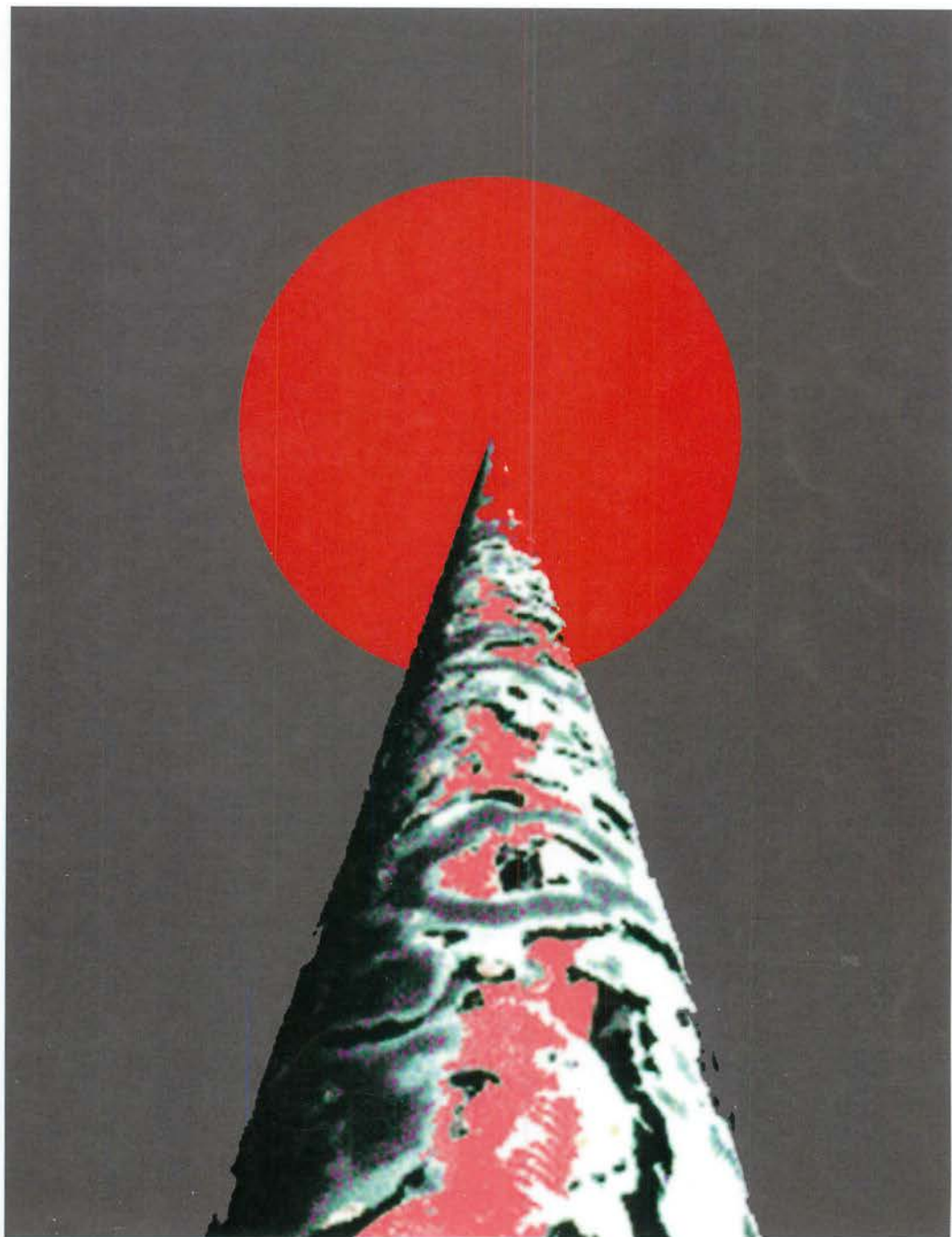


GOD STAR



DUARDO CARDONA

If controversial subjects are not your cup of tea, read no further and put this book down right now because what this work has to offer is revolutionary in the extreme.

God Star sets out to show that the sky which ancient man remembers was entirely different from the one that now stretches above us.

This is demonstrated through ancient texts from all over the world which deal with the astronomical lore of our forebears. As if with a single voice, these texts proclaim that the present planet we know as Saturn once shone as a sun in Earth's primordial sky. This claim receives credence through the fact that astronomers now view the planet Saturn as the remnant of what had once been a brown dwarf star. It also goes a long way in explaining why Saturn was considered the "ruler of the planets in mythology,"* and why the god of that planet is found at the head of every ancient pantheon on earth.

Astronomically, it is then deduced that Earth used to be the satellite of this proto-Saturnian sun, which mini-system then invaded the present Solar System, and that this transpired during the age of man.

As bizarre as this scenario appears, it is lent credibility by the hard sciences through the unmistakable signs encountered here on Earth, as also by what is constantly being discovered out in space. In fact, the likelihood that such an interloping planetary system might have been captured by the Sun is even now acknowledged by a new class of trailblazing astronomers.

Thus, apart from the mytho-historical record, the theory presented within the pages of this book includes evidence from geology, paleontology, astrophysics, and plasma cosmology. It also serves to elucidate various dilemmas that presently encumber these and other disciplines.

What might be seen by some as of greater importance, the reconstruction of the primeval events that took place beneath the proto-Saturnian sun goes a long way in disclosing the origins of religion, including the very concept of deity.

While, for the sake of scholarship, the book includes the odd technical tract, it is nevertheless written in a manner that will be readily understood by the intelligent layperson. In fact it almost reads like a detective novel.

* *Astronomy* (January 2006 Special Issue), p. 60.

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Dwardu Cardona

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**This work is dedicated to all those who have trod
the same, or a similar, path.**

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Other than as specified above and in the text itself, I burden no one with each and every single facet of the theory presented in this work.

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Chapter 1

Myths and Legends

MYTH

The first criticism that will be leveled at this work is that it is based on nothing but myths and legends.

I agree: it is. It is also based on recent discoveries in astronomy, geology, and palaeontology. Even so, what *are* myths and legends?

Strictly speaking, legends are traditional tales popularly regarded as historical myths. But then what are myths? Myths are usually defined as primitive, or ancient, tales involving supernatural beings, often embodying once-popular ideas concerning natural and historical phenomena.

What, then, is the difference between myths and legends? There will be some who will claim that there is no difference. Others may make a distinction between mythic tales told about historical persons (legends) and mythic tales told about divine and semi-divine beings (mythology). Personally, I would make a further distinction in that mythology deals mostly with cosmogonical origins. But let us not get caught up in semantics. Let me simply say that, in this work, I shall be concentrating on those tales dealing with divine and semi-divine beings. One claim I shall, however, be making is that these tales are not mythic in the usually understood sense of the word. In other words, what I shall be claiming is that the tales I shall be treating of are not to be considered untrue. On the contrary, I hope to show beyond a reasonable doubt that these tales truly reflect events that, bizarre though they might seem, actually transpired in ages past.

Franz Xavier Kugler, one of the world's foremost authorities on Babylonian and Biblical astronomy, chronology, and mythology, who died in 1929, warned that:

"...ancient traditions, even when they are dressed as myth and saga, cannot be dismissed lightly as fantastic, or worse, meaningless fabrications. It is particularly proper to avoid this pitfall when dealing with serious reports, *especially those of a religious nature such as those that occur in large number in the Old Testament.*"¹

In this work, the word "mythology" is used in its original Greek meaning—*mythologia*, from *muthos* or *mythos*, as pronounced by the Athenians, meaning "tale," and *logia*, derived from *legein* (to speak): that is, the telling of tales. There is nothing in the Greek term itself which specifies that these tales were considered fictional. More than that, it were these very tales that formed the basis of Greek and other religions of the ancient world. True, it shall be countered that these ancient religions were based on false premises. What I aim to indicate, on the other hand, is that these premises were anything *but* false.

¹ L. C. Stecchini, "Astronomical Theory and Historical Data," in A. de Grazia (Ed.), *The Velikovsky Affair* (N. Y., 1966), p. 141 (emphasis added).

One may now ask: What actually constitutes *mythos*? As Roger Wescott explained, linguistic comparison suggests that the Greek word *muthos* is derived from a Proto-Indo-European stem which means "to remember nostalgically," and/or "to pine for."² And, as I shall also endeavor to show, the contents of the world's mythology indicates exactly that—a sorrowful longing for the conditions of a past age. Thus Wescott was inclined to state that he viewed myth "as more wistful than wishful" besides being "more commemorative than imaginative."³

Those who are familiar with the contents of myth, even if only cursorily, will at once point out that myths are too convoluted in their bewildering messages, when not perplexingly contradictory, to be taken seriously in this day and age. But, as Claude Lévi-Strauss admonished, "this apparent arbitrariness is belied by the astounding similarity among myths collected in widely different regions."⁴ Or, as Wescott succinctly phrased it: "Myths are at once startlingly bizarre and oppressively repetitious."⁵ For Alan Watts, the prime paradox was that myth conceals while it simultaneously reveals.⁶

RITUAL

The systematic study of myth could be said to have been inaugurated no earlier than the 6th century B.C.,⁷ but it has continued unabated ever since. Myth, in its turn, is inexorably bound to ritual, so much so that a particular school of thought has long argued that myth is *derived* from ritual.⁸ This view holds that myths originated as textual commentaries meant to explain and justify the rites. As James Frazer noted: "No people ever observed a custom because a mythical being was said to have once acted in a certain way."⁹ And as long as the stress is on "*mythical being*," I heartily agree. I cannot, however, agree with him when he maintains that "all peoples have invented myths to explain why they observed certain customs"¹⁰—especially since this begs the question as to why customs arose in the first place. A particular myth, according to Frazer, "is never so graphic and precise in its details as when it is a simple transcript of a ceremony which the author of the myth witnessed with his eyes."¹¹

"For while many cases can be shown in which a myth has been invented to explain a rite [Frazer had it stated], it would be hard to point to a single case in which a myth has given rise to a rite. Ritual may be the parent of myth, but can never be its child."¹²

² R. W. Wescott, "Aster and Disaster: Toward a Catastrophist Mode of Mythological Interpretation," *KRONOS* IX:1 (Fall 1983), p. 65.

³ *Ibid.*, p. 70.

⁴ C. Lévi-Strauss, "The Structural Study of Myth," in T. A. Sebeok (ed.), *Myth* (Bloomington, 1958), p. 83.

⁵ R. W. Wescott, *loc. cit.*

⁶ *Ibid.*; A. W. Watts, *The Two Hands of God: The Mystery of Polarity* (N. Y., 1963), p. 14.

⁷ Mainly by Theagenes (6th century, in Italy), Xenophanes (5th century, in Ionia), and Euhemerus (4th century, in Sicily)—see R. W. Wescott, *op. cit.*, pp. 66-67.

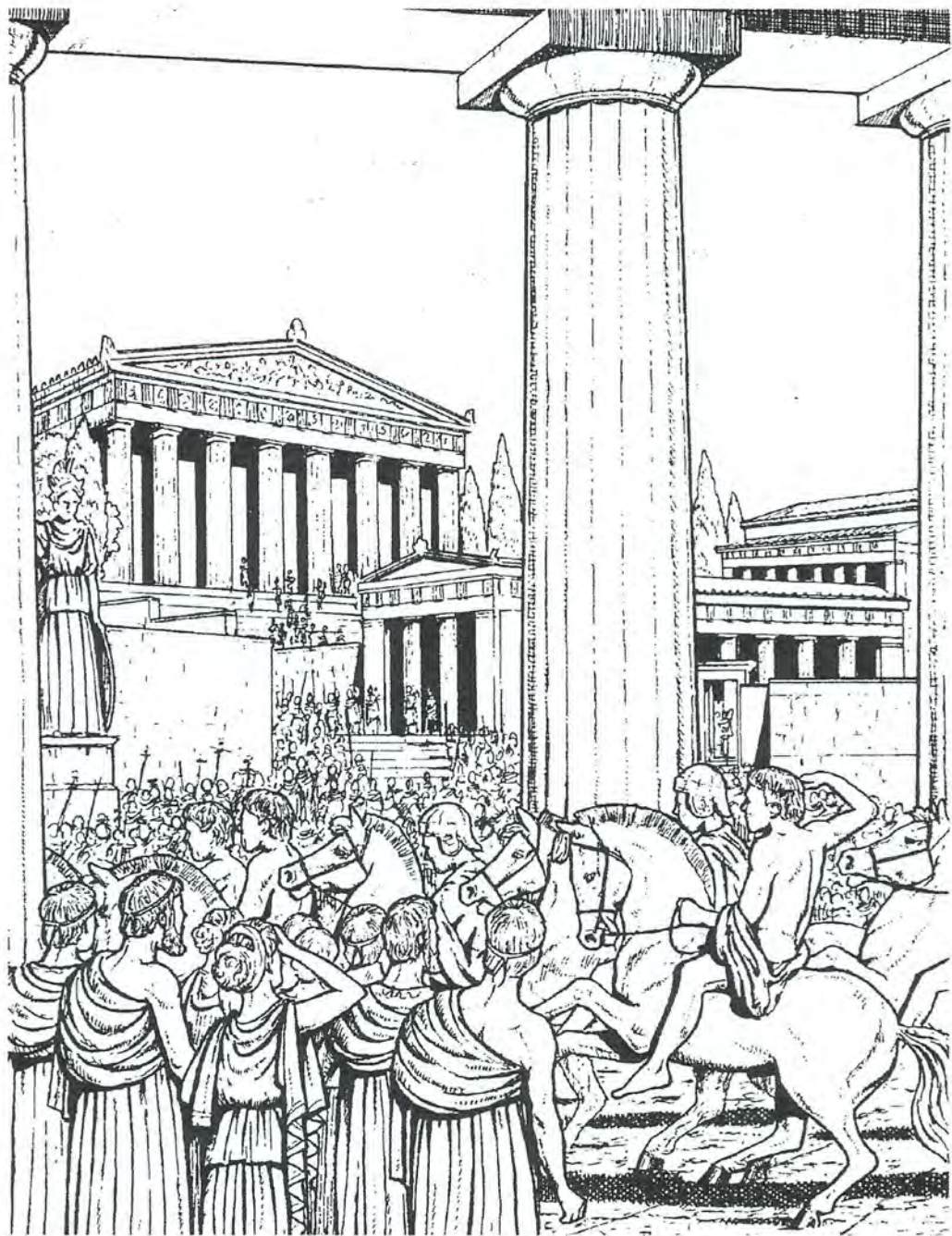
⁸ See, for instance, F. R. Somerset (popularly known as Lord Raglan), "Myth and Ritual," in T. A. Sebeok, *op. cit.*

⁹ J. G. Frazer, *The Golden Bough*, Vol. I (N. Y., 1890/1981), p. 128.

¹⁰ *Ibid.*

¹¹ *Ibid.*, p. 246.

¹² *Ibid.*



**The Panathenaic procession, held annually on the birthday of Athena on the Acropolis of Athens in the early summer. Did such rites evolve from myth, or was it myth itself that derived from such rites?
(Illustration by John Green.)**

There might be some who might view this as a case of placing the cart before the horse, claiming that the contrary is certainly true, that, in actual fact, ceremonial rituals arose as an attempt to graphically illustrate the events narrated by myth. Wescott, citing Edward Tylor and Lévi-Strauss, definitely saw this reverse as being just as possible—that rites *could* have arisen “as mere dramatizations of preexisting myths.”¹³ Frazer himself not only knew this but referred his readers to H. Usener whose views were in direct opposition to his own.¹⁴ But, as Clyde Kluckhohn was forced to conclude, the problem as to which came first, ritual or myth, is one that is not likely to be solved.¹⁵

Thus, while I cannot agree with Frazer’s view, neither can I agree that the opposite is true. To begin with, I do not believe that myths owe their existence to an author—at least not if we are speaking of the *origin* of any one particular myth. Myths, as I intend to illustrate, arose as eye-witness accounts of what was actually seen and, in that sense, no author need be invoked. Likewise also with custom, ritual, and religious ceremonies: They all owed their inspiration to actual events which the participants attempted to recreate for purposes much more sublime than Frazer ever imagined.¹⁶

My own position is that myth and ritual rose together hand-in-hand in a united effort to perpetuate, rather than explain, what had once taken place in the ancient sky, and to commemorate those events.

DRAMA

In ancient Greece, myth was not only associated with ritual but also with that form of entertainment that has come down to us as drama. What is interesting about Greek drama, and not widely known, is that the art originated in the rituals dedicated to one particular deity, namely Dionysus. As Gilbert Murray observed, according to the testimony of the Greeks themselves, tragedy was explicitly concerned with the “sufferings of Dionysus.”¹⁷ In fact, when dissatisfied with any particular play, the Athenians were wont to exclaim that “it has nothing to do with Dionysus.”¹⁸

“Greek tragedy, strictly speaking, was a peculiar form of art with narrow limits, both local and temporary. It was, in literal meaning, a ‘goat-song,’ i.e., a *molpe* (dance and song combined), performed at the altar of Dionysus over the sacrifice of a dismembered goat, which, by a form of symbolism common in ancient religion, represented the god himself. Hardly acted outside one small district of Greece, lasting as a living form not much beyond the limits of the fifth century B.C., performed only at one particular type of religious festival, the *Dionysia* at Athens.”¹⁹

True, a certain amount of criticism can be leveled at the above. After all, Dionysus was not himself the usual subject of Greek drama—at least not that we can tell from the various Greek plays that have come down to us—since he only appears in a couple of plays. Various

¹³ R. W. Wescott, *op. cit.*, p. 72.

¹⁴ H. Usener, “Italische Mythen,” *Rheinisches Museum* XXX, pp. 228 ff.

¹⁵ C. Kluckhohn, “Myth and Rituals: A General Theory,” in W. A. Lessa & E. Z. Vogt (eds.), *A Reader in Comparative Religion* (N. Y., 2nd. ed., 1965).

¹⁶ Neither is this work in keeping with the views of most other mythologists.

¹⁷ G. Murray, *Aeschylus* (Oxford, 1940), pp. 5-6.

¹⁸ *Ibid.*, p. 329.

¹⁹ *Ibid.*, pp. 1-2.

tragic figures, as well as comic ones, served as the basis for Greek theatrical productions. As Peter James pointed out, the real subject of all Greek plays was "good drama—the same criterion used by Shakespeare and the rest."²⁰

"Of course Greek drama drew on religious, legendary and historical themes—these formed the moral backbone of Greek society, from which the great dramas were created. (Same as Shakespeare, who drew on local British traditions as well as Scandinavian, Greek, Roman and Italian.) It does *not mean* that Greek drama somehow 'evolved' from religious ritual, though this is commonly supposed."²¹

As James also pointed out: "The ancient Greeks of the 5th century were much like us—they liked a good drink, a laugh and good drama."²²

One can argue, as James has,²³ against Murray's statements concerning the acting out of Greek drama as having taken place hardly "outside one small district of Greece" or that Greek drama lasted as a living form "not much beyond the limits of the fifth century B.C." since the available evidence, here, seems to contradict him. Thespis, for instance, was renowned for his traveling shows which were usually performed on the back of a wagon. Even so, I cannot agree with James when he claims that Greek drama did *not* evolve from religious ritual.²⁴ Murray himself also stated that:

"We must remember that the subject of Greek tragedy is always the heroic saga. It is never an invented story, and it is never the history of ordinary human beings. I should doubt if there was any named character in an Attic tragedy who was not actually in some way an object of worship: a god or hero or at least the possessor of some taboo, tomb, or oracle, or ritual."²⁵

Aeschylus, the Greek poet and playwright, is renowned as the founder of Greek drama. He is the first of the only three Attic tragedians of whose work entire plays survive. "The first thing that strikes a student of Aeschylus," according to Murray, "is the strong Bacchic or Dionysiac element ..."²⁶ More than that: "The ancient critics seem always to recognize that, while Dionysus was, of course, the patron of all drama, there was something specifically Dionysiac about Aeschylus."²⁷ Nor is this merely Murray's contention. The Greek biographer, Plutarch, himself had had it stated that *all* of the plays written by Aeschylus were "brimming with Dionysus."²⁸

Here, an incident in the life of Aeschylus may be pertinent. Apparently, the playwright himself once acted a part in one of his own plays in which there was a reference to the goddess Demeter. The audience, who suspected him of revealing the inviolable secrets of one of Demeter's rites, rose in anger against him. Aeschylus fled, seeking sanctuary, to the altar of Dionysus which was erected in the orchestra and thus, at least temporarily, saved himself

²⁰ P. J. James, "Velikovsky & Oedipus (3)," posted electronically on the Kronia List, April 13, 1997.

²¹ *Ibid.* (Emphasis as given.)

²² *Ibid.*

²³ *Ibid.*

²⁴ And see, here, P. J. James & N. Thorpe, *Ancient Inventions* (London, 1996), pp. 580-584.

²⁵ G. Murray, *op. cit.*, p. 124.

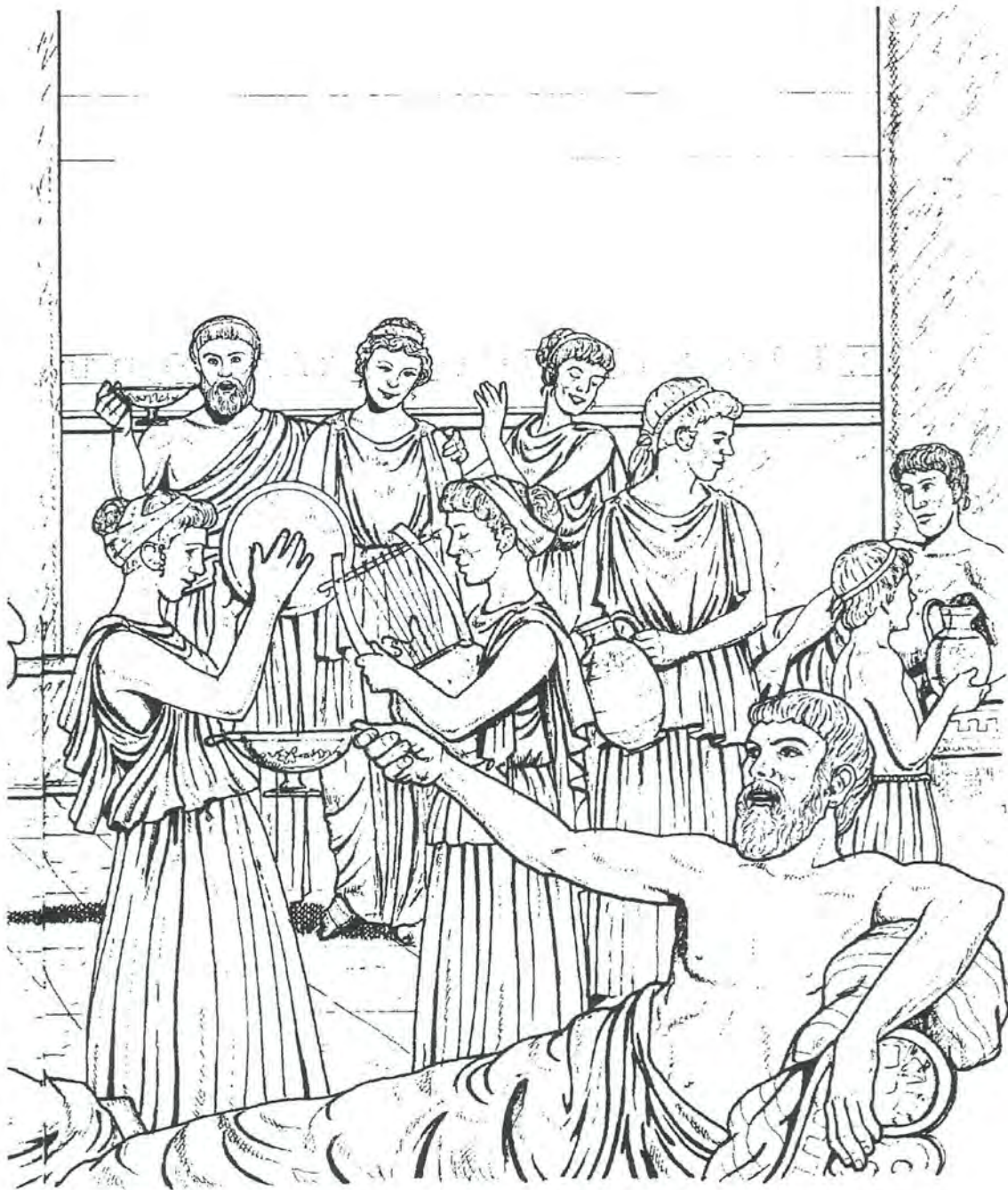
²⁶ *Ibid.*, p. 145.

²⁷ *Ibid.*, pp. 146-147.

²⁸ *Ibid.*, p. 146.



A Greek symposium (drinking party) during which works of literature, philosophy, and scholarship were often discussed.



"The ancient Greeks were much like us—they liked a good drink [usually wine], a laugh and good drama."

(Illustration(s) by John Green.)



Greek theatrical mask.

from the furious mob. He was later charged with the crime before the Areopagus, in Athens, but his plea that he had not known that what he had uttered was supposed to have been a secret was accepted by the court who acquitted him.

Murray, of course, is not the only modern authority who holds, or held, the view that Greek drama had its origin in Dionysian rituals. According to Karl Kerényi "[Friedrich] Nietzsche [also] believed that in line with an unassailable tradition, the oldest forms of Greek tragedy dealt exclusively with the sufferings of Dionysus, and that for a long time the sole hero of tragedy was Dionysus."²⁹ Like James, Kerényi himself did not quite agree, even going as far as labeling Nietzsche's assertion as false. "The oldest stage hero," as far as Kerényi was concerned, "was an enemy of Dionysus."³⁰ But I will not quibble here as to whether it was Dionysus or his enemy who was considered to have been the hero of early Greek

tragic drama since this does not alter the fact that such tragedies were originally concerned with the life and downfall of Dionysus himself. Thus, as Jane Harrison noted:

"The plays were performed in the theatre of Dionysus, in the precinct of the god, his image was present in the theatre, the chorus danced around his altar, his priest sat in the front and central seat among the spectators. In the face of facts so plain it seems to me impossible that the drama had its roots elsewhere than in the worship of Dionysus."³¹

Let us, however, temporarily set the opinions of modern scholars aside. What should really concern us is what the ancient Greeks themselves had to say, because, after all, it was they who were in the best position to illuminate us on the subject. In this respect, we have already noted what Plutarch had stated concerning the Dionysiac content of Aeschylus' plays. But what of Greek drama in general?

According to Herodotus, the Greek historian, "the tragic chorus" that was part and parcel of Greek drama belonged "to the worship of Dionysus."³² Aristotle went even further when he wrote that tragedy "originated with the leaders of the dithyramb,"³³ a wild choric hymn sung in honor of Dionysus by participants masquerading as satyrs, from which the festivals of Dionysus developed. Thus the Theater of Dionysus below the Acropolis of Athens

²⁹ K. Kerényi, *Dionysus* (Princeton, 1976), p. 324.

³⁰ *Ibid.*

³¹ J. Harrison, *Epilegomena to the Study of Greek Religion and Themis* (1962), p. 339.

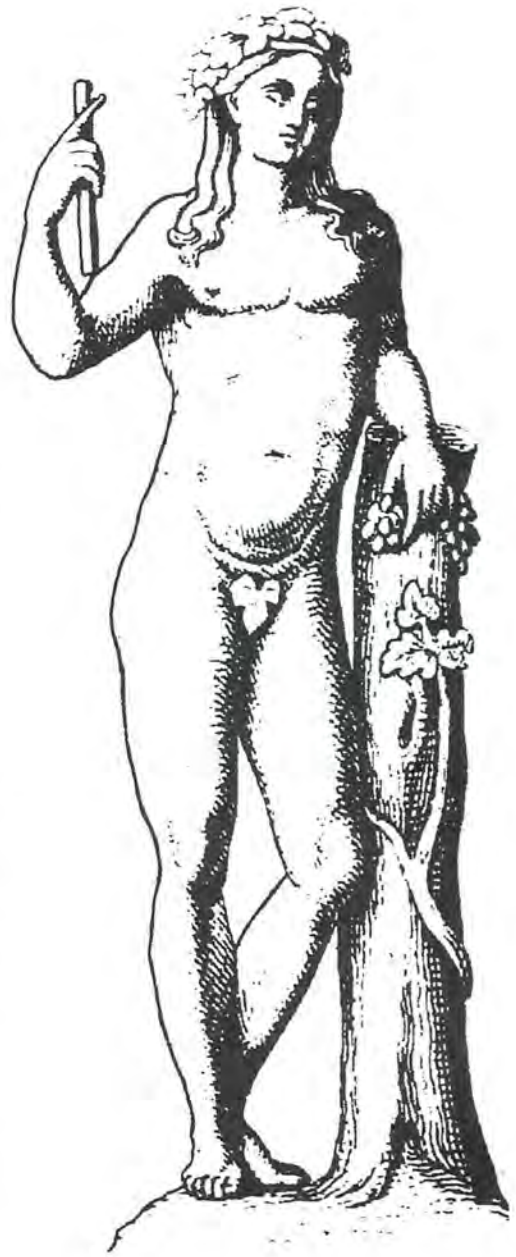
³² Herodotus, *Historiae* V:67.

³³ Aristotle, *De Poetica* IV:12.

was constructed within the sacred precinct of the god.³⁴

What should also be noted here is that the rites of Dionysus so closely resembled those of the Egyptian god Osiris, that Herodotus thought it impossible for the Greek rites to have risen independently of the Egyptian ones and therefore supposed that the Greeks must have borrowed their rites from the Egyptians and, with slight alterations, passed them on as their own.³⁵ So, incidentally, also Plutarch, who insisted upon the detailed resemblances between the rites of Osiris and those of Dionysus³⁶—which, if nothing else, also indicates that comparative mythology is not itself the modern tool some of its critics have maintained. In this instance, as in many others, however, no borrowing need be called for. What is at bottom here is that whatever it was that Dionysus had *originally* stood for was the very same thing that the Egyptian Osiris had *originally* represented. Or, to put it in a simpler way, Osiris and Dionysus were representations of the same *original* phenomenon; they were simply one and the same god under different national guise.

Others, of course, have maintained that the similarity of Greek rituals to those of the Egyptians stems from the ignorance of the Greeks in matters Egyptian. Thus, for instance, Gwyn Griffiths tried to convince his readers that Greek observers were “not usually in a position” to understand Egyptian religion particularly because of their ignorance of the Egyptian language.³⁷ Thus, according to Griffiths, Greek theological explanations of Egyptian religious particulars and mythological equations were based on



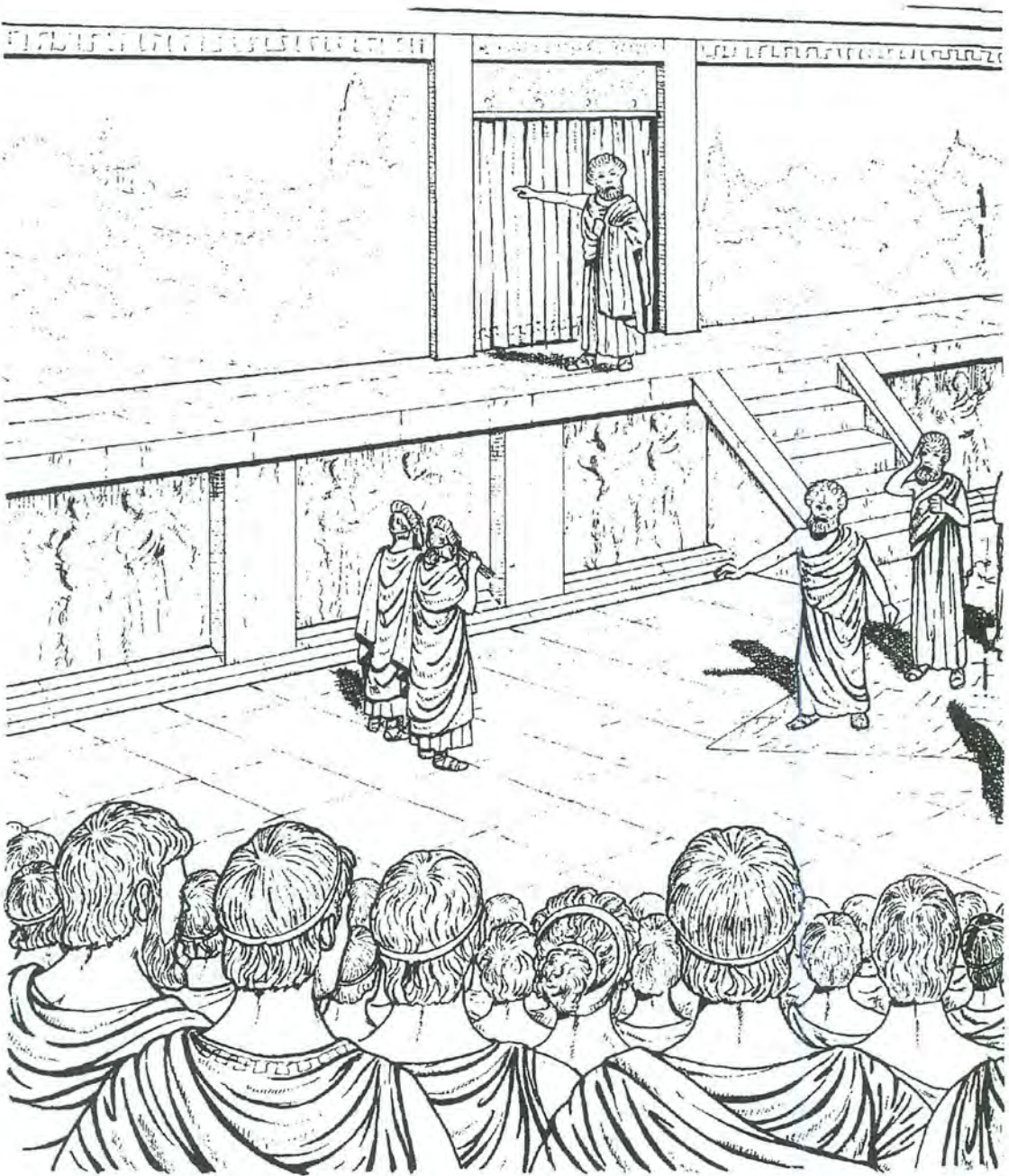
Dionysus.

³⁴ W. Oates & E. O'Neil, *The Complete Greek Drama* (1938), p. xxiii.

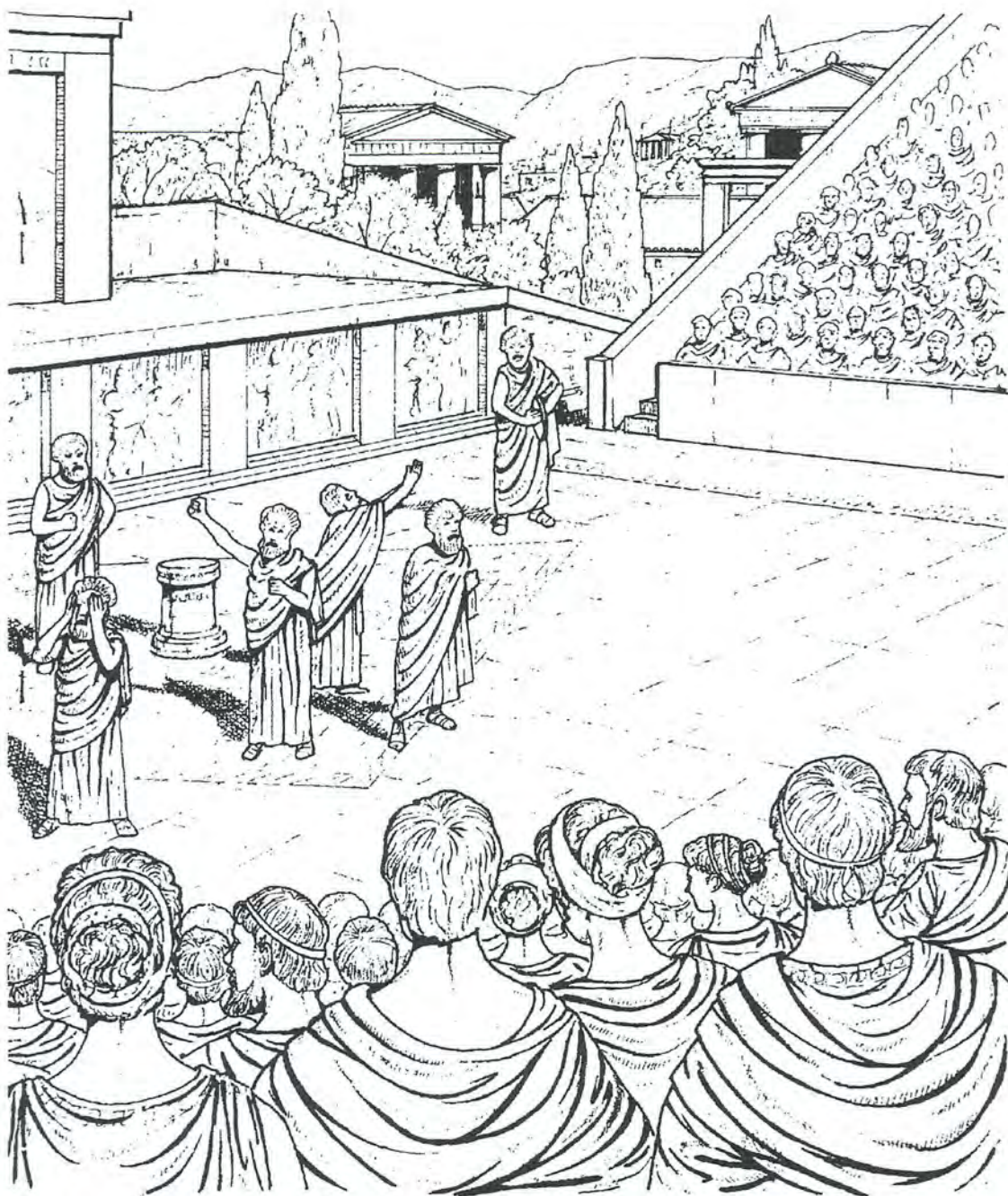
³⁵ J. G. Frazer, *The Golden Bough* (London, 1974, abridged edition), p. 507.

³⁶ *Ibid.*

³⁷ G. J. Griffiths, “Interpretatio Graeca,” in W. Helck & E. Otto, *Lexikon der Ägyptologie*, Vol. III (1980), col. 167.



Performance of *Oedipus Rex* in the theater of Dionysus on the south slope of the Acropolis of Athens.
Actors wore masks, each playing more than one role.



**Note the altar of Dionysus in the center of the orchestra.
(Illustration(s) by John Green.)**



Actors performing in a Roman Theater.

Although it has been stated that Roman drama was a secular diversion with its roots in sacred Etruscan funeral rites, it was actually nothing more than a Greek derivative of Hellenic repertory.

(Illustration by John Green.)

misunderstandings of Egyptian phenomena, as well as on modifications that were introduced on what they saw as Greek parallels.³⁸ And of course, still according to Griffiths, each deviation caused by misunderstanding, "whether radical or slight," would have contributed to one more "remove" from the original version.³⁹

On the other hand, ancient Egyptian religion, together with what Martin Bernal surprised me by calling "Egyptian philosophy," has often been denigrated.⁴⁰ But, as Bernal noted, that these "were necessarily crude and shallow, has difficulties with such superbly intelligent men as Eudoxos who, according to all reports, lived with the priests and learnt Egyptian, and clearly had a great respect and enthusiasm for Egyptian culture."⁴¹ Despite the fact that I do not necessarily agree with all of Bernal's dauntless assertions concerning the Afroasiatic roots of Classical Greek culture—and he has come under enough criticism from mainstream scholars—he was, in my opinion, quite correct when he accused modern mythologists of what he termed *Besserwissen*—the audacity of believing to know the ancients better than they knew themselves.⁴²

The point to be made is not whether tragedy, as it eventually developed, remained primarily concerned with Dionysiac ritual but whether it really originated in direct response to it. As we have seen, despite the odd dissenter, modern opinion mainly reflects that of the Greeks themselves who seem to have attained a degree of unanimity—by no means the accustomed expectancy—on this particular subject. Let us not, after all, forget that the very word "tragedy," in Greek *tragodia*, means nothing more than "goat song," derived from *tragos*, that is "goat," the sacred animal of Dionysus. Despite its enigmatic name, the goat song itself was sung in honor of Dionysus, describing his birth and violent end. That the term "goat song"—*tragodia*—became a synonym for "misfortune" is therefore understandable. Christians, if no one else, can at least understand this much: What could be more tragic than the violent death of a god?

ORALITY

Myths and rituals originated in the days before the invention of writing. Prior to that, myths were handed down orally. That having been said, the next question the critic will ask is: How reliable can a report of anything be if it has been handed down orally for an untold number of years *before* it was even written down? And, to be sure, the reliability of oral tradition has been the subject of controversy since the time of Euhemerus.⁴³

In our own world, as we all know, different eyewitnesses are liable to offer different versions of any single event even when the reports are collected within a very short time of the occurrence. Not only that, but, with each telling, each report becomes more embellished until all semblance of truth is muddled beyond recognition. Can you imagine the reliability of such reports being handed down by word-of-mouth over a few thousand years?

And yet, as Dorothy Vitaliano shrewdly observed, how often have parents retold a bedtime story only to be found corrected if they deviate by as much as a single word from the original version told? *Such* is the power of oral tradition—as notice, to give but one example,

³⁸ *Ibid.*

³⁹ *Ibid.*

⁴⁰ M. Bernal, *Black Athena* (New Brunswick, 1988), p. 118.

⁴¹ *Ibid.*

⁴² *Ibid.*

⁴³ R. M. Dorson, "The Debate Over the Trustworthiness of Oral Traditional History," cited by D. B. Vitaliano, *Legends of the Earth* (Bloomington, 1973), p. 4.

the accuracy with which the people of sub-Saharan Africa managed to preserve their history, without the aid of a written language, up until the advent of the colonial period.⁴⁴

As Peter Hallberg pointed out in relation to the Icelandic skalds, when history is transmitted through a succession of professional bards with highly trained memories and powers of recollection, there is reason to believe that, when put into writing even after a few centuries, the details remain more than reasonably accurate.⁴⁵ Thus Alfred de Grazia was echoing received opinion when he stated:

"We know from general anthropology and ancient literature that an exact rendition of a large body of verse and prose (such as Homer's *Iliad* and other epic works) can be transmitted over generations and centuries...[I]n the period of oral transmission, trained speakers can memorize and reproduce exactly thousands of lines heard from the lips of a teacher."⁴⁶

To paraphrase Peter Warlow's astute words, the main secret behind the retention and immediate recall of any part, or all, of a particular epic, regardless of its enormity of lines, is the systematic learning by rote, or repetition. As he aptly demonstrated, this is made evident by the effortless recall of nursery rhymes learned by rote in early childhood together with other poems and quotations drummed into youngsters in school and college. It is by rote, which Warlow calls "*the basic way*," that every child learns the complexities of speech, the chronological order of the alphabet, the days in the month, multiplication tables, spelling aids, and other fundamentals in the early garnering of knowledge. He was nowhere near exaggerating when he referred to rote learning as "an incredibly powerful technique."⁴⁷

It has also been hypothesized that the hexameter of Homer's verses was inherited from an earlier oral tradition and that it was this very hexameter that helped preserve the epics.⁴⁸ If this was so, verbatim memorization may not even have been necessary. According to Milman Parry, the hexameters of poetic sagas such as the *Iliad* and *Odyssey* are not simply constructed of word-units but of formulas. These constitute "groups of words [co-ordinated precisely] for dealing with traditional materials, each formula shaped to fit a hexameter line."⁴⁹

Thus, for instance, as Walter Ong noted, the phrase "there spoke out clever Odysseus" occurs seventy two times in Homer's poems.⁵⁰ Such a formula would be easy to remember every time Odysseus is introduced to say something.

Personally, I disagree emphatically with Ong when, from this, he also surmises that Odysseus was thought of as being clever—"polymetis"—not because he was supposed to have been, but because "without the epithet *polymetis* he could not be readily worked into the meter."⁵¹ According to Ong, all of Homer's characters, including the deities, received their time-worn epithets in order to fit the correct metrical lines of the epics in which they appear. This is difficult to believe when one remembers that the same, or similar, epithets were bestowed on the comparative deities of other nations which appear in poetic sagas employing an entirely different meter from that of Homer. In various other cases, deities carry the same,

⁴⁴ C. Sagan & I. S. Shklovskii, *Intelligent Life in the Universe* (N. Y., 1966), p. 464.

⁴⁵ P. Hallberg, *The Icelandic Saga* (Nebraska, 1962), p. 52.

⁴⁶ A. de Grazia, *God's Fire* (Princeton, 1983), p. 285.

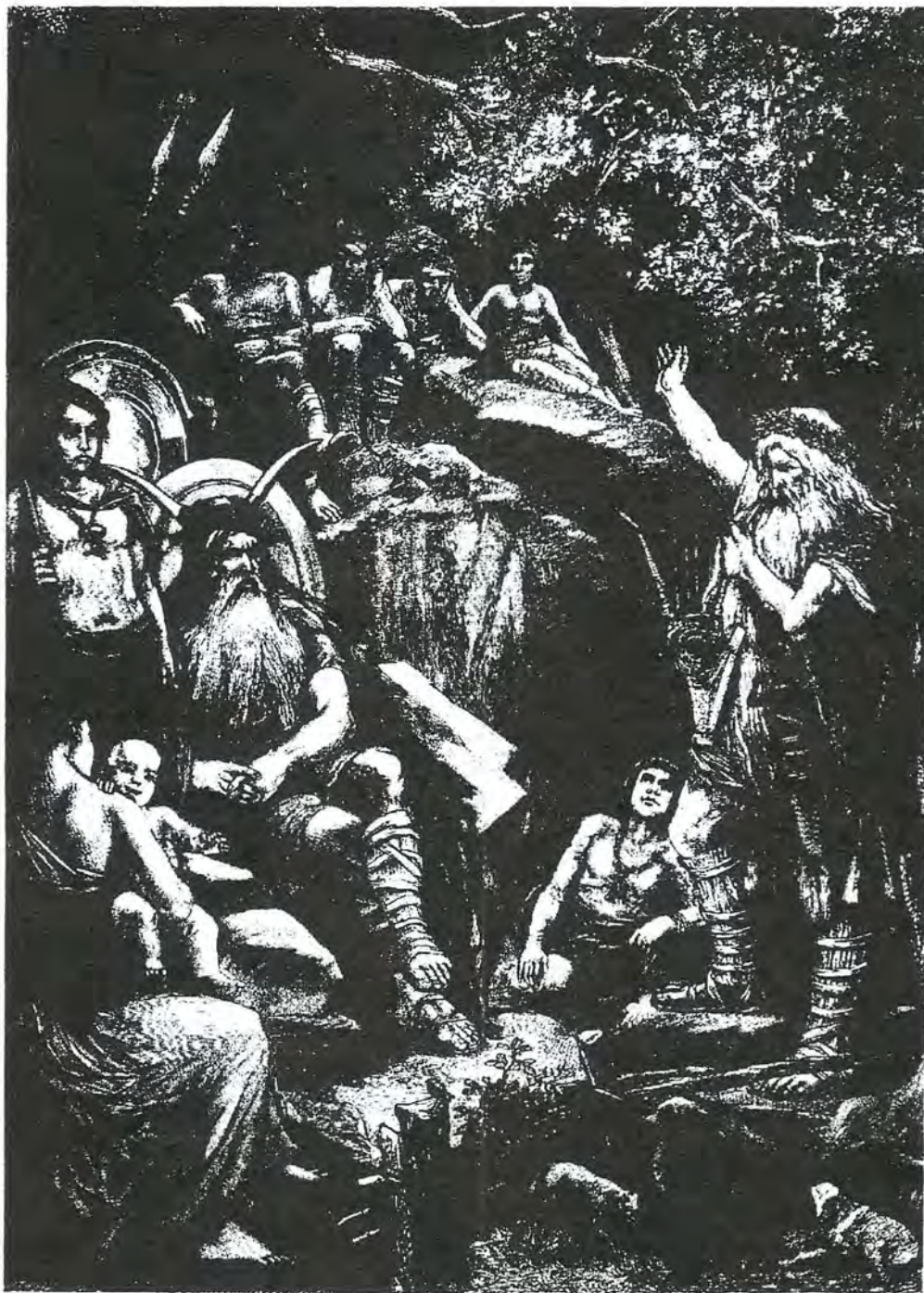
⁴⁷ P. Warlow, *The Reversing Earth* (London, 1982), p. 143.

⁴⁸ S. Begley, et al., "Memory," *Newsweek* (Sept. 29, 1986), p. 54.

⁴⁹ W. J. Ong, *Orality and Literacy* (N. Y., 1982), p. 58.

⁵⁰ *Ibid.*

⁵¹ *Ibid.*, pp. 58-59.



Scandinavian skald, or bard, reciting a saga from memory to a chieftain and his tribe.



Heroes of the Trojan War.

From left to right: Menelaus, Paris, Diomedes, Odysseus, Nestor, Achilles, Agamemnon.
An artist's impression.

Did the protagonists of Homer's *Iliad* owe their characters to poetic meter?

or similar, epithets even when they are not interwoven into verse. Even so, Ong's forceful conclusion need not affect the validity of Parry's approach.

In recent years, an interesting experiment was conducted by Hildegard Wiencke-Lotz who traveled some 45,000 miles through Europe in an all-encompassing effort to track the various versions of the *Gudrun Epic* still "sung" in those parts and to verify, if possible, the historicity of its setting and occurrences. Previously believed to be "little more than a fairy tale in three parts, of which the middle part possibly reflected some historical events," the *Gudrun Epic* was demonstrated by Wiencke-Lotz to be "an ancient oral tradition representing a unified whole which loses its meaning when the three parts are considered separately."⁵² As David Griffard, relying on notes by William Douglas, as well as the work of Wiencke-Lotz herself, was able to report:

"[Wiencke-Lotz] argues that the entire *Gudrun Epic* has a sound historical basis and that all specific places mentioned can be found where expected geographically, though their distribution covers a large geographical area. She has identified and visited the numerous places named in the tales and has traced the specific period of Gudrun's life in relation to Roman history."⁵³

What emerged from this study is that the epic is exclusively indigenous to those territories which had, at one time or another, been occupied by the Goths. This conclusion received confirmation through the archaeological discoveries of the countries involved—Yugoslavia

⁵² D. Griffard, from the "Introductory Notes" to H. Wiencke-Lotz, "Folklore: Its Stability and Self-correcting Power," *HORUS* II:2 (Summer 1986), p. 29.

⁵³ *Ibid.*

Austria, Greece and Asia Minor, Poland, Russia, Sweden, Denmark, England, Germany, France, Spain and, to an extent, even Morocco and Tunisia.⁵⁴

Just as important was Wiencke-Lotz's meeting with the folklore-telling communities that still exist in some of these countries. Their rendition of Gudrun songs and/or tales was found to be "absolutely trustworthy" when compared to the epic as it had been immortalized in writing in 1233, even though the recitals were anything but verbatim duplications of it. In the meantime, the recitals themselves were always repeated in exactly the same way. This was so true that, on one occasion, when a particular storyteller deliberately, and mischievously, changed a line, "there was a drastic interruption, even from the toddlers" who immediately sought to correct the narrator.⁵⁵

One telling conclusion, among others, that can be drawn from this study is that, despite a passage of more than the 400 years which supposedly separate Homer from the events he narrated, the *Gudrun Epic* has retained geographical, historical, and archaeological accuracy with a consistency that can only be attributed to a faithful persistence in the original. In its turn, this faithfulness can only be the result of a honing of memory through learning by rote and, perhaps, to give Parry his due, by formula.

LITERACY

Need I even state that the invention of writing revolutionized the ancient world? And yet, despite its many advantages, writing *does* carry one disadvantage with it, a point that was not lost on the ancient Egyptians. Here the point I wish to make is best illustrated by the allegorical story of Thamus, a mythological king of Egypt, who, with the following words, reproached Thoth, the god of letters, for having invented writing:

⁵⁴ S. Wiencke-Lotz, *op. cit.*, pp. 31, 32.

⁵⁵ *Ibid.*, pp. 30, 32-33.



Thoth—the Egyptian god of letters.



Making and writing on papyrus.

Not many people among the Egyptians could read and write. Those who could became scribes, valuable to the court and temples as record keepers. The English word “paper” is derived from the Greek name of the sedge-like plant, the papyrus, the stalks of which were pressed together into a sheet of writing material which was then smoothed with a stone. Despite its many advantages, the invention of writing carried with it at least one major disadvantage—it no longer necessitated the memorizing of past events.

(Illustration by John Green.)

Most ingenious Theuth [Thoth] ... one man has the ability to begat arts but the ability to judge of their usefulness or harmfulness ... belongs to another; and now you, who are the father of letters, have been led, by your affection to ascribe to them a power the opposite of that which they really possess. For this invention will produce forgetfulness in the minds of those who learn to use it, because they will not practice their memory. Their trust in writing ... will discourage the use of their own memory ... You have invented an elixir not of memory, but of reminding; and you offer your pupils the appearance of wisdom, not true wisdom, *for they will read many things without instruction* and will therefore seem to know many things, when they are for the most part ignorant ... ”⁵⁶

Thus, when it came to things past, the later Egyptians read the texts bequeathed by their ancestors *but did not always understand what the written words alluded to*, for they had not witnessed what their ancestors had. When bards recited their traditions from memory, a lis-

⁵⁶ Plato, *Phaedrus*, as translated by H. N. Fowler, 274-275 (emphasis added).



Egyptian scribe.

Egyptian scribes wore special starched kilts which, when sitting cross-legged, acted as a “desk” on which to place their papyrus sheet when writing—the first lap-top?

(From a statue now in the Louvre, Paris)

tener could question the reciter and receive an answer in explanation. *One cannot, however, question the written word.* And, in that respect, as much knowledge was lost as was recorded. This we have to keep in mind as we continue with our study, and, while I shall never use it as a crutch, I will have recourse to remind the reader of it from time to time in the pages that follow. As Sharon Begley *et al* noted:

*"Before there is knowledge, there must be memory. Yet few subjects remain so unknown, so obscured in metaphor and myth. According to the ancient Greeks, life is the act of recollecting knowledge the soul forgot at the moment of its birth in a body... Later thinkers noted the perversity of memories—how nothing imprints them more strongly than the desire to forget."*⁵⁷

PERPLEXITY

Roger Wescott recently wrote: "Ever since Greek philosophers first initiated critical examination of Homeric and Hesiodic myth, some mythologists have characterized myths in general as mad."⁵⁸

As Wallis Budge stated of Egyptian texts, the perplexity of ancient beliefs confounded even those very ancients who professed adherence to them. Speaking especially of the antiquity of the so-called Book of the Dead, Budge informed his readers that there is no doubt that "the greater part" of these texts "are far older than the period of...the first historical king of Egypt."⁵⁹ According to him: "Certain sections indeed appear to belong to an indefinitely remote and primeval time."⁶⁰ Those who came later, however, did not always seem to have understood what the originals had alluded to—which is exactly the situation that Thamus, in reproaching Thoth, had meant to emphasize.

"The earliest texts bear within themselves proofs, not only of having been composed, but also of having been revised, or edited, long before the days of king Mena [or Menes], and judging from many passages in the copies inscribed in hieroglyphics upon the pyramids of Unas [and other early kings], it would seem that, even at that remote date, the scribes were perplexed and hardly understood the texts which they had before them."⁶¹

Concerning a particular, and very important, "chapter" of the Book of the Dead—a "chapter" that has been considered "an abridgment of the whole Book of the Dead"—and basing his opinion on that of Chabas, Budge affirms that it was not only "very ancient" and "very mysterious," but "very difficult to understand" even "*fourteen centuries before our era*."⁶² Can we, millennia later, fare any better in our attempt to understand these texts? And is it merely Egyptian texts that will pose this problem for us?

In speaking of the great epics of the Germans, the Indians, Finns and other ancient peoples, Sigmund Freud claimed that the original cause behind these epics had already fallen

⁵⁷ S. Begley, *et al*, "Memory," *Newsweek* (Sept. 29, 1986), p. 48 (emphasis added).

⁵⁸ R. W. Wescott, "Indeterminacy: Temporary, Permanent, or Indefinite?" *The Velikovskian* 1:1 (1993), p. 54.

⁵⁹ E. A. W. Budge, *The Egyptian Book of the Dead* (N. Y., 1895/1967), p. xii.

⁶⁰ *Ibid.* (emphasis added).

⁶¹ *Ibid.*

⁶² *Ibid.*, p. xiv (emphasis added). But see also p. 314 for variant readings which "offered difficulties to the ancient Egyptian readers."

into oblivion before the arrival of Alexander the Great who himself lamented that he had no Homer to immortalize his deeds.⁶³ Will we, so many centuries later, be able to ferret out "the cause behind these epics"?

Of course, as anyone who has ever read anything about him knows, Freud had his own psychoanalytic beliefs in mind when he referred to ancient myths. As Richard Heinberg noted, "proponents of the non-historical approach to myth interpretations are more or less forced not so much to *explain*...myths as to *explain them away*."⁶⁴ And, despite what good can still be said of Freud's psychoanalytic methods, in the end, that is exactly what he did in his attempts to analyze the messages he believed to be contained in ancient myth—he ended up by explaining them away. Fortunately, as Heinberg also noted, "the 'collective fantasy' approach to myth in general is starting to lose ground."⁶⁵ Thus, despite his own calling as a psychoanalyst, Theodore Reik had to admit that:

"[Myths] appeared to us at first as collective daydreams, as wish fulfillment of the masses. Such a characterization is still psychologically valid, but we apply today the interpretation of myths in the hope of discovering at their depths precipitations or sediments of *real historical events or situations*."⁶⁶

And, to be sure, Reik, as well as others of his profession, are now of the professional opinion that "the more wide-spread a myth, the more likely it is to have an historical basis."⁶⁷

An example of the complexity of myth comes from the Egyptian *Papyrus of Ani* in which, among other things, the deity is made to utter the following words:



Sigmund Freud—1856-1939.

In his attempts to analyze the messages he believed to be contained in ancient myth, Freud ended up explaining them away rather than explaining them.

(Illustration by Charles Hogarth.)

⁶³ S. Freud, "Moses and Monotheism," *The Standard Edition of the Complete Psychological Works of Sigmund Freud*, Vol. XXIII (London, 1955), p. 80.

⁶⁴ R. Heinberg, "Historical Paradise and Collective Psychology," *HORUS* 1:3 (Fall 1985), p. 18 (emphasis as given).

⁶⁵ *Ibid.*

⁶⁶ T. Reik, as quoted by R. Heinberg, *loc. cit.* (Emphasis added.)

⁶⁷ *Ibid.*, p. 19.

"I am the lord of the crown. I am in the Eye, my egg...My seat is on my throne. I sit in the pupil of the Eye."⁶⁸

Now I ask you, what meaning can be extracted from the above? As the "lord of the crown," the deity can be understood as the crowned god. Thus he can say that his seat is on his throne. There is nothing enigmatic about a crowned god sitting on his throne. But what does it mean that the deity is, or resides, "in the Eye" or that he sits "in the pupil of the Eye"? What is this "Eye" in which the god resides? And why is the eye equated with his egg? What has an eye to do with an egg? What is this egg anyway?

And yet, enigmatic as these words are, together with others pertaining to different themes, an in-depth study will reveal their coherence and even logic once the key to the symbolism behind them is understood.

MISTRANSLATIONS

Once myths were put into writing, mistranslations were bound to occur. Here, an illustration offered by Bob Forrest comes immediately to mind.

"I can imagine how odd anomalies could arise in transmission, and this point was brought home to me by a curious example I came across just recently: Cinderella's glass slipper. I had always found it peculiar that the slipper should be said to be made of glass, but according to Brewer's 'Dictionary of Phrase and Fable' this came about via a mistranslation of the phrase 'pantoufle en vair' (a fur slipper) as 'a glass slipper' (pantoufle en verre). I do not suppose, though, that the vagaries of oral transmission can account for more than the odd 'peculiarity' of a myth, legend or story."⁶⁹

Another example concerns one of the most famous sayings attributed to Jesus: "It is easier for a camel to go through the eye of a needle, than for a rich man to enter into the kingdom of God."⁷⁰ As Vitaliano indicated, this is more than probably a mistranslation of the Greek, in which the Gospels were originally written, where the Greek word for "rope"—*kameylos*—was mistranslated as "camel"—*kamelos*.⁷¹ This is because the sound of the Greek letter *eta* sounds very similar to that of *epsilon* to a foreign ear. Thus the words of Jesus should be translated as: "It is easier for a rope to go through the eye of a needle, than for a rich man to enter into the kingdom of God"—which, let's face it, makes for a better simile.

When it comes to Hebrew, in which the books of the Old Testament were originally set down, we encounter even greater difficulties because, for one thing, Biblical Hebrew was written without vowels, thus making for confusion between words containing the same consonants but different vowel sounds, and, for another, there are over a thousand Hebrew words which appear *only* in the Old Testament, and, in some cases, appear there only *once*. How, then, without comparison, can the meaning of such words be verified with certainty?

As will be seen in forthcoming pages, such mistranslations, which owe more to the written word than they do to oral tradition, permeate the mythological sources of most ancient nations. But, rather than proving detrimental to our cause, such mistranslations, where found, shall actually help us ferret out the truth.

⁶⁸ E. A. W. Budge, *The Papyrus of Ani* (N. Y., 1967), p. 96.

⁶⁹ B. Forrest, *Velikovsky's Sources*, Vol. 6 (Manchester, 1983), p. 440.

⁷⁰ Mark 10:25. See also Luke 18:25.

⁷¹ D. B. Vitaliano, *op. cit.*, pp. 5-6.

MISINTERPRETATIONS

The casual reader of popular mythology may not realize to what extent the subject is infused with astronomical content. This is partly due to the aversion displayed by most modern mythologists to anything in their studies that smacks of astronomical connections. This is so true that when Giorgio de Santillana and Hertha von Dechend dared to go against the common trend in their monumental work, *Hamlet's Mill*, they found the doors of academia closed shut in their face. As Martin Bernal found reason to state:

"Having written a major book on Galileo, de Santillana [whom Bernal qualifies as possibly the greatest historian of Renaissance science] became interested in the Hermetic Egyptian tradition; then, late in life, he read Dupuis's *Origine de tous les cultes*, and was convinced by its argument that much of ancient mythology was indeed allegory for scientific astronomy.

"Despite de Santillana's enormous reputation, *Hamlet's Mill*—the book in which he and a younger German colleague [Hertha von Dechend] set out [such a mytho-astronomical] scheme—was not accepted by any university press and was published commercially. This means that respectable scholars are not obliged to take such work into account. In addition, de Santillana's having stuck his neck out so far lessened his effectiveness as a [historian]. Furthermore, his work ... could be lumped together with a more or less 'lunatic fringe'; this allowed or even compelled orthodox scholars to ignore it."⁷²

Earlier in this century, mythologists were quite aware of the astronomical nature of ancient myths, but, of lately, the general assumption has been that these astral connections are of late derivation, having been foisted on an already existing mythology. So much can be said against this that volumes, of which this is one, can be written.

The problem, however, goes deeper than that because even those earlier mythologists who had accepted the astronomical nature of the myths were themselves often guilty of tampering with their sources so that, today, it is not easy to discern what these ancient sources really had to say about the cosmic powers our ancestors venerated. This is not to be wondered at because, if one had to pursue the astronomical motifs inherent in *most* of mythology, one would be forced to assume that the ancients' perception of the celestial sphere was entirely different from that of modern man. Thus, when modern mythologists pursue these astral myths, they tend to look up at the sky, if only figuratively, and realize that what the ancient records state about the planets, and even the Sun and Moon, bears absolutely no resemblance to the present Solar System. And yet one must keep in mind that these self-same ancients, as we shall see in the next chapter, were quite sophisticated when it came to observational astronomy. Thus something of a dilemma faces the mythologist as was poignantly demonstrated, a few decades ago, by Irene Nicholson.

In a Mayan scheme purported to describe the celestial sphere, Nicholson discovered that the planet Venus was positioned above the Sun, below which was the Milky Way and, below that, the Moon.⁷³ Knowing full well that the Maya had been better astronomers than that, she attempted to circumvent the problem by blaming these disparities on a faulty record.

⁷² M. Bernal, *op. cit.*, pp. 275-276.

⁷³ I. Nicholson, *Mexican and Central American Mythology* (London, 1967), pp. 22-23.



The Egyptian god Ra, said to be the personification of the Sun, but whose motions and characteristics do not fit the role of the Sun.

"The discrepancies between the true cosmic placing of the Sun, planets, and Milky Way may be due to a distorted record. We can hardly suppose that people with so accurate a calendar [and with such accurate knowledge concerning the motions of the planet Venus] were ignorant of the general positions of the heavenly bodies."⁷⁴

Because, as we have already seen, mistranslations did creep into ancient records, Nicholson's suspicion of a "distorted record" is not, in itself, unreasonable. Besides mistranslations, however, there has also been a fair amount of misinterpretation. Here Nicholson was trapped by her predecessors who had already identified certain Mayan objects as the Sun, the Moon, and the Milky Way. It did not occur to her that these objects might have been misidentified.

Such misidentifications and, therefore, misinterpretations litter past works on mythology. Ask anyone who has even a modest knowledge of mythology to name the sun-god *par excellence*, and he or she would probably point to the Egyptian Ra (or Re). And why not? Is that not what most books on mythology claim? The *Larousse Encyclopedia of Mythology* is very specific: "Ra (or Re or Phra), which probably signifies 'creator,' is the name of the sun, sovereign lord of the sky."⁷⁵

So also with James Frazer, who echoed this Egyptian dictum when he stated: "That Ra was both the physical sun and the sun-god is of course undisputed ..."⁷⁶

But then one conducts an in-depth study of this Egyptian "physical sun" and "sun-god" only to come to the realization that,

⁷⁴ *Ibid.*, p. 24.

⁷⁵ J. Viaud, "Egyptian Mythology," *Larousse Encyclopedia of Mythology* (London, 1972), p. 11.

⁷⁶ J. G. Frazer, *The Golden Bough* (N. Y., 1890/1981), Vol. I, p. 313.

except for the fact that Ra shone brightly in the sky, the characteristics, and even motions, attributed to Ra do not fit the role of the Sun.

Thus, for example, Ra was often lauded as "Lord of the Circles" and as "he who entereth [or liveth] in the Circle."⁷⁷ He was described as "the sender forth of light into his Circle" and as the "Governor of [his] circle."⁷⁸

What is this Circle that the hymns allude to? Egyptologists will immediately inform us that this Circle of which the hymns speak was what the Egyptians referred to as the Duat (or Tuat), a word that has been rendered into English as "the Underworld." That may be so, but the fact remains that Ra was said to have shone from within it. What becomes obvious, in other words, is that, whatever Ra once signified, it was a celestial body that resided within a circle or band or ring. As we all know, the Sun does not send forth its rays into a circle; it does not reside in a ring.

There will now be those who will tell me that, under certain conditions, the Sun *is* seen to be surrounded by a ring. They will of course be alluding to that atmospheric refraction which lends a halo, known as parhelia, to the solar orb. But not only is this too rare an apparition to have earned Ra his title of "Governor of his Circle" and/or "Lord of the Circles," it is also a phenomenon that is restricted to northern regions and hardly, if ever, seen at the latitude of Egypt. But there is more.

When pictured on the walls of temples and on papyri, Ra is often shown surmounted with a red or golden disc, which is not inappropriate if the Sun is truly being represented. In the liturgies dedicated to him, however, Ra is described as having shed a green, rather than a golden, light. Thus a hymn to Ra states: "Thou hast come with thy splendours, and thou hast made heaven and earth bright with thy rays of pure emerald light."⁷⁹

In another hymn we read: "O Ra ... the heir of eternity, self-begotten and self-born, king of earth, prince of the netherworld ... thou dost rise in the horizon of heaven and sheddest upon the world beams of emerald light ..."⁸⁰

Not only did this sun shed a green, or emerald, light, it itself *was* green. As Donald Mackenzie informed his readers, in his form of Sebek-Tum-Ra, this sun was the "radiant green disk."⁸¹ "Hail Green One," was the manner in which Ra was lauded.⁸²

Mythologists have nothing to say by way of explaining why the ancient Egyptians alluded to the Sun as having been green and shedding a green light. And, as long as they continue to believe that Ra was the Sun, how can they? Does our Sun shed a green light? Is the disk of the present sun green?

Consider further the *motions* of the celestial object called Ra. In a statement found in one of the *Coffin Texts*, the deity is addressed with these words: "You shall go up upon the great West side of the sky and go down upon the great East side of the earth."⁸³ Is not this contrary to what the present Sun does? Does the Sun today "go up" in the west? Does it "go down" in the east? Thus Faulkner, who translated this passage, could not help stating that this "unexpected reversal of the points of the compass is incomprehensible"⁸⁴—and ended up by

⁷⁷ E. A. W. Budge, *The Gods of the Egyptians*, Vol. II (N. Y., 1904/1969), p. 339.

⁷⁸ *Ibid.*, pp. 339-340.

⁷⁹ *Idem*, *The Egyptian Book of the Dead* (N. Y., 1895/1967), p. 250 (emphasis added).

⁸⁰ *Ibid.*, p. 251 (emphasis added). See also p. 6 for a similar hymn.

⁸¹ D. A. Mackenzie, *Egyptian Myths and Legends* (N. Y., 1907/1978), pp. 236-237.

⁸² E. A. W. Budge, *Osiris & the Egyptian Resurrection*, Vol. II (N. Y., 1911/1973), p. 355.

⁸³ *Coffin Texts*, Spell 18.

⁸⁴ As quoted by D. Talbott, "The Ship of Heaven," *AEON* 1:3 (May 1988), p. 85.

blaming what to him was an inconsistency on "a blunder in an early copy which no one has noticed or at least attempted to correct."⁸⁵ This explanation, however, presupposes that there must be other texts which give the rising and setting of Ra correctly, that is in accordance with the *present* motions of the Sun. But, as David Talbott has indicated, "wherever the direction of the [sun] ship's movement is explicitly connected with the phases of morning and evening the texts *always* reverse the direction expected by the solar interpretation."⁸⁶

Worse than that, when sailing in his ship, or boat, Ra is said to move *down* at dawn,⁸⁷ and "upstream" *at night*,⁸⁸ contrary to what we see the Sun doing in our sky at present.

There are many other characteristics of Ra that do not conform with the appearance and motions of our Sun which, in order not to anticipate the major thesis of this book, I will leave for later chapters. In the meantime I would simply like to add that the items I have so far touched upon have not really gone unnoticed by mythologists. Each and every datum that will be analyzed in this work have been noted and, in some cases, even discussed. Unfortunately, these incongruous astronomical oddities have never been collected in one place in an effort to analyze them as a whole—which is exactly what I intend to do in the chapters that will follow.

CONTRADICTIONS

Contradictions permeate ancient accounts. This is especially true, but not restricted to, the tales contained in the Old Testament and those that constitute what is generally termed Classical mythology. To give but just two examples:

In chapter six of the Book of *Genesis*, which describes the loading of the ark in preparation for the coming deluge, it is written that God commanded Noah to take aboard two, a male and a female, of *every* living beast.⁸⁹ But in chapter seven of the same book, the command to Noah is to take aboard two *only* of unclean beasts, but *seven* of every clean beast as well as of every kind of fowl.⁹⁰ Why the difference?

The second example I will give comes from Greek mythology and concerns the goddess Athena. According to Hesiod, the father of Greek didactic poetry, Athena was born from the head of Zeus,⁹¹ a tale that became very popular among the ancient Greeks. But, despite the notability of Hesiod's tale, Athena's parentage, as also the nature of her birth, was not unanimously agreed upon among the Hellenes. To some it was Poseidon who fathered Athena, Zeus becoming her adopted father only because the goddess disowned the god of the sea.⁹² To others, Athena's father was Itonus, king of Iton in Phthiotis.⁹³ Next in popularity to Hesiod's tale was that which claimed that Athena was fathered by the giant Pallas whom she later slew and flayed.⁹⁴ According to Apollodorus, on the other hand, Pallas was the name of Athena's playmate whom she also slew, but accidentally, while engaged in friendly

⁸⁵ *Ibid.*

⁸⁶ *Ibid.*, p. 86.

⁸⁷ *Pyramid Texts*, Spell 1133.

⁸⁸ *Coffin Texts*, Spell 136.

⁸⁹ *Genesis* 6: 19-20.

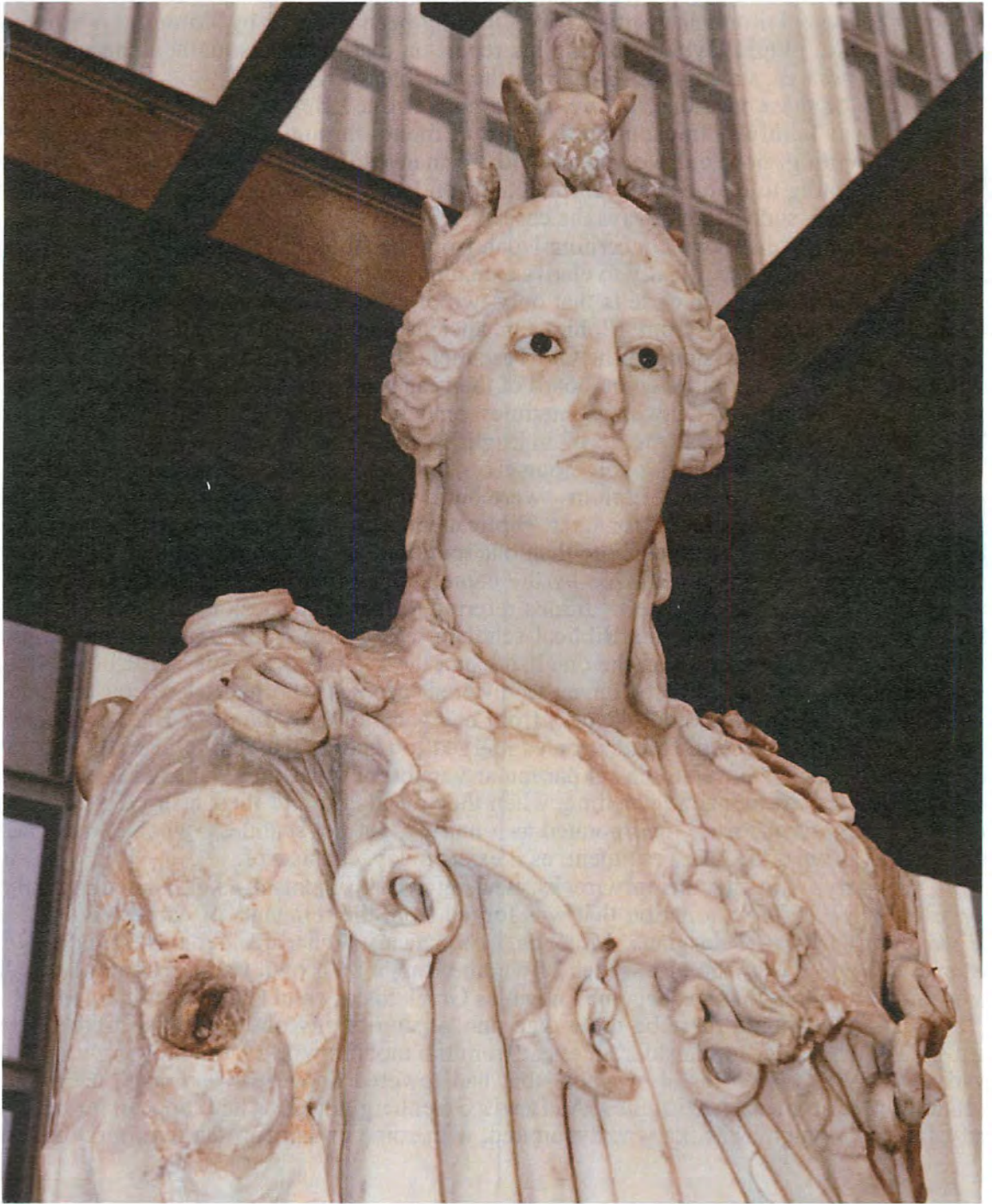
⁹⁰ *Ibid.*, 7: 2-3.

⁹¹ Hesiod, *Theogony*, 912-936.

⁹² Herodotus, *Historiae*, IV: 180.

⁹³ Pausanias, *Descriptions of Greece*, IX: 34: 1.

⁹⁴ Tzetzes, *On Lycophron*, 355.



Athena—(Roman sculpture)—whose daughter was she?
(Photograph by the author, courtesy of the Los Angeles County Museum of Art.)

combat.⁹⁵ Apollonius Rhodius tells us that, according to the Pelasgians, Athena was born on the shores of Lake Tritonis in North Africa,⁹⁶ having been fostered by Triton (or Tritos), the deity of the lake.⁹⁷ Philo Byblius, basing his report on that of Sanchoniathon and quoted by Eusebius of Caesarea, stated that Athena was the daughter of Kronos.⁹⁸

So which of these versions, *if any*, is the correct one? Better still: If, as stated above, mythic lore was faithfully transmitted by word of mouth through the ages before it became engraved in writing, how did we end up with so many different versions of the same tale? While it is tempting to blame such contradictions on faulty recording when these myths were first written down, such is not always the case.

The example given above concerning Noah from the Book of *Genesis* was not chosen at random. It was chosen specifically to clarify a conundrum.

Thus, in that passage which tells that only two of every beast was to be taken aboard the ark, the instructions come from Elohim, an ancient name which is usually translated as "God" in most English versions of the Old Testament. But in the passage which specifies that seven should be the number taken on board of the beasts designated as clean, the command is said to have come from Yahweh, sometimes rendered "Jehovah," another ancient name which is usually translated as "the Lord" in English versions of the same work.

We shall not, at this point, involve ourselves in a discussion concerning whether or not these two names—Yahweh and Elohim—were but two different designations for one and the same deity. We shall leave that for later. Biblical scholars, however, had long ago realized that the Old Testament preserves more than one tradition, and that, among other things, these different traditions can be recognized by the name applied to what one usually considers as having been "God." One of these traditions referred to the deity as Elohim, another tradition referred to him as Yahweh. Thus Biblical scholars refer to these different versions, *among others*, as the Elohist tradition on the one hand, and the Yahwist tradition on the other. Originally, these different traditions belonged to different peoples who had passed on their traditions by word of mouth, without change, from one generation to the next. But, as happened so often in the past, these different peoples merged to become one nation even though each faction was persistent in retaining its particular version of what they believed to have transpired in the past. At an even later time, when they decided to put their history into writing, these various traditions were incorporated as a unified, but not seamless, whole. And that, to put it simply, is what the Old Testament, as it exists today, consists of.

So, similarly, with the ancient Greeks, who referred to themselves as Hellenes, supposedly after Helen of Troy, a nation that was forged from the remnants of earlier civilizations and wandering tribes—Pelasgians, Minoans, Mycenaean, Achaeans, Trojans, Ionians, Dorians, and heaven knows who else—each of whom brought their own traditions into that Indo-European melting pot that has become known as Greek history and Classical mythology.

Even so, why should there be more than one version of any one particular myth? Here I can best ask the reader to consider an event from the modern world—the blowing up, by the invading army, of the colossal swastika that had towered above the Germans in symbolic splendor above so many Nazi rallies. As Lewis Greenberg noted: "There appears to be some confusion over which swastika was dynamited, with some opting for one over the Reichstag

⁹⁵ Apollodorus, *Bibliotheca*, III: 12: 3; see also Pausanias, *op. cit.*, IX: 33: 5.

⁹⁶ Apollonius Rhodius, *Argonautica*, IV: 1310.

⁹⁷ G. W. Cox, *Mythology of the Aryan Nations* (N. Y., 1870), p. 249.

⁹⁸ Eusebius Pamphili, *Praeparatio Evangelica*, I: X: 36, 38.

and others for one over the Reichchancellery.”⁹⁹ This did not happen that long ago. It happened at a time when the recording of history had already reached perfection, at a time when events could be frozen and immortalized on film. And, as it happens, the event in question was exactly so documented. As Greenberg noted:

“The last two choices are definitely in error. Film footage of the great swastika being blown up (as seen in the film *The Enigma of the Swastika*) leaves no doubt and clearly indicates that it was the Zeppelinfeld swastika.”¹⁰⁰

If the memory of events from the recent past can get to be so confused, why should we wonder about the faulty memory concerning events from a much more remote past? But then, without a film to document these earlier events, how can we ever be sure of what really transpired?

Two lessons to be learned from the above example are these: Despite the differing versions as to which swastika was blown up by the invading army, all reports agree on one fact: A colossal swastika in Germany was blown up by the invading army. That is the core of this particular historical event. And, in many cases when dealing with contradictory versions of a particular myth, it is the core of the event that we must hold on to and not necessarily the detailed trimmings, many of which were, in any case, appended to the myths at a much later time. Thus, whether it was just one pair or seven of each animal that Noah was said to have taken into his ark, the core of the different tales remains that he *did* take male and female specimens of the animals on board. The second lesson is that various versions of an event can be compared and, with a little help from logic, the correct one can often, if not always, be ascertained. When it comes to the science of mythology—and it *is* a science—comparison can be a very effective tool.

COMPARISONS

Hermann Collitz had this to say about the subject:

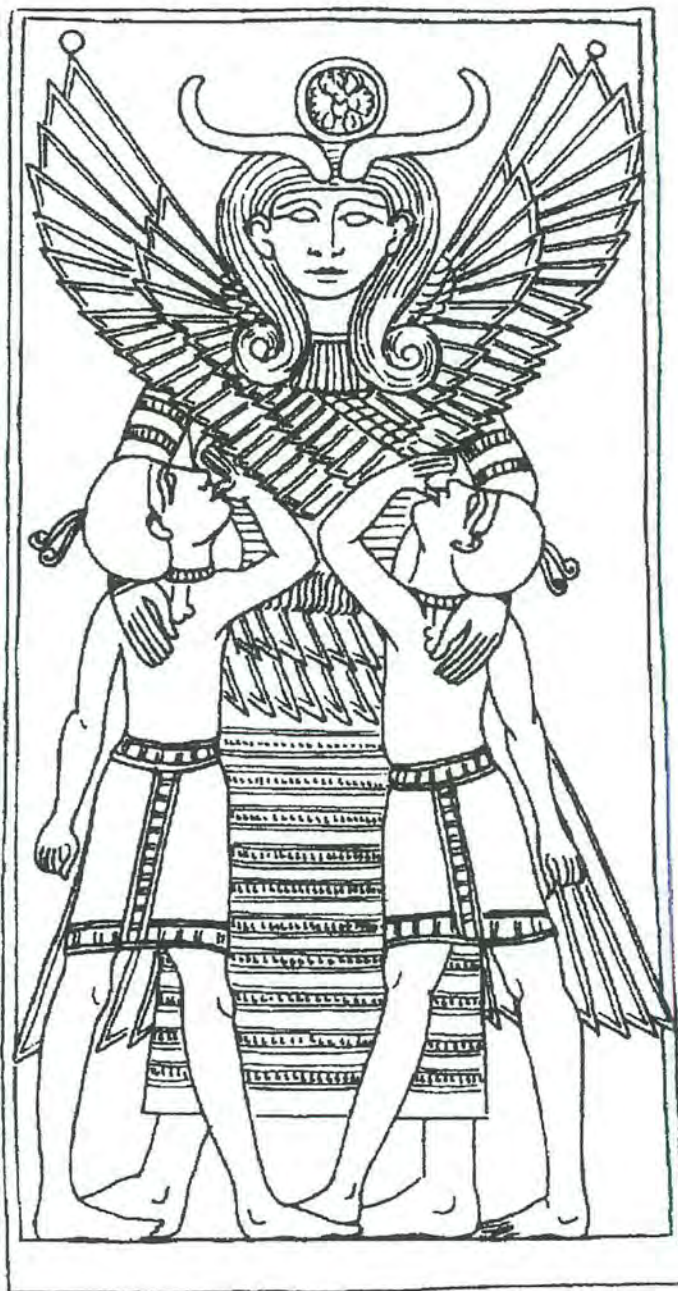
“Comparative mythology, in co-operation with the study of popular traditions (*folklore*), has been especially studied with assiduity...Mythological science is not intended to serve the knowledge of cultural development—be it of a people or of a group of closely related peoples—it does not primarily co-operate with philology, but it looks for similar ideas in different peoples and it tries to determine types which are repeated in the course of time.”¹⁰¹

In other words, comparative mythology is that branch of mythology which compares the myths of one nation, or race, with those of another—and, sometimes, even compares the myths of one particular nation, or race, with the divergent myths found within the same nation or race. Among other things, this is done in order to identify the unidentified protagonists in one myth with the identified ones in another, but similar, tale. An example that comes to mind is the following:

⁹⁹ L. M. Greenberg, *Let There Be Darkness: The Reign of the Swastika* (Wynnewood, Pennsylvania, 1997), p. 85.

¹⁰⁰ *Ibid.*, where are other sources are cited.

¹⁰¹ H. Collitz, “König Yima und Saturn,” in Jal Dastur Cursetji Pavry (Ed.), *Oriental Studies in Honour of Cursetji Erachji Pavry* (London, 1933), p. 87 (as translated privately for the author by Birgit C. Liesching).



Anath
the goddess who went on a drunken rampage against mankind.
13th century B. C. ivory plaque from Ras Shamra, ancient Ugarit,
now at the Damascus National Museum.
(Illustration by Marie Joséphe Devaux.)

A tale from the Hindu lore of India concerns the goddess Kali whose thirst for gore—she is often portrayed with hanging tongue and mouth dripping with blood—was developed after she had slain the *asura* (or demon) Raktavira (also known as Raktabija). From every drop of blood that fell to the ground from the wounded *asura*, there sprang another demon possessing his courage, strength, and valor.¹⁰² In order to keep Raktavira's blood from reaching the ground, and thus generating further demons, Kali, also known as Durga, was forced to drink it as it gushed out. This drinking of blood gave her such a blind lust for violence that, when she gave free reign to it, nothing was able to stop her. "On one occasion Shiva himself had to mingle among the demons whom she was slaughtering and allow himself to be trampled underfoot in her dance of victory, as this was the only way to bring her to her senses and save the world from collapse."¹⁰³

This myth is very similar to one involving the goddess Anath. In a myth from Ugarit we see Anath coming to the aid of Baal when he was beset by his enemies. As cruel a goddess as Kali, Anath did not limit her slaughter to demons but went on a drunken rampage against mankind from "from the rising of the sun" to "the shore of the sea."¹⁰⁴ In the end, Baal was forced to intervene in order to stop the goddess from annihilating mankind.

As William Albright reported:

"It has been pointed out by Marvin Pope that there are many traits which Anath shares in common with the Indic goddess Kali or Durga. In fact, the respective figures are in some ways so similar that coincidence can scarcely be the only explanation."¹⁰⁵

Yet another similar myth that both Pope and Albright failed to notice comes to us from ancient Egypt. Here we read of the goddess Sekhmet, who was said to have been Ra's destructive eye, being hurled in anger at mankind. Incited by Ra himself, the goddess began a slaughter so complete that she ended up by flooding the world in blood. In both this myth and that of Anath, each respective goddess is described as wading up to her waist in gore. In the end, like both Shiva and Baal, Ra himself was forced to intervene and call the goddess back.¹⁰⁶

As can be seen, there seems to be no doubt that, in the above three myths, despite the difference in details, the same event is being described. This leads to the assumption, which we can state beyond a reasonable doubt, that the three goddesses, Kali (or Durga), Anath, and Sekhmet were merely different names, applied by different nations who spoke different languages, of one and the same goddess.

Let me now concentrate on Anath (sometimes transliterated as Anat) in order to further illustrate the methodology behind comparative mythology. What we know of this goddess comes mostly, but not solely, from the tablets discovered at Ras Shamra, the ancient Ugarit, in a priest's house adjoining the temple of Baal.¹⁰⁷ In one of these texts we read that Anat was described as a "star."¹⁰⁸ Her alter-ego, the Persian Anahita (sometimes transliterated as

¹⁰² A. Isenberg, "Devi and Venus," *KRONOS* II:1 (August 1976), p. 93.

¹⁰³ V. Ions, *Indian Mythology* (London, 1967), p. 94.

¹⁰⁴ W. F. Albright, *Yahweh and the Gods of Canaan* (N. Y., 1968), p. 130.

¹⁰⁵ *Ibid.*, p. 131.

¹⁰⁶ B. van de Walle, "Egypt: Syncretism and State Religion," *Larousse World Mythology* (London, 1972), p. 40.

¹⁰⁷ J. Gray, *Near Eastern Mythology* (London, 1969), p. 74.

¹⁰⁸ J. Aistleitner, *Die Mythologischen und Kultischen Texte aus Ras Shamra* (Budapest, 1959), p. 40.



Kali, also known as Durga, the Hindu goddess of destruction.
(From an 18th century Rajasthan painting.)

Anahid), known also by the Hellenistic name of Anaitis, has in turn been compared to the Greek Aphrodite¹⁰⁹ who was the personification of the planet Venus.¹¹⁰

But is it anywhere *directly* stated that Anahita, or Anaitis, was the Iranian or Persian name for the planet Venus? The answer is yes. We find this stated in the Persian work known as *Bundahish* in which the planet in question is referred to by the very name of Anahid.¹¹¹

We also find Anat identified as the Babylonian Ishtar,¹¹² whose Venerian identity has never been contested.¹¹³

If this is not enough, we can refer to Michael Astour (whose name, incidentally, translates as "star") who stated: "Anath, the Queen of Heaven, was identified with Venus (Kaukabta) and, under the name of Uzza, 'the strong one,' was worshipped by the Sinaitic Saracens as the Morning Star."¹¹⁴

Comparative mythology then dictates that if Anath was the personification of the planet Venus, then, on the strength of the close similarity of the three myths described above, so should Kali and Sekhmet be identified as personifications of the same planet.¹¹⁵

¹⁰⁹ I. Fuhr, "On Comets, Comet-Like Luminous Apparitions and Meteors," Part II, *KRONOS* VIII:1 (Fall 1982), p. 49, where various other sources are cited.

¹¹⁰ This is so well known that no references are required.

¹¹¹ *Bundahish* 5:1.

¹¹² S. Langdon, *Tammuz and Ishtar* (1914), pp.95-96.

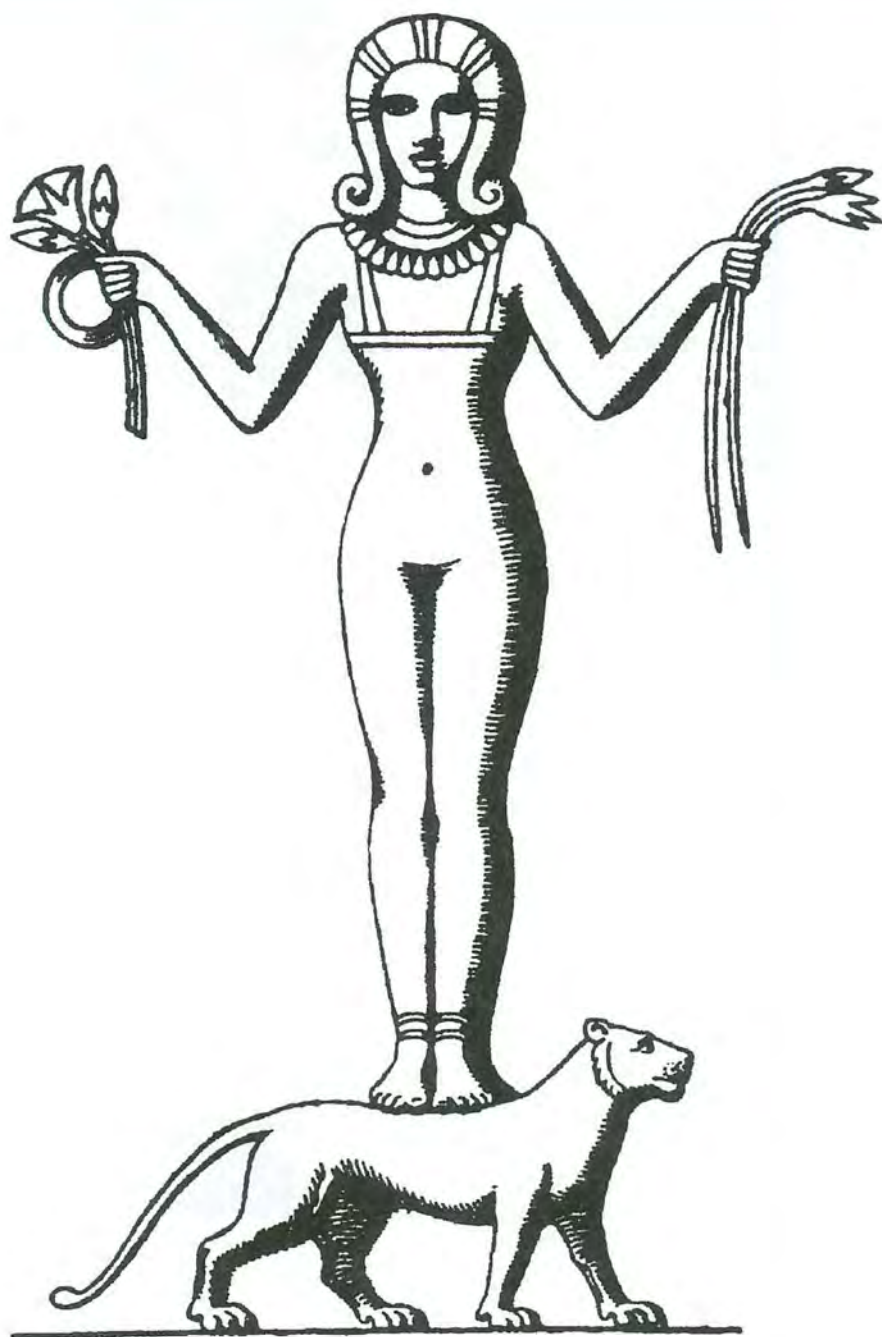
¹¹³ This, too, is enough well known.

¹¹⁴ M. Astour, *Hellenosemitica* (Leiden, 1967), p. 261.

¹¹⁵ Actually, the identification of Sekhmet and Kali as Venus had earlier been proposed by Immanuel Velikovsky and Isenberg even though they followed different lines of evidence and reasoning than the ones I have. See I. Velikovsky, *Worlds in Collision* (N. Y., 1950), p. 165; A. Isenberg, *op. cit.*, *in toto*.



Sekhmet, the Egyptian goddess of destruction who was sent by Ra as his vengeful eye to destroy mankind



Qudshu (Qadesh, Qetesh, Qeteshi)
The Egyptianized form of the Canaanite Anath.

DIFFUSION

Joseph Campbell, perhaps the most popular mythologist of the latter half of the twentieth century, began the first tome of his four-volume work, *The Masks of God*, by pointing out that the "comparative study of the mythologies of the world compels us to view the cultural history of mankind as a unit; for we find that such themes as the fire-theft, deluge, land of the dead, virgin birth, and resurrected hero have a worldwide distribution—appearing everywhere in new combinations while remaining, like the elements of a kaleidoscope, only a few and always the same."¹¹⁶ It was thus his view, as it has been that of many another mythologist, that the ideas inherent in the mythological record owe their universal distribution to a radiating diffusion, especially by contact and mainly from "the nuclear Near East." As he had it stated: "The archaeology and ethnography of the past half-century have made it clear that the ancient civilizations of the Old World—those of Egypt, Mesopotamia, Crete and Greece, India and China—derived from a single base, and that this community of origin suffices to explain the homologous forms of their mythological and ritual structures."¹¹⁷ To be sure, there is no doubt that ideas—knowledge—traveled from one people to another. Thus, for instance, it has been known for years that ancient Greek astronomical beliefs owed their impetus to Babylonian knowledge, as well as to that of other nations.

One may therefore suppose that the similarity of the myths enumerated above concerning the goddesses Anath, Kali, and Sekhmet could have been passed on from one people to another. Is it not possible, for instance, that the Indo-European Aryans brought the myth of Kali with them, which myth was then passed on to both Canaan and Egypt through migrational contact? Possible, yes; but, despite Campbell, highly unlikely, especially since the three goddesses do not share a common, or similar, name. Thus, for instance, while we can see the similarity—or, actually, the evolution—of the names from the Canaanite Anath, or Anat, to the Persian Anahita, Anahid, and/or Anaitis, from which we can safely suppose a diffusional contact, direct or otherwise, between Canaan and later Persia, there is nothing linguistically related between the names Anath, Kali, and Sekhmet. Nor do these three goddesses share a similarity in their physical depiction. Although pictorial depictions of Anath are rare, she is usually portrayed as a seductive-looking female with a very distinctive hair style shaped in the form of the Greek letter omega. Kali, on the other hand, is always depicted as a ferocious-looking and emaciated hag with disheveled hair, vampiric fangs, a lolling tongue, and shriveled pendulous breasts. And while Sekhmet, like Anath, is also shown having the slim contoured form of a woman, she is invariably given the head of a lioness. One would think that, had two of these goddesses been borrowed from the mythological lore of another nation, or race, they would have retained *some* similarity of the original's name and physical appearance. As we have seen, however, it is only in the detailed account of their crazed and bloody acts of destruction and death-dealing annihilation that the three goddess bear any similarities.

On the other hand, without wishing to contradict the above, the cult of the goddess Anat *did* find its way from Canaan to Egypt. Among her various epithets, Anat was known as Qadesh, or Qudshu, which simply meant "holy."¹¹⁸ The worship of this goddess, together with others of Near Eastern origin, was introduced into Egypt when the Egyptians began to infiltrate Palestine. Even so, despite their attempt to Egyptianize the goddess, mainly by depicting her in the company of Egyptian deities, her name of Qudshu (Qetesh or Qeteshi)

¹¹⁶ J. Campbell, *The Masks of God: Primitive Mythology* (N. Y., 1959), p. 3.

¹¹⁷ *Ibid.*, p. 202.

¹¹⁸ L. Delaporte, "Phoenician Mythology," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 76; R. Hestrin, "Understanding Asherah," *Biblical Archaeology Review* (September/October 1991), p. 55.



Toltec portrait of the bearded Kukulcan
—the same as the Aztec Quetzalcoatl—
whose heart, upon his death, flew out to become the Morning Star.
(From a bas relief at Chichen Itza.)

was retained as so, also, was her distinctive Canaanite form. (Here I should note that Wallis Budge was in error when he claimed that the Egyptians gave her "the peculiar headdress of Hathor,"¹¹⁹ since, as we have already noted, her omega-shaped hairdo had always been hers. The fact that the Egyptian Hathor was similarly portrayed by the Egyptians, *while not coincidental*, should not blind us to this fact.) There is therefore no doubt that cults and rituals *were* transferred from one culture to another, but, when this transpired, it left its tell-tale marks. No such marks are obvious between the cults of Anath and Sekhmet *despite the similarity of their myths*.

As William Heidel pointed out as early as 1929, "the facile assimilation of one rite to the other ... was probably due to the recognition of a common basis in ritual forms."¹²⁰ He, however, warns that there should be "made no assumption of direct borrowing of motives, as is often done; such an assumption is methodically without justification where other explanations of such points of agreement as may be found are possible and sufficient."¹²¹

"Ideas, without a material substratum to which they are related, are not so easily communicated as some historians appear to suppose; the experience of the Western world with the East in our day would seem to show that concrete objects and modes of behaviour are far more readily adopted than ideas and ideals."¹²²

Similar mythological ideas are not, however, restricted to the ancient lore of Asia, Europe, and Egypt. They are also to be found on opposite shores of the Old World and the New. Consider, for example, the following aspects of the myths of Osiris and Quetzalcoatl.

In Mesoamerica, the priest-king known as Quetzalcoatl was thought of as a civilizer, a compassionate being, a lawgiver and inventor of the calendar.¹²³

The Egyptian Osiris was also thought of as a civilizer. Having become king of Egypt, he imparted the arts of civilization to his subjects. He taught them how to till the land, formulated a code of laws by which they should live, and instituted the rites of the gods.¹²⁴

Toward the end of his tragic life, Quetzalcoatl "ordered ... that a stone casket should be built in which he was to lie four days and nights in strict penance."¹²⁵

The end of Osiris was similarly woeful. His brother and enemy, Set—whom his biographer, Plutarch, refers to as Typhon—managed to trap him within a chest, which he instantly nailed shut and flung into the river.¹²⁶

When Quetzalcoatl died—some said by throwing himself on a funeral pyre—his heart flew out of him into the sky to become the Morning Star.¹²⁷

Now, as is well known, Egyptian rites of the dead attempted to assimilate the deceased pharaoh to Osiris. In the Text of Unas it is told that "the king's soul, provided with its words of power, flew with its wings to heaven, and 'opened' its seat there with the stars of the sky, and itself became the morning star ..."¹²⁸ Since the dead king was believed to recreate the

¹¹⁹ E. A. W. Budge, *The Gods of the Egyptians*, Vol. 2 (N. Y., 1904/1969), p. 280.

¹²⁰ W. A. Heidel, *The Day of Yahweh* (N. Y., 1929), p. 301.

¹²¹ *Ibid.*

¹²² *Ibid.*

¹²³ I. Nicholson, *Mexican and Central American Mythology* (London, 1972), p. 78.

¹²⁴ E. A. W. Budge, *Osiris and the Egyptian Resurrection*, Vol. I (N. Y., 1911/1973), p. 2.

¹²⁵ I. Nicholson, *op. cit.*, p. 88.

¹²⁶ E. A. W. Budge, *op. cit.*, pp. 3-4.

¹²⁷ E. C. Krupp, *Beyond the Blue Horizon* (N. Y., 1991), pp. 200-201.

¹²⁸ E. A. W. Budge, *op. cit.*, p. 110.



The Egyptian Osiris whose soul also turned into the Morning Star.

events of Osiris' death in order to enable him to join the god in heaven, it is obvious that, originally, it was the soul of Osiris that turned into the Morning Star.

At this point I should perhaps point out that there have been various scholars who have gone to great pains in attempting to prove pre-Columbian cultural contact across the Atlantic between the Old and the New World—even between Egypt and Mesoamerica.¹²⁹ And let us not forget that, in his 1970 voyage from Africa to Barbados in a replica of an Egyptian reed boat, Thor Heyerdahl, if nothing else, did prove the *feasibility* of such voyages.¹³⁰ More recently, Vincent Malmström has also suggested the possibility of pre-Columbian contact across the *Pacific* between East Asia and Mesoamerica,¹³¹ although, in a later work, he seems to have limited this contact to Japan.¹³² Mainstream diffusionists, however, do not generally adhere to these hypotheses, preferring instead to think that any diffusion of Asian ideas into the New World could only have passed into North America, together with the nomads who brought them, across the once-existent Bering land bridge from where the ideas dispersed throughout the rest of the continent.

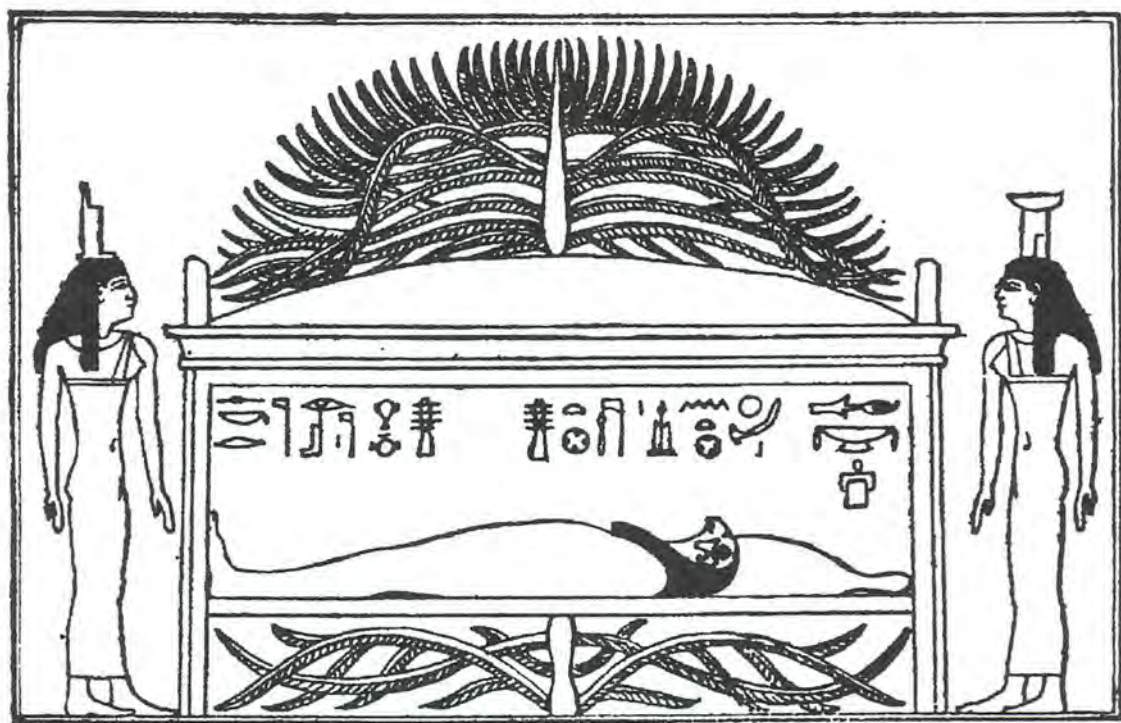
That there is no direct borrowing between the two myths in question, however, should be quite evident. Despite the similarity in the essence of the two tales, they are told in quite different ways. Thus, while they were both represented as civilizers, the manner in which Osiris and Quetzalcoatl met their end was differently told—the one self-sacrificed on a funeral pyre, the other suffocated in a chest. And although, like Osiris, Quetzalcoatl also had his enemy,

¹²⁹ See here especially, B. Fell, *America B. C.* (N. Y., 1976), pp. 253 ff.; G. Thompson, *American Discovery* (Seattle, 1994), pp. 71 ff.

¹³⁰ T. Heyerdahl, *The Ra Expeditions* (N. Y., 1971), *in toto*.

¹³¹ V. H. Malmström, "Where Time Began," *Science Digest* (December 1981), p. 113.

¹³² *Idem*, *Cycles of the Sun, Mysteries of the Moon* (Austin, Texas, 1997), pp. 248-249.



Osiris, in his form of Seker, dead in his chest, with Isis on the left and Nephthys on the right.
(From a bas relief at the temple of Osiris at Dendera.)

named Tezcatlipoca, who eventually brought down his downfall,¹³³ it was not he who placed Quetzalcoatl in his chest. And while it is stated outright that Quetzalcoatl's heart turned into the Morning Star, in the case of Osiris it is only intimated. Besides which, in the case of Osiris, it is his soul, and not his heart, that becomes the Morning Star, although, to be sure, the Egyptians held that the soul did reside in one's heart.

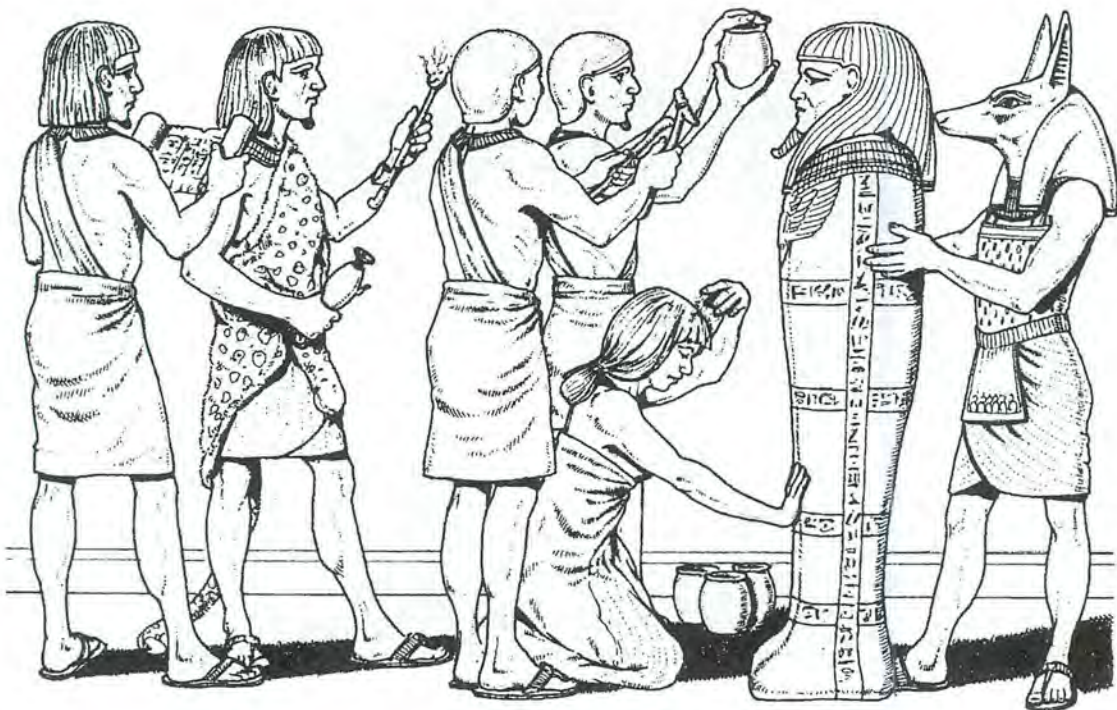
In seeking to explain the similarities we find between American and classical mythology "as well as with the chief traditions of the Hebrews,"¹³⁴ Max Fauconnet asked the following questions:

"Does this mean that Humanity was once upon a time reduced to a little group of individuals who later spread over the earth, bringing with them their legends which they altered through the centuries in accordance with new climates and new habits? Or, as *seems more probable*, are all these legends a confused account of great events on a planetary scale which were beheld in terror simultaneously by the men scattered everywhere over the world?"¹³⁵

¹³³ I. Nicholson, *op. cit.*, p. 88.

¹³⁴ M. Fauconnet, "Mythology of the Two Americas," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 448.

¹³⁵ *Ibid.* (emphasis added).



Egyptian funerary rite.

Every dead pharaoh became an Osiris and was thus believed to recreate the events of Osiris' death and resurrection in order to enable him to join the god in heaven.

(Illustration by John Green.)

But then what great event could have given rise to the witch riding on a broom which we find on both sides of the Atlantic? Although the notion that witches flew through the air on brooms traces to mediaeval Europe, the Spanish conquistadors found the witch's equivalent in the annals of the Mexicans in the form of Tlacolteutl, goddess of vice and eater of filth. Depicted as naked as some of her European counterparts, she, too, was a witch who flew through the air on a broom.¹³⁶

Immanuel Velikovsky—and I hope no one will accuse me of relying on a scholar who has been discredited¹³⁷—had his own explanation concerning the appearance of the witch on her broom on both sides of the Atlantic. As he noted:

“... if there exists a fantastic image that is projected against the sky and that repeats itself all around the world, it is most probably an image that was seen on the screen of the sky by many peoples at the same time. On one occasion a comet took the striking

¹³⁶ I. Nicholson, *op. cit.*, p. 75.

¹³⁷ My various criticisms of Velikovsky's works have appeared in various publications, and these should be enough to dispel any notions the reader may have concerning my reliance on his expositions, despite my debt to him. Credit, on the other hand, should always be given where it is due.



Romantic depiction of witch on her broom.



Tlacolteutl, goddess of vice and eater of filth, the Aztec witch riding on her broom, which broom is coupled with the additional cometary image of the serpent-dragon.
(From the *Codex Fejervary-Mayer*.)

form of a woman riding on a broom, and the celestial picture was so clearly defined that the same impression was imposed on all the peoples of the world.”¹³⁸

Fantastic as this explanation may seem at first sight, it should not be discounted out of hand. The appearance of comets, for one thing, should not be judged by the faint luminosities that have vainly striven to illuminate the twentieth century sky. When one reads in a prestigious encyclopedia of astronomy about “the extraordinary spectacle that a large comet can produce;”¹³⁹ when one reads in ancient, and not-so-ancient, chronicles about comets “spreading forth in the likeness of a dragon,” stretching all the way from the Irish Sea to the regions of Gaul,¹⁴⁰ or of others seen “lashing their tail wildly as if in agony;”¹⁴¹ when one views ancient, and not-so-ancient, depictions of comets with their tails streaming half way across the sky, some of which were bright enough to be seen with the unaided eye in broad daylight, one cannot help but come to the conclusion that cometary magnificence is petering out. Present-day comets seem to be nothing but decrepit, tired, and wan remnants—spectral shadows of their former glory.

If then, in the not-so-distant past, comets have appeared to take on the fantastic shapes of dragons (not to mention swords and even people), what would be so extraordinary had one of them taken a shape that was visualized by various peoples as a woman riding on a broom? Actually, the visualization of comets as celestial brooms was quite common in the Old World. In China, for instance, comets were also known as “candle stars” which were said to consist of a star above which brooms could be seen pointing upward. And, in fact, the term

¹³⁸ I. Velikovsky, *Worlds in Collision* (N. Y., 1950), p. 305.

¹³⁹ L. Rudaux & G. de Vaucouleurs, *Larousse Encyclopedia of Astronomy* (London, 1966 revised edition), p. 229.

¹⁴⁰ Geoffrey of Monmouth, *The History of the Kings of Britain* (N. Y., 1958), p. 169.

¹⁴¹ C. Beaumont, *The Mysterious Comet* (London, 1925), pp. 82-83.

"Broom Star," in Chinese rendered *sao-hsing*, was the most common Chinese name for "comet."¹⁴² A bundle of straw, which is what primitive brooms consisted of, was also an old European cometary symbol.¹⁴³ It is therefore indicative that, as portrayed in an Aztec codex, the witch Tlacolteutl combines *two* separate cometary symbols, since she is not only shown riding on a broom, but the broom itself is coupled with the image of a serpent-dragon.¹⁴⁴

Despite all that, and without wishing to negate anything I said above, it remains my personal belief that many, if not most, of the mythohistorical record *has* been passed on from one culture to another through the medium of diffusion. But it was *not*, as generally believed, diffusion by contact. On the contrary, it seems to have been diffusion by *separation*.

DIVINE REVELRY

At this point, it should perhaps be pointed out that the problems involved in the interpretation of mythology is not merely a *modern* concern. The same problems occupied the minds of the ancients themselves—definitely the ancient Greeks who were very "concerned with the relation of rationalism to traditional beliefs."¹⁴⁵ As Fred Bratton noted:

"The Sophists and Neoplatonists anticipated one modern solution by defining myths as allegories that symbolized moral or spiritual truth and were not to be taken literally. The Neoplatonic and Stoic philosophers of the Hellenistic period were thus able to hold both to tradition and rationalism. This method of interpretation was rejected by Plato and the later Epicureans as just a way of keeping intact the traditional supernatural beliefs of the state religion and keeping the facts of history from the people. The emperor Julian regarded myths as esoteric teachings understood only by the intellectual aristocracy. The early Christian theologians discredited the pagan myths while teaching new ones for the Hebrew and Christian religions."¹⁴⁶

Other than as a form of art, often more of a voluptuous or heroic nature than not, mythology is not much valued by the modern layman. Yet, in one form or another—and this includes past and recent occultism among our youth—religion is. Here lies one of the major incongruities of the problem I wish to address because, in essence, religion is only the philosophical interpretation and mystic ritualization of myth.

The forms which man's various religions have taken in the past, and continue to take in the present, are endless. The names of his past and present gods are legion. The rituals he has invented with which he has sought, and continues to seek, divine protection and godly blessing have run the gamut from love feasts to horrible mass human sacrifice. Throughout the ages, the expository interpretation and theological apologetics concerning his rites and beliefs have filled untold volumes most of which do nothing but contradict each other.

Meanwhile, the discoveries of anthropology and archaeology keep adding evidence not only of the antiquity of man's basic faith but also of the universality of its thematic structure. Even that indomitable primitive, Neanderthal Man, it finally had to be admitted, had, burning in his savage breast, the desperate need to satisfy, or otherwise appease, the unseen forces

¹⁴² H. Yoke, "Ancient and Medieval Observations of Comets and Novae in Chinese Sources," *Vistas in Astronomy* 5 (1962), pp. 137, 164.

¹⁴³ J. Grimm, *Teutonic Mythology*, Vol. II (Gloucester, 1976), p. 722.

¹⁴⁴ I. Nicholson, *loc. cit.*

¹⁴⁵ F. G. Bratton, *Myths and Legends of the Ancient Near East* (N. Y., 1970), p. 4.

¹⁴⁶ *Ibid.*



Diana—Greek goddess of the hunt.

Sculpture by Gaudens.

More often than not, such mythological subjects merely served as an excuse for the portrayal of the unclad human body.

(Photograph by the author, courtesy of the Metropolitan Museum of Art.)

associated with death.¹⁴⁷ Man, so it now seems, has been a religious creature from the very moment of his human inception.

The study of comparative religion, despite its past overall banality, has always been subject to stray insights. From the very beginning of the development of western thought, the *philosophes* have been cognizant of the universality of certain religious rites and beliefs. Among these one can enumerate all manner of lustrative rituals; the need for some sort of redemption; the immortality of the soul, the mind, or the human aura; the belief in paradise, hell, or some other place of existence after death; and various others.

Most of these have often been explained as a psychological alleviation—a ray of hope against the realization of a futile life capped with the finality of death. Man, it has been said before, is the only animal burdened with this acute awareness. It is also for this same reason that those of an unreligious bent of mind, whether they realize it or not, very often find themselves involved in a continuous search for the supposed meaning of life.

Belief in an afterlife should not, of itself, incur a belief in God. Belief in a reward, or punishment, after death, on the other hand, does—for someone, or something, must exist to judge and mete out justice. This someone, this something, this God, should logically be exemplary. How come most of man's gods are not?

The philosophic endeavor to discern moral precepts in divine action becomes something of a farce when one is confronted with the ungodly activities of most deities. The Greek gods, for instance, were guilty of patricide, butchery, cannibalism, rage, jealousy, adultery, rape, incest, deception, and slaughter without equal. These actions are not symbolic of moral precepts; they are the irresponsible adventures of a bunch of delinquent revelers. Why, then, did the Greeks look up to these imperfect gods, build them costly temples, offer them sacrifices, prayers, and invocations, while philosophers endeavored to illustrate the divinity of what they believed to be the orderly universe by comparing it with these gods?

The Stoics and pagan apologists had long attempted to spiritualize the myths described by Hesiod and others. This spiritualization, in the form of allegorism, continued as the dominant mode of mythic interpretation well past the Middle Ages and into the Renaissance.¹⁴⁸ Only half way through the seventeenth century, and more so during the eighteenth, did philosophers begin to reduce the fantastic episodes of classical mythology to common-sense narratives. But this was merely an attempt to de-allegorize the myths. The origin of the gods, together with the rites connected with them, remained unexplained.

The actions of the Greek gods could no longer be seen as the moral conflict between good and evil—between virtue and vice—for the simple reason that, according to the myths, the evil, or vice, was more often triumphant than not. Zeus was guilty of more deceptions and rapes than any other god the Greeks venerated. Yet this same Zeus was considered to be the upholder of law and order. If this divine lawlessness could not be explained allegorically, it could only mean that the gods were impervious to their own laws.

Pierre Bayle took great pleasure in accumulating tales which told of the lusts of these gods and goddesses who could indulge in incestuous and homosexual rape. To him, the Greek world was a world of sex-mad divinities.¹⁴⁹ Yet the Greeks of ancient times believed that these actions, normally repugnant even to them despite their hedonistic society, actually took place precisely as narrated by the early poets—by Hesiod, by Homer, and others.

¹⁴⁷ G. Constable, *The Neanderthals* (N. Y., 1973), pp. 96 ff.

¹⁴⁸ See here, for instance, the melding of Greek myths, by way of allegory, with Christian beliefs, during the Renaissance, as outlined by M. Pelta, "A Renaissance Saturn," *AEON* IV:3 (December 1995), pp. 71 ff.

¹⁴⁹ P. Bayle, *Dictionnaire Historique et Critique* (Rotterdam, 1697), *passim*.



Zeus, who was guilty of more deceptions and rapes than any other god the Greeks venerated. Why, then, was this same Zeus considered to be the upholder of law and order? (Photograph by the author, courtesy of the National Archaeological Museum of Athens.)

Pheidias, architect of the Parthenon and sculptor of the colossal Athena Parthenos, was accused of an act of impiety simply because one of the figures on Athena's shield was thought to resemble him. Epicurus, because he was bold enough to teach a school of mixed sexes, caused a scandalous stir in his day. When Praxiteles sculpted his famous Aphrodite, the people of Cos were shocked by the complete nudity of the figure. Socrates, because he preached against the gods, was accused of blasphemy and of corrupting the youth of his time. For that he was put to death. Yet these very people, so scandalized by the impiety of their citizens, could look at their upholders of law, the gods, and excuse the atrocious actions they were portrayed as having been guilty of.

Since our western world owes so much to Classical Greece, should we not wonder at the incongruity of this affair? Should we not ask the question: What was it that made the ancients—and the Greeks were not the only ones—bow their heads to such consistent lawlessness in the lives of their upholders of law?

CELESTIAL DIVINITIES

From Greek sources comes the following well-known tale of divine family conflict:

The goddess Gaea bore a son called Ouranos and then lay with him in incest. Ouranos' children, born of Gaea, planned a revolt against their father. Ouranos therefore imprisoned these rebellious sons. In revenge, Gaea inflamed her youngest-born, Kronos, to overthrow his father. Kronos, hiding in ambush, attacked his father and castrated him with a sickle. He then became lord of heaven in his father's stead.

Fearing a similar rebellion, Kronos did not see fit to release his brethren. Worse than that, laying in incest with his sister Rhea, he commenced to devour his own offspring. But when his son Zeus was born, Rhea gave Kronos a stone to swallow in his stead. When Zeus grew to manhood, he also attacked his father and deposed him. Like Ouranos and Kronos before him, Zeus then inherited the lordship of heaven.

What philosophical insights could lay buried within this tale of incest, revenge, castration, patricide, cannibalism, stupidity (for how could a god have mistaken a stone for his infant child?), and deception?

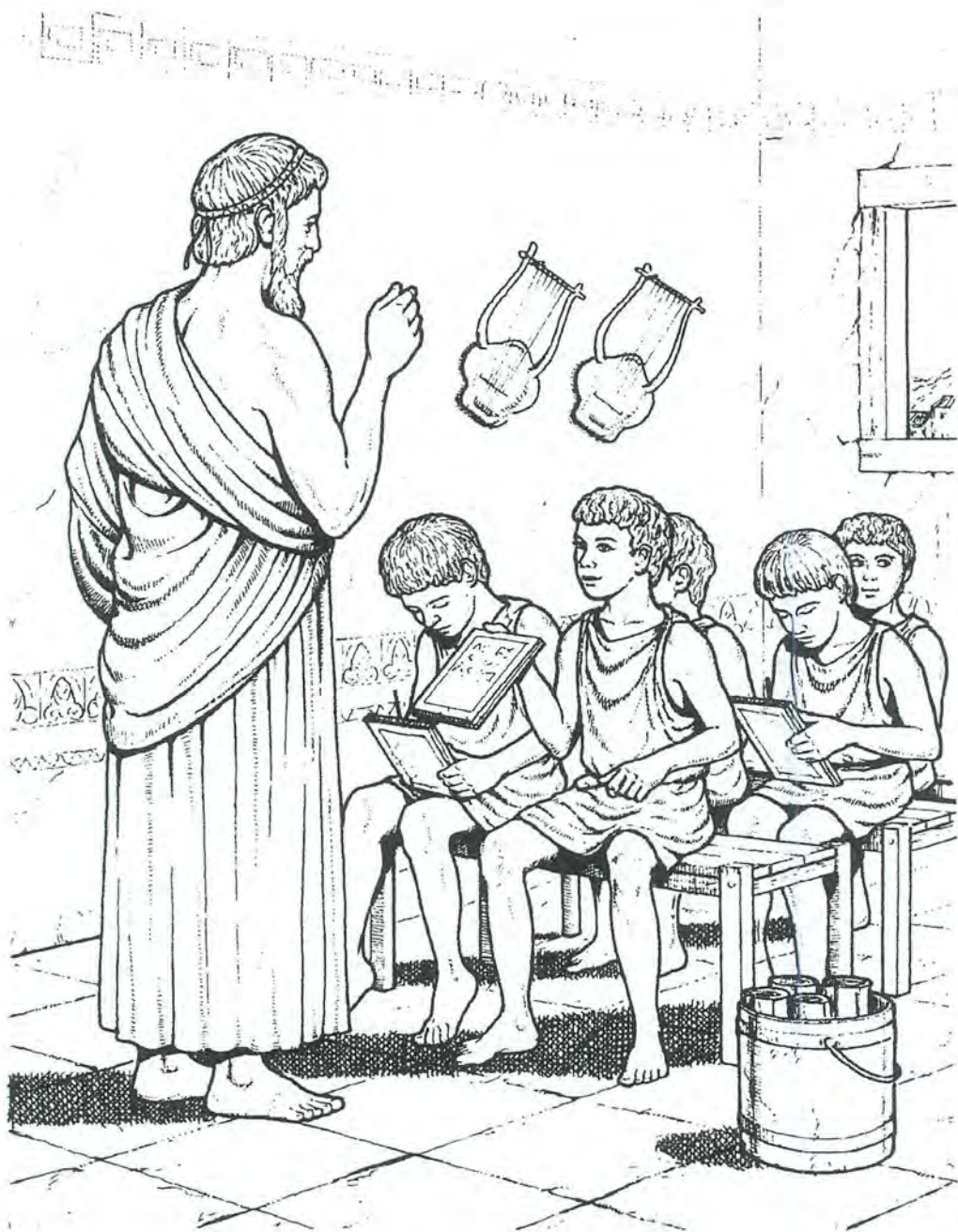
Not that philosophers have not tried. Pierre Jurieu, for instance, saw Kronos as a symbol of time which devours what it first produces.¹⁵⁰ Jurieu's belief derived from the fact that, in Greek, "Time" is rendered *Chronos*, which concept they then attributed to Kronos. Jurieu did not ask what prompted the Greeks to equate time with their god Kronos—and this question should have been asked in view of the fact that Kronos was also the Greek name of the planet we call Saturn.

To the ancient Greeks, the planet Saturn would have appeared as nothing more than a pin-point of light in the night sky, no different than the way it appears to us with the unaided eye at present. What, then, could have impelled the Greeks to equate this pin-point of light with the abstract idea of time?

When, as narrated in the above myth, Zeus deposed Kronos, did he also depose time? Better still, what does it mean that Zeus deposed Kronos?—for Zeus was also the Greek name of a planet, that which today is known to us as Jupiter. What could it mean that the planet Jupiter deposed the planet Saturn?

Despite what philosophers, mythologists, and students of ancient religion might have written in the past, the tale recorded above can have no philosophical meaning—at least none that would not be strained. In view of the fact that Kronos and Zeus were actually deified

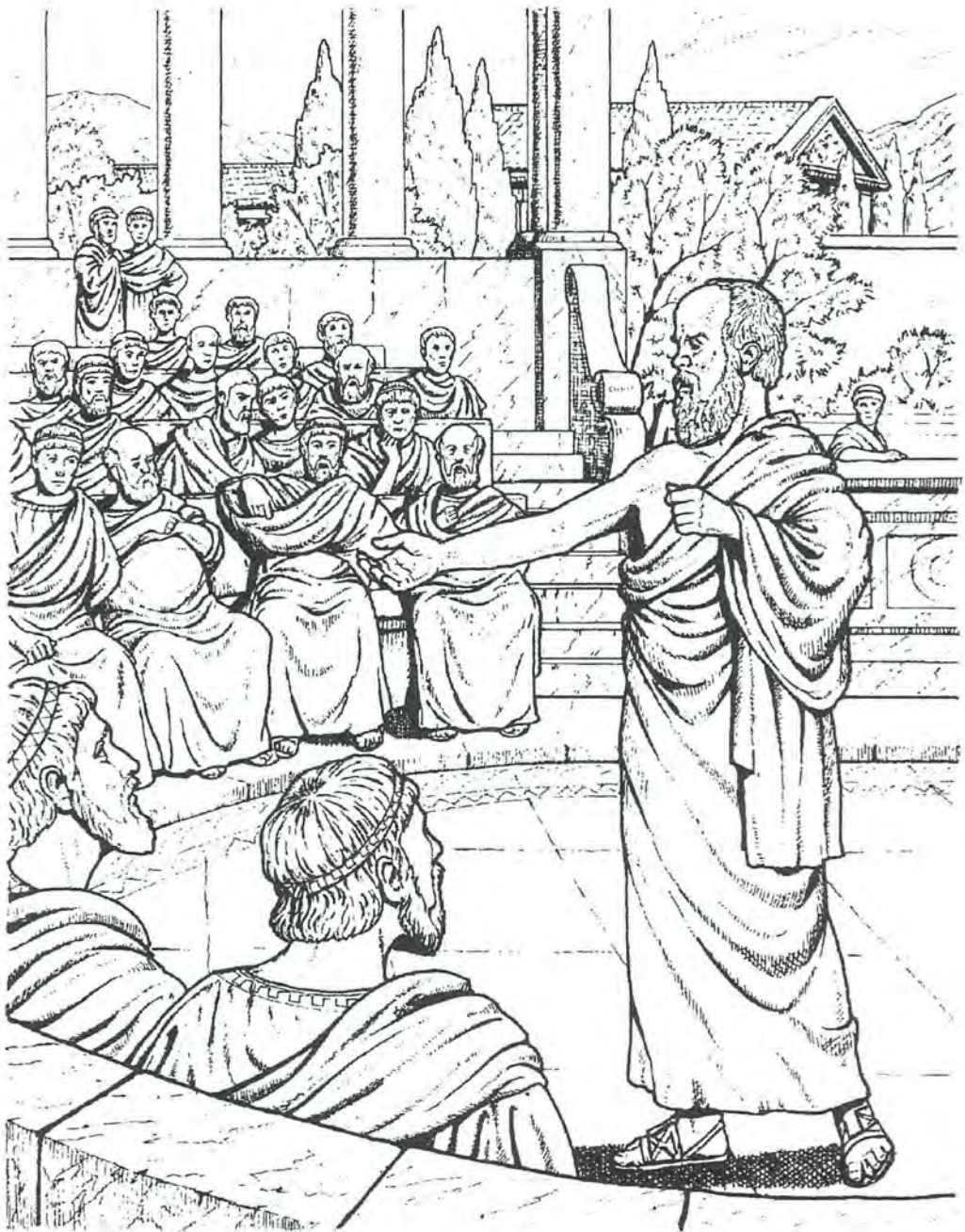
¹⁵⁰ F. E. Manuel, *The Eighteenth Century Confronts the Gods* (Cambridge, 1959), p. 33.



Ancient Greek school for boys.

Education was not compulsory. Schools were private and charged fees. Girls could receive similar education in separate schools. In Europe, separate schools for boys and girls continued as the moral standard well into the twentieth century. When Epicurus was bold enough to teach a school of mixed sexes, he caused quite a scandalous stir.

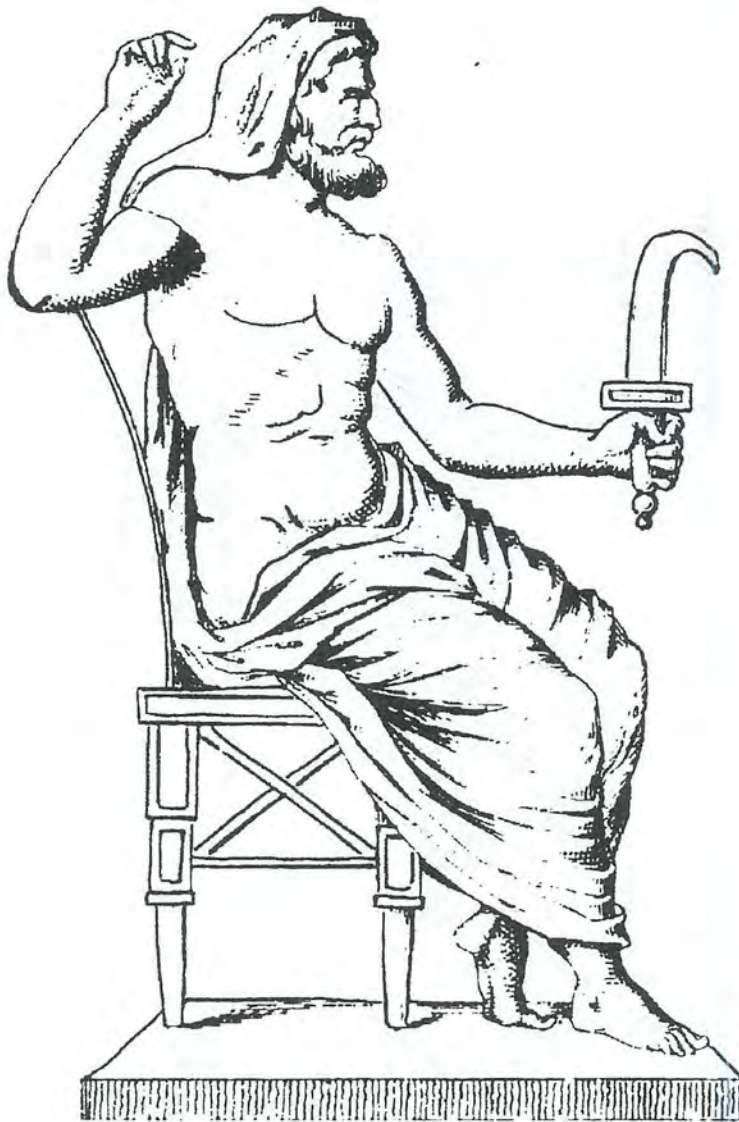
(Illustration by John Green.)



Socrates defending himself at his trial.

Accused of preaching against the gods and corrupting the youth of his time, Socrates was found guilty and sentenced to death. Surrounded by his saddened friends, he carried out the sentence by drinking hemlock.

(Illustration by John Green.)



Kronos, holding the sickle with which he castrated his father.



Rhea, giving Kronos a stone in swaddling clothes, instead of her son Zeus, for him to devour .
(From a relief now in the Capitoline Museum, Rome.)

planets, should we not turn our attention to a possible cosmological interpretation of the myth?

THE PLANETARY DEITIES

That ancient man worshipped the planets as gods is not a new revelation. The study of classical texts, of cuneiform tablets, even the pages of the Old Testament, have long illuminated this oft-ignored aspect of ancient religions. The Sun and the Moon—one as the benefactor of light and warmth, the other as the vanquisher of nightly shades—might be considered appropriate candidates for divine worship. But what influence could the planets have ex-

erted on Earth and its inhabitants to induce our ancient forebears to deify them, venerate them, and offer them the blood of human sacrifice? After all, unlike the Sun and Moon, to the unaided eye the planets appear no more than small flickering pin-points of light lost amid a starry sea among a multitude of other flickering pin-points of light.

The ancient Greeks deified all of the heavenly bodies of the Solar System that were, and still are, visible to the naked eye. Saturn was Kronos who was once king of heaven. Jupiter was Zeus who, as in the case of other planetary pantheons, seized the kingdom of the gods from his father Kronos/Saturn. Mars was known as Ares, the blood-thirsty god of war. Aphrodite, the goddess of love, perhaps the most popular of the Greek deities, was the personification of Venus. The planet Mercury was Hermes, with his winged sandals, the swiftest god among the Olympians.

These planetary identifications were even adopted by those ancient peoples who came into direct contact with the Greeks. Thus, in *The Book of the Secrets of Enoch*, a Graeco-Jewish work from the intertestamental period, the names of the planets are so given in Greek: Kruno for Kronos/Saturn; Zeus for Jupiter; Aris for Ares/Mars; Aphrodit for Aphrodite/Venus; and Ermis for Hermes/Mercury.¹⁵¹

Can it however be said that, in the minds of the Greeks, planets and gods were synonymous? I pose this all-important question because critics have often denied this to have been the case. My answer is that the identity of the ancient gods as planets should never even have been questioned. The only acceptable assertion in this matter is that of those very people who once believed in, and venerated, these gods. Giorgio de Santillana and Hertha von Dechend recognized this truth when they wrote:

"The most 'ancient treasure' ... left to us by our predecessors ... was the idea that the gods are really stars, *and that there are no others*. The forces reside in the starry heavens, *and all stories, characters and adventures narrated by mythology* concentrate on the active powers among the stars, *who are the planets*."¹⁵²

This is quite a claim, to say the least, when one remembers that, at the very dawn of civilization, the Sumerian list of deities already contained more than five thousand names with which to reckon¹⁵³—think about it! Accepting that most of these names constitute nothing but a litany of epithets bestowed on a much shorter list of deities, the deities themselves, and the tales told about them, remain quite numerous. And yet, as we shall see, this was not merely a case of epithets, for the deities themselves were often inadvertently duplicated, triplicated, and so forth.

On the other hand, to maintain that *all* mythological characters reduce to a handful of planets, and that *all* mythological tales are descriptive of planetary motions, is not, in my opinion, a defensible position. After all, in the end, man found it expedient to recognize divinity in just about everything, creating deities who would lord it over such concepts as birth, health, sleep, and death and a thousand other issues to boot. Even so, I *will* maintain that if we restrict ourselves to the world's *major* myths, de Santillana and von Dechend's claim *can* be validated.

¹⁵¹ II Enoch, XXX:4. (NOTE: The difference in the spelling of the names is merely due to different transcription from the Greek.)

¹⁵² G. de Santillana & H. von Dechend, *Hamlet's Mill: An Essay on Myth and the Frame of Time* (Boston, 1969), p. 177 (emphasis added).

¹⁵³ F. G. Bratton, *op. cit.*, p. 21.



Ares, the blood-thirsty god of war, personification of the planet Mars.
(From an ancient marble statue—the Ares Ludovisi—now in Rome.)



Aphrodite of Melos, Greek goddess of love and beauty, personification of the planet Venus.

When it comes to the ancient Greeks, as the authors in question had it noted, "Aristotle was proud to state it as known that the gods were originally stars, *even if popular fantasy had later obscured this truth.*"¹⁵⁴ Aristotle's own words read as follows:

"A tradition has been handed down by the ancient thinkers of very early times ... to the effect that these heavenly bodies are gods ... The rest of their tradition has been added later in a mythological form to influence the vulgar ..."¹⁵⁵

Translators, and other commentators, have since attempted to fault Aristotle since, as they have pointed out, the gods are *not* identified as planets in the earliest extant Greek sources. Thus, M. Tredennick, who translated Aristotle's works for the famed Loeb Classical Library, thought it appropriate to append a footnote to the above passage which, in part, reads:

"This statement [of Aristotle] is not literally true. The planets do not seem to have been associated with the gods of popular mythology until the 4th century B. C."¹⁵⁶

Tredennick then referred his readers to John Burnet, an earlier authority on the subject, who had written:

"In classical Greek literature no planets but Hesperos [Venus as Evening Star] & Eosphoros [the Morning Star] are mentioned by name at all ... Mercury appears for the first time by name [as Hermes] in [Plato's] *Timaeus* 38e, and other di-

¹⁵⁴ G. de Santillana & H. von Dechend, *op. cit.*, p. 4 (emphasis added).

¹⁵⁵ Aristotle, *Metaphysics*, 12:8:19.

¹⁵⁶ H. Tredennick, translator of Aristotle's *Metaphysics* (Loeb Classical Library, 1947), footnote to 12:8:19.

vine names are given [by the same Plato] in *Epinomis* 987b sq, where they are said to be 'Syrian.' The Greek names Phaenon [Saturn], Phaethon [Jupiter], Pyroeis [Mars], Phosphoros [another designation for the Morning star] & Stilbon [Mercury] are no doubt older, though they do not happen to occur earlier.¹⁵⁷

W. D. Ross was another modern translator of Aristotle who appended a similar disclaimer to the original passage quoted above.¹⁵⁸

What the above authorities, and others since then, have failed to take into consideration is that, at bottom, the characteristics of the Greek gods were identical to the *known* planetary deities of other, *and older*, races with whom the Greeks came in contact and from whom they borrowed much of their cosmological and cosmogonical lore.

That this knowledge, as per Aristotle, had to be reaffirmed was due to a multitude of factors, the least of which not being the "forgetting" of cosmic history by the Greek nation. When Solon visited Egypt, he was informed that "neither he nor any other Hellene knew anything worth mentioning about the times of old."¹⁵⁹ He was told that "there is no old opinion handed down among you [Greeks] by ancient tradition, nor any science which is hoary with age."¹⁶⁰ The Greeks, according to the Egyptian sages, knew "nothing of what happened in ancient times"¹⁶¹ and this, supposedly, was due to the survivors of previous natural catastrophes who, for whatever reason, had left "no written record" behind them.¹⁶²

The gods' eventual disassociation from the planets was also abetted by the fact that, like other nations, the Greeks were wont to allude to the planets by a different set of names when dealing with astronomical, as opposed to cosmogonical, matters. Thus, as indicated by Burnet above, we come across Saturn, who was Kronos, being referred to as Phaenon; Jupiter, who was Zeus, as Phaethon; and so forth. It should be noted, however, that these astronomical terms were not themselves devoid of mythic characteristics—so that even in purely astronomical treatises, it was difficult to disassociate the study of planets from that of the gods.



Aristotle, who "was proud to state it as known" that the gods were originally astronomical bodies.
(Illustration by Charles Hogarth.)

¹⁵⁷ J. Burnet, *Early Greek Philosophy* (4th ed., 1931), p. 23.

¹⁵⁸ G. de Santillana & H. von Dechend, *loc. cit.*

¹⁵⁹ Plato, *Timaeus* 22.

¹⁶⁰ *Ibid.*

¹⁶¹ *Ibid.*, 23.

¹⁶² *Ibid.*

Aristotle had no reason to invent the equation of planets with gods. Having been widely forgotten by his immediate, but not his earlier, ancestors, he simply rediscovered this verity and sought to reaffirm it. Besides, he was not the only one to offer the assertion. Others maintained and voiced identical opinions.

Among the Greeks, Lucian of Samosata also knew this truth.¹⁶³ Thus he tells us that "from both Homer the poet and the epics of Hesiod we should understand that the ancients were of one mind with the astrologers,"¹⁶⁴ and that it is "the conjunction of Venus and Mars" that "creates the poetry of Homer."¹⁶⁵ Plato, who recognized the same truth on his own, had it verified by the Egyptians.¹⁶⁶

The Romans, who, in their turn, borrowed many of their deities from the Greeks, were no different. It is in fact to them that we owe the present names of the planets in the western world so that, to this day, the planets still bear the names of the gods.

Kronos became Saturnus, the god of civilization. Zeus became Iuppiter, Diespiter, or simply Iovis, and, like his counterparts throughout the world, was considered king of all the gods. Ares became Marspiter, also known as Mavors—pronounced Ma-oors—or Marmar, a god of war as blood-thirsty as his Greek counterpart. Aphrodite became Venus, retaining her position as the queen of love and feminine beauty. Hermes became Mercurius, or Mercurius, and was honored as the god of merchandise.

The synonymy of planets with gods was so entrenched among the Romans that Cicero denied the possibility of planetary orbital changes simply because he believed such changes to be contrary to the planets' divine nature.¹⁶⁷

This belief, that the gods were really deified astronomical bodies, even touched primitive peoples. Thus the name of the great Polynesian god, Ta'urua, simply means "star"¹⁶⁸—and here we cannot help but note the similarity of this name to that of Tara, an epithet of Kali/Durga, mentioned earlier, which also means "star," even though no etymological connection between the two names has yet come to light. In old records of Tahiti, the name Ta'urua is applied to Fomalhaut, a star in the constellation Pisces; to Orion's belt; to Al-phard or Cor Hydra; Betelgeuse; Canopus in the constellation Argo; Deneb in Cygnus; and Sirius. Each particular star was then identified by a clarifying epithet added to the name Ta'urua.¹⁶⁹ The same name, however, was also applied to the planets Jupiter and Venus. The former was designated Ta'urua-o-rai'i-taetae'a-o-Havai'i-i-te-tua and the latter as Ta'urua-e-hiti-Matavai.¹⁷⁰

Among the Skidi branch of the Pawnee Indians of North America, there were some who, in a sense, might be considered to have been astronomers. These men compiled star maps; identified the constellations and the brightest stars among them; noted the planets and recorded their movements. The beginning of the Pawnee ceremonial year was co-ordinated in rites.¹⁷¹ As G. A. Dorsey discovered, "the greater part of the [Pawnee] heavenly gods were

¹⁶³ G. de Santillana & H. von Dechend, *op. cit.*, p. 177.

¹⁶⁴ Lucian, *De Astrologia* 22.

¹⁶⁵ *Ibid.*

¹⁶⁶ Plato, *op. cit.*, 22.

¹⁶⁷ I. Velikovsky, *Mankind in Amnesia* (N. Y., 1982), pp. 59-60.

¹⁶⁸ T. Henry, *Ancient Tahiti* (Honolulu, 1928), pp. 363-364.

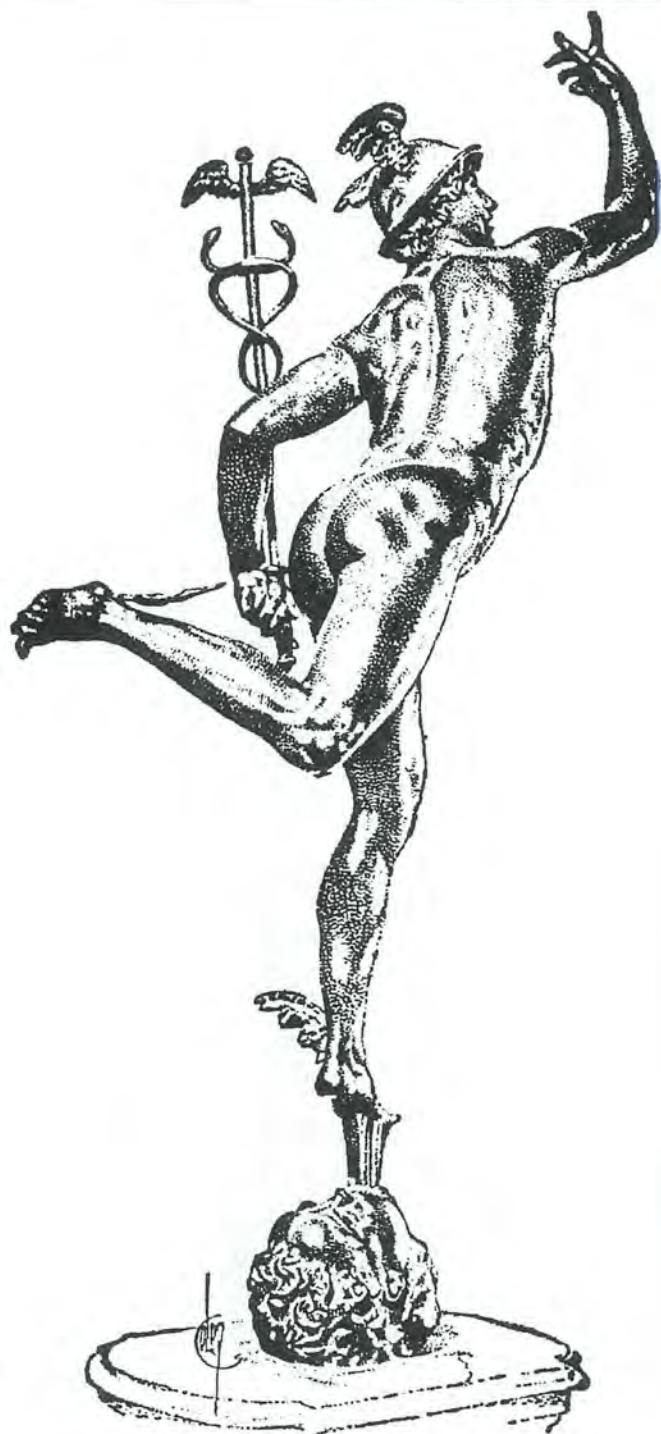
¹⁶⁹ *Ibid.*

¹⁷⁰ *Ibid.*

¹⁷¹ M. B. Zysman, "The Pawnee Papers," Part I, read at the Haliburton seminar sponsored by the Canadian Society for Interdisciplinary Studies, Sept. 2, 1982; E. C. Krupp, *Beyond the Blue Horizon* (N. Y., 1991), p. 246.



The Roman Jupiter—Iuppiter, Diespiter, Iovis—king of the gods, who personified the planet of the same name.
(From a wall painting at the Casa dei Dioscuri.)



The Roman Mercury—Mircurius, Mercurius—god of merchandise,
who personified the planet of the same name.
(From a sculpture by Giovanni di Bologna.)

identified with stars."¹⁷² They worshipped both the Evening and the Morning Star,¹⁷³ the latter's pre-eminence being stressed by many an anthropologist and researcher. In fact, Morning Star's pre-eminence was such that no writer can treat of this North American Indian nation without wondering how this star acquired such significance in the religious beliefs of these people. That the Pawnee Morning Star was the planet Mars has now been astronomically verified¹⁷⁴ and accepted by most anthropologists and archaeoastronomers.¹⁷⁵ Up until 1906, the Pawnee were still offering human sacrifice to it.¹⁷⁶

So, similarly, with the more sophisticated nations of Mesoamerica. Thus Susan Milbrath has observed that a "number of scholars agree that the fundamental nature of the ancient Mesoamerican pantheon is astronomical."¹⁷⁷ The same view has also been echoed by David Kelley, who wrote: "It has been clear to all serious students of Mesoamerican culture that there was an intimate relationship between astronomical knowledge, the calendar, and religious beliefs and rituals."¹⁷⁸

As Ev Cochrane more recently stated: "A prominent characteristic of Mesoamerican astronomy, immediately apparent, was their obsession with the observation *and worship* of the planet Venus."¹⁷⁹ And this despite the fact that B. C. Brundage, on considering the function the planet Venus played among the Mesoamericans, had no recourse but to offer the observation that the planet's true role in the development of this particular culture "is not understood."¹⁸⁰ He also, however, added:

"It might not be far wrong to look upon the Mesoamericans' great skill in numeration as a child of that planet and to state that their intellectual life pulsed to its periods. Certainly a significant portion of their mythology involved that planet."¹⁸¹

Thus Anthony Aveni, one of the foremost archaeoastronomers of the twentieth century, could not help but avow that "[f]or the Maya the importance of Venus ... cannot be overstated."¹⁸² In fact what student of Mesoamerican lore can delve into the religious beliefs of these people without running headlong into Quetzalcoatl, perhaps the greatest Mesoamerican deity, at whose death, as we have already seen, his heart flew out to become the Morning Star.

But what of *more ancient* nations?

¹⁷² G. A. Dorsey, unpublished notes, Field Museum of Natural History, Department of Anthropology, Chicago, 1922. These notes were later compiled by R. Linton and published as *The Thunder Ceremony of the Pawnee and The Sacrifice to the Morning Star*.

¹⁷³ M. Fauconnet, "Mythology of the Two Americas," *New Larousse Encyclopedia of Astronomy* (London, 1972), p. 433.

¹⁷⁴ V. del Chamberlain, *When Stars Came Down to Earth*, pp. 84-85.

¹⁷⁵ E. C. Krupp, *op. cit.*, pp. 191, 193.

¹⁷⁶ R. Linton, *The Sacrifice to the Morning Star* (1922), pp. 1-2; E. C. Krupp, *op. cit.*, p. 191.

¹⁷⁷ S. Milbrath, "Astronomical Imagery in the Serpent Sequence of the Madrid Codex," in A. Aveni (ed.), *Archaeoastronomy in Pre-Columbian America* (Lubbock, 1975), p. 263.

¹⁷⁸ D. Kelley, "Astronomical Identities of Mesoamerican Gods," *Archaeoastronomy* 2 (1980), p. 1.

¹⁷⁹ E. Cochrane, "When Venus was a Comet," *KRONOS* XII:1 (Fall 1986), p. 3 (emphasis added).

¹⁸⁰ B. C. Brundage, *The Phoenix of the Western World* (N. Y., 1981), p. 173.

¹⁸¹ *Ibid.*

¹⁸² A. Aveni, *Skywatchers of Ancient Mexico* (N. Y., 1980), p. 184.



**Karttikeya—also known as Skanda and/or Kumara—shown here in his southern Indian form of Subrahmanya, the Hindu god of war, who personified the planet Mars.
(From a nineteenth century trichinopoly painting.)**

The Indic *Linga Purana* preaches that “the worship of the planets should be pursued by good men,”¹⁸³ and then unambiguously identifies each planet with a major Hindu deity—thus:

“It is cited that the planet Mars is Skanda (Karttikeya) the commander-in-chief of the army of Devas. People of perfect knowledge say that Mercury is lord Narayan. O excellent brahmins, the great planet Shaniscara, the slow-moving Saturn, is Yama, the lord of the worlds. The preceptors of Devas and Asuras [that is Shukra and Brihaspati] are the great planets Venus and Jupiter with (refulgent) rays. They are mentioned as the sons of Prajapati.”¹⁸⁴

In the Hebrew *Talmud*, the very meaning of “idolatry” is defined as the “worship of stars and constellations.”¹⁸⁵

But none of this has stemmed criticism concerning the synonymy of planets and gods as they appear in ancient literature and beliefs. That planets were deified and worshipped as deities has, of course, been accepted—and how can it be otherwise when the evidence is there for all to read about. What has not been accepted is that this has always been so. What critics generally claim is that the planets had not *always* been gods—that, on the contrary, the deification of the planets owes its origin to a late date. But, as I have now been asking for a number of years, how late is late? Or, to ask a different question, how far back in history can this belief be traced?

Ignoring, or sweeping aside, the statements of Aristotle, critics continue to maintain that the Greek identification of the planets as gods does not trace beyond the 4th century B.C. But is Greek lore the yardstick by which to measure the antiquity of anything? The Greeks, after all, came somewhat late on the ancient historical scene. What about those nations that were older, much older, than the Greeks?

In Egypt the planets were also deified. Saturn was called Heru-ka-pet, that is Horus the Bull of Heaven; Jupiter was Heru-ap-sheta, the Star of the South; Venus was Sbat uatitha, the Evening Star; Mars was Heru-khuti and/or Heru-tesher, the Red Horus; and Mercury was Sebku and/or Sebek.¹⁸⁶ Granted, it will be pointed out that these names and identifications became popular during the late Graeco-Roman period and that they do not trace further back than the 19th Dynasty. But the identity of the Morning Star as Horus was already known during the Old Kingdom and is found recorded more than once in the *Pyramid Texts*.¹⁸⁷ In fact, to the ancient Egyptians, the synonymy of gods and planets was so complete that, in some instances, the same word was employed to signify either. Thus *sba*, among other things, meant “star,” but *Sba* was also the name of a “star” god.¹⁸⁸ The word *netru* meant “stars,” but it also meant “gods.”¹⁸⁹ As Faulkner pointed out:

¹⁸³ *Linga Purana* 1:57:39.

¹⁸⁴ *Ibid.*, 1:60:2-5. (NOTE: Elsewhere in the same work other names are also given for the planets, including Budha for Mercury. *Ibid.*, 1:57:1-5 and 13-18.)

¹⁸⁵ H. Macoby, “‘Worlds in Collision’ and the Birth of Monotheism,” *SIS Review* 11:1 (Autumn 1977), p. 18.

¹⁸⁶ E. A. W. Budge, *The Gods of the Egyptians*, Vol. II (N. Y., 1904/1969), pp. 302-303.

¹⁸⁷ W. M. Müller, *Egyptian Mythology*, Vol. 12 of *The Mythology of All Races* (1918/1964), pp. 94, 373; see also D. Cardona, “Morning Star,” *AEON* 1V:1 (April 1995), pp. 29 ff., where further references are supplied.

¹⁸⁸ E. A. W. Budge, *An Egyptian Hieroglyphic Dictionary*, Vol. II (N. Y., 1920/1978), p. 655.

¹⁸⁹ *Ibid.*, Vol. I, p. 409.



Horus, who, as Heru-khuti and/or Heru-tesher, the Red Horus, was the personification of the planet Mars in its embodiment as the Morning Star.

"It is of course very well-known that the Ancient Egyptians took a great interest in the stars, not only observing them for practical purposes such as determining times and seasons, but also inscribing star-maps and tables in their coffins and tombs at least from the Middle Kingdom onward. It is also realized that behind this lay a very ancient stratum of stellar religion, in which the stars were regarded as gods ..."¹⁹⁰

So, also with Wallis Budge, who observed that "many passages" of the *Pyramid Texts* "refer to primitive star-worship."¹⁹¹

Moving next to Syria we find that in the Eblaite tablets, the word for "temple" is not only given as *e-dingir*, which, as is to be expected, means "house of god," but also as *e-mul*, which means "house of the star."¹⁹²

In ancient Babylon, as elsewhere, the planets were also adored as gods. Saturn, whom the Babylonians called Ninurta,¹⁹³ was worshipped as a mighty hunter. Jupiter, as Marduk, was venerated as the king of the gods. Mars, under the name Nergal, was already then a god of war. Venus, called Ishtar, had already won her place as the goddess of love and carnal knowledge. Mercury was known as Nabu or Nebo.

Morris Jastrow, who was aware of the astral nature of Babylonian religion, was of the opinion that this belonged "to a later stage in the unfolding of religious rites."¹⁹⁴ But, as N. H.

Snaith more recently phrased it: "All the Mesopotamian deities, *without exception* as far as the later period is concerned and probably for the *earlier period also*, were associated with the heavenly bodies ..."¹⁹⁵ As if to prove the point, the Neo-Babylonians worshipped not only the effigies of gods but their planetary symbols as well.¹⁹⁶

¹⁹⁰ R. Faulkner, "The King and the Star-Religion in the Pyramid Texts," *Journal of Near Eastern Studies* 25 (1966), p. 153 (emphasis added).

¹⁹¹ E. A. W. Budge, *From Fetish to God in Ancient Egypt* (N. Y., 1988), p. 51 (emphasis added).

¹⁹² G. Pettinato, *The Archives of Ebla* (N. Y., 1981), p. 252.

¹⁹³ D. A. Mackenzie, *Myths of Babylonia and Assyria* (London, 1915), reprinted as *Mythology of the Babylonian People* (London, 1996), p. 301.

¹⁹⁴ M. Jastrow, Jr., "The Sign and Name for Planet in Babylonian," *Proceedings of the American Philosophical Society* XLVII:189 (May-August 1908), p. 146.

¹⁹⁵ N. H. Snaith, *The Distinctive Ideas of the Old Testament* (N. Y., 1964), p. 29 (emphasis added).

¹⁹⁶ S. Lloyd, *The Art of the Ancient Near East* (N. Y., 1965 third printing), p. 235.

So, likewise, in ancient Uruk. As Krystyna Szarzynska has recently noted, "in the most archaic period the determinative dingir [which means "god"¹⁹⁷] was associated with astral deities only."¹⁹⁸

The civilization of Uruk traces to that of Sumer. And it is precisely here that the truth can be run to ground for the language of Sumer is the oldest written language that we have. And in that language, very much as in that of the Egyptians, the word and/or cuneiform sign for "god" and "star" was one and the same—*—a symbol derived from the pictograph which preceded cuneiform writing—*—the very picture of a star.¹⁹⁹ This not only proves that stars and gods were thought of as being truly synonymous as far back as written records reach, it also indicates that the very concept of God has its origin in a star.

This brings me to another point I wish to stress. Thus one often encounters the statement that the ancients deified the planets—a statement which, because of its handiness, I have even employed myself, as I have employed it throughout this work. But, strictly speaking, this is incorrect. The ancients had no need to deify the planets because, to them, the planets had always been deities. They were, to be sure, the only deities they knew. In other words, planets were gods; gods were planets: planets and gods were one and the same.

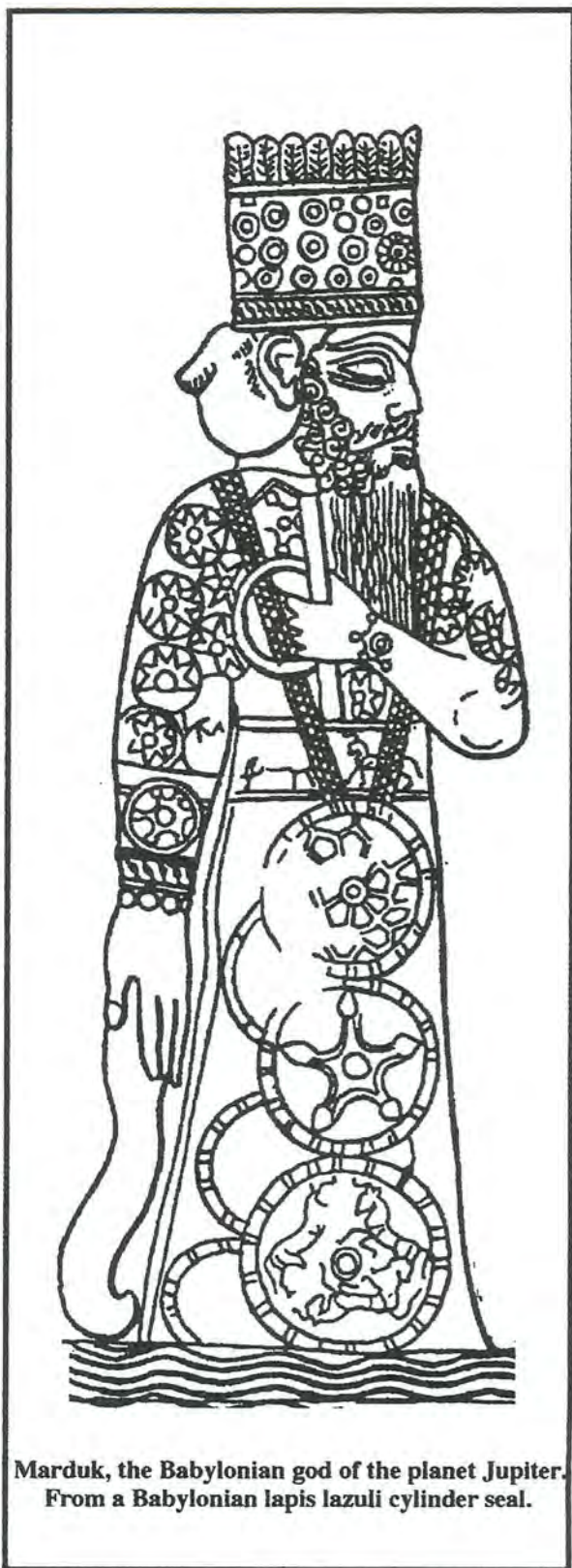
It was only during the first century B.C. that Lucretius began to turn the tables by going to great pains in demonstrating that astronomical bodies were not thinking purposeful gods.²⁰⁰ In doing so, he was

¹⁹⁷ K. Szarzynska, "Some of the Oldest Cult Symbols in Archaic Uruk," *Jaarbericht ex Oriente Lux* 30 (1987-1988), p. 10.

¹⁹⁸ *Ibid.*, p. 11 (emphasis added).

¹⁹⁹ S. Langdon, *Semitic Mythology* (Boston, 1931), p. 93; I. S. Shklovskii & C. Sagan, *Intelligent Life in the Universe* (N. Y., 1968), p. 460; J. E. Pfeiffer, *The Emergence of Society: A Prehistory of the Establishment* (N. Y., 1977), p. 170.

²⁰⁰ See here V. Clube & B. Napier, *The Cosmic Serpent* (N. Y., 1982), pp. 169-170.



Marduk, the Babylonian god of the planet Jupiter.
From a Babylonian lapis lazuli cylinder seal.



Ishtar, Assyro-Babylonian goddess of the planet Venus.
From a cylinder seal of the Neo-Assyrian period.
(Illustration by Tessa Rickards.)

inadvertently verifying the fact that, in more ancient times, the planets had been *so* believed to be—*thinking purposeful gods*.

There is therefore no point in critics telling us that the gods only *later* adopted planetary aspects unless their assertion can be validated by an actual ancient source that upholds it. In the meantime, sources which point to the contrary abound. After all, when it comes to what our ancient forefathers believed, it is our ancient forefathers that we must believe. *If* critics

can point to an *older* source than the Sumerian that contradicts the statements above, let them present it. In the meantime, the record continues to stand.

ASTRONOMY IN MYTHOLOGY

When it comes to the antiquity concerning the belief that the gods of our ancient forefathers had been nothing but anthropomorphosed planets, I am not alone. De Santillana and von Dechend held the identical opinion.

"... this science, although it has dug up a marvelous wealth of details, has been led by its modern evolutionary and psychological bent to forget about the main source of myth, which was astronomy—the Royal science. This obliviousness is itself a recent turn of events—barely a century old. Today expert philologists tell us that Saturn and Jupiter are names of vague deities, subterranean or atmospheric, superimposed on the planets at a 'late' period; they neatly sort out folk origins and 'late' derivations, all unaware that planetary periods, sidereal and synodic, were known and rehearsed in numerous ways by celebrations already traditional in archaic times."²⁰¹

Actually, the association of mythology with astronomical lore was well understood by scholars of a past age. Thus Nicolas Fréret (1688-1749), the first permanent secretary of the Academie des Inscriptions, who disputed so much with Isaac Newton, was of the belief that the astronomical events alluded to in the mythologies and described by ancient writers could only have been based on actual observations. Fréret even went so far as to proclaim that the data of ancient



The Assyro-Babylonian Nabu, or Nebo, scribe of the gods, the god of the planet Mercury.

²⁰¹ G. de Santillana & H. von Dechend, *op. cit.*, pp. 3-4.



Sir Isaac Newton.

Despite the fact that historians of science laud him as one of the greatest scientific minds the world has ever seen, they have only managed to hoodwink the public by downplaying his glaring religious fundamentalism.

(Illustration by Charles Hogarth.)

history conflicted with the theory of Newton.²⁰³ This would be quite a bold statement to make in this day and age. Who, today, would believe that anything in mythology, or the astronomical assertions of the supposedly ignorant ancients, could have any value in disputing the scientific theories of the great Newton? But, before we laugh Fréret out of court, let us not forget that Newton's theological seams were quite apparent in his own day, and it is only with the passage of time that historians of science have been able to hoodwink the public by downplaying his once glaring religious fundamentalism. Historians laud him as one of the greatest scientific minds the world has ever seen, but what sort of scientific acumen could he have been employing when he accepted Bishop Ussher's date for the creation of the world, which the latter, on Biblical evidence, had computed as having occurred in 4004 B.C. As Livio Stecchini indicated: "[Fréret] challenged Newton's views about mythology and ancient science by which the latter tried to dismiss the evidences for changes in the solar system before the era of Nabonassar."²⁰⁴

It was only during the mid part of the twentieth century that the study of mythology slowly crept away from its astronomical underpinnings—*mainly because what the ancients stated about astronomical bodies of the Solar System does not conform to what we see at present*. But, *even more recently*, the pendulum seems to be swinging back. Thus even astronomers are finally beginning to pay heed to the message of the mythohistorical record, as exemplified in 1982 by Victor Clube and Bill Napier,²⁰⁵ and, in 1985, by that indomitable antagonist of cosmic catastrophism, Carl Sagan, himself.²⁰⁶ Despite my disagreement with Clube and Napier on many an issue, I have to say that even they recognized the truth. Thus, in their first major co-authored work, they had this to say:

"The modern astrophysicist tends to see astronomy as an exclusively modern puzzle. Armed with the laws of physics, he dissects the scene before him with the antiseptic calm of a skillful surgeon. But like the surgeon, he can overlook the mysterious origins of his patient. For some reason, *astronomy is the oldest of the sciences* and it is

²⁰³ L. C. Stecchini, "Newton and Historical Science," *KRONOS* X:1 (Fall 1984), p. 63.

²⁰⁴ *Ibid.*

²⁰⁵ V. Clube & B. Napier, *op. cit.*, in toto.

²⁰⁶ C. Sagan & A. Druryan, *Comet* (N. Y., 1985), pp. 173-187.

certainly known to have a past that is *rooted in primitive polytheistic religion and celestial mythology* ... The question we address is why."²⁰⁷

Most mythologists who *have* favored an astronomical interpretation of mythology have however been handicapped by the uniformitarian dogma that the Solar System has remained unchanged for millions of years. Not only that, some of them have even *utilized* this dogma as the very basis for astro-mythological beliefs. Thus, for instance, Elmer Suhr who could feel confident in reporting that:

"Astronomy, including manifestations of sun, moon, stars, comets and meteors, has the advantage of remaining constant in its movements and consistently the same in appearance over great periods of time; its forms are more geometric, its changes more regular, all of which gave the heavens more prestige in the mind of primitive man."²⁰⁸

This, I intend to show, has been the great pitfall of most mythologists who could not reconcile the heaven alluded to by our ancient forefathers with the one that now stretches above and around us. And yet, as I hope to demonstrate, it was the very opposite to what Suhr believed that lay at the very foundation of mytho-astronomical belief. In fact, what I wish to stress is that the astronomical bodies of the Solar System were deified by ancient man the world over not because they consistently followed an ordained pattern, *but precisely because they did not*.

As Lewis Farnell noted early in the twentieth century: "What is normal in nature and society rarely excites the myth-making imagination, which is more likely to be kindled by the abnormal, some startling catastrophe, some terrible violation of the social code."²⁰⁹

And as the French anthropologist Emile Durkheim (1858-1917) pointed out:

"...that which characterizes the life of nature is a regularity which approaches monotony. Every morning the sun mounts the horizon, every evening it sets; every month the moon goes through the same cycle; the river flows in an uninterrupted manner in its bed; the same seasons periodically bring back the same sensations. To be sure, here and there an unexpected event sometimes happens: the sun is eclipsed, the moon is hidden behind clouds, the river overflows. But these momentary variations could only give birth to equally momentary impressions, the remembrance of which is gone after a little while; they could not serve as a basis for these stable and permanent systems of ideas and practices which constitute religions. Normally, the course of nature is uniform, *and uniformity could never produce strong emotions*."²¹⁰

While not exactly an authority on mythological subjects, it is also worth noting the words of Frederick Hall who wrote:

"If we will the myths their proper credence in the light of new evidence of planetary catastrophism, we will find that they can add much to our store of knowledge. All mythical accounts may not be equally authentic—and surely many are garbled—but

²⁰⁷ V. Clube & B. Napier, *op. cit.*, p. 283 (emphasis added).

²⁰⁸ E. G. Suhr, *Before Olympus* (N. Y., 1967), p. 27.

²⁰⁹ L. R. Farnell, "The Value and Methods of Mythological Study," *Proceedings of the British Academy* XX (1919), p. 47.

²¹⁰ E. Durkheim, *The Elementary Forms of the Religious Life* (N. Y., 1965), p. 103 (emphasis added).

this simply emphasizes the care that must be taken in research if we are to reach a believable consensus between the message of myth and the discoveries of space age science."²¹¹

This is a bold statement to come from an engineer who had worked at the Stanford Linear Accelerator Laboratory, but, as we shall see, the content of myth *can* help us garner new astronomical knowledge even if, at first sight, this knowledge may appear to be at variance with what we believe we know. In fact, even that so-called pillar of astrophysics, the Big Bang Theory, had been much earlier posited in a *religious* work.

In the Book of *Genesis*, Elohim, usually translated into English as "God," begins the creation with the words: "Let there be light." And, it is there written, "there was light." There have been many who have seen a similarity between this description of beginnings and the Big Bang Theory. The following, one of several such, comes from a popular work devoted to the mysteries of the Bible:

"Prevailing scientific theory proposes that the universe was created in a flash of light. This 'big bang,' or cosmic explosion, is believed to have occurred some 16 billion years ago. Some see parallels between this modern, scientific theory and the biblical account which opens with God's command, 'Let there be light'."²¹²

Granted, on its own, this similarity is not enough for one to claim that the theory in question had already been posited in a religious work. The Book of *Genesis* is not, however, the religious work I have in mind. So bear with me for a while.

George Gamow is the acclaimed father of the Big Bang theory. But before Gamow there was Georges Lemaître who, in 1927, was the first to propose that a hot, dense, primeval "atom" had exploded, flinging its contents outward to create the universe.²¹³ With the advent of the theory in question, Pope Pius XII himself had it stated that "scientists are beginning to find the finger of God in the creation of the universe."²¹⁴ Lemaître, who was a Catholic priest besides being a physicist, was later decorated by the Vatican for his scientific achievements.²¹⁵

To be quite fair, in developing his theory of the expanding universe, Lemaître had relied on the principles of general relativity. But, since he was also well versed in the discipline of theology, could he not also have come across that great medieval commentary on Biblical Scripture known as the Ramban? In 1990, in a book titled *Genesis and the Big Bang*, the Israeli nuclear physicist Gerald Schroeder argued in detail that there is no contradiction to be found between the account of creation as described in *Genesis* and the current scientific dictum.²¹⁶ Moreover, as Schroeder noted, "the Ramban ... had the remarkably modern insight that at the moment after creation, all the matter in the universe must have been concentrated in a tiny speck."²¹⁷ Tell me that this insight is not identical to that reached by Lemaître?

I hope no one will now think that I, personally, believe that Creation as described in *Genesis* is a veiled description of the Big Bang since, as I hope to demonstrate in a future work, I have an entirely different theory to propose concerning the shedding of light by

²¹¹ F. F. Hall, "Solar System Studies," (Part 2), *AEON* I:4 (July 1988), p. 25.

²¹² A. E. Guinness (ed.), *Mysteries of the Bible* (N. Y., 1988), p. 18.

²¹³ J. McManus (ed.), *The Cosmos* (Alexandria, Virginia, 1990), pp. 61-62.

²¹⁴ R. N. Ostling, "Galileo and Other Faithful Scientists," *TIME* (December 28, 1992), p. 39.

²¹⁵ J. McManus, *op. cit.*, p. 61.

²¹⁶ R. N. Ostling, *loc. cit.*

²¹⁷ As reported in *ibid.*

Elohim. But this brings us to another problem that we must overcome for, after all, theories come cheap. It is one thing to hypothesize, but quite another to uphold the hypothesis—at least Lemaître had general relativity on which to rely. In this respect, David Leveson was shrewd enough to note: “In scientific as opposed to pseudo-scientific polemic, *evidence has priority over hypothesis*,” adding that “hypothesis must conform to evidence, not evidence to hypothesis.” And he goes on with: “If evidence contrary to a given hypothesis is found, the hypothesis must (or should) be altered or rejected.” But then he was astute enough to warn that: “This does not mean that when contrary evidence is found the hypothesis is immediately rejected; it may be retained tentatively in the hope that further evidence may eventually explain the ‘contrary’ evidence in terms of the theory.”²¹⁸ As he also pointed out:

“Indeed, many hypotheses are arrived at intuitively, through a ‘flash of insight,’ and may be maintained in the mind of the investigator in spite of much initial ‘contrary’ evidence, and later be vindicated ... But a legitimate researcher will not consciously suppress contrary evidence. Certainly he will not publish a hypothesis until he has satisfied himself that all the available evidence is in accord with it. Indeed, if he is properly conscientious, he will *search* for contrary evidence to test the validity of his ideas. Hypothesis may precede evidence in time but not in importance.”²¹⁹

These are guidelines that *will* be kept in mind as we attempt to unravel the lost history of our Solar System in the pages that follow. But, even so, the question must be asked: *What* constitutes evidence? As Daniel Trifiletti noted:

“The very nature of evidence changes from one discipline of science to another. What is evidentiary to one person is excluded by another. Facts are not the same for everyone. Since we cannot all agree as to what constitute ‘facts,’ deductive arguments alone can never be fully convincing...”

“There is another approach, however, for assessing what might be considered ‘dubious’ by some. That recourse is *inductive* reasoning. Let it be recognized that no fact stands alone, but is part of a whole constellation of other facts. At some point, when enough facts have been collected, each individual point of light may be seen as part of a newly recognizable figure—an organic whole. Eventually the sheer weight of even ‘dubious’ facts becomes too large to ignore.”²²⁰

THE HISTORICITY OF THE EVENTS

Can it, however, be assumed that the events portrayed in myths have any factual basis one way or the other? Many a past mythologist has been vociferous in denying that any historicity can be discerned in mythic content. Most mythologists continue to believe that myth, on the one hand, deals with religious, that is moral, precepts presented in allegorical form, and, on the other hand, with such fabulous events that no scientifically-minded modern person can accept. Conrad Hyers, a professor of religion, to name but one, has written profusely

²¹⁸ D. Leveson, *A Sense of the Earth* (1971), p. 158 (emphasis added).

²¹⁹ *Ibid.* (emphasis added).

²²⁰ D. Trifiletti, “Precession and the Hebrew Calendar,” *Catastrophism and Ancient History* XI:2 (July 1989), p. 125 (emphasis added).

on the subject. In attempting to dissect the Old Testament Book of *Genesis*, he has stressed that "the authors were concerned with using these stories as instances of various theological and ethical truths."²²¹ As he had it stated, the "primary function of great myths and legends is not that of offering explanations;"²²² they "are not concerned with providing a miscellany of information or ready-made answers."²²³ "They were," according to Hyers, "understood as vehicles of the most basic and important truths of all by which people organized, regulated, and interpreted their lives, and through which they saw meaning, purpose, and value in their existence."²²⁴ "Myths and legends," he goes on, "together with rituals, provided the overarching frame of reference within which to live and experience and celebrate the world."²²⁵ In a way, I could not have put it better myself. Where I disagree with him is when he states that "to dwell on the historicity of the accounts, even only an historical core, is to stray from the purposes of the writings."²²⁶ He goes on with: "[The accounts in *Genesis*] are not aimed at providing a 'truer' picture of the universe or of human history, let alone the *only* true picture, in the modern scientific or historical senses of *true*."²²⁷ Personally, I refuse to be dubbed a fundamentalist,²²⁸ but I must also state that Hyers' disclaimer is mainly due to the fact that he does not understand *what* historical truths lie hidden within the pages of *Genesis*, a work which will hold a place of great importance in the pages to follow.

Mircea Eliade who, in his faltering way, has done more for comparative mythology than any other mythologist of the past, was of a slightly different opinion. To him, religious rites consisted in "the repetition of an archetypal action performed *in illo tempore* (before "history" began) by ancestors or by gods ..."²²⁹

"By its repetition, the act coincides with its archetype, and time is abolished. We are witnessing, so the speak, the same act that was performed *in illo tempore*, at the dawn of the universe."²³⁰

Of course this depends on what one means by "history." If, by that term, one is to understand "*written* history," then Eliade is correct. If, however, by "history" we mean "the story of mankind," Eliade could not have been correct. This becomes of great importance when one considers what else Eliade had to say about this subject. Thus, toward the end of the work being cited, he states that:

"Every ritual, and every meaningful act that man performs, repeats a mythical archetype; and ... this repetition involves the abolition of profane time and placing of man in a magico-religious time which has no connection with succession in the true sense, but forms the 'eternal now' of mythical time. In other words, along with other

²²¹ C. Hyers, "Genesis Knows Nothing of Scientific Creationism," *Creation/Evolution* XII, 4:2 (Spring 1983), p. 19.

²²² *Ibid.*

²²³ *Ibid.*, pp. 19-20.

²²⁴ *Ibid.*, p. 20.

²²⁵ *Ibid.*

²²⁶ *Ibid.* p. 21.

²²⁷ *Ibid.*

²²⁸ See, here, D. Cardona, "Fundamentalism: A Personal Statement," *AEON* II:5 (February 1992), pp. 102-104.

²²⁹ M. Eliade, *Patterns in Comparative Religion* (London, 1996), p. 32 (emphasis as given).

²³⁰ *Ibid.* (emphasis as given).

magico-religious experiences, myth makes man once more exist in a timeless period, which is in effect an *illud tempus*, a time of dawn and of 'paradise,' outside history ...

"We moderns would say that myth (and with it all other religious experiences) abolishes 'history' ... But note that the majority of myths, simply because they record what took place 'in illo tempore,' themselves constitute an *exemplar history* for the human society in which they have been preserved, and for the world that society lives in. Even the cosmogonic myth is history, for it recounts all that took place *ab origine*; but we must, I need hardly say, remember that it is not 'history' in our sense of the word—things that took place once and will never take place again ..."²³¹

Despite the fact that I shall be relying heavily on Eliade's scholarly insights in the pages that follow, it is precisely here that I must part company with him because, as I aim to illustrate, the events narrated in myth *did* take place. They took place not "outside history," as he maintained, but *within* history. And by "history" I *do* mean "'history' in our sense of the word." Moreover, Eliade claimed that *even* the cosmogonic myth is history, whereas I maintain that all myth is cosmogonic in origin. The "history" I am speaking of, therefore, is a *cosmogonic* history, one that unfurled across the sky and touched Earth and its inhabitants with a mighty finger that has left the human psyche scarred unto this day. The events that the major myths of the world narrate actually took place, and they took place very much in the way the myths narrate.

What, then, *is* myth?

I cannot for the life of me remember who said it, but someone, somewhere, once stated that myth constitutes the fossilized memory of man. Truer words have rarely been spoken. But this fossilized memory betokens a knowledge, a remembrance, of what once took place in heaven and, in that respect, it can safely be stated that myth constitutes the history of the Solar System.

Here I can best illustrate the above by repeating a story that was well known to the ancient Greeks. The story involves the god Helios—usually identified as the personification of the Sun²³²—who was believed to drive his flaming chariot across the sky. When, once, Helios told his son Phaethon that he could ask him for any boon, Phaethon replied by asking to be allowed to drive his father's chariot. At first Helios, repenting of his oath, tried to dissuade Phaethon by stressing the dangers involved in driving the chariot. But, when Phaethon insisted, Helios, having given his word, was left with no recourse but to give in to his son. Phaethon, still in the pride of his youth, leaped into the chariot, took reins in hand, and began on his journey. The steeds drawing the chariot, however, felt that the weight they were carrying was too light and they leaped into the air as if the car was empty. This occasioned them to leave their usual well-beaten path, and Phaethon, who lacked his father's expertise, panicked, and, in trying to correct his erroneous course across the sky, pulled this way and that way at the reins, confusing the horses further. Losing control of the chariot, Phaethon ended up driving it too close to Earth with the result that Earth's moisture was dried up by the heat of the chariot and, in due course, Earth caught fire and came close to being annihilated by the conflagration. In the end, Zeus himself was forced to intervene. Sending forth one of his terrible thunderbolts, he smote Phaethon with its might, shattering the chariot and freeing the horses. The fragments of the wrecked car were scattered and Phaethon himself, with flames

²³¹ *Ibid.*, pp. 429-430 (emphasis as given).

²³² But see further in this work.



Helios—driving his chariot across the sky.
From a Greek vase painting.

searing his glowing locks, went hurtling down through the air to his death leaving a long trail behind.²³³

Now when the Egyptian priest, whoever he was, told Solon that his countrymen knew nothing of what had transpired in the past, he also told him that the story of Phaethon “as it is told, has the fashion of a legend, but the truth of it lies in the occurrence of a *shifting of bodies in the heavens* which move around the earth, and a destruction of things on earth by fierce fire, which occurs at long intervals.”²³⁴

Generally speaking, of course, astronomers will not admit of any *shifting* of the heavenly bodies. Granted, there have been the odd brave soul among them who has ventured close to the fringe by proposing that a certain amount of orbital shuffling among the planets did take place. Axel Firsoff, for instance, once posited that “Neptune could originally have been closer to the Sun than Uranus” and that Venus, “having originally formed somewhere beyond the orbit of proto-Uranus [would have] acquired [its] slow retrograde spin and copious atmosphere, [and] would subsequently have been moved to its present station, after the inner planets had already lost their primary atmospheres.”²³⁵ The process, according to Firsoff, “would have been slow, involving a number of relatively close encounters with Jupiter or

²³³ Although the tale was well known, it is best preserved by Ovid in his *Metamorphoses* II:1-329.

²³⁴ Plato, *Timaeus* 22 (emphasis added).

²³⁵ V. A. Firsoff, “The Anomalous Condition of Venus and the Origin of the Solar System,” *Solar System Today* II:3 (September 1980).



The fall of Phaethon.

A tableau showing Phaethon making his request of Helios at the upper left-hand corner, with the maddened steeds, the shattered chariot, and the falling Phaethon in the centre. Other characters not mentioned in the accompanying text fill the rest of the scene.

From a Roman relief now in the Louvre, Paris.

Saturn or both."²³⁶ Such events, however, are usually placed far into the past before the advent of man who could not, therefore, have had any knowledge of them, let alone immortalize them in myth. Thus, in the end, Firsoff had to admit that "[t]he stability of the system, and the Bode-Titius law in particular, would place this event in a remote geological epoch."²³⁷

On the other hand, astronomers, geologists, and historians have finally decided to jump on the cosmic catastrophism band wagon—which brings to mind a conversation that Ev Cochrane, the publisher of *AEON*, and I had with Professor Benny Peiser, in July of 1996, when we went to pick him up at the airport for the Deerfield Beach, Florida, symposium sponsored by Cochrane's periodical. It was on the way from the airport that Peiser first informed us of the above revelation. He also told us, however, that while astronomers had come around to seriously consider *terrestrial* catastrophism as having possibly been caused by asteroidal and cometary impacts, they were still adamant in their denial concerning the possibility of *planetary* catastrophism within the historical, and man's prehistoric, past. Not only that, Peiser, who seems to have no use for planetary catastrophism himself, also warned us that the persistence of belief in planetary "billiards" can only prove a hindrance to the eventual acceptance of cosmic catastrophism. Peiser sees this face-about by astronomers and their allies as a positive step forward. As I told him then, unless *planetary* catastrophism was also to be embraced as a valid possibility, at best the step in question can only be seen as being sideways.

The present state of affairs was uniquely displayed at the Second SIS Cambridge Conference, held in July 1997 at Fitzwilliam College, in Cambridge, in which the work of the astronomers Victor Clube and Bill Napier received quite a boost. Having kept the astronomical part of their cosmic scenario well within the bounds of accepted paradigms, not much can be

²³⁶ *Ibid.*

²³⁷ *Ibid.*



The hypothesis that the dinosaurs were exterminated at the end of the Cretaceous period due to the terrestrial impact of a celestial body was first proposed by de Laubenfels, the credit for which was later usurped by Luis Alvarez.
(Photograph by the author, courtesy of the Royal Ontario Museum, Toronto.)

said for these two astronomers' interpretation of the mytho-historical record. In fact, as far as their book, *The Cosmic Serpent*, is concerned, it can safely be stated that they relied quite heavily on Immanuel Velikovsky's *Worlds in Collision*. Of course, Velikovsky dealt in *planetary* catastrophism, whereas Clube and Napier re-interpreted Velikovsky's mytho-historical sources in light of *cometary* bombardments. They could not, of course, escape the fact that the sources themselves stress the role of planets in lieu of comets. They got around this by the supposition that planets were named as the perpetrators in lieu of comets because the comets had first appeared close to the planets and thus received planetary names.

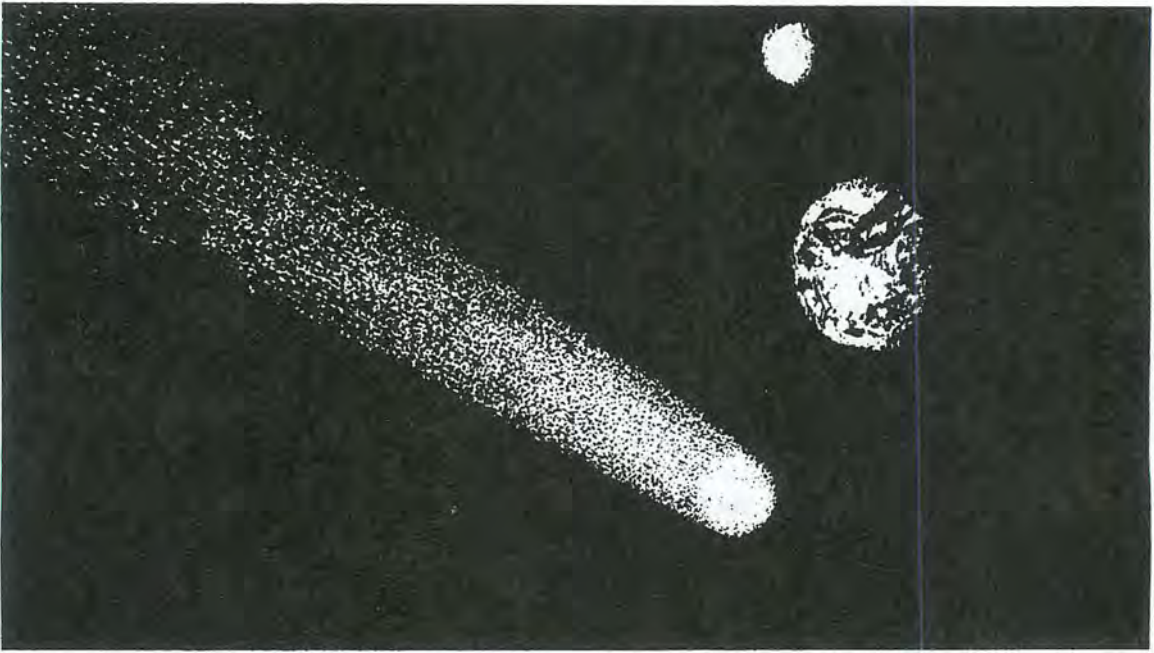
Even so, the sudden interest in cosmic catastrophism among establishment science was not influenced by the work of Clube, Napier, Velikovsky, or any of their predecessors in the field, but was largely due to the insights derived from three separate events—one ancient, the other two recent. The ancient event concerns the demise of the dinosaurs at the end of the Cretaceous period (the Cretaceous-Tertiary boundary, actually) due to the terrestrial impact of a celestial body, which was first proposed by de Laubenfels in 1956,²³⁸ *twenty four years before the team headed by Luis Alvarez stole the credit for the hypothesis*. At first described as "a nutty theory of pseudoscientists posing as paleontologists,"²³⁹ the proposal has now gained general acceptance. Even so, because this event is supposed to have transpired millions of years ago, it did not do much toward the gaining of respectability by cosmic catastrophism. In that respect, neither did the terrestrial impact of a heavenly bolide in the Tunguska region of Siberia, which occurred on the morning of June 30, 1908, exploding in a blinding flash and flattening twenty-five square miles of the surrounding forest, since this, too, was considered an isolated case. Although the warning should have been clear, the event did not attract much attention in the Western World until the late decades of the century. It was, more than anything else, the most recent of these events, when Comet Shoemaker-Levy 9, which had broken up into a train of twenty-one separate fragments, smashed into Jupiter during the month of July in 1994. Had there been a slight deviation in the comet's orbit, all twenty one pieces could have plowed into Earth. But even with this terrestrial miss, it became painfully apparent that if a comet can smash into a nearby member of the Solar System, another one could just as easily collide with Earth.

All of a sudden there was a flurry of activity among astronomers centered on the detection, and possible elimination, of Earth-crossing objects, while geologists have gone wild in their attempt to discover previously unrecognized impact scars in our terrestrial terrain. Historians began pouring over historical, pseudo-historical, and mytho-historical documents in the hope of discovering records of possible past impacts, while archaeologists started sifting the dust of ages to see what they might have missed among the scattered ruins of past civilizations that might be interpreted as cometary, or asteroidal, destruction. So that, in a manner of speaking, the writing of this book does not exactly place me in bad company—but only in a manner of speaking.

Comets plowing into Earth remain a far cry from planets shifting on their orbits—that is if these shifts are maintained to have transpired during the advent of man on Earth. As pointed out above, it was because of the supposed impossibility of such orbital shifts that the astronomers Clube and Napier thought it expedient to re-interpret the mytho-historical record in a cometary light, claiming that planets were named in the ancient records simply because comets had appeared in close proximity to the planets and thus were given planetary names. And, to be fair, this is not exactly a spurious idea. Thus the Greeks were wont to refer to

²³⁸ M. W. de Laubenfels, "Dinosaur Extinction: One More Hypothesis," *Journal of Paleontology* 30 (1956), pp. 207-218.

²³⁹ R. Matthews, "Ice Cubes From Space Prove the Scoffers Wrong," *The Sunday Telegraph* (June 1, 1997).



Did the ancient deities personify comets rather than planets?

comets by the same names they applied to planets,²⁴⁰ a disclosure that has become something of a crutch to those who would recast the ancient planetary deities as cometary ones. As Ilse Fuhr noted, "in the list of Hephaistion, the comet Hippeus is not only named *after* Aphrodite, but actually *is* Aphrodite (= Venus) as other comets actually *are* other planets."²⁴¹

There are three things to keep in mind here. First, it is quite obvious that the planets were named for the deities *before* comets were, otherwise it would not have been possible to name the comet Hippeus *for* "Aphrodite (= Venus)." Second, it is also obvious that, despite the fact that comets *were* named after planetary deities, they were also given their own distinctive names—Hippeus in the above case, other names for other comets in other cases, as Fuhr herself noted²⁴²—so that comets and planets could not really have been confused with each other. Third, although it might be redundant to say so, it was the comets that were given planetary names, and not the planets that were given cometary ones. And this is a lesson that Clube, Napier, and all those who wish to recast the planetary deities as cometary ones have failed to learn.

²⁴⁰ F. Boll, *Antike Beobachtungen Farbiger Sterne* (Munich, 1918), p. 85.

²⁴¹ I. Fuhr, "On Comets, Comet-Like Luminous Apparitions and Meteors," *KRONOS* VIII:1 (Fall 1982), p. 43.

²⁴² See here, for instance, the comet named Eileithyia, mentioned by both Hephaistion and Pliny, as noted in *Ibid.*, pp. 42, 46.

Chapter 2

Ancient Astronomical Lore

SACRED IMAGES FROM THE SKY

There will be some who might object that ancient civilizations had enough knowledge of astronomical matters, so that one could not really accept whatever they had to say concerning the planets of the Solar System as being accurate. Such an objection would, however, be based on ignorance since the various civilizations whose mytho-historical records we will soon be examining were actually quite knowledgeable when it came to observational astronomy. A detailed exploration of this ancient astronomical lore would constitute a book of its own. Thus, despite the length of this chapter, what is presented below constitutes only a brief account of the major astronomical discoveries made by our ancient forefathers.

I will start with a topic that might be considered mundane—meteors and meteorites. These had been falling from the sky since time immemorial. Our primitive forebears would not have been strangers to such falls. And, unlike the deification of planets, the sanctification of meteorites is more understandable. Meteors do not appear merely as pin-points of light in the night sky. Even when they do, as shooting stars they leave a short-lived luminous streak in their wake. Every so often, veritable showers of these streaky flares seem to radiate from a local spot in the sky. When conditions permit, such showers can be quite impressive. More rarely, meteors roar in the shape of terrible fire balls through the sky, night or day. Their explosive impact on the ground can be quite a frightening experience. Such events, when witnessed, must have awed our primitive ancestors. The occurrences would have been remembered with fear and even reverence.

Depending on conditions, an impacting meteor may or may not form a crater. The meteor itself may be burned and atomized in its passage through Earth's atmosphere. Often enough, stony chunks or masses of iron remain on the ground as evidence of the bombardment. The arrival, or apparent materialization, of such objects in places where fire balls were seen to strike must have mystified primitive man to no little extent. Such objects, when found, would have been thought to be magical, possessing benign or evil powers, if not both. It is understandable that such objects, now known as meteorites, would have been collected, preserved, and even revered. But we find that there was more than that. Lincoln La Paz put it succinctly when he wrote:

"The ancients supposed the stars to be the domicile of gods; falling stars and falling meteorites signified to them either the actual descent of a god or the sending of his image to earth."¹

The worship of meteorites² as images of the gods, however, could only have accrued from a *prior* belief that the gods resided in the sky in the form of stars. Thus, if stars were

¹ L. La Paz, *Topics in Meteorites: Their Recovery, Use, and Abuse From Paleolithic to Present* (Albuquerque, 1969), p. 86.

gods, fallen stars were fallen gods. But even this does not quite explain why certain meteorites were associated with *specific* deities and, in some cases, with *specific* planets.

One thing to note here is that it can thus be seen that the ancients were well aware of the phenomenon. The Babylonians referred to meteors as *Kakkabu rabu*.³ This recognition, however, did not keep the ancient peoples of the Near East from attributing sanctity to meteorites. Nor did it keep them from identifying them as images or pre-existing deities.⁴

Among the Semites, especially the ancient inhabitants of the Arabian peninsula, stones were frequently credited with divine attributes.⁵ These cults, as Hildegard Lewy indicated,⁶ were practiced by the same people who worshipped the visible planets. Philo Byblius tells us that the Phoenicians considered meteorites as "stars fallen from the air," and that these played a dominant role in the religion of his ancient forebears.⁷ These meteorites, as Lewy stressed, "were conceived as divine beings of exactly the same nature as the planets."⁸

A meteorite which fell at Tyre, in Syria, was associated with the goddess Astarte.⁹ What is of additional interest here is that, according to those very Phoenicians who venerated her, Astarte was the same as the Greek Aphrodite¹⁰ and, therefore, like her, the goddess of the planet Venus.

According to a passage in the New Testament, one of the sacred images that was worshipped at Ephesus, and associated with Artemis/Diana, was believed to have fallen from the planet Jupiter.¹¹ The Syrian cultists of the god Elegabalus (or Gabal) "focused their worship on a meteorite at the shrine of Emesa."¹² A large, conical, black stone, this "image" was later transported by the emperor Marcus Aurelius Antoninus, who assumed the name of his god, to the temple of Kybele in Rome.¹³ Another famous meteorite which was held as sacred in this region was the Magna Mater at Pessinus, in Asia Minor.¹⁴ Worthy of mention was also the stone which fell at Abydos and was worshipped there.¹⁵

According to the Egyptian priest Manetho, as quoted by Plutarch, the Egyptians considered lodestones to be the bones of the god Horus, while iron, in general, was believed to be the bones of Set (which Plutarch rendered as Typhon).¹⁶ Meteorites were venerated not only in honor of Set but also in honor of the great god Amon¹⁷ whom the Greeks, rightly or wrongly, identified with their own Zeus,¹⁸ and the Romans, quite naturally, with Jupiter.

The ancients were so well acquainted with meteorites that, before its discovery as an ore in the bowels of the Earth, they were of the belief that *all* iron fell from the sky. Thus the

³ M. Jastrow, Jr., *Die Religion Babyloniens und Assyriens* II/2 (1912), p. 696.

⁴ J. K. Bjorkman, "Meteors and Meteorites in the Ancient Near East," *Meteoritics* 8 (1973), pp. 91-132.

⁵ J. Wellhausen, *Reste Arabischen Heidentums* (1897 second edition), pp. 101 ff.

⁶ H. Lewy, "Origin and Significance of the Mâgên Dâwîd," *Archiv Orientalni* 18, Pt.3 (1950), p. 346.

⁷ *Ibid.*, p. 347.

⁸ *Ibid.*, p. 348.

⁹ Eusebii Pamphili, *Evangelicae Praeparationis*, I:x:38c.

¹⁰ *Ibid.*

¹¹ Acts 19:35.

¹² E. C. Krupp, *Beyond the Blue Horizon* (N. Y., 1991), p. 109.

¹³ *Ibid.*

¹⁴ G. A. Wainwright, "The Coming of Iron," *Antiquity*, X (1936), p. 6.

¹⁵ *Ibid.*

¹⁶ Plutarch, *De Iside et Osiride*, 62.

¹⁷ G. A. Wainwright, *loc. cit.*; *idem*, "The Bull Standards of Egypt," *Journal of Egyptian Archaeology*, XIX (1933), pp. 49-52; *idem*, "The Relationship of Amun to Zeus and his Connexion with Meteorites," in *ibid.*, XVI (1930), p. 36.

¹⁸ Herodotus, *Historiae* II:42; Diodorus Siculus, *Bibliotheca Historica*, I:13:2.



Elagabalus (A.D. 218-222).

Born Varius Avitus, high priest of the Syrian god Elagabalus, proclaimed Emperor of the Roman Empire on May 16, 218, he was given the title of Marcus Aurelius Antoninus. Assuming the name of his god, he became popularly known as Emperor Elagabalus. When he moved from Emesa to Rome, he took the meteoritic "image" of his deity with him, which "image" also became known as *the* Elagabalus, and installed it in the temple of Kybele.



The Egyptian god Amon
who was, among other things,
associated with meteorites.

Sumerian name for "iron" was *an-bar*, which means "fire from heaven."¹⁹ The Hittites, who were among the first, if not the first, in the ancient world to use weapons made out of iron, called the metal *ku-an*, which also translates as "fire from heaven,"²⁰ since, as they claimed, iron originated in the sky.²¹ The Assyrians also extracted iron from ore, but, to them, the metal was said to have been "fragments from heaven."²² In Egypt, the name for "iron" was *bia-en-pet* or *baat-en-pet*, which translates as "metal of heaven"²³ (although "thunderbolt of heaven" has also been suggested).²⁴

In Egypt, the association of meteoric iron with the gods, and especially with the evil god Set, seems to have led to a taboo against the use of the metal.²⁵ A similar religious taboo is also known to have existed in ancient Israel. The Old Testament preaches against the use of iron tools in the construction of Yahweh's altar.²⁶ The taboo against the use of iron was also observed in Greek and Roman cults.²⁷ A religious exception seems to have been allowed in Egyptian funerary rites. "Metal of heaven" was used in the manufacture of small symbolic instruments in connection with the rites of the dead and such items were often interred with the deceased. These religious instruments are mentioned in the Egyptian prayers for the dead even though, because of the corrosive nature of iron, few of them have ever been retrieved.²⁸

Meteorites were also worshipped in Greece. Concerning this practice, Pausanias wrote:

"Orchomenos has a sanctuary of Dionysos, but the most ancient one is consecrated to the Graces. They pay particular worship to rocks, saying they fell out of heaven..."²⁹

The "image" of Venus (or Aphrodite) on Cyprus was a stone which fell from the sky.³⁰ Aphrodite Ura-

¹⁹ V. Clube & B. Napier, *The Cosmic Serpent* (London, 1982), p. 196.

²⁰ *Ibid.*

²¹ E. C. Krupp, *Loc. cit.*

²² *Ibid.*

²³ E. A. W. Budge, *The Egyptian Book of the Dead* (N. Y., 1895/1967), p. 306.

²⁴ V. Clube & B. Napier, *loc. cit.*

²⁵ I. Velikovskiy, *Ramses II and His Time* (N. Y., 1978), p. 236.

²⁶ Deuteronomy 27:5.

²⁷ H. B. Walters, *Catalogue of the Bronzes, Greek, Roman and Etruscan, in the British Museum* (London, 1899), p. xviii.

²⁸ G. A. Wainwright, "The Coming of Iron," *Antiquity*, X (1936), p. 11.

²⁹ Pausanias, *Descriptions of Greece*, 38:1.

nia of Aphaca was also associated with a meteor at Byblos in Syria.³¹ The great "image" of Pallas Athena, known as the Palladium, in the citadel of Troy, on which the safety of the city was held to depend, was also said to have been a stone which fell to Earth.³² So was the sacred stone at Delphi, said to belong to Kronos³³ who was Saturn.

As G. A. Wainwright wrote in 1936:

"Plenty of [other meteorites] could be mentioned as being kept in churches or temples, but let that of Casa Grande suffice. It was found in a room of an ancient Mexican temple carefully swathed in bandages."³⁴

Let not the reader delude himself into thinking that such beliefs and practices were merely the result of ancient and/or primitive naïveté. Modern-day Moslems might not care to admit it, but the most holy object in all of Islam, the Black Stone, which today is incorporated into the Ka'aba at Mecca, is also a meteorite.

Here it is only fair to point out that Immanuel Velikovsky's claim that the Black Stone was believed to have fallen from the planet Venus³⁵ cannot be substantiated. Even so, there seems to be no doubt that the Black Stone "had streaked out of the heavens one night in the forgotten past,"³⁶ and that it is nothing but a meteorite.³⁷

There has been some speculation that this meteorite had originally been reddish in hue and that its present black color is simply due to the patina of ages.³⁸ To my knowledge, this has never been ascertained. In fact there is reason to believe that the Stone's blackness coincided with a special characteristic of mythic significance.

That the Ka'aba was *originally* a shrine to the god and planet Saturn has now been documented.³⁹ Also, the myths and astronomical lore of various nations connect the color black with this very planet and its deity.⁴⁰ As Hildegard Lewy pointed out, "Saturn is frequently called the 'black' or 'dark' planet."⁴¹ It is this particular Saturnian curiosity that points to the Black Stone's selection as a Saturnian symbol. As Lewy wrote:

"As...this Black Stone was revered in a sanctuary dedicated to the cult of the 'Black Planet' Saturn, we comprehend that a black meteorite, or a black stone resembling a meteorite, was thought to be a piece of the 'Black Planet,' which means a part of the

³⁰ C. P. Olivier, *Meteors* (1925), p. 3.

³¹ I. Fuhr, "On Comets, Comet-Like Luminous Apparitions and Meteors," *KRONOS* VIII:1 (Fall 1982), p. 38.

³² H. H. Bancroft, *The Native Races of the Pacific States* (1874-1876), Vol. III, p. 302.

³³ G. A. Wainwright, *op. cit.*, p. 6.

³⁴ *Ibid.*

³⁵ I. Velikovsky, *Worlds in Collision* (N. Y., 1950), p. 291.

³⁶ S. Welles, *et al.*, *The World's Great Religions* (N. Y., 1957), p. 101.

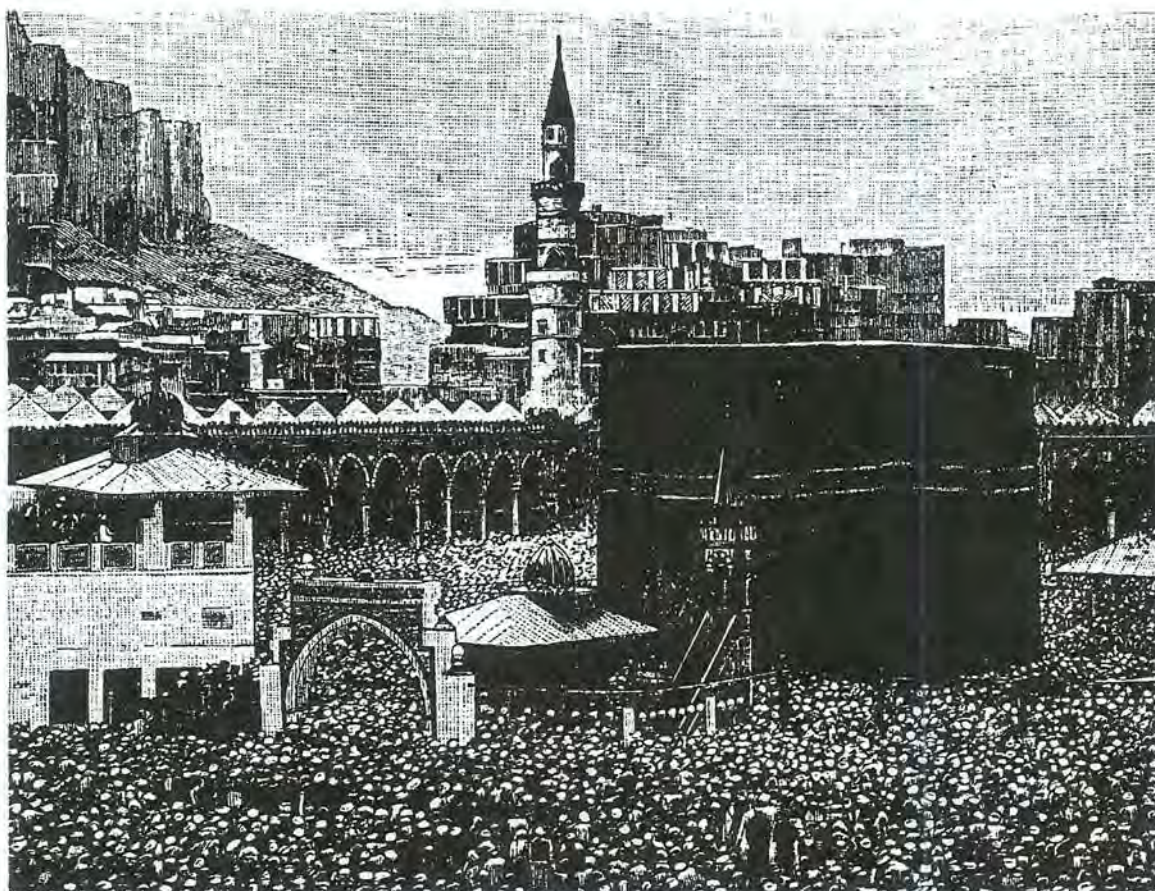
³⁷ *Ibid.*; J. Huxley, *et al.*, *The Ancient World* (London, 1968), pp. 95-96; F. Lenormant, *Lettres Assyriologiques* (1871-1872), Vol. II, pp. 138 ff.; F. A. Lucas, *Meteorites, Meteors and Shooting Stars* (N. Y., 1931), p. 7; G. A. Wainwright, *op. cit.*, p. 6; P. K. Hitti, *History of the Arabs* (1937), p. 100.

³⁸ I. Velikovsky, *op. cit.*, p. 290.

³⁹ See, for instance, D. Cardona, "The Kaaba," *KRONOS* XII:3 (Spring 1988), pp. 14 ff., where various other sources are supplied.

⁴⁰ J. Schaumberger, *Sternkunde und Sterndienst in Babel* (Munster, 1935), p. 317; al-Biruni, *Kitab at-Tafhim* (ed. R. Ramsay Wright, London, 1934), p. 240; D. Cardona, "Child of Saturn," Part III, *KRONOS* VII:3 (Spring 1982), p. 8, where other sources are cited.

⁴¹ H. Lewy, *op. cit.*, pp. 339, 348.



The Ka'aba, in the base of which the meteoritic Black Stone is cemented.

body of a great god which, therefore, deserved the same veneration as the planet itself."⁴²

As we have already seen, the meteoric "image" which Elagabalus—that is, Marcus Aurelius Antoninus—carted from Emesa to Rome was also described as having been black. There is, after all, nothing extraordinary about black meteorites.⁴³

COSMIC DEBRIS

Despite all of the above, and much more that I could have added, science did not officially recognize the existence and fall of meteors until April 26, 1803.⁴⁴ Despite reports of stones falling from the sky, scientists "preferred to doubt" all such reports.⁴⁵ What is even

⁴² *Ibid.*, p. 348.

⁴³ See here, D. Overbye, "Voyager Was On Target Again," *Discover* (April 1986), p. 78.

⁴⁴ See here, W. K. Hartman, *Moons and Planets* (Belmont, 1972), pp. 175-177.

⁴⁵ F. A. Paneth, "Meteorites," *Encyclopaedia Britannica* (1959 edition), Vol. 15, p. 341.

worse, they also preferred "to change their statements to conform with acknowledged scientific theories."⁴⁶ When, for example, a large stone was reported to have fallen from the sky near Luce in 1768, the Académie des Sciences sent the French chemist, Antoine Laurent Lavoisier, to investigate. Having done so, he concluded that nothing of the sort could have transpired and that all those who were said to have witnessed the event had either been mistaken or lying.⁴⁷ The reasoning was simple: As that indomitable arch-enemy of establishment science, Charles Fort, put it, since there were no stones in the sky to start with, no stones could have fallen from the sky.⁴⁸

Because of such episodes, many European museums ended up discarding genuine meteorites, which would have been of great benefit to the scientific world in later years, simply because they thought of them "as shameful relics of a superstitious past."⁴⁹ One meteorite from that era, however, was preserved "due to the protection given to it by the bishop of Zagreb's consistory." This was the iron meteorite which had fallen at Hraschina in 1751. Sworn statements by eye-witnesses were collected and, together with the iron fragment, were sent to the Austrian emperor. Eventually, both the documents and the meteorite came into the possession of the Vienna museum and the attention of the physicist E. F. F. Chladni who commenced on a battle against the scientific establishment. In his paper of 1794, Chladni defended the trustworthiness of the Hraschina and other meteorites and was bold enough to claim that these objects originated as cosmic debris which had penetrated Earth's atmosphere and fallen to the ground. Most of his colleagues, however, remained skeptical.⁵⁰

But then, in 1803, so many of the damned things fell and landed on the ground—an entire shower of meteorites actually—that the new investigator, Jean Baptiste Biot, had no option but to accept their extraterrestrial origin.⁵¹ Even so, when, in 1807, two Yale scientists claimed that meteorites had recently struck the ground at Weston, Connecticut, disbelief was still rampant. Thus, when Thomas Jefferson, President of the United States, "who included palaeontology among his many interests," was told of the incident, he is reported to have replied that: "It is easier to believe that two Yankee professors would lie, than that stones would fall from heaven."⁵²

There is a lesson to be learned here because, since the ancients, who had been reporting the fall of such objects, swaddling them, worshipping them, etcetera, have been proven right on this score, they should perhaps be given the benefit of the doubt concerning their reports of other astronomical occurrences which science has not yet had reason to accept as being valid.

CALENDARS

The Mesoamerican Indians have gained the reputation of having been one of the most astronomically-oriented peoples of the ancient world. This is stressed here because the uninitiated has a tendency to perceive the Mesoamerican Indians as having been a primitive tribe of people, adorned in colorful costumes and exotic feathered headdresses, whose brutal religion incorporated human sacrifice on a massive scale. Other than their description as primitive, the above holds true. But these Indians had also been capable of constructing monu-

⁴⁶ *Ibid.*

⁴⁷ T. Palmer, *Catastrophism, Neocatastrophism and Evolution* (Nottingham, 1992), p. 2.

⁴⁸ D. Knight (ed.), *The Complete Books of Charles Fort* (N. Y., 1974), p. 19.

⁴⁹ F. A. Paneth, *loc. cit.*

⁵⁰ *Ibid.*; see also, W. K. Hartman, *loc. cit.*

⁵¹ T. Palmer, *loc. cit.*

⁵² *Ibid.*

mental buildings the artistic adornment of which boggles the imagination, and, more than that, of organizing and maintaining a civilization that worked extremely well for as long as it lasted.

Among the Maya, the priests were the ones who normally acted as the keepers of scientific knowledge, including that branch we today would call astronomy. It was not, however, merely the priesthood which was obsessed with such lore but, as Juan de Torquemada recorded a century after the Spanish conquest of Mexico, even kings. Of Netzahualpilli, the king of Texcoco, he had this to report:

"They say he was a great astrologer and prided himself much on his knowledge of the motions of the celestial bodies; and being attached to this study, that he caused inquiries to be made throughout the entire extent of his dominions, for all such persons as were at all conversant with it, whom he brought to his court, and imparted to them whatever he knew, and ascending by night on the terraced roof of his palace, he thence considered the stars, and disputed with them all on difficult questions connected with them."⁵³

It is obvious from the pictorial elements included in various codices that pyramid-temples, as well as other structures, were utilized as astronomical observation posts. One of these codices even shows a priest stationed in a temple doorway, peering through a cross-piece to observe a celestial event. In fact, the symbol of an eye located within, or in conjunction with, such cross-pieces appear on other codices which treat of astronomical matters, thus indicating that this simple instrument was the one most frequently used in astronomical observations.⁵⁴

Granted, most, although not all, of Mesoamerican astronomical knowledge is calendric in nature. It might therefore be countered that, since calendars are the outcome of solar and lunar motions, one should not be all that impressed with their knowledge. After all, as complex as they are, the motions of the Sun and the Moon are more observable than the fall of meteorites. The computation of such systems is not, however, all that easily determined. After all, the calendar we presently use in the Western World was not computed until 1582.

The Mesoamericans' mathematical abilities, especially when it came to the calculation of time-periods and, quite naturally, the formulation of calendars (of which they possessed more than one), formed the dictatorial power that held sway over Maya life. The vigesimal system they employed—that is, a progression by twenties rather than by tens as in our decimal system—enabled them to conduct complex calculations in their studies of astronomical phenomena. They understood, and utilized, the concept of zero a thousand years before Europeans did. They learned how to accurately predict eclipses and were able to tabulate the motions of the planet Venus with a precision that has stunned modern astronomers. The *Dresden Codex*, for example, gives a total of 11,960 days for 405 lunar cycles which, when compared to the modern value of 11,959.89 days, discloses an error of only one day every 380 years.⁵⁵

I will not here tax the reader's patience with a detailed scrutiny of Mesoamerican calendars with all their complex calculations. Even so, a brief survey would not be amiss.

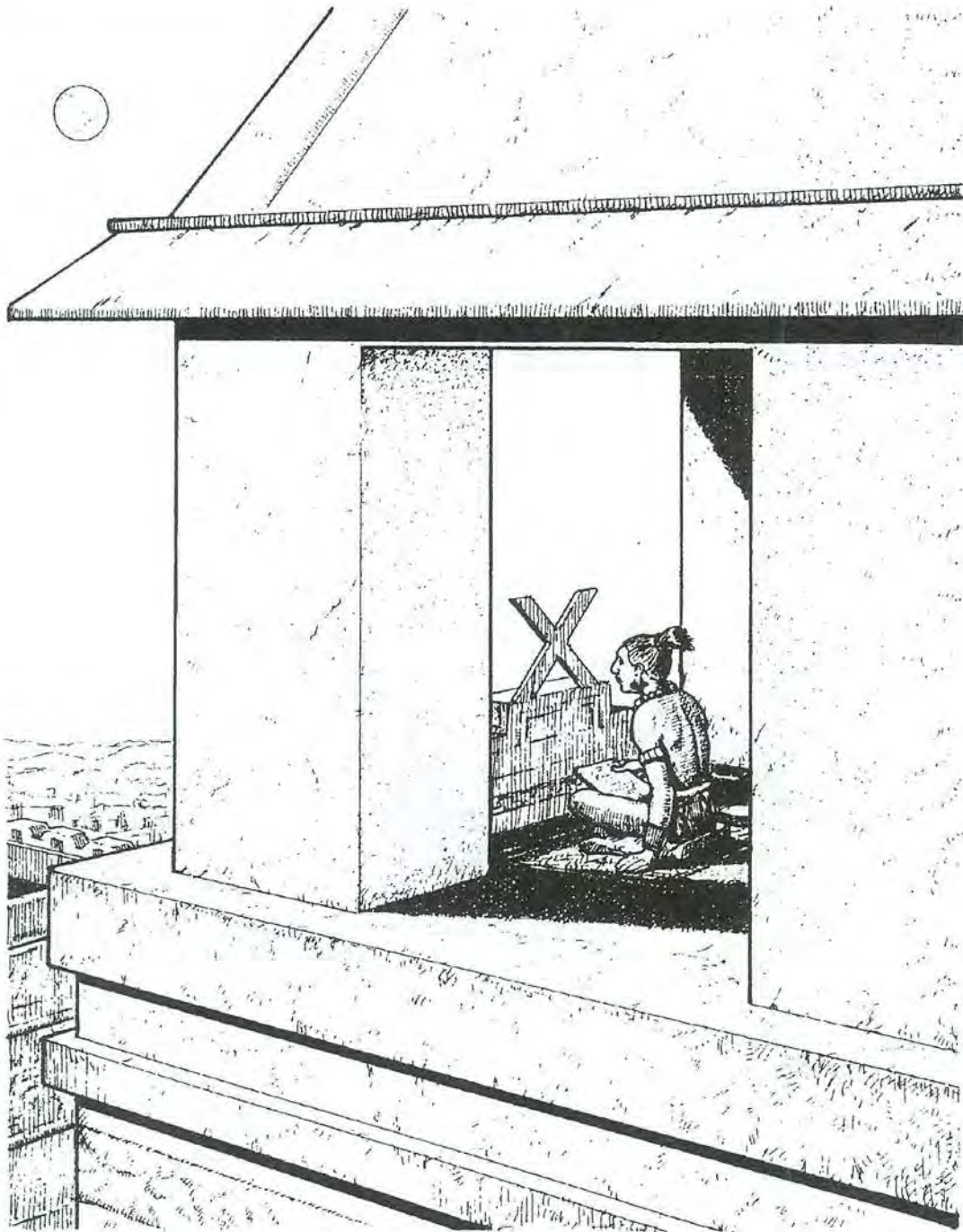
⁵³ A. Aveni, "Astronomy in Ancient Mesoamerica," in E. C. Krupp (ed.), *In Search of Ancient Astronomies* (N. Y., 1977), p. 174; see also, V. H. Malmström, *Cycles of the Sun, Mysteries of the Moon* (Austin, Texas, 1997), p. 167.

⁵⁴ A. Aveni (see above), p. 169.

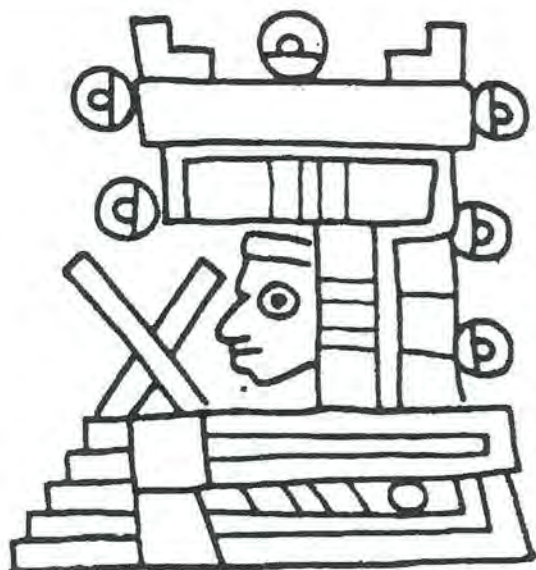
⁵⁵ G. Anequin, *The Civilization of the Maya* (Geneva, 1978), p. 200.



Mixtec artist from Oaxaca painting a codex.
(Illustration by John Green.)



Maya priest-astronomer seated on top of a four-storey observational tower using his sighting cross to track the heavenly bodies.
(Illustration by John Green.)



Left: Seated priest-astronomer, from the *Codex Mendoza*, shown in the act of observing the stars (denoted by the symbol to his right) at night. Right: Symbolic representation of the same idea through the utilization of a cross-stick device as an aid to observation.

Among various ancient peoples, the star cluster known as the Pleiades also served to pinpoint the beginning of the year, the cycle of the seasons, as well as the occurrence of festivals. In this respect, the Mesoamericans were no different. They, too, were enticed with the observation of the Pleiades. Known to European observers as the Seven Sisters, this group of stars received considerable attention all over the world. As Anthony Aveni informs us:

“The Sherente of Brazil still use the Pleiades today to mark the seasons. They say that the year commences in June when the Pleiades first appear as the sun leaves the constellation of Taurus...The Navajo dignify the Pleiades by associating them with their principal deity, Black God, creator of fire and light. In fact, a recognizable form of this group appears on the face of Black God.

“The Aztecs determined the occurrence of their most important feast day by the appearance of the Pleiades. According to Sahagún, the ceremony of the Binding of the Years took place every fifty-two years and began when the Pleiades transited the zenith at midnight...”⁵⁶

As we have already noted, Saturn was known as the black god and/or black planet among various peoples of the ancient world. I therefore feel confident that the Navajo Black God mentioned by Aveni in the quote above will be found to have originally been a personification of the same planet. If this turns out to be correct, the association of the Pleiades with this

⁵⁶ A. Aveni, *op. cit.*, p. 207.



Symbolic representations of Mesoamerican observational temples utilizing the crossed-stick and V-shaped devices.

planetary deity requires an explanation since this constellation has no observable celestial connection with the planet Saturn.⁵⁷

According to Charles Lacombe, the 365-day calendar, as illustrated in the *Codex Tro-Cortesianus*, is "unbelievable in its perfection and simplicity, instantly performing the incredible combination of mathematical functions required to program and retrieve the mathematical data."⁵⁸ How were these people, bereft of optical instruments save for a simple device constructed out of two crossed pieces of wood, able to calculate all this with such breathtaking precision. As Guy Anequin tells us:

"Their measurements...were based entirely on sighting, calculations of triangulation and measurement of the movements of shadows. They observed that the stars, and in particular the sun, were seen at different angles according to the time of the year. They also noted that daily hours of sunlight varied from one day to another according to these positions—they thus strove to locate the solstices, the extreme solar positions for the longest and the shortest days of the year. For this, they probably used a gnomon, a kind of sight made with only a vertical rod. The shadow on the ground at midday on June 21 (the summer solstice) was shortest, while at midday on December 21 (the winter solstice) was the longest. The various sightings taken at sunrise from a fixed point will give a different angle throughout the year—for in winter the sun rises further to the south and in summer further to the north on the eastern horizon...

"Scrutiny of the night sky must have been no less important than that of day. Observation of lunar transformations and trajectories were noted in the *Dresden Codex*,

⁵⁷ See here, D. Cardona, "The Mystery of the Pleiades," *KRONOS* III:4 (Summer 1978), pp. 24 ff.

⁵⁸ P. Tompkins, *Mysteries of the Mexican Pyramids* (N. Y., 1976), p. 296.

which lists 405 synodic months during some 33 years of observation. The manuscript also presents a table of 69 possible dates of future solar eclipses. The Evening Star Venus, with its irregular course, the first to appear and the last to fade, caught their eye. The Maya strived [sic.] to measure its height which varies at sunrise and sunset...All of these preoccupations, which went far beyond those required to compile an agrarian calendar, showed their obsessive interest in infinity—whether of time or space—and also an anxiety in the face of the passage of time.”⁵⁹

The astronomical observations of the Maya were so precise that the figures they arrived at in computing the solar year were not only more accurate than the Julian year, but, as some have claimed, also more accurate than the Gregorian year which was introduced into Europe in 1582 and remains the calendar year until the present.⁶⁰

Mesoamerican calendars were not produced by any one person in any single generation. Their development and refinement was the product of centuries. In fact, their basic elements can be traced as far back as the Olmec, who had established their cities and ceremonial centres in Mexico’s Gulf Coast “at least as early as the second century B. C.”⁶¹ In time—pun not intended—these calendars evolved into an intricate system in which several different time cycles, all of which were calculated independently and with similar exactitude, were incorporated in various combinations, relating one cycle to another, in their utilization of time measurement.⁶²

One particular calendar employed by the Maya, called Haab, was based on a 360-day count and was divided into 18 months of 20 days each, to which five days—believed to be “malefic, ill-omened, empty, and nameless”⁶³—were added at the end to bring the year to a total of 365 days.

While the 365-day calendar, which in time became the common property of all Mesoamerican peoples, has been attested in inscriptions as early as 667 B.C.,⁶⁴ Edmonson tells us that the 360-day calendar did not come into use by the Olmecs earlier than the first century B.C.,⁶⁵ that is some 300 years after the inauguration of the 365-day one. I mention this here in passing because, if Edmonson is correct, Immanuel Velikovsky’s contention that the 365-day calendar followed the 360-day one⁶⁶ has to be wrong.

A somewhat simpler, but more mysterious, calendar, said to have been called Tzolkin by the Maya, but Tonalamatl by the Aztecs, was composed of 260 days divided into 13 months of 20 days each. Usually referred to as the *sacred* calendar because it was used to keep the religious festivals in line with the proper seasons, the Tzolkin has been demoted to a mere divinatory program by students of Mesoamerican culture.⁶⁷

More recently, Vincent Malmström has attempted to show that this 260-day calendar was actually even older than the Maya. Said to have been originally developed for agrarian purposes, Malmström contends that this calendar owed its origin to the Zoque of Mexico’s Pacific coastal plain and that it marks the interval between passages of the Sun at its zenith over

⁵⁹ G. Anequin, *op. cit.*, pp. 204-206.

⁶⁰ W. Gates in D. de Landa, *Yucatan Before and After the Conquest* (Baltimore, 1937), p. 60.

⁶¹ A. Aveni, *op. cit.*, p. 174 (emphasis added).

⁶² *Ibid.*, pp. 174, 175.

⁶³ G. Anequin, *op. cit.*, p. 202.

⁶⁴ M. S. Edmonson, *The Book of the Year: Middle American Calendrical Systems* (Salt Lake City, 1988), p. 116 (but see Aveni, previously cited in reference #61, above).

⁶⁵ *Ibid.*, pp. 194-195.

⁶⁶ I. Velikovsky, *op. cit.*, pp. 330 ff.

⁶⁷ G. Anequin, *loc. cit.*; P. Tompkins, *op. cit.*, p. 290.

the Zoque's ceremonial center at Izapa. Developed in the fourteenth century B.C., the calendar passed on to the Olmec of the Gulf Coast and, from there, to the Maya in the east and the plateau of Mexico in the west.⁶⁸ Whether Malmström has come across a red herring, and/or whether Mayanists will ever accept his conclusions, as of this writing remains to be seen. One thing that can be stated for certain is that the synchronization of this calendar with the 360-day one occurred once every 18,980 days, which makes for 52 years.⁶⁹ This is the same time period we have already encountered as separating the ceremony known as the Binding of the Years which began at the midnight transit of the Pleiades constellation.

The Mesoamericans also devised a lunar calendar which fitted into their other time-keeping devices. The lunar period of 29.53 days that they obtained contained a mere discrepancy of only .112 of a day.⁷⁰

The *Dresden Codex* not only includes the perpetual lunar calendar mentioned above, but also a table of new moons to be used for the prediction of solar eclipses.⁷¹

VENUS

Of all the celestial bodies that the Mesoamericans observed, the planet Venus seems without doubt to have been considered the most important. Called, among other things, the Great, or Ancient, Star, it is repeatedly alluded to in the extant codices. Ramón y Zamora, who studied the lore of the Mexican tribes only a few decades after the re-discovery of America, was astounded to discover that the Indians kept a precise record of the appearances of this planet. "So accurately did they keep the record of the days when it appeared and disappeared," he wrote, "that they never made a mistake."⁷² Toribio Motolina added that "they knew on what day it would appear again in the east after it had lost itself or disappeared in the west" and that "they counted the days by this star and yielded reverence and offered sacrifices to it."⁷³

The *Dresden Codex* of the Maya includes a complete record of the apparition of this planet in its cycle from Morning to Evening Star, recorded in the dot and bar mathematical symbols which they employed (in which a dot signifies 1, and a bar stands for 5, with an oval—a stylized seashell, really—for the concept of zero). Intervals indicating the elapsed time between successive heliacal risings are there recorded. This interval of time was calculated by them as a period of 584 days which the Maya subdivided into four subintervals: the appearance of the planet as Morning Star; its appearance as Evening Star; its disappearance in front of the Sun; and its disappearance behind the Sun.⁷⁴

Venus takes 224.7 days to complete one circuit around the Sun. As seen from Earth, however, it appears to take 583.92 days to complete one circuit. This is because Earth, too, is moving in the same direction. This *apparent* time-span is known as the synodic period. As noted above, the Mesoamericans calculated the Venerian synodic year as 584 days,⁷⁵ which, when compared to the modern value of 583.92 days, discloses an error of less than one hour

⁶⁸ V. H. Malmström, "Where Time Began," *Science Digest* (December 1981), pp. 56 ff.; *idem*, *Cycles of the Sun, Mysteries of the Moon* (Austin, Texas, 1997), pp. 1 ff.

⁶⁹ G. Anequin, *op. cit.*, pp. 202-203.

⁷⁰ P. Tompkins, *loc. cit.*

⁷¹ *Ibid.*, p. 294.

⁷² A. Aveni, "Venus and the Maya," *American Scientist*, 67 (May-June 1979), p. 274.

⁷³ *Ibid.*

⁷⁴ *idem*, "Astronomy in Ancient Mesoamerica," in E.C. Krupp (ed.), *In Search of Ancient Astronomies* (N. Y., 1977), p. 169.

⁷⁵ W. Gates, "The Dresden Codex," *Maya Society Publication*, 2 (1932).



per year.⁷⁶ Considering that the Maya had no optical instruments with which to scan the sky, these findings are truly amazing.

The Maya were also aware of the commensurability between this 584-day Venus "year" and the so-called vague year of 365 days. They knew that eight vague years were exactly equal to five Venus "years." The equivalent number of days, which come out to 2,920, is a figure which turns up repeatedly in their Venus tables. They had quite correctly calculated that Venus returns to almost the exact same spot in the sky, almost at the same time of the year, every 2,920 days.⁷⁷

Meanwhile, a relatively new manuscript, which has been dubbed the *Grolier Codex*, surfaced in 1971. Michael Coe has determined that, like the *Dresden Codex*, the extant eleven pages of this manuscript illustrates the Venus calendar "but displays a much more sophisticated system" which has been described as "the world's first and only perpetual calendar of Venus ever produced by any civilization."⁷⁸ According to Charles Lacombe, "this ancient Mayan document must rank among the supreme intellectual achievements of human history."⁷⁹

"The codex predicts the appearance and disappearance of Venus in a great cycle of 845 revolutions equal to 1352 years; and after completion, the cycle repeats itself endlessly by means of a shift in the order of the lines and the way they are to be read."⁸⁰

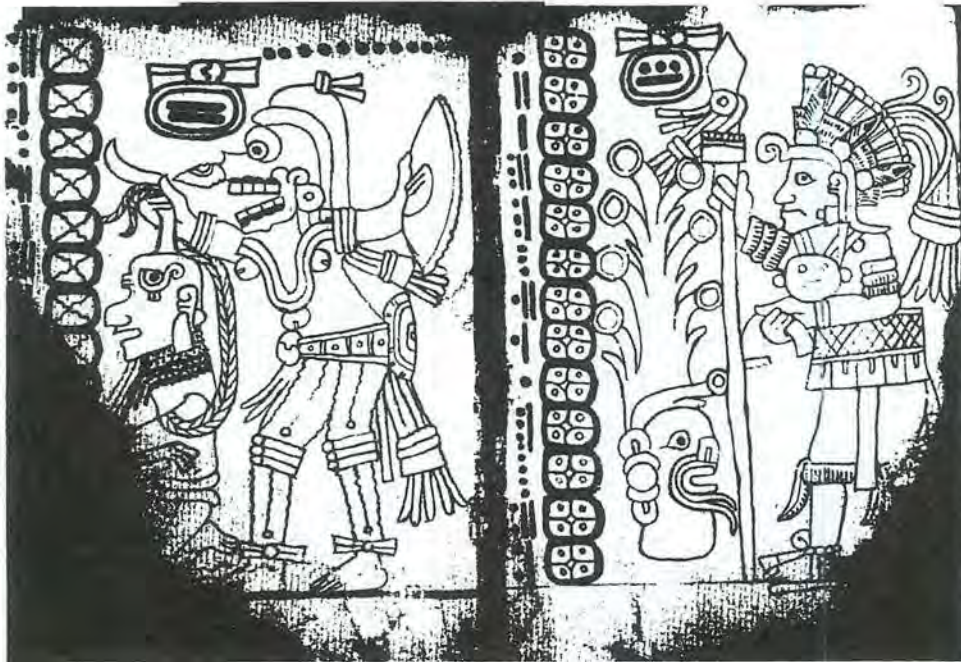
⁷⁶ G. Anequin, *op. cit.*, p. 200.

⁷⁷ A. Aveni, *op. cit.*, p. 171.

⁷⁸ P. Tompkins, *op. cit.*, p. 295.

⁷⁹ *Ibid.*

⁸⁰ *Ibid.* (NOTE: For a short history of the discovery and early controversy re the authenticity of the *Grolier Codex*, now considered genuine, see M. D. Coe, *Breaking the Maya Code* (N. Y., 1992), pp. 227-229.



Two pages from the *Grolier Codex* dealing with the motions of the planet Venus.
(From a photograph by Justin Kerr.)

It should also be pointed out that the Venus calendar owes its origin to a very "late" period of history. Indeed, Floyd Lounsbury has argued that the Venus table "was historically set in motion" on a date which translates as November 20 in A.D. 934.⁸¹

There has also been some scholarly speculation that the codices also contain information concerning the other planets visible to the naked eye,⁸² but, as of this writing, this has not yet been verified. On the other hand, we will never know just how much lore has been lost due to the burning of so many other codices by the Spanish Catholic Church, concerning which Diego de Landa, the first archbishop of Yucatan, boasted so much.

SUN SPOTS

The ancient Chinese were aware that the Sun exhibits spots on its surface. Chinese records of sunspots go back to the Han Dynasty (200 B.C. to A.D. 200) "by which time a well organized astronomical/astrological bureaucracy was established with the task of keeping the

⁸¹ V. H. Malmström, *op. cit.*, p. 183.

⁸² See, for instance, P. Tompkins, *op. cit.*, p. 296.

Emperor informed of portents from the heavens, and responsibility for maintaining the calendar."⁸³

"The historical records of each succeeding Chinese dynasty include a wealth of astronomical observations, and from the tenth century similar records are available from Korea."⁸⁴

One may of course argue that it does not require much expertise in detecting sunspots since these solar blemishes can be detected with the unaided eye. It is easily forgotten by the layman that one cannot easily view the Sun directly without some form of optic protection except during its risings and settings. Of course, it could also be argued that the Chinese, who were so adept at just about everything, could have utilized dark, or smoked, glass in order to enable them to view sunspots. Actually, not even a smoked glass would have been necessary. Despite the fact that the Sun cannot be viewed directly for any length of time with the unaided eye, it *can* be viewed indirectly when it is shielded by haze or thin clouds. As John Gribbin noted, it is hardly surprising that those Chinese records which mention sunspots "very often comment at the same time that the brightness of the Sun was reduced."⁸⁵ As Gribbin explained: "This does *not* imply that the Sun itself was dim, but that dust or haze in the atmosphere was obscuring its light and making it possible to pick out the spots against the glare of the solar disk."⁸⁶ Had sunspots been as easily detected with the unaided eye as some would think, it would not, in Europe, have taken till the early seventeenth century for them to be re-discovered. One of the reasons why Galileo was persecuted by the Catholic Church was his insistence that the Sun often exhibits such blemishes on its surface. Prior to that, one of the central dogmas of the Church was that the Sun, having been created by God, had to be a perfect sphere. "[S]uggesting imperfection in the Sun was seen in some quarters as implying that God could be fallible and was guilty of shoddy workmanship."⁸⁷ And yet, even before the Chinese, sunspots had long been known to the ancient Greeks.⁸⁸

THE ETERNAL PLANET

The caliber of ancient Chinese astronomy can *inter alia* be judged by what the imperial astronomers were able to discover about the planets. Here I do not wish to bore the lay reader with too many technicalities, so I will merely zero in on what the Chinese had to say concerning the planet Saturn, the *astronomical* name of which was T'ien-Sing, which means "Eternal Planet." The slowness of this body in its course around the Sun, for instance, was described by them in this manner:

"This planet, with its slow and heavy walk, imitating age, drags itself along its path, in a manner of speaking; before finishing its revolution, it had seen a great number of men die whom it had seen being born, so slow was its pace."⁸⁹

⁸³ J. Gribbin, "The Inconstant Sun," *KRONOS* V:3 (Spring 1980), p. 64.

⁸⁴ *Ibid.*

⁸⁵ *Ibid.*

⁸⁶ *Ibid.*

⁸⁷ *Ibid.*, p. 59.

⁸⁸ *Ibid.*

⁸⁹ G. Schlegel, *Uranographie Chinoise* (La Haye, Leyde, 1875), p. 628 (as translated privately for the author by Birgit C. Liesching & Gayle Chin Anderson).



The legendary Chinese astronomers Hsi and Ho receiving their commission from the just as legendary Emperor Yao.
(From a Qing dynasty print.)

In its slow march across the sky, the Chinese calculated that it takes 28 years for the planet to complete one revolution around the Sun,⁹⁰ which is not too far off the modern value of 29.46 years.

The *apparent* stoppage and temporary retrograde motion of Saturn along its orbit, which applies to all outer planets—that is, those farther away from the Sun than Earth, and therefore outside Earth's orbit—an illusion brought about when Earth overtakes it in its narrower circuit, was also calculated by them.⁹¹ As Gustave Schlegel pointed out, the modern value for this *apparent* motion “more or less agrees with the Chinese observation.”⁹² And similarly for the other planets visible to the naked eye.

GUEST STARS

One particular branch of ancient astronomy that can be said to have been *uniquely* Chinese was the record-keeping of what they termed “Guest Stars.” These records documented the temporary blaze of stellar “explosions,” or flare-ups, which bring usually invisible stars to bright perceptibility, an effulgence which persists for a specific, but not usually long, time, before it wanes and the star again disappears from view. Having once been referred to as “new stars,” these stellar phenomena are now known as novae and supernovae. The most famous of such temporary Chinese Guest Stars was the one that took place in 1054 A.D., a supernova that is now believed to have given birth to the Crab Nebula.

THE SURYA SIDDHANTA

Of Hindu astronomical knowledge I will say nothing beyond a few facts as contained in the *Surya Siddhanta* which, among other matters, presents the correct view that Earth is a sphere. As it is there written: “And everywhere upon the globe of the earth, men think their own place to be uppermost—but since it is a globe in the ether, where should there be an upper, or where an under side of it?”⁹³ Aryabhatta even held the opinion that Earth revolves on its axis.⁹⁴

One should read the section of the *Surya Siddhanta* which treats of planetary conjunctions, that is the *apparent* contact of one planet with another as seen with the naked eye against the background of stars, in order to obtain some measure of understanding concerning the painstaking observations and calculations that these early astronomers were capable of. A different term is there employed for different conjunctions.⁹⁵ These *apparent* close approaches of planets were correctly understood in a purely angular sense—that is, they were quite aware that the planets *appeared* to touch each other only when they happened to lie in the same line of sight as seen from Earth.⁹⁶

Velikovsky was thus completely in error when he proposed that these conjunctions referred to actual physical contacts between planets.⁹⁷ This is evidenced by the work in ques-

⁹⁰ *Ibid.*, pp. 628-629.

⁹¹ *Ibid.*, p. 629.

⁹² *Ibid.*

⁹³ E. Burgess & W. D. Whitney (translators), *Surya Siddhanta: A Textbook of Hindu Astronomy* (Minneapolis, 1978), p. 392.

⁹⁴ W. E. Clark (translator), *The Aryabhatiya of Aryabhatta* (1930), p. 13.

⁹⁵ *Surya Siddhanta* VII:2-6.

⁹⁶ *Ibid.*, V:6.

⁹⁷ I. Velikovsky, *op. cit.*, p. 256.

tion itself where it is stated that "the planets move on upon their own paths, approaching one another *at a distance*."⁹⁸

G. Thibaut has claimed that much of what is found contained in the Hindu Siddhantas, of which there is more than one, is mainly based on the teachings of the Greek Hipparchos and/or Ptolemy. Otto Neugebauer and D. Pingree also trace some of this Hindu knowledge to the even older Babylonians. We therefore turn next to Greece and, after that, to Babylon.

THE ALMAGEST

Claudius Ptolemaeus, popularly known simply as Ptolemy, was the most celebrated geographer, mathematician, and astronomer prior to medieval times. More than that, he has often been referred to as "the greatest astronomer of antiquity."⁹⁹ Unfortunately, despite some Arabian traditions concerning his personal appearance and the report that he lived to the ripe old age of 78 years, nothing much is known about the man himself. Whether his name, Ptolemaeus, derived from that of the Greek city in which he was said to have been born, Ptolemais Hermii, or whether, as Kenneth Heuer assumes, it "indicates that he was an inhabitant of Egypt of Greek or Macedonian [that is, Ptolemaic] descent,"¹⁰⁰ cannot now be ascertained.

What seemed to have been certain until recently is that he conducted his astronomical observations at Alexandria, in Egypt, sometime during the years 127 and 141 or 151 A.D. The belief among more modern historians of science, however, is that Ptolemy conducted most of his observing "not at night on the coast of Egypt but during the day in the great library at Alexandria, where he appropriated the work of a Greek astronomer [Hipparchus] and proceeded to call it his own."¹⁰¹

Of his works on geography and mathematics, I shall say nothing here, concentrating instead, and then only briefly, on his astronomical observations and theories. These were presented in thirteen books originally titled *Syntaxis*, but later referred to by the Arabs as *Almagest*, which means "The Greatest," the name by which the work is now more commonly alluded to. For better or worse, this work "was accepted as the final authority on the subject until it was superseded by the observations of the Polish astronomer Nicolaus Copernicus in the 16th century."¹⁰²

What Ptolemy concluded from his so-called observations of the heavens was that the heavenly bodies moved in circular orbits and that Earth, already known by then to be spherical in shape, was at the centre of the universe. He calculated the periods of revolution, as well as the apparent retrogradation, of the five planets visible to the unaided eye, the inclination of their orbits, and their motions in latitude. He compiled a catalogue of the stars visible in both the northern and southern hemispheres, listed under constellations, giving their apparent magnitudes, latitudes, and longitudes, which stars numbered 1,022 (some say 1,025) as compared with the 850 or so that were contained in the earlier catalogue of Hipparchus.

Much of the *Almagest* is taken up with an explanation of astronomical assumptions and mathematical methods; the length of the year and the motion of the Sun; the length of the month and the motions of the Moon; the sizes and distances of the Sun, the Moon, and Earth itself; eclipses of the Sun and the Moon; and the precession of the equinoxes.

⁹⁸ *Surya Siddhanta* V:24 (emphasis added).

⁹⁹ W. Broad & N. Wade, "Betrayers of the Truth: Cases of Fraud in the Idealized World of Science," *Equinox* (May-June 1983), p. 86.

¹⁰⁰ K. Heuer, *City of the Stargazers* (N. Y., 1972), p. 117.

¹⁰¹ W. Broad & N. Wade, *loc. cit.*

¹⁰² D. Kindersley (ed.), *Quest for the Past* (N. Y., 1984), p. 180.

Ptolemy also wrote a text in four books on astrology, the *Tetrabiblos*, which he compiled from material culled from Chaldean, Egyptian, Greek, and earlier writings, with which we shall also not concern ourselves here. Let not the reader, however, disqualify Ptolemy as an incompetent astronomer *because* of his astrological beliefs. Isaac Newton was not only a believer in alchemy, he himself attempted to change base metals into silver and gold.¹⁰³

As Heuer informed his readers, "Ptolemy was not the kind of genius who produced new ideas; he took existing ideas and changed and extended them in order to obtain agreement with observed facts."¹⁰⁴ There is no doubt, however, that a large part of the theories he presents are his own contributions "based on observations of his own, not to speak of the unbelievable number of numerical calculations which underlie the tables of the *Almagest*."¹⁰⁵

Some of Ptolemy's modern defenders have been claiming that his "system" has been much misunderstood by astronomers as well as historians of astronomy. As Irving Wolfe pointed out:

"...the theory of Ptolemy was not presented in its time as a real picture of the sky. Astrophysicist Bruce Gregory reminds us that Ptolemy's model was not said to be a miniature of the Solar System, as we use the word today. It was 'a device for calculating the position of the planets, not a device for representing the appearance of the planets.'¹⁰⁶ Astonishingly, the theory of Copernicus was first presented in the same way, as a system which 'might not be the true scheme of nature, but merely a mathematical fiction which fitted the observations.'¹⁰⁷ Ptolemy's system, however, was soon elevated to absolute truth, as was Copernicus' later, so it is we who have made them into religions."¹⁰⁸

Maybe so, even though, to me, this sounds more like an attempt to whitewash Ptolemy's image. Thus, for instance, those astronomers who have more recently re-examined Ptolemy's original data soon realized that retrocalculations of the planets proved that many of Ptolemy's so-called observations were wrong. "The errors were gross even by the standards of ancient astronomy."¹⁰⁹ There is also no longer any doubt that Ptolemy plagiarized the work of the earlier Hipparchus. We have already noted the earlier star catalogue compiled by Hipparchus who conducted *his* observations from the island of Rhodes. This Greek island lies five degrees of latitude *north* of Alexandria. This makes for a five-degree band of *southern* stars that can be seen from Alexandria but not from Rhodes. Not a single one of the 1,022 stars that Ptolemy listed in his catalogue is to be found in this five-degree band. Moreover, "every example given in the *Almagest* of how to work out spherical astronomy problems is given for a latitude the same as that of Rhodes."¹¹⁰

Robert Newton went even further:

¹⁰³ I. Asimov, "Science Follies," *Science Digest* (July 1982), p. 79.

¹⁰⁴ K. Heuer, *op. cit.*, p. 122.

¹⁰⁵ *Ibid.*

¹⁰⁶ B. Gregory, *Inventing Reality: Physics as Language* (N. Y., 1988), p. 9, as cited by I. Wolfe, "A Catastrophic Reading of Western Cosmology," *Chronology and Catastrophism Review* (1993 special issue), p. 63.

¹⁰⁷ J. Jeans, *The Growth of Physical Science* (N. Y., 1958), p. 122, as cited by I. Wolfe in *ibid.*

¹⁰⁸ I. Wolfe, *loc. cit.*

¹⁰⁹ W. Broad & N. Wade, *loc. cit.*

¹¹⁰ *Ibid.*



**Claudius Ptolemy — with his astronomical cross-staff — who prevented the advance of astronomy
for a millennium.**

(Illustration by André Thevet from his *Portraits and Lives of Illustrious Men* (Paris, 1584).)

"...all his own observations...are fraudulent, so far as we can test them. Many of the observations that he attributes to other astronomers are also fraud that *he* has committed. His work is riddled with theoretical errors and with failures of comprehension...His models of the moon and Mercury conflict violently with elementary observation and must be counted as failures."¹¹¹

The worst of Ptolemy's failures, however, was his geocentric system, which eventually became known as the *Ptolemaic* system. Despite Owen Gingerich's claim that the geocentric world view "was almost universally accepted in his day,"¹¹² when Ptolemy presented Earth as the centre of the universe with the planets revolving around it, he was rejecting what had already been deduced before his time. Having *considered* the heliocentric system advocated by his forebears, he disqualified it since the implied violent rotation of Earth as deduced from Aristotle's physics seemed to Ptolemy to be contrary to observation. The way he reasoned was that Earth's rotation would have left "the animals and other weights...hanging in the air." Earth itself, he reasoned, "would very quickly fall out of the heavens." As he stated: "Merely to conceive such things makes them appear ridiculous."¹¹³

As Carl Sagan correctly noted, in rejecting the earlier belief that the planets revolved around the Sun, Ptolemy was responsible for preventing "the advance of astronomy for a millennium."¹¹⁴ Thus, Robert Newton may not have been too harsh in his judgement when he claimed that Ptolemy "has caused us to lose much of the genuine work in Greek astronomy" and that it would have been better for astronomy had the *Almagest* never been written.¹¹⁵

What, then, was this *ancient* Greek astronomy that Ptolemy sought to supersede? How superior was it to that espoused by Ptolemy?

THE HELIOCENTRIC SYSTEM

Many an authority on the subject of ancient Greek astronomy has in years past stressed the primitive nature of their knowledge. Many of them have relied on the oft-repeated dictum that "the world according to Homer" consisted of a round, but flat, Earth overarched by a semi-spherical sky in which the gods had fashioned their various domains. But even as early as 1881, apparently to the unconcern of various authorities who came after him, Simon Newcomb had already warned against this erroneous belief. As he wrote:

"Not enough credit has been given to the ancient astronomers. For instance, there was no time within the scope of history when it was not known that the earth is a sphere, and that the direction *down* at different points is toward the same point at the earth's centre. Current teaching in the text-books as to the knowledge of astronomy by the ancients is at fault."¹¹⁶

The discovery that the Sun, rather than Earth, was the body at the center of the Solar System has for long been attributed to the Polish astronomer Nicolaus Kopernik, popularly known as Copernicus (1473-1543). It is sometimes forgotten that the Greek astronomer,

¹¹¹ R. R. Newton, *The Crime of Claudius Ptolemy* (Baltimore, 1977), p. 378 (emphasis added).

¹¹² O. Gingerich, "Ptolemy, Copernicus, and Kepler," in M. J. Adler (ed.), *The Great Ideas Today: 1983* (Chicago, 1983), p. 139.

¹¹³ Claudius Ptolemy, *Almagest* I:7 (emphasis added).

¹¹⁴ C. Sagan, *Cosmos* (N. Y., 1980), p. 53.

¹¹⁵ D. Kindersley, *loc. cit.*; O. Gingerich, *op. cit.*, p. 151.

¹¹⁶ S. Newcomb, "Lowell Lectures," *Boston Daily Advertiser* (November 29, 1881).



Copernicus—1473-1543—who appropriated the ancient Greek discovery that Earth and the planets revolve around the Sun.
(Illustration by Charles Hogarth.)

Aristarchus of Samos, who flourished circa 270 B.C., had already recognized that Earth revolved together with the other planets around the Sun, thus anticipating Copernicus by some eighteen hundred years. For that reason, Heuer thought it appropriate to call Aristarchus "the ancient Copernicus."¹¹⁷ Personally, giving credit where it is *really* due, I would rather turn that around by calling Copernicus "the modern Aristarchus."

Copernicus himself was not only aware that Aristarchus had preceded him in the discovery, he actually admitted to the fact in a passage of his work. Wishing to retain the fame for himself, however, he had second thoughts and ended up by excising all mention of Aristarchus in his *published* version.

To be sure, the work in which Aristarchus proposed this hypothesis has not survived, but the hypothesis itself was well known and commented upon by other writers. For instance, in *The Psammites* (or *Sand Reckoner*), Archimedes had it stated:

"But Aristarchus of Samos brought out a book consisting of some hypotheses, in which the premises lead to the result that the universe is many times greater than that now called. His hypotheses are that the fixed stars and the Sun remain unmoved, that the Earth revolves about the Sun in the circumference of a circle, the Sun lying in the middle of the orbit..."¹¹⁸

Granted that the great Plato (427-348 B.C.) had himself placed Earth in the centre of the universe, it seems as if even he had a change of mind. According to Plutarch (A.D. 46-120), Theophrastus had it stated that, when he had grown old, Plato repented "that he had placed the earth in the middle of the universe, which was not its place."¹¹⁹

Actually, the belief in a heliocentric system seems to have originated not even with Aristarchus, but with Herakleides Ponticus (Heracleides of Pontus) who died in 322 B.C.—we do not know when he was born. The same idea was also advanced much later by Macrobius (A.D. 395-423) and Martianus Capella (circa A.D. 400) and maintained by Emperor Julian the Apostate (A.D. 332-363) and Nicolaus Cusanus (Nicholas of Cusa—A.D. 1401-1464) who himself based his opinions on those of Iamblichus of Chalcis, all of whom wrote *long before* Copernicus abrogated the idea.

¹¹⁷ K. Heuer, *op. cit.*, p. 70.

¹¹⁸ C. Sagan, *op. cit.*, p. 167.

¹¹⁹ Plutarch, *Quaestiones Naturales*, VII.

Proclus (A.D. 410-485), one of the greatest intellects of the Athenian schools of Neoplatonism, wrote not only about the moons, or satellites, revolving around the planets, but also of the planets revolving around stars.

Copernicus, of course, was not the only astronomer of later times who appropriated the works of the ancients. The Danish astronomer Tycho Brahe (1546-1601) also announced as his own discovery the fact that Venus and Mercury revolved around the Sun despite the fact that Heracleides of Pontus had already made the discovery.

It might now be objected that these ancient discoveries were not universally adhered to. Thus, for instance, Plutarch (A.D.46-120), who was anything but an astronomer, immortalized his conviction that Earth does not move. In other words, borrowing a phrase from the indomitable Charles Fort, there was not agreement among the wise men. The study of ancient Greek astronomy also makes it obvious that while an investigator might, through observation and calculation, come to a correct conclusion about a celestial object, the very same person would often hold an incorrect belief concerning another. But was this any different than what transpired later in the so-called age of enlightenment. As Velikovsky so aptly noted:

"During his lifetime Copernicus had only one follower, Rheticus, and was rejected by all others. Kepler's discoveries were rejected by Galileo, his peer; Newton's gravitational theory was rejected by Leibnitz, his peer; and Agassiz, who was ridiculed, himself rejected Darwin. Virchow did not support Pasteur; Edison rejected and fought against Tesla and the use of alternating current. The list can be multiplied a hundred times. It goes back to Archimedes' rejection of Aristarchus, who taught that the earth revolves around the sun."¹²⁰

In fact, was it any different than what continues to transpire down to the present day? When new astronomical, or other scientific, discoveries come to light, as they continue to do almost day by day, and theories are then formulated to account for the discoveries, can it be said that astronomers, and/or other scientists, are almost *immediately* of one mind concerning them?

THE WELL AT SYENE

Eratosthenes (276-194 B.C.) seems to have been the first person to measure Earth's circumference. He accomplished this when he was told that at Syene, the present Aswan, in



Plato—427-348 B.C.—who, in his old age repented for having placed Earth at the centre of the universe.

(Illustration by Charles Hogarth).

¹²⁰ I. Velikovsky, *Stargazers and Gravediggers* (N. Y., 1983), p. 189.

Egypt, there was a well which, at noon on the day of summer solstice, was illuminated by the Sun down to the bottom. He also knew that, on the same day at Alexandria, a vertical staff cast a short shadow. From this—a shadow in one place but no shadow in another on the same day—Eratosthenes first verified that Earth was indeed spherical. Then, knowing the distance between Syene and Alexandria, which was measured at 5,000 stadia, and using some simple geometry, he realized that this was 7° , or close to $1/50$ of a great circle. He thus arrived at the figure of 250,000 stadia, which he subsequently corrected to 252,000 stadia, as the circumference of Earth. When translated into miles or kilometers, his result was only a few percent off the mark.

It was on thus discovering the vastness of the world he lived on that Eratosthenes became convinced of the immensity of the universe.

INCLINATION TO THE SOUTH

The Greeks were also aware that Earth's axis was inclined, and that it was inclined "toward the south." As Plutarch wrote:

"Diogenes and Anaxagoras affirm that, after the world was composed and the earth had produced living creatures, the world out of its own propensity made an inclination towards the south."¹²¹

Unfortunately, Plutarch, bless his soul, was not only not an astronomer, he was not much of a geographer either. So he did make something of a mess when it came to explaining the reasons behind Earth's inclination and, especially, when he attempted to account for its effects. On the other hand, come to think of it, perhaps Plutarch should not be blamed too much for these misunderstandings since, in some instances, he actually claimed that he was but repeating what others had asserted.¹²²

THE PRECESSION OF THE EQUINOXES

Besides being inclined, Earth's axis spins in a strange fashion which has often been compared to that of a spinning top. Rather than rotating in a rigid manner, Earth's axis also wobbles in such a way that its imaginary tip describes a circle of its own. In effect, the axis precesses around the vertical so that it traces out a cone in space. This additional axial rotation thus causes an apparent shift of the stars, as viewed from Earth, which is different from the apparent daily revolution of the stars around the pole. Whereas the daily rotation causes the stars to seem to revolve *around* the Pole Star, precession causes the Pole Star *itself* to revolve in a circle of $23\frac{1}{2}^\circ$ radius. Thus, throughout the years, the Pole Star is seen to shift and leave the north celestial pole. If another star is then in the right position, it becomes the new Pole Star. At present, the Pole Star is alpha Ursae Minoris, but, at the time of the Greek astronomers we are presently concerned with, it would have been *beta* Ursae Minoris. In 3000 B.C., it would have been alpha Draconis. It was not just the pole stars, however, that slowly "passed away," but the entire sky and, with it, its entire denizens. This movement, however, is very slow in execution, requiring 26,000 years in order to complete one full circle. The motion does not, therefore, lend itself to easy detection. Nor, for that matter, does the resultant change—except over thousands of years. Needless to say, no one person can live long enough to detect the change. And yet, not only was this change detected, so was the precessional motion that gives rise to it. The discovery is attributed to one of the greatest astrono-

¹²¹ Plutarch, *Opera Moralia* II:8.

¹²² See here, *ibid.*, and *ibid.* III:12.

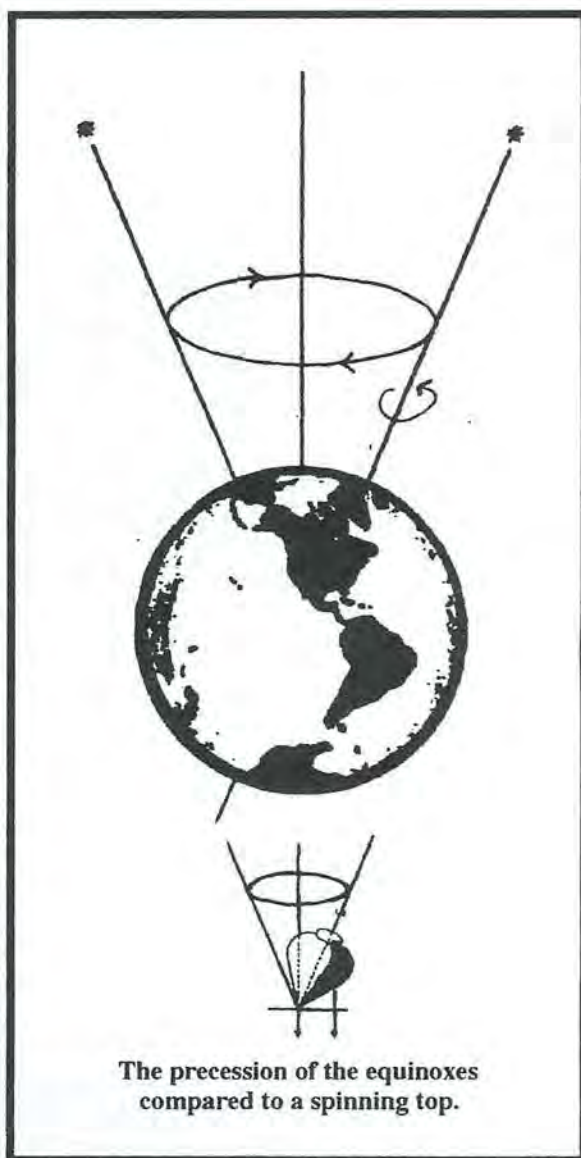
mers and mathematicians of antiquity, the Greek Hipparchus, who flourished sometime between 146 and 127 B.C. How did he accomplish the feat?

It is said that Hipparchus came to his conclusion by comparing the positions of the stars, especially Spica in the constellation Virgo, with the earlier ones given by Timocharis of Alexandria sometime in the beginning of the 3rd century B.C. Hipparchus realized that the longitudes of the stars had increased and so concluded that the equinoctial points—those points at which the Sun's path crosses the equator—had moved westward along the ecliptic (moving clockwise for an observer on Earth). He estimated the movement at about a degree per century, or $36''$ per year. The true value, of course, is closer to $50''$ but, considering the crude equipment he had to work with, to say nothing of the difficulty of the task, one can claim that he did extremely well.

It has, however, been argued that Hipparchus could not have discovered this fact on the basis of Timocharis' observations alone, since these observations did not go back far enough in time for anyone to have noticed the difference in the positions of the stars as brought about by the slow motion of precession. It is more probable that Hipparchus had access to much older Babylonian observations. It was the Babylonians who had first started to measure longitudes by referring stars to the ecliptic. As George Sarton opined: "[Hipparchus'] comparison of the longitudes of Spica (and other stars of low latitudes) with the longitudes determined 150 years before [by Timocharis] in Alexandria may have roused his suspicion, but older observations were needed to carry conviction."¹²³ Sarton, in fact, goes on to state that:

"It has been claimed that the precession itself was discovered by the Babylonian astronomer Ki-din-nu (Cidenas of the Greeks...) who flourished c. 343 B.C. That is possible. Hipparchus may or may not have known of Cidenas' work, but it is certain that he was acquainted with Babylonian longitudes of stars."¹²⁴

That Ki-din-nu (or Cidenas) was the true discoverer of this precessional motion has never been verified. Be that as it may, the one thing to keep in mind is simply this: The precession



The precession of the equinoxes compared to a spinning top.

¹²³ G. Sarton, "Hipparchus," *Encyclopaedia Britannica* (1959 edition), Vol. 11, p. 582.

¹²⁴ *Ibid.*



Hipparchus on the roof of the observatory of Alexandria.

of the equinoxes—which term, incidentally, was coined by Hipparchus himself—could not have been discovered without comparing the longitudes of stars “at different epochs, sufficiently distant.”¹²⁵ Hipparchus’ reliance on much older stellar longitudes is therefore beyond doubt. The prize for the cognition of what lies behind precession, however, remains his.

This is not to say that others have not vied for the fame—even if in retrospect and through modern proxy. None of these attempts have, however, withstood the test of scrutiny.

THE CRIME OF ANAXAGORAS

Anaxagoras (500–428 B.C.) was the first to clearly state that the Moon shines with the reflected light from the Sun, from which he devised a theory concerning the phases of the Moon. At the time, as with Galileo much later, this doctrine, which was not in keeping with the prejudices of the day, was so dangerous that the manuscript in which Anaxagoras set out these theories had to be circulated in secrecy. A century later, Aristotle (384–322 B.C.), a great mind in some matters, not so in others, was to argue that the Moon exhibited phases and that eclipses occurred simply because *that* was the nature of Earth’s satellite—which, as Sagan succinctly put it, was “an explanation that explains nothing.”¹²⁶

Anaxagoras also believed that the Sun and the stars were hot. While this was evident for the Sun, it was not, as it still is not, for the stars. When asked why we do not feel the heat of the stars, he replied correctly that it was because they were too far away. When he calculated the Sun to be larger than the Peloponnesus, which constitutes about a third of Greece, his estimate was thought to be “excessive and absurd.”¹²⁷

He knew that the Moon harbored mountains (although he also believed it harbored life).

In the end, again much like Galileo, Anaxagoras was charged, convicted, and imprisoned for impiety, mainly because he had taught that the Moon consisted of ordinary, and not *divine*, matter. It took Pericles, the great Athenian leader, to engineer Anaxagoras’ release from prison.¹²⁸

SHADOWS THROUGH SPACE

Thales, who lived toward the end of the 7th century B.C., has been lauded by his own ancient countrymen as having been the first astronomer. Diogenes Laertius stated that Thales was first to receive the name of sage; that he was first to study astronomy and predict eclipses of the Sun and fix the solstices; was first to make a number of specific observations relating to the Sun and the Moon; was said to have “discovered” the seasons and to have divided the year into 365 days.¹²⁹ According to others, he was also the first, rather than the above mentioned Anaxagoras, to realize that the Moon was actually illuminated by the Sun.¹³⁰

Thales is also said to have recognized and to have predicted the solstices; to have been the first to discover the passage of the Sun from one solstice to another; and to realize that this cycle was not always of equal length, but that, on the contrary, there were “slight variations in length of the solar seasons as divided by solstices and equinoxes.”¹³¹

¹²⁵ *Ibid.* (emphasis added).

¹²⁶ C. Sagan, *op. cit.*, p. 182.

¹²⁷ *Ibid.*

¹²⁸ *Ibid.*

¹²⁹ Diogenes Laertius, *Lives of Eminent Philosophers*, I: 22, 23, 24, 27.

¹³⁰ W. Mullen, “Thales: The First Astronomer,” *The Velikovskian* III:4 (1997), p. 5.

¹³¹ D. R. Dicks, “Solstices, Equinoxes and the Presocratics,” *Journal of Hellenic Studies*, 86 (1966), p. 31.

But, despite William Mullen's noble attempt to uphold this lofty position for him,¹³² the best that can be claimed for Thales is the honor of having been the first *Greek* astronomer. That being the case, one should attempt to find out exactly how much Thales could have borrowed from the *earlier* Babylonians.

There has been much debate on how much Thales owes his fame to those who later praised his name. D. R. Dicks, for one, has insisted that Thales' reputation in having been the first Greek astronomer comes from later, unreliable, sources, and that, therefore, no validity should be applied to these claims.¹³³ And while Mullen has found reason to question the evidence that Dicks relied on, the evidence he himself presented is, at best, circumstantial.¹³⁴

Those who have sought to devalue Thales' reputation have also questioned his ability to predict eclipses. Both Plutarch¹³⁵ and Pliny (A.D. 23-79)¹³⁶ knew that lunar eclipses were caused by the projection of Earth's shadow on the lunar surface. The passage of the Moon across the face of the Sun during a solar eclipse would have been more evident, so that it would also have been known that the Moon cast its shadow on earth during such an occurrence.¹³⁷ Even so, knowing what causes a lunar, or solar, eclipse is one thing; being able to predict either of them is quite another.

Meanwhile, quite a number of ancient sources, including Herodotus, have claimed that Thales predicted an eclipse which took place during the battle between the Medes under Cyaxares and the Lydians under Alyattes.¹³⁸ This has led historians to set the date of that battle at 585 B.C. Benny Peiser, on the other hand, has claimed that "Thales could not have possessed the knowledge necessary to predict eclipses in general."¹³⁹ In this, he might not have been *entirely* correct. As van der Waerden had earlier noted:

"Such a feat requires the experience of more than forty years, no matter how one proceeds. It is not possible to accomplish it alone. But Thales had no Greek predecessors. The conclusion is inescapable that he must have drawn upon the experience of Oriental astronomers."¹⁴⁰

Besides, when it comes to the eclipse that is said to have occurred at the time of the battle between the Medes and the Lydians, a close look at what Herodotus reported tells us that, while Thales *did* predict the year of this eclipse, he said nothing concerning the actual date, the time of day, or the place from which it would have been visible. As various scholars have noted, knowledge and a correct understanding of eclipse cycles should have enabled Thales to predict the eclipse in question by the day, and not just the year.¹⁴¹

In his attempt to retain, or regain, Thales' reputation, Mullen has noted that none of the scholarly arguments denying Thales the capacity to predict eclipses and other celestial occurrences "is sufficient to prove that Thales did not *begin* an inquiry into each of these phenom-

¹³² W. Mullen, *op. cit.*, pp. 1 ff.

¹³³ D. R. Dicks, "Thales," *Classical Quarterly*, 9 (1959), pp. 294, 298.

¹³⁴ W. Mullen, *op. cit.*, p. 4.

¹³⁵ Plutarch, *On the Face of the Moon's Disc* (in *Opera Moralia*), 932E, 933B; see also Diodorus Siculus, *Bibliotheca Historica* II:31:6, XV:50:3.

¹³⁶ Pliny, *Historiae Naturalis* II:47, 51.

¹³⁷ See here, for instance, E. G. Suhr, *The Spinning Aphrodite* (N. Y., 1969), p. 53.

¹³⁸ Herodotus, *Historiae* I:74.

¹³⁹ B. Peiser, as cited in W. Mullen, *op. cit.*, p. 2.

¹⁴⁰ B. L. van der Waerden, *Science Awakening* (Gröningen, 1954), pp. 86-87.

¹⁴¹ See here, D. R. Dicks, *op. cit.*, p. 309; A. A. Mosshammer, "Thales' Eclipse," *Transactions of the American Philological Association* 111 (1981), p. 154.

ena.”¹⁴² This may be all that true, but, in face of the fact that the works of Thales himself have not survived, this can at best be qualified as a surmise. Thus I mention all this specifically to stem the possible accusation that I have taken *every* statement of the ancients as being necessarily true.

THE METONIC CYCLE

The reconciliation of the motions of the Sun with those of the Moon was required by ancient societies in an endeavor to pin-point their seasonal festivals. Most Greek festivals were held at full moon with certain ceremonies to be held in certain months. The months, therefore, needed to be reconciled with the year. But since twelve lunations fall somewhat short of the solar year, an extra month had to be added to the year every so often.

According to Geminus of Rhodes, who wrote sometime in the first century B.C., such a system of intercalation was already in use “some time before the second half of the fifth century B.C.”¹⁴³ The earliest such intercalation by the Greeks that has come down to us involved the supplementing of 96 lunar months through an 8-year period, a cycle they called *octaeteris*, with the addition of leap years every third, fifth, and eighth years by inserting an extra month into each of them.¹⁴⁴

By the fifth century B.C., however, it had been realized that this 8-year cycle was not all that accurate. The small difference between 99 months (the 96 plus the 3 of the leap years) and the 8 years into which they tried to fit them accumulated as the years went by so that the integration of the solar and lunar motions was thrown off balance.

It was the Athenian astronomer Meton who then realized that the Moon returned to the same position *in relation to the Sun* every 19 years—or so Geminus had it stated, for which reason the system has, to this day, been called the Metonic cycle. This cycle works better than the 8-year one because 19 years equal 235 lunations almost exactly.¹⁴⁵

In actual fact, however, there are indications that the Babylonians had been using this 19-year cycle some one hundred years earlier. The Chinese also seem to have known about it, although it cannot be ascertained just how early the relationship was discovered and/or borrowed. Known as the *chang*, dates separated by multiples of 19 years are known from inscriptions on Shang dynasty oracle bones.

Diodorus Siculus also quoted a no-longer extant work by Hecateus of Abdera who also mentioned this 19-year return of the Moon and that it was known to the Hyperboreans who inhabited an island “not smaller than Sicily” which was located “opposite to the coast of Celtic Gaul,” which could only have been Britain.¹⁴⁶

In Tibet, the year is counted as 360 days with the addition of seven intercalary months over a 19-year interval set up to keep the phases of the Moon in step with the solar year and the seasons.¹⁴⁷ It is not known, however, how old this system is.

A MATTER OF GRAVITY

Isaac Newton owes his prestige in the world of science to his theory of gravity as propounded in his *Principia*. But, as Velikovsky was right in asking: “[D]id not Newton read in

¹⁴² W. Mullen, *op. cit.*, p. 6 (emphasis added).

¹⁴³ E. C. Krupp, *Beyond the Blue Horizon* (N. Y., 1991), p. 150.

¹⁴⁴ *Ibid.*

¹⁴⁵ *Ibid.*, p. 153; see also, R. Gallant, “Early Historic Man—Catastrophism and Calendars,” *Chronology & Catastrophism Workshop* 1987:1, p. 31.

¹⁴⁶ E. C. Krupp, *op. cit.*, pp. 153-154.

¹⁴⁷ *Idem*, *Skywatchers, Shamans & Kings* (N. Y., 1997), p. 82.

Plutarch [A.D. 46-120] of the Moon removed from the Earth by 56 terrestrial radii and *impelled by gravitation* to circle around the Earth...?"¹⁴⁸

Whose original theory was gravitation then?

THE ROTATION AND REVOLUTION OF PLANETS

That the planets both rotated on their own axes and moved on their orbits was well known to Plato. Thus he wrote that the Creator "gave to each [of the heavenly bodies] two movements: the first, a movement on the same spot after the same manner...the second a forward movement...."¹⁴⁹ Nor was Plato the only one. As Lynn Rose wrote:

"The Sicilian Pythagorians Hiketas and Ekphantos, both of whom were from Syracuse, spoke explicitly of Earth's rotation *in situ*. The cosmology of Herakleides of Pontus...featured the same basic device."¹⁵⁰

PLANETARY CONJUNCTIONS

Johannes Kepler (1571-1630), famous for his discovery of the three laws of planetary motions, wrote of a "great conjunction" that took place between the planets Jupiter and Saturn every 20 years, culminating in a "mighty conjunction" every 60 years (59.6, more correctly).¹⁵¹ Kepler then prepared some diagrams, known as trigons, illuminating these conjunctions as they occurred against the background of the zodiac.

As E. S. Kennedy has shown, however, Arabian astrology already knew all that.¹⁵² Earlier still, the Neoplatonist Olympiodorus (6th century A.D.) knew, and wrote, that one revolution of Jupiter took twelve years (modern calculation: 11.86) and that of Saturn was accomplished in thirty years (modern calculation: 29.46 years).

"For if the sphere of Jupiter comes from the same to the same in twelve years, but that of Saturn in thirty years, it is evident that when Jupiter has made five, Saturn will have made two revolutions: for twice thirty is sixty, and so likewise is twelve times five; so that their revolutions will be conjoined in sixty years."¹⁵³

THE PERIODICITY OF COMETS

It has often been stated that ancient historical documents, to say nothing of mythological ones, have nothing to offer as far as *modern* astronomy is concerned. But, as Livio Stecchini pointed out, this is certainly not true when it comes to the periodicity of comets. As he wrote:

"No science of comets is possible without the use of these records. It must be observed that many of the critics of Velikovsky have claimed that historical data are ir-

¹⁴⁸ I. Velikovsky, "My Challenge to Conventional Views in Science," *Pensée* IVR VII (Spring 1974), p. 10 (emphasis added).

¹⁴⁹ Plato, *Timaeus*, 40a-b.

¹⁵⁰ L. E. Rose, "Variations on a Theme of Philolaos," *KRONOS* V:1 (Fall 1979), p. 21.

¹⁵¹ G. de Santillana & H. von Dechend, *Hamlet's Mill: An Essay on Myth and the Frame of Time* (Boston, 1969), pp. 399-401.

¹⁵² E. S. Kennedy, "The Sassanian Astronomical Handbook Zīj-I Shāh, and the Astrological Doctrine of 'Transit' (Mamarr)," *Journal of the American Oriental Society* 78 (1958), p. 259.

¹⁵³ T. Taylor, *The Metamorphosis or Golden Ass and Philosophical Works* (London, 1822), p. 333.

relevant to astronomical science, but even today every study on comets is based on a collation of the available historical data. In fact, specialists of the theory of comets give particular importance to the Chinese historical records which began to be scrutinized for these very purposes in the age of Newton."¹⁵⁴

Edmund Halley owes his fame to his supposed discovery of the periodicity of comets. But had not Diodorus Siculus (1st century B.C.) and Pliny (A.D. 23-79) already written about comets returning on their orbits?¹⁵⁵ More than that, according to Diodorus Siculus, the Chaldeans—by whom he meant the Assyro-Babylonians—had already learned to predict the return of comets, as so, also, had the Egyptians.¹⁵⁶ Mary Proctor, however, was not convinced. As she wrote: "For my own part, I reject as altogether improbable the statement of Seneca that the ancient Chaldean astronomers could calculate the return of comets."¹⁵⁷ The same, however, cannot be said of the Greeks. As Francis Baker wrote as far back as 1891:

"We first find attention paid to these phenomena, and definite theories propounded respecting them in the Greek schools, and it is curious to observe how favorably some of the early hypotheses contrast with the fantastic ideas advanced in later times...The Pythagorians held they were permanent bodies belonging to the solar system, *revolving round the sun like the planets*, but in orbits so extensive that they were visible only when near the earth."¹⁵⁸

As Velikovsky revealed, one of these Greek scholars was Seneca (4 B.C.-A.D 65):

"Seneca [in his *De Cometis*]...knew the real nature of comets, the inertia of their motion, and their periodicity. [But for] 1,500 years after his time science clung to the



Johannes Kepler (1571-1630)
whose discovery of the "great conjunction" of
Jupiter and Saturn was already known to
Olympiodorus some eleven hundred
years earlier.
(Illustration by Bruce LaFontaine.)

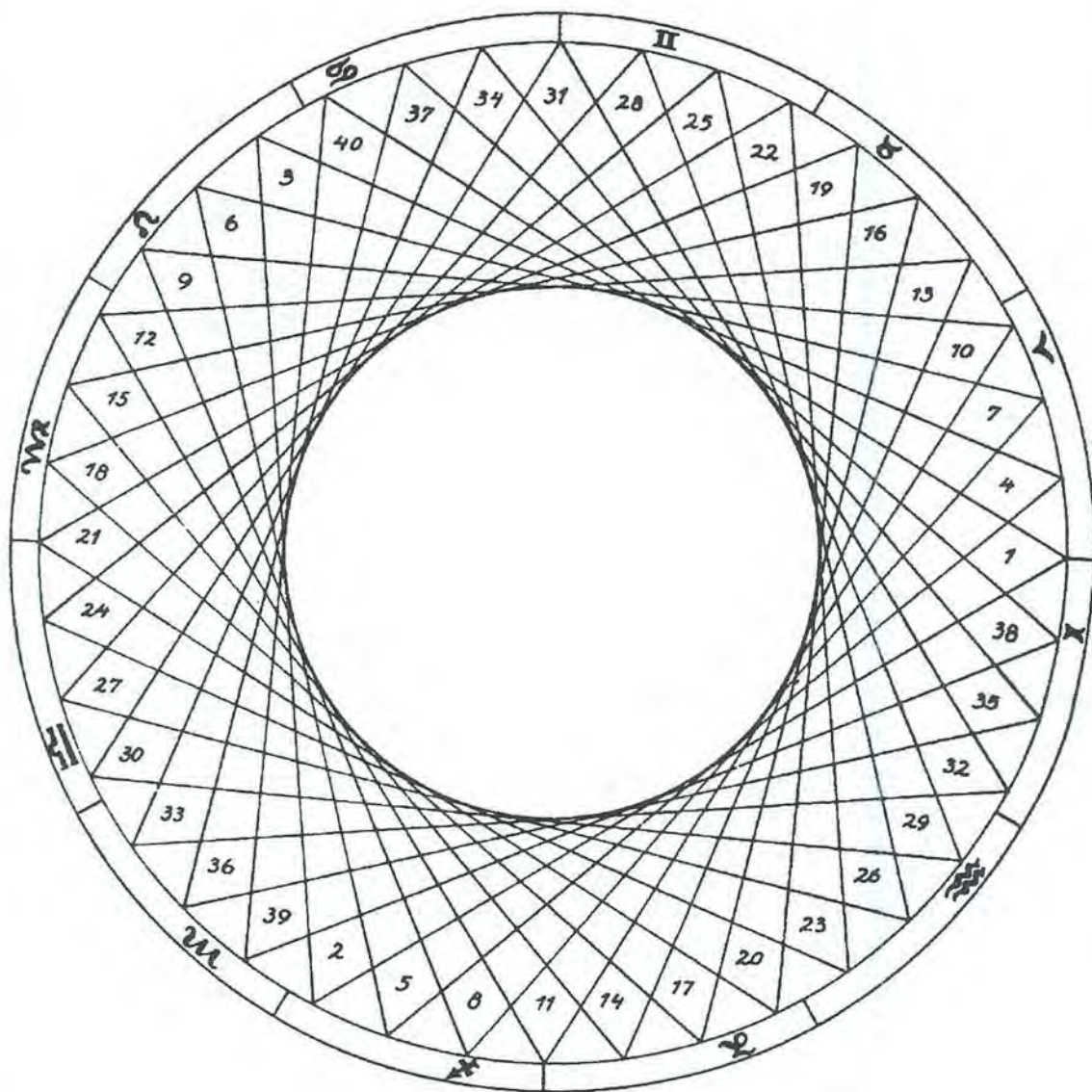
¹⁵⁴ L. C. Stecchini, "Newton's World View," *KRONOS* IX:3 (Summer 1984), p. 54.

¹⁵⁵ I. Velikovsky, *loc. cit.*

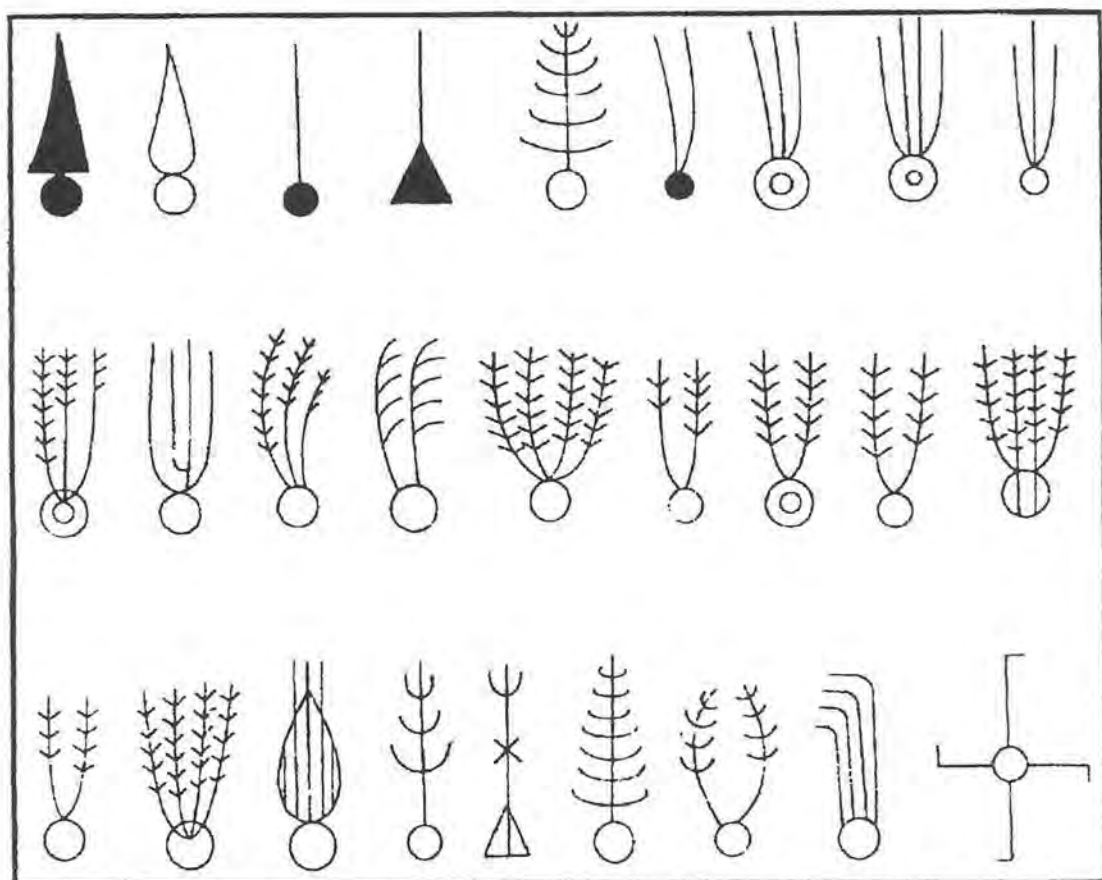
¹⁵⁶ F. H. Baker, "Comet Lore," *Living Age* (June 27, 1891), pp. 818-823.

¹⁵⁷ M. Proctor, *The Romance of Comets* (N. Y., 1926), p. 148.

¹⁵⁸ F. H. Baker, *loc. cit.*, (emphasis added).



Kepler's Trigon showing the "Great Conjunction" of Jupiter and Saturn every twenty years along the zodiacal band.



Comets as depicted in a Chinese painting on silk recovered from a 168 B.C. Han Dynasty tomb.

dogma that comets are apparitions in the atmosphere, like rainbows. Copernicus thought so, too."¹⁵⁹

Plutarch even knew that comets whirled, or rotated.¹⁶⁰

It is, therefore, something of a pity that Pythagoras himself was of a different opinion, believing comets to be nothing more than mere terrestrial "exhalations" which rose in the air and ignited the atmosphere. I say it is a pity because, for whatever reason one wishes to believe, Pythagoras turned out to be such a so-called genius that he held the educated world enthralled for close to two thousand years. Pythagoras, however, did not *entirely* obliterate the earlier knowledge because, so many years after him, Pliny was still alluding to comets as permanent bodies moving in orbits like the planets and periodically returning on their orbits as, at least, *one* of the theories held respecting them in his time.¹⁶¹ And was it not through reading Pliny that Halley managed to gain his fame?

Isaac Newton himself disbelieved that comets were physical entities. In an attempt to reconcile his gravitational theory with the precepts of *Genesis*, he attempted to demonstrate that the Solar System had been created in a single divine act and, obeying divine laws, must

¹⁵⁹ I. Velikovsky, *Stargazers and Gravediggers* (N. Y., 1983), p. 220.

¹⁶⁰ Plutarch, *op. cit.*, 928D.

¹⁶¹ Pliny, *op. cit.*, II:xxii.



Edmund Halley (1656-1742)
 whose fame re the discovery of the periodicity of
 comets is contested by the earlier statements of
 Diodorus and Pliny.
 (Illustration by Bruce LaFontaine.)

therefore have remained in stable equilibrium ever since.¹⁶² The existence of the erratic comets—erratic to the extent that they had not yet been allotted any specific regularity by the astronomers of *his* time—was very damaging to his thesis and he therefore spent an awful lot of time and energy in an attempt to explain them away.¹⁶³

NUMBER OF WORLDS

Very much like modern ones, ancient Greek thinkers did not only concern themselves with what they could see, measure, and calculate in the sky, but also with what they dared deduce from *what* they could see, measure, and calculate.

Democritus, who lived sometime during the fifth century B.C.,¹⁶⁴ *one of the founders of the atomic theory*, was probably the greatest of the Greek physical philosophers. According to Diogenes Laertius, his works, including treatises on geometry, optics, and astronomy, which unfortunately have not survived, numbered seventy-two.

What we know of them comes from the numerous quotations which have survived in the works of other authors. His views on astronomical bodies were not that divergent from modern ones. Hippolytus thus paraphrased him:

"...he [Democritus] maintained worlds to be infinite, and varying in bulk; and that in some there is neither sun nor moon, while in others that they are larger than with us, and with others more numerous. And that intervals between worlds are unequal; and that in one quarter of space (worlds) are more numerous, and in another less so; and that some of them increase in bulk, but that others attain their full size, while others dwindle away; and that in one quarter they are coming into existence, whilst in another they are failing; and that they are destroyed by clashing one with another. And that some worlds are destitute of animals and plants, and every species of moisture."¹⁶⁵

¹⁶² L. C. Stecchini, *loc. cit.*

¹⁶³ V. Clube & B. Napier, *The Cosmic Serpent* (London, 1982), p. 247.

¹⁶⁴ The date of his birth is not really known. Some writers place it as early as 470 B.C., others as late as 460 B.C. or even later.

¹⁶⁵ Hippolytus, *The Refutation of all Heresies*, I:xi.

Even the modern theory of the formation of planets by aggregation, whether it will eventually turn out to be correct or not, was foreseen by Democritus:

"...worlds are produced when many bodies are congregated and flow together from the surrounding space to a common point, so that by mutual contact they made substances of the same figure and similar in form come into connection; and when thus intertwined, there are transmutations into other bodies, and that created things wax and wane through necessity."¹⁶⁶

LIFE ON OTHER PLANETS

Giordano Bruno was not as lucky as Anaxagoras. He had no Pericles to save him from those in authority. In A.D. 1600, Bruno was burned alive at the stake by the Catholic Inquisition for espousing the belief, among other things, that other worlds must necessarily harbor other life. The belief that life exists on other planets did not, however, originate with him. As far back as the fourth century B.C., Metrodorus of Chios had already written that: "To consider the Earth the only populated world in infinite space is as absurd as to assert that in an entire field sown with seed, only one grain will grow."¹⁶⁷

THE BABYLONIAN PRECEDENCE

We have come a long way in analyzing the astronomical knowledge of ancient peoples—from eye-witness reports of meteors and the metallic structure of meteorites to the correct motions of the heavenly bodies; from the calculation of complex calendrical systems to the prediction of solar and lunar eclipses; from the intricacies of Mesoamerican computations to the Greek passion for exactitude and philosophical daring. I therefore hope that when, in the following chapters, the main thesis of this work is revealed, no one will counter its revelations by objecting that the ancients had very little astronomical knowledge at their disposal to be taken seriously.

It is, moreover, accepted that this ancient knowledge was not necessarily the property of the masses. Nor was it all necessarily adhered to by every scholar of the time. The man in the street, always prone to age-old superstitions, had little mind of astronomical matters. But, to an extent, this was not much different than it is at present.

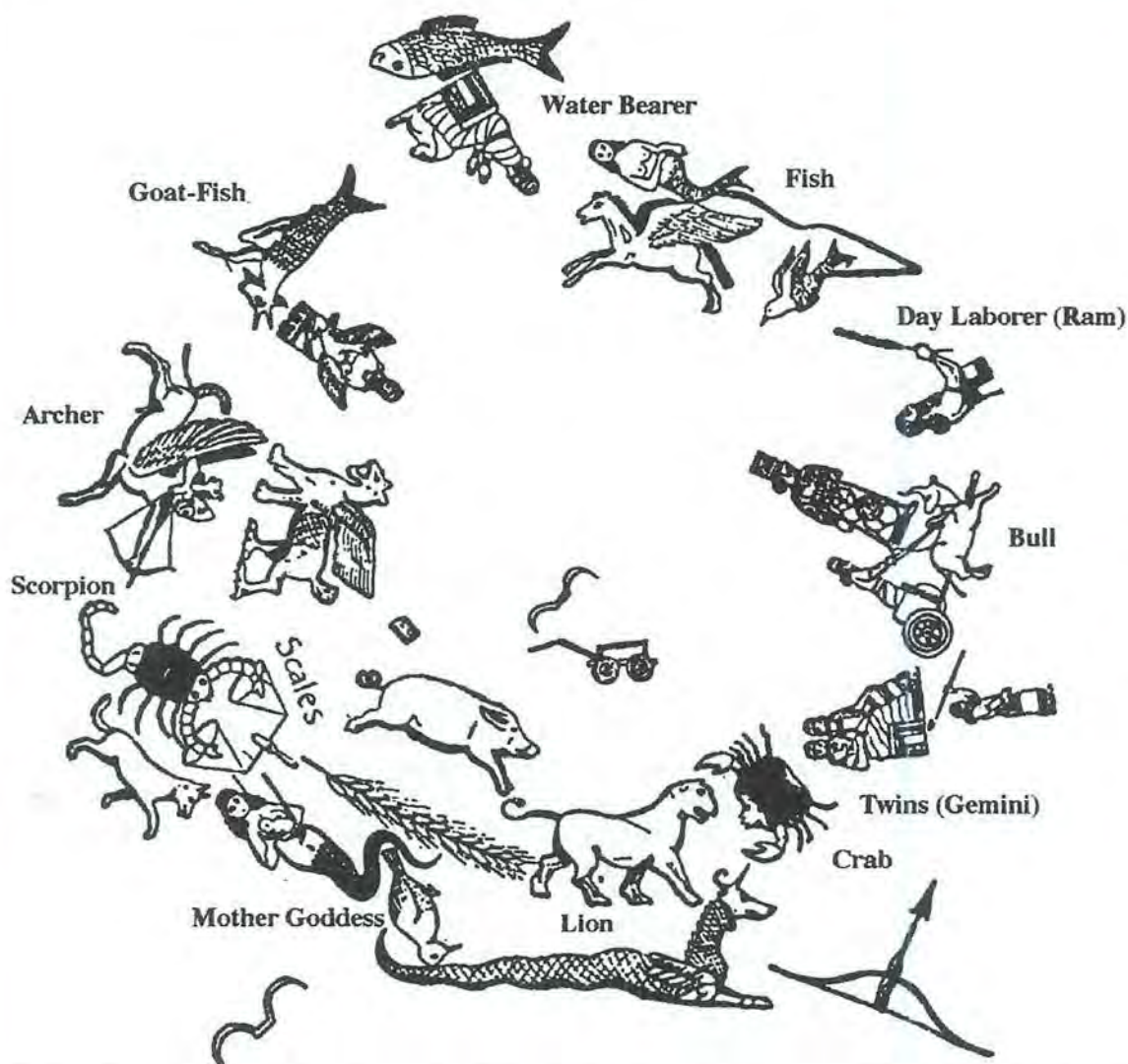
Meanwhile, competing theoreticians were very often contradicted by others. Plutarch, for instance, delighted in enumerating the various and contradictory theories concerning the nature of comets, some of which theories were hilarious even by the standards of *his* day. And, as we have seen, while the Greeks were quite aware of Earth's axial tilt, they fell far short when it came to explaining the reason behind it.

Can it, however, be said that *all* modern astronomers agree on each and every astronomical issue, or that some of their theories have not been, or will not be, found to be in error? Why should we expect more stringent standards from our ancient forebears? Have we not already seen that many of the great astronomical break-throughs and theories—even that concerning the Big Bang—were originally discovered, or thought of, by these very ancients?

It is no secret—and it never has been—that the Greeks learned, and borrowed, much of their astronomical knowledge from the Babylonians. Nor, *unlike many of their modern counterparts*, did they ever try to hide the fact. As Alexander Jones noted: "The Greek as-

¹⁶⁶ *Ibid.*, I:x.

¹⁶⁷ T. Dickinson, "Probing the Cosmic Haystack," *Equinox* (March-April 1983), p. 81; *idem*, "Earth: There's No Life Like It," *Equinox* (December 1995), p. 30.



Late Babylonian zodiac showing the twelve constellations among which many are still recognizable in our modern version of same.

tronomers of the late Hellenistic and Roman periods were fully conscious that their science drew on earlier 'Chaldean' or 'Babylonian' astronomy; and this fact has never since been wholly forgotten."¹⁶⁸ Plato *himself* acknowledged this Greek debt to Babylonian astronomy,¹⁶⁹ which is perhaps the first such confession to be encountered in Greek literature.

Even when it came to such practical instruments as time-telling devices, it seems as if the Babylonians long preceded the Greeks. Thus Herodotus was able to write that: "The sun-

¹⁶⁸ A. Jones, "Evidence for Babylonian Arithmetical Schemes in Greek Astronomy," in H. D. Gatter (ed.) *Die Rolle der Astronomie in der Kulturen Mesopotamiens* (Graz, 1993), p. 77.

¹⁶⁹ Plato, *Epinomis* 986c-987a.

dial...and the gnomon with the division of the day into twelve parts, were received by the Greeks from the Babylonians."¹⁷⁰

Seneca wrote that Apollonius of Myndus learned what he knew about comets from the Chaldeans, which was the general term at that time for Babylonian astronomers: "Apollonius says that the Chaldeans place comets in the category of planets and have determined their orbits."¹⁷¹ Epigenes, on the other hand, disagreed with him, stating that, in fact, the Chaldeans knew nothing about comets who thought of them as filaments of twisted atmosphere.¹⁷²

When it comes to the constellations, we still owe their present names and adopted shapes to the Greeks, but, so it seems, the Greeks themselves had borrowed even these from the Babylonians. Thus, for instance, where the Greeks saw a scorpion in the constellation Scorpio, so had the Babylonians before them. Where the Greeks saw twins in the constellation Gemini, so had the Babylonians before them.

Peter James has even indicated "some specific linguistic borrowing" in this context. Take, for instance, the constellation which the Greeks called Pegasus. To the Sumerians and Akkadians this group of stars was known as Iku, a word that meant "field." Why, then, did the Greeks see a horse in this constellation had they really borrowed their lore from them? This misnomer, according to James, probably stems from the fact that, in Greek, *iqo*, which sounds much like *iku*, used to mean "horse"—as recorded on the Linear B Tablets—before the word *hippos* was later adopted. If this is true, it would also mean that the borrowing of Babylonian astronomical knowledge by the Greeks "had already begun in Mycenaean times,"¹⁷³ to which the Linear B Tablets belong.

It is known that Democritus "spent some time in the East and his astronomic ideas were definitely Babylonian."¹⁷⁴ So, also, with Hipparchus, who based much of his findings on Babylonian records.¹⁷⁵ Here is what G. J. Toomer had to say about the subject:

"It has always been known that Hipparchus derived material from Babylonian astronomy. A considerable number of Babylonian observations are quoted in Ptolemy's *Almagest* (which is the principal source of our knowledge of Hipparchus' work), and some of these are explicitly said to have been used by Hipparchus. *But it is only in the present [20th] century, with the decipherment and interpretation of the relevant cuneiform texts, that his debt to Mesopotamian sources was more fully revealed.*"¹⁷⁶

"Thus, although our information about Hipparchus' work is largely secondhand and fragmentary, his extensive knowledge of both the observational and theoretical parts of Babylonian astronomy is beyond any doubt."¹⁷⁷

As James pointed out:

¹⁷⁰ Herodotus, *Historiae*, II:109.

¹⁷¹ Seneca, *Quaestiones Naturales*, VII:4:1.

¹⁷² P. James, "Greek Debt to Babylonians," *SIS Internet Digest* 1997:1, p. 15.

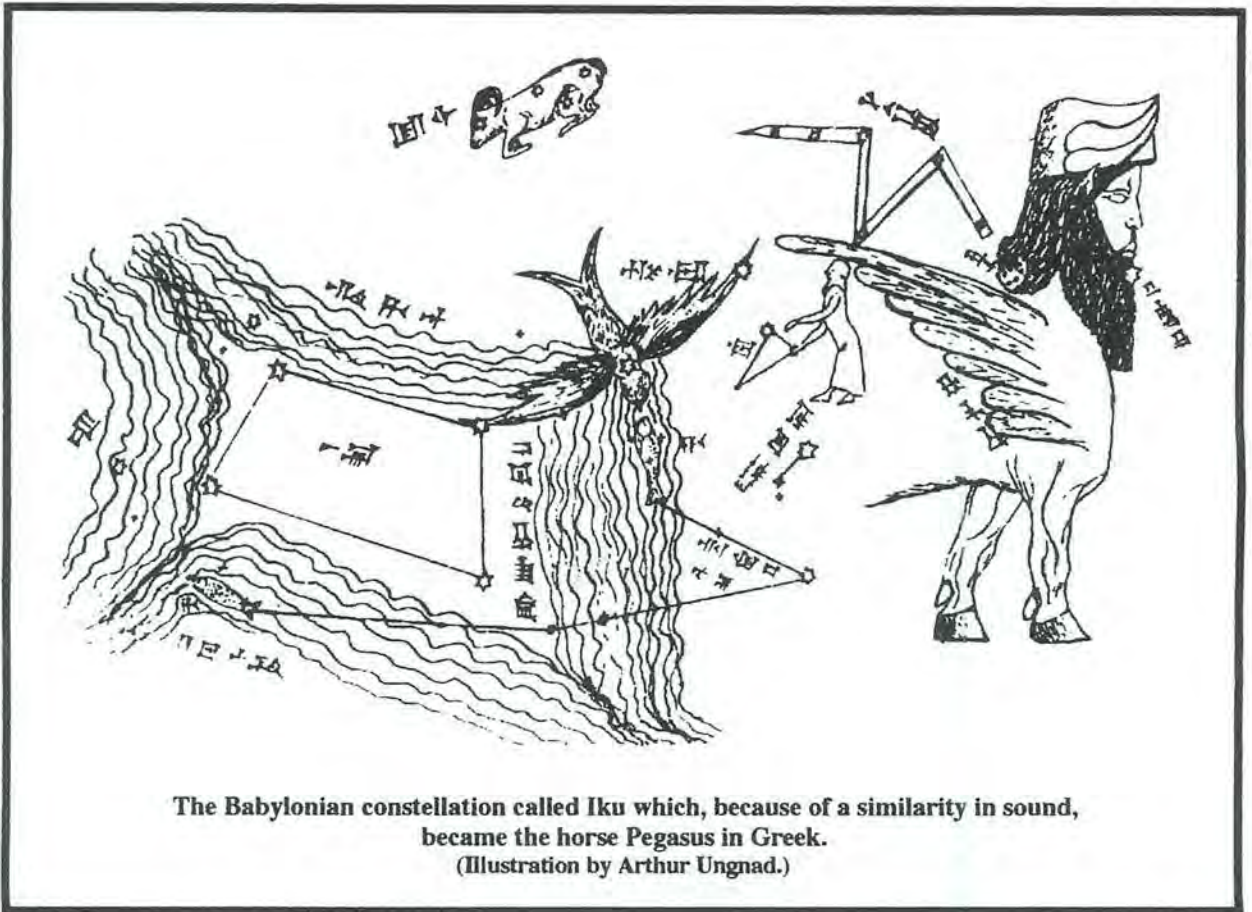
¹⁷³ *Ibid.*

¹⁷⁴ G. Sarton, *History of science: Ancient Science Through the Golden Age* (Harvard, 1952), Vol. I, p. 291; see also, A. T. Olmstead, *History of the Persian Empire* (Chicago, 1948/1970), pp. 328-342.

¹⁷⁵ G. Sarton, *op. cit.*, Vol. II, pp. 335 ff.; A. T. Olmstead, *op. cit.*, pp. 195-213; J. Lindsay, *Origins of Astrology* (London, 1971), pp. 63-89; B. L. van der Waerden, *Science Awakening II: The Birth of Astronomy* (N. Y., 1974).

¹⁷⁶ G. J. Toomer, "Hipparchus and Babylonian Astronomy," in *A Scientific Humanist: Studies in Memory of Abraham Sachs* (1988), p. 353 (emphasis added).

¹⁷⁷ *Ibid.*, p. 357.



The Babylonian constellation called Iku which, because of a similarity in sound, became the horse Pegasus in Greek.
(Illustration by Arthur Ungnad.)

"This major period of Greek borrowing starts in the 5th century [B.C.] under the Persian empire, which enabled the Greeks to become well acquainted with Babylonia and Babylonian ideas. It is clear that the *precise* records of the Babylonians were invaluable to the Greeks, and a certain amount of their theory was taken on board as well."¹⁷⁸

None of this is to say that the Greeks did not learn anything astronomical on their own. Thus, for instance, despite Toomer, and as previously noted, there is at present no evidence that Hipparchus derived his knowledge of the precession, for which he mostly owes his fame, from the Babylonians. And, as with Hipparchus, so, also, with various other Greek astronomers and philosophers.

THE ZODIAC

As early as 687 B.C., the Mesopotamians knew that the Sun travels through the belt of the zodiac—that collection of stars which form a ring that encircles the sky in the plane of the ecliptic—in the period of one year. They also knew that the Moon traveled through the same constellations and that it circled back to its starting point in about twenty-seven days,

¹⁷⁸ P. James, *loc. cit.*

which is why they called the band of the zodiac "the path of the Moon." The five planets visible to the naked eye were also seen to travel the same path, but each at a slower pace than the Moon.¹⁷⁹

As far back as Sumerian times, the constellations of the zodiac were already known. Long before even the Babylonians, the constellations Taurus, Leo, and Scorpius had already been assimilated to a bull, a lion, and a scorpion. The German historian of science, Willy Hartner, has even attempted to trace the symbols associated with these constellations farther back in time, to the Neolithic people of Elam and Persia. As early as the fourth millennium B.C., these people of southern Iraq were already drawing bulls, lions, and scorpions studded with star symbols.¹⁸⁰ To quote Edwin Krupp:

"Six thousand years ago, the stars of Taurus, Leo, and Scorpius rose heliacally at significant times of the year, as seen from latitude 30 degrees north. This is close to the latitude of Ur, the Sumerian city founded on the Euphrates River five thousand years ago."¹⁸¹

THE ASTRONOMICAL DIARIES

That the Babylonians carefully noted and recorded eclipses is reported by Claudius Ptolemy, who had access to a continuous series of such observations reaching back to 747 B.C.¹⁸² Ptolemy implies that the series did not reach further back in time than that,¹⁸³ which has led various authorities to claim that the observation of eclipses by the Babylonians commenced with Nabonassar who, according to generally accepted chronology, reigned over Babylon somewhere between 747 and 732 B.C.

Franz Xavier Kugler, who examined more than one hundred Babylonian cuneiform tablets pertaining to astronomy, has demonstrated that the oldest documents containing a scientific approach to astronomy dated only from the second half of the sixth century B.C.¹⁸⁴ Nabonassar, however, is known to have destroyed previously existing observations in order that exact historical chronology would commence with his own reign.¹⁸⁵

The Babylonians also compiled a catalogue of the fixed stars¹⁸⁶ and recorded the occultations of the planets by the Sun and Moon.¹⁸⁷ Through the use of gnomons, and other sun-dials, they were able to measure time during the day and were able to fix the length of the solar day with sufficient accuracy. They determined the synodic revolution of the Moon within a small fraction of the correct value.¹⁸⁸ They discovered that the length of the solar year was close to 365 1/4 days.¹⁸⁹ They knew that comets were permanent bodies revolving in orbits similar to, but greater than, those which the planets followed.¹⁹⁰

When Richard Stephenson analyzed the content of Babylonian astronomy, he did not find it wanting. In his view, despite the paucity of texts from the period 700-50 B.C., the ancients

¹⁷⁹ E. C. Krupp, *Beyond the Blue Horizon* (N. Y., 1991), p. 124.

¹⁸⁰ *Ibid.*, p. 142.

¹⁸¹ *Ibid.*

¹⁸² Claudius Ptolemy, *Syntaxis (Almagest)* III:6.

¹⁸³ *Ibid.*

¹⁸⁴ F. X. Kugler, *Sternkunde und Sterndienst in Babel*, Vol. I (Münster, 1907), p. 213.

¹⁸⁵ G. Rawlinson, *The Seven Great Monarchies of the Ancient Eastern World*, Vol. II (N. Y., 1884), p. 208.

¹⁸⁶ *Ibid.*

¹⁸⁷ Aristotle, *De Caelo*, II:12.

¹⁸⁸ G. Rawlinson, *loc. cit.*

¹⁸⁹ *Ibid.*

¹⁹⁰ *Ibid.*

had proven themselves good and careful astronomers. All that they recorded, he has concluded, "has actually happened in the sky." As far as he was concerned, the old Babylonian eclipse data can be used with confidence. As he wrote: "Comparison of modern calculations with the Babylonian eclipse records gives an excellent figure for the average rate of lengthening of the day over the past 2500 years." In fact, he went out of his way to inform his readers how Babylonian astronomical records were proving useful to modern astronomers in calculating changes in the length of the day. He did, of course, discover a statistical uncertainty of 1.78 milliseconds per century, but, as he explained, this "arises not so much from inaccuracies in the Babylonian measurements but more from uncertainties in the modern estimates of the rate of expansion of the Moon's orbit."¹⁹¹

The Assyro-Babylonians, or Chaldeans as Diodorus Siculus called them, already knew that the planetary system was a dynamic one. As Diodorus wrote: "Each of the planets, according to them has its own particular course, and its velocities and periods of time are subject to change and variation."¹⁹² They also knew that Earth was a sphere and thus counted it among the planets. This is evidenced by the words of Diodorus who wrote that the Chaldeans had it stated "that the moon's light is reflected and her eclipses are due to the shadow of the earth."¹⁹³

Among the Babylonians, texts that deal strictly with astronomical, as opposed to astrological, observations do not seem to have made their appearance until about the middle of the seventh century B.C. during the reign of Nabonassar. It is from about this time, down to the turn of the millennium, that we have in our possession a collection of cuneiform tablets to which Abraham Sachs has applied the term "astronomical diaries."¹⁹⁴

These diaries record such phenomena as the length of the lunar months, based on the phases of the Moon; lunar and solar eclipses; the dates of first visibility for Mars, Jupiter, and Saturn; the first and last visibilities of the inner planets, Venus and Mercury; the dates of the occurrences of the equinoxes and solstices; the dates of the significant appearances of the star Sirius; and the "conjunction" of the Moon and each of the visible planets with various stars. Meteorological phenomena during the rainy seasons are also recorded, with diverse cloud and storm conditions. To all of this, one finds appended the changes in the level (rise or fall) of the river at Babylon, often followed "by a report of secular events or rumors of such events." Finally, the amount of produce (barley, dates, etc.) that could be purchased for one shekel of silver during any one month is also listed. The technical data—measurements, calculations—given in cubits and degrees, are evidence of a sophisticated attempt at reconciling once mysterious motions with numerical allocation, while the glosses concerning obstruction of visibility by bad weather are indicative of diligent observation.¹⁹⁵

There is nothing spurious about these astronomical diaries—nothing magical, mythological, or even faintly oracular. They are a mere record of the night by night occurrences concerning the heavenly bodies—hence the term "diaries"—month by month, throughout the year. Were it not for the historical events that they also report, they would probably have inspired less interest among scholars. Astronomically, they are nothing but a catalogue of the same boring celestial events that we see enacted in the sky above us to this day. *But they are accurate*—so that a modern student of astronomy would not have been embarrassed had he or she been the author of the diaries. As Sachs observed: "Some of [the astronomical phe-

¹⁹¹ R. Stephenson, "The Skies of Babylon," *New Scientist* (August 19, 1982), pp. 478-481.

¹⁹² Diodorus Siculus, *Bibliotheca Historica* II:31.

¹⁹³ *Ibid.*

¹⁹⁴ A. Sachs, "Babylonian Observational Astronomy," *Philosophical Transactions of the Royal Society of London*, A 276 (1974), p. 44.

¹⁹⁵ *Ibid.*, pp. 44-48.



Fragments of a cuneiform tablet, one of various constituting the Babylonian astronomical diaries.
(Illustration after A. Sachs.)

nomena recorded in them] are precisely those that are predicted by the mathematical astronomical cuneiform texts of the Hellenistic [that is later Greek] period.”¹⁹⁶

During Seleucid times, when Babylon was ruled by the Hellenistic dynasty founded by Seleucus I after the death of Alexander, a period which is calculated to have lasted from 312 to 64 B.C., lunar and planetary theory had developed along Greek classical lines. Abstract numerical tables, or ephemerides, representing the motions of the heavenly bodies, were much in vogue at the time. These continued to record the recurrence of astronomical phenomena, year by year, “with an accuracy comparable with that of contemporary observations.”¹⁹⁷ Judging by the contents of the astronomical diaries, this accuracy can be stretched to 747 B.C.

There is no great wonder in all of this, but it does prove one point, banal as it may seem, and that is this: Beginning from *at least* the middle of the seventh century B.C., Babylonian astronomers knew very well what these pin-points of light called planets looked like and could easily distinguish one from the other; they knew where every planet belonged in the sky and what track each one of them invariably followed—an easy matter for anyone with a keen eye-sight plus the patience and the motivation to learn. Yes, I know, it is hardly even worth mentioning.

Why, then, contrary to what we see above us in the night sky at present, did these same Babylonian astronomers insist that the planet we call Saturn had been the most prominent body in the sky?

That is a question the answer to which, beginning in the very next chapter of this work, will carry us into some very strange and deep waters.

¹⁹⁶ *Ibid.*, p. 44.

¹⁹⁷ A. Armitage, “History of Astronomy,” *Encyclopaedia Britannica* (1959 edition), Vol. 2, p. 582 (emphasis added).

Chapter 3

The Sun Star

THE MOST PROMINENT OF THE PLANETS

It was Diodorus Siculus, sometime in the first century B.C., who first reported to the Hellenistic world that the Chaldeans regarded Saturn as the most prominent of the planets:

“But above all in importance, they [the Chaldeans] say, is the study of the influence of the five stars known as planets...the one named Cronus [the same as Kronos] by the Greeks [i.e. Saturn]...is the most conspicuous...”¹

As viewed from Earth, this is simply not so. Venus is much more prominent. It is easily the brightest of the planets, bright enough at night to cast shadows and, when meteorological conditions permit, bright enough to be seen during the day. In contradistinction, Saturn is a very difficult object to observe. Even Bob Forrest, one of the strongest opponents of cosmic catastrophism, was moved to display his bewilderment at this datum:

“The only puzzling thing about this passage [of Diodorus] is the way Saturn is said to be the most conspicuous of the planets. All else is fairly routine.”²

As we shall see, this statement is not the “only puzzling thing” in this passage of Diodorus; nor is all else in it “fairly routine.” But one thing at a time.

The term “Chaldean,” meanwhile, has long been misunderstood and misapplied by ancient historians and moderns alike. As used by Diodorus and other classical authors, the term simply meant “astrologers” and/or “astronomers,” but always in relation to the Babylonians.³ These, then, were the same Babylonians whose astronomical achievements we have enumerated in the previous section. But how, then, with all of their sophisticated knowledge of the heavens, could they have committed such an error. Or, *if an error it was not*, why would they have perpetuated such a falsity?

Of course, one could also ask: Why take the word of Diodorus, a Greek historian, who could easily have been mistaken on matters Babylonian? But was Diodorus the only writer of antiquity who ever reported this strange belief concerning the planet Saturn? And, in fact, were the Babylonians the only ones who were supposed to have asserted this oddity?

To give but one other example—and later we shall give others—we note here one of the Sanskrit names of the planet Saturn, that is Grahanyakah.⁴ The name is composed of the

¹ Diodorus Siculus, *Bibliotheca Historica*, II:30-34.

² B. Forrest, *Velikovsky's Sources: Notes and Index Volume* (Manchester, 1983), p. 532.

³ J. D. Prince, “Chaldea,” *Encyclopaedia Britannica* (1959 ed.), Vol. 5, p. 195.

⁴ V. S. Apte, *The Practical Sanskrit-English Dictionary* (Delhi, 1975), p. 417.

words *graha(h)*—"planet"—and *nayakah*—"chief or leader."⁵ Thus, according to this name, Saturn is, or at least was, considered the leader of the planets—in fact, the chief planet.⁶

As we shall soon see, this belief was widespread among the ancient nations and it is difficult to believe that such a persistent assertion could have been the result of mere fancy. But if the astronomers of the time could see, as they must have, that Saturn was *not* the most prominent, or conspicuous, of the planets, on *what* was the belief based?

STELLA SOLIS

So what was it that made the Babylonians allude to Saturn as the most prominent of the planets—prominent enough for them to refer to it, *inter alia*, as En-Me Šar-ra, that is "Lord of the Law of the Universe"?⁷ One must admit, that is quite a lofty title to bestow on what appears to be a mere pin-point of light in the present night sky.

The clue to Saturn's prominence—even loftiness—was supplied by Diodorus in the very same passage we have already partly quoted. There, this writer continues to report that "the [planet] named Cronus [i.e. Saturn] by the Greeks...they [the Chaldeans] call the star of Helios..."⁸

It is somewhat odd that Forrest did not find this statement as "puzzling" as the one which proclaims Saturn to be the most prominent of the planets. Odder still is that he relegated it to the unimportance of "fairly routine" reporting because, to the Greeks of Diodorus' time, Helios was the Sun. From it are derived such Sun-oriented English words as "heliacal," "heliocentric," and "heliograph." Why would the Babylonians have referred to the planet Saturn as the star of the Sun?

But what of the Babylonians themselves? Do we not hear from them directly? With so many cuneiform tablets having been lost through the vagaries of nature and the hand of man, and with so many undeciphered others falling apart in museum basements, it would not have been remarkable had this datum not survived in the original. But it has, and in more than one text.

R. C. Thompson might have been the first to discover, even if not *entirely* understand, this Babylonian verity. Thus, another Babylonian name for the planet Saturn was (Mul) Lu-Bat Sag-Uš,⁹ and we find it stated in an astrological report from that nation that "(Mul) Lu-Bat Sag-Uš Mul (il) Šamaš šu-u," which Thompson translated as "[the planet] Saturn is the star of the sun."¹⁰

Actually, Diodorus should have known that this belief was already common among the scholars of his own nation. Eratosthenes of Alexandria, who thrived somewhere between 276 and 194 B.C., and whose astronomical, mathematical, and geographical knowledge enabled him, as we have already seen, to measure Earth's circumference, identified the planet Saturn as the star of the Sun, as so did several other Greek writers.¹¹ Among the Greeks, this belief

⁵ *Ibid.*, p. 542.

⁶ I acknowledge my debt to Roger Ashton for this insight.

⁷ M. Jastrow, Jr., "Sun and Saturn," *Revue D'Assyriologie et D'Archeologie Orientale* (Paris, September 1910), p. 173.

⁸ Diodorus Siculus, *loc. cit.*

⁹ M. Jastrow Jr., "The Sign and Name for Planet in Babylonian," *Proceedings of the American Philosophical Society*, 47:89 (May-August 1908), pp. 155-156.

¹⁰ R. C. Thompson, *The Reports of the Magicians and Astrologers of Nineveh and Babylon*, Vol. II (London, 1900), p. lxiii; see also, W. A. Heidel, *The Day of Yahweh* (N. Y., 1929), pp. 437, 470, where other references are cited.

¹¹ A. Bouche-Leclercq, *L'Astrologie Grecque* (Paris, 1899), p. 93.

continued down to the 6th century A.D. as is known through the neo-Platonic philosopher Simplicius who also called Saturn the star of the Sun.¹²

Whether they obtained this particular information from the Greeks or not, we find that the Romans were of a similar mind. In his enumeration of the planets, the Latin writer Gaius Iulius Hyginus who, as the superintendent of the Palatine Library, must have had access to much older material, referred to the planet in question as the star of Sol.¹³ As just about any dictionary will verify, Sol was not only the Roman Sun personified, it was, as it still is, the very Latin word for "Sun."¹⁴ From it are derived such English words as "solar," "solarium," and "solstice." The scholiast on Germanicus also lists Saturn as Stella Solis¹⁵—Star of the Sun—a name which apparently was a common designation for the planet in Roman times.¹⁶

But whence the belief? Better still, what does the designation "star of the Sun" really mean? To what does it allude?

A telling clue comes from Sanskrit. In this language, Surya is the common name for the Sun. Suryaputrah, which means "son of the Sun," is however one of the names for the planet Saturn.¹⁷ Another Sanskrit name for the Sun is Ravi and, again, we find the planet Saturn designated as Raviputra which also means "son of the Sun."¹⁸ As the son of the Sun, Saturn *could* be termed the *star* of the Sun. But this only raises another question. Why would Saturn, among the planets, have been thought of as the son of the Sun?

Let us go one step farther. Yet another Sanskrit name for the planet Saturn is Saurah. But *saurah* also means "solar day" and/or "solar month."¹⁹ This seems to indicate that the connection between Saturn and the Sun was more intimate than we have so far deduced. In fact, this last datum is enough to make one believe that, at least to the Hindus, Saturn and the Sun were close to being synonymous.

(MUL) LU-BAT SAG-UŠ

A common entry in a collection of astrological reports from Nineveh and Babylon which, in variant forms, is many times repeated, uses the formula "When Shamash [the same as Šamaš] stands in the halo of Sin" such and such a thing will come to pass.²⁰ Now open up just about any work on Assyro-Babylonian mythology and you will find it stated that Shamash and Sin were the deified Sun and Moon. According to this belief, the omen mentioned above would then translate as "when the Sun stands in the halo of the Moon" such and such a thing will come to pass.

Now while Sun and Moon can be seen together, the Sun can never appear in the halo of the Moon. For one thing, the Sun does not appear small enough to fit between the Moon and its surrounding halo—when it has one; for another, the Moon can only appear within a halo during the night when the Sun, needless to say, is absent. What, then, could the Babylonian astrologers have been alluding to?

¹² *Ibid.*

¹³ Hyginus, *De Astronomia* (also known as *Poetica Astronomica*), II:42:6-10.

¹⁴ There are even some indications that the words "sol" and "sun" might be philologically related. See N. Webster, *Twentieth Century Dictionary of the English Language* (N. Y., 1939), p. 1666.

¹⁵ A. Bouche-Leclercq, *loc. cit.*

¹⁶ R. H. Allen, *Star Names: Their Lore and Meaning* (N. Y., 1899/1963), p. 470.

¹⁷ V. S. Apte, *op. cit.*, p. 997.

¹⁸ *Ibid.*, p. 796.

¹⁹ *Ibid.*, p. 1002.

²⁰ M. Jastrow, Jr., "Sun and Saturn" (see above), pp. 163-164, 169.

There is no point in claiming that this was astrological nonsense. Babylonian astrologers, like those of ancient China, were required to acquaint their rulers with the mandates of heaven, to warn them of impending disasters or to soothe their fears with reports of divine satisfaction. The foretold events might not always have come to pass. Fallacious predictions, however, were one thing; impossible ones were quite another. There would have been no point in predicting an event based on an astronomical occurrence that could *never* have come to pass. A prognostication based on the appearance of the Sun within the halo of the Moon would not only have been useless, it would have been considered utterly insane. No Babylonian astrologer would have risked ridicule, not to mention royal displeasure, by sending such a prediction to his king. Why, then, did they even bother writing down such a formula?

As Morris Jastrow, *even without knowing the full implication of these formulae*, concluded: "Since this phenomenon can only occur at night, Šamaš cannot of course be the sun."²¹

This brings us back to the Babylonian statement mentioned earlier which reads "(Mul) Lu-Bat Sag-UŠ (il) Šamaš šu-u," and which, as we have seen, Thompson translated as "Saturn is the star of the sun." Jastrow, however, has noted that while this reading is possible, a more accurate translation would be "Saturn is the sun-star."²² We note here the difference between calling Saturn the star of the Sun—the star *belonging* to the Sun—and naming it as the Sun-star since the latter seems to connote the Sun itself. In fact, another translation given by Jastrow is "[the] planet Saturn (as a) star is Shamash."²³ Stated more clearly, what this datum is really telling us is that "the planet Saturn is Shamash"²⁴ or "Shamash is the planet Saturn."

What is also of interest is that this statement appears as a gloss in one of those omens which uses the formula "when Shamash stands in the halo of Sin."²⁵ This, then, was the astrologers' way of informing whoever read this particular report that by Shamash the planet Saturn, and not the Sun, was meant. The formula in question should therefore read "when Saturn stands in the halo of Sin" such and such a thing will come to pass.

This is further clarified by another gloss which appears in a number of similar cases which unambiguously declares that (Mul) Lu-Bat Sag-UŠ *ina tarbas Sin izzaz*—i.e. "Saturn stands in the halo of Sin."²⁶ This not only makes better observational sense, it compliments—nay, validates—the formula which uses Shamash as a name for Saturn. If conditions permit, the pin-point of light in the night sky that is Saturn *can* be discerned within the halo of the Moon. (Actually, this argument, which I myself have had reason to repeat in the past,²⁷ is not even called for because, as I will indicate in a future work, Sin did not *always* stand for the Moon.²⁸)

Thompson, of course, was aware before Jastrow that the Babylonians called Saturn by the name of Shamash.²⁹ Since this verity came to light at least as early as 1900, it is a sin of omission—worse still, a scholarly deception—not to have it so stated in current works dealing with Assyro-Babylonian mythology. Even the former Director of the British Astronomi-

²¹ *Ibid.*, p. 163.

²² *Ibid.*, pp. 163-164.

²³ *Ibid.*, p. 164.

²⁴ *Ibid.*, p. 163.

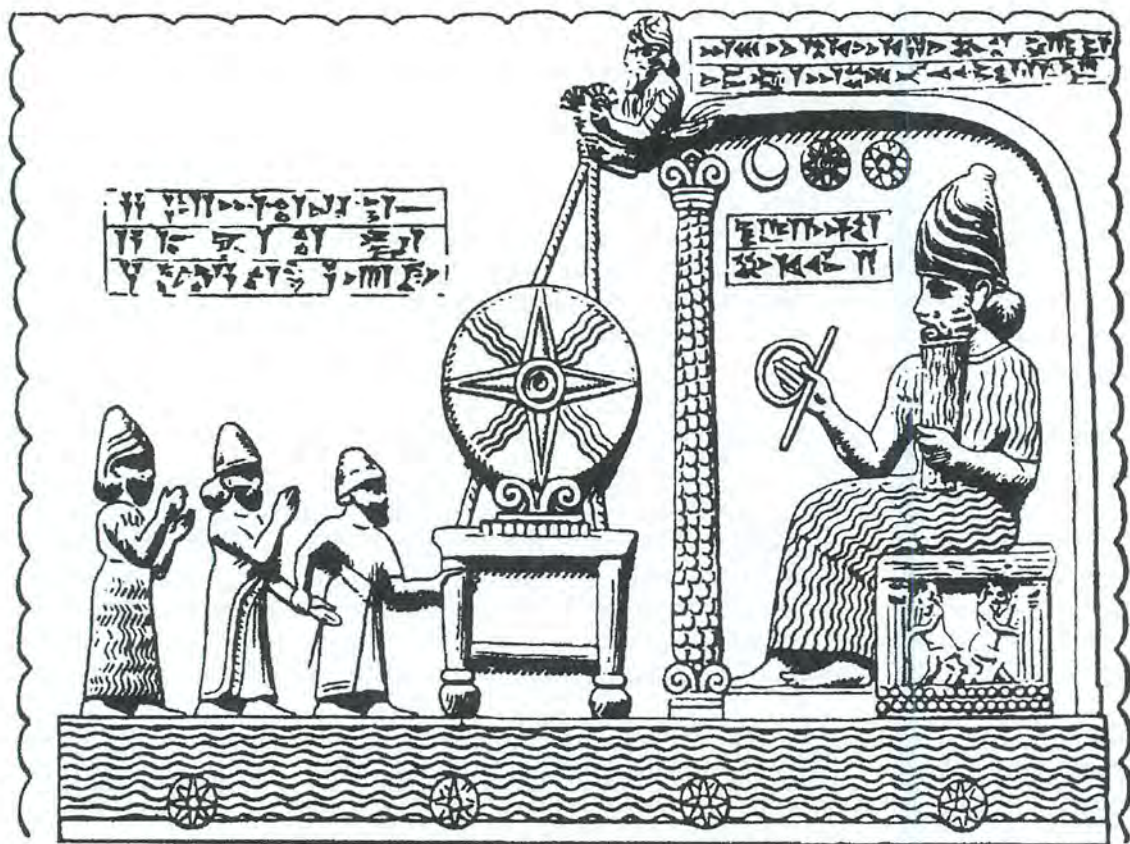
²⁵ *Ibid.*

²⁶ *Ibid.*, p. 164.

²⁷ D. Cardona, "Intimations of an Alien Sky," *AEON* II:5 (February 1992), pp. 14-15.

²⁸ *Idem*, "Shamash and Sin," *Chronology & Catastrophism Workshop* 1992:2, pp. 16-17; E. Cochrane, "Mons Veneris," *AEON* IV:5 (November 1996), pp. 71 ff.

²⁹ R.C. Thompson, *op. cit.*, p. xxv; see also, P. Gossman, *Planetarium Babylonicum* (Rome, 1950), pp. 41-57.



Shamash—the god and his emblem—whom the Assyro-Babylonians themselves identified as the planet Saturn.

(Stone tablet of Nabu-apal-iadina, from Abu Habbah, 9th century B.C., now in the British Museum.)

cal Association, A. F. O'D. Alexander, paid greater heed to ancient belief than mythologists have on this particular issue. In his 1962 work on the planet Saturn, he correctly presented the astrological excerpts we have been investigating as relating to Saturn rather than the Sun.³⁰ Unfortunately, he then muddled up the issue by claiming that it was “a legendary association between these two bodies” which served as “an excuse for making reports even more ambiguous by using the word for Sun when Saturn was meant.”³¹

Actually, there is absolutely no doubt that Shamash was also the Babylonian name of the Sun. In fact, a bilingual list of the heavenly bodies now housed in the British Museum shows Shamash pure and simply as the Sun. Saturn is there called by the usual name of Ninurta.³² This is so true that a differentiation between Shamash/Saturn and Shamash/Sun had to be introduced into these astrological reports. Just as the above-mentioned gloss was thought necessary to indicate that Saturn, in lieu of the Sun, was meant in those prognostications that might have appeared ambiguous to the casual reader, so similar glosses were inserted to

³⁰ A. F. O'D. Alexander, *The Planet Saturn* (N. Y., 1962), p. 44.

³¹ *Ibid.*

³² D. A. Mackenzie, *Myths of Babylonia and Assyria* (London, 1915), reprinted as *Mythology of the Babylonian People* (London, 1996), p. 301, where “Ninurta” is rendered through its former reading as “Ninip (Nirig).”

emphasize the role of the Sun, in lieu of Saturn, when the opposite was true. In this case the gloss was made to indicate "Šamše u-mi"—i.e. "Šamaš of the day."³³

In fact, variants of the name Shamash still mean "sun" in many modern Semitic languages.³⁴ Thus, in Hebrew, the common word for "sun" is *shemesh*. Among the Aramaeans the word was also rendered šemeš (shemesh) or šimša (shimsha).³⁵ In pre-Islamic times, the Arabic word was Šamšu (Shamshu).³⁶ Even in Maltese, the only European language with a distinctive Semitic root-base, the Sun is called *xemx*,³⁷ where the "x" is phonetically equivalent to "sh"—thus *shemsh*.

All of this raises some very interesting questions. Why, for instance, was the planet Saturn called by the same name as the Sun? It is not as if the Babylonians had no other names for Saturn—we have already encountered two: En-Me Šar-ra and (Mul) Lu-Bat Sag-Uš. But also, ancient names, unlike some modern ones, carried their own meanings. No one in those days would have thought of naming a person or an object by using lexical abstraction. *Shemesh*, and therefore Shamash, means "to be brilliant,"³⁸ and while this may be an apt name for the Sun, one would hardly think of alluding to the pin-point of light that is Saturn by the same appellation. And yet this is precisely what the Babylonians did. As Jastrow was forced to conclude, "the fact that Saturn was also called the 'sun' is vouched for, both by explanatory notes attached to astrological connotations, and by notices in classical writings to that effect."³⁹ Thus, while we understand that Shamash was the name of the planet Saturn as well as the Sun, is it also to be understood that Saturn was once believed to have been *as brilliant as the Sun*?

THE LIGHT OF THE GODS

The close relationship, or quasi-synonymy, between the planet Saturn and the Sun was not, in Mesopotamia, restricted to the Babylonian Shamash. The Sumerian planetary god Ninurta also shared this dual characteristic. Thus Stephen Langdon could speak of "the sun-god Ninurta" in one breath while claiming in the next that, in Sumerian-Babylonian religion, Ninurta was "the war god and planet Saturn."⁴⁰ It was even said of Ninurta that his face was Shamash.⁴¹

Together with many other deities, Ninurta has often been presented by mythologists as a storm god. This view owes its origin to the texts themselves in which Ninurta is lauded as *u sur me-a*⁴² or, in Sumerian, as *Lugal-e ud me-lâm-bi nîr-gál*.⁴³ In the past, these epithets had been translated as "the most furious storm (or stormwind)" and "King, Storm whose bril-

³³ M. Jastrow, Jr., *loc. cit.* (emphasis added).

³⁴ Anonymous, "Shamash," *Encyclopaedia Britannica* (1959 ed.), Vol. 20, p. 454.

³⁵ *Ibid.*

³⁶ *Ibid.*

³⁷ E. D. Busuttill, *Kalepin Tliet Ilsna* (Valletta, 1978), p. 123.

³⁸ J. Strong, *Hebrew and Chaldean Dictionary* (Madison, N. J., 1890), p. 119. NOTE: The earlier opinion of George Rawlinson—*The Seven Great Monarchies of the Ancient Eastern World* (N. Y., 1885), Vol. I, p. 82—who contended that the name Shamash signified "the ministering office of the sun" (emphasis as given), is no longer held to be valid.

³⁹ M. Jastrow, Jr., *Aspects of Religious Belief and Practice in Babylon and Assyria* (N. Y., 1911), p. 223.

⁴⁰ S. Langdon, "Semitic Mythology," *Mythology of All Races*, Vol. V (N. Y., 1964), pp. 55, 135.

⁴¹ T. Jacobson, *Before Philosophy* (Harmondsworth, 1963), pp. 145 ff.

⁴² J. van Dijk, *Sumerische Gottlieder*, Vol. II (Heidelberg, 1960), p. 140.

⁴³ H. Lewy, "Origin and Significance of the Mâgên Dâwîd," *Archiv Orientalni*, 18:3 (1950), p. 335.



Ninurta— with thunderbolts, sword, and scythe—
from a relief found at the temple dedicated to the god in ancient Kalakh (or Kalhu), present-day Nimrud.

liance surpassed (all others)."⁴⁴ It is strange that this consensus was reached, and maintained, in spite of Virolleaud's contention that *ud* (and, by extension Akkadian *u*), actually stands for "sun" or "sun light."⁴⁵ More recently, this subject has again been taken up by Sjöberg and Bergmann who have indicated that "originally *u* [and, by extension, Sumerian *ud*] did not mean 'storm' but 'light'."⁴⁶ Thus even "sun" and "sun light" are not entirely correct.

The epithets quoted above should therefore read "the most furious[?] light" and "King, Light whose brilliance surpassed (all others—i.e. all other gods)." Thus, originally, Ninurta seems to have had nothing to do with storms and everything to do with light—which is much in keeping with his sun-like qualities.

Nimrod has also, and often, been identified as the planet Saturn,⁴⁷ even if the reason for the identification has seldom been clarified. When a reason is given, it usually runs something like the following: Nimrod, sometimes called Nebrod, the traditional founder of Babylon, was "the first to become king on earth...and took as title the name of the planet Kronos [which was Saturn]."⁴⁸ Nimrod, however, did not have to take the name of the planet Saturn because his name was already that of Saturn. Thus, for instance, Nimrod has also, and often, been claimed to be an alias of Ninurta.⁴⁹ The actual truth, however, is that the two names are really one and the same. The cuneiform characters which spell *nin*, *ur*, and *ta* can also be read *nim*, *ru*, and *ud* respectively⁵⁰—which can be said to be the same syllables in reverse and which, of course, spell "nimru-ud," a name that has been popularized as "Nimrod."⁵¹

Of course, it is not only in legendary tales, such as those dealing with Nimrod, that Saturn was lauded as king—often the very first king the world had ever known. As we have already seen above, in the original, that is older, sources, Ninurta/Saturn is himself proclaimed *lugal*—that is "king." And this, again, is in keeping with the mytho-historical record since all of the Saturnian deities were revered as kings, *the first of their line*.

Formerly, when the decipherment of cuneiform was still in its infancy and the transliteration of the Mesopotamian deities had not yet been formalized, the name Ninurta was variously read as Ninib, Ninip, or simply Nin, a title which has been translated as meaning "Lord," although it also stands for "Lady."⁵² (And is it because of this that Fred Bratton listed Ninurta as a fertility goddess,⁵³ or was this merely a typographical error?) Thus, scholars of the late nineteenth and early twentieth centuries were wont to refer to this astral deity by one, or more, of the above names. Writing in 1885, George Rawlinson opted for Nin

⁴⁴ Or, according to a slightly different translation, "King, Storm, whose splendor is Heroic"—see *ibid*.

⁴⁵ M. Jastrow, Jr., "Sun and Saturn," *Revue D'Assyriologie et D'Archeologie Orientale* (Paris, September 1910), p. 165.

⁴⁶ A. W. Sjöberg & E. Bergmann, *The Collection of the Sumerian Temple Hymns* (N. Y., 1969), p. 100.

⁴⁷ S. Langdon, *op. cit.*, p. 55; H. Lewy, *op. cit.*, p. 338.

⁴⁸ A. B. Cook, *Zeus: A Study in Ancient Religion*, Vol. II:1 (N. Y., 1965), p. 693.

⁴⁹ H. Lewy, *op. cit.*, pp. 337, 338; A. E. Guinness (ed.), *Mysteries of the Bible* (N. Y., 1988), p. 41.

⁵⁰ Lisa Liel (formerly, Lisa Aaronson), writing under the name Brad Aaronson, "On the Merits of the Revised Chronologies," *Chronology & Catastrophism Workshop* 1988:1, p. 18; *idem*, "Cuneiform and the Revised Chronology," *Catastrophism and Ancient History* XI:2 (July 1989), pp. 128-129.

⁵¹ The reason behind this alternate reading would necessitate a side excursion on cuneiform decipherment but, as interesting as that might be, this is not the place for it.

⁵² *Ibid*. (NOTE: Lisa Liel's other assertion, that Ninurta was the only male deity ever lauded as a female *nin*, cannot be correct. While goddesses bearing the title *nin* are known, such as Ninhursag, Ninsun, Ninshubur, Ningirda, and Nintu, there are also gods other than Ninurta which also bear the title *nin*, such as Ninagal, Ninazu, Ningishzida, Ninlilu, besides the already mentioned Ningirsu—see here, S. Dalley, *Myths From Mesopotamia* (Oxford, 1991), pp. 325-326; S. Langdon, *op. cit.*, pp. 284, 285.)

⁵³ F. G. Bratton, *Myths and Legends of the Ancient Near East* (N. Y., 1970), p. 16.

and Ninip.⁵⁴ Among the epithets of Nin/Ninip that he discussed, we again encounter such familiar ones as “the powerful chief” and “the supreme.” Not only do we find this deity lauded as the first among kings but also as “the first of the gods,”⁵⁵ thus giving the impression that Saturn was the very first god ancient man had recognized as such.

As we noted in Chapter 1 of this work, the cuneiform sign for “god” and “planet” was one and the same—*. However, the same cuneiform sign also stood for “king.”⁵⁶ But, more than that, the very same ideogram was also used to “spell” the name of the great Sumerian god An (or Anu)⁵⁷ who—as the father of all the gods, the “Head of the *older generation* of gods,” standing at the beginning of every theological list from all periods⁵⁸—can also be understood as a personification of the Saturnian deity.

More in keeping with our subject, we also find Ninib lauded as “the light of heaven and earth” and, quite explicitly, as “he who, *like the sun*, the light of the gods, irradiates the nations.”⁵⁹

There is, again, no point in claiming that these were *metaphorical* epithets meant to be applied to the god and not the planet he represented because, to the ancients who venerated him, the god and the planet was one and the same. And this, incidentally, is not merely *my* contention. Conventional mythologists had recognized this fact for themselves even though they found it very difficult to accept. Thus Peter Jensen was forced to see in Saturn an ancient symbol of the “eastern sun” or “the sun on the horizon,”⁶⁰ without however offering a single piece of evidence for this interpretation. George Rawlinson himself found these epithets “very difficult to reconcile with the notion that, as a celestial luminary, [Ninip] was Saturn.”⁶¹ Somewhat like Jensen, he, also, sought to explain the situation by appealing to astral bodies *other than the one indicated by the texts themselves*. As he wrote: “These phrases appear to point to the Moon, or to some very brilliant star, and are scarcely reconcilable with the notion that [Ninip] was the dark and distant Saturn.”⁶²

Elsewhere, and earlier, Rawlinson had indicated the same bewilderment when he asked: “How is it possible that the dark and distant planet Saturn can answer to the luminary who [or which] ‘irradiates the nations *like the sun*, the light of the gods’?”⁶³

NINGIRSU

Other than earlier readings of the name Ninurta as Nin, Ninib, Ninip, etc., the deity in question possessed some *bona fide* aliases, one of which was Ningirsu⁶⁴—the Lord of Girsu (in Lagash).⁶⁵ This is ascertained by the *Gula Hymn of Bullutsa-rabi* in which the consort of the goddess Gula (also known as Bau and/or Nin-Karrak)⁶⁶ is called by various names among

⁵⁴ G. Rawlinson, *The Seven Great Monarchies of the Ancient Eastern World*, Vol. I (N. Y., 1885), p. 86.

⁵⁵ *Ibid.*, p. 87.

⁵⁶ J. E. Pfeiffer, *The Emergence of Society: A Prehistory of the Establishment* (N. Y., 1977), p. 170.

⁵⁷ S. Langdon, *op. cit.*, p. 93.

⁵⁸ *Ibid.*, p. 94; S. Dalley, *Myths From Mesopotamia* (Oxford, 1991), p. 317.

⁵⁹ G. Rawlinson, *op. cit.*, p. 87 (emphasis added).

⁶⁰ P. Jensen, *Die Kosmologie der Babylonier* (Strassburg, 1890), pp. 115-116, 136.

⁶¹ G. Rawlinson, *loc. cit.*

⁶² *Ibid.*

⁶³ *Idem*, *History of Herodotus* (London, 1862), p. 509.

⁶⁴ F. Guirand, “Assyro-Babylonian Mythology,” *New Larousse Encyclopedia of Mythology* (London, 1972), p. 60.

⁶⁵ H. Lewy, *op. cit.*, p. 335.

⁶⁶ F. Guirand, *loc. cit.*

which is Ninurta as well as Ningirsu.⁶⁷ As with the former, so also with the latter: The luminary identified with the god is spoken of as radiating a great light. Thus we find it recorded in Gudea's Cylinder B:

"Ningirsu...rose in overwhelming splendor. *In the land it became day*; the Eninnu [another epithet of the god] rivaled in brilliance the child of Enzu."⁶⁸

This Enzu, also read Zu-en, was the more familiar Sin. His "child" was Shamash, often referred to as *Shamash mar Sin*—i. e. Shamash son of Sin.⁶⁹

This led William Albright to state that "Ningirsu is here the sun...who ascends each morning from the underworld."⁷⁰ That Albright was not well acquainted with the characteristics of this deity is further illustrated when he also opined that "Ningirsu, like Ninurta, seems to have been *primarily* a god of fertility with intimate solar associations."⁷¹ Albright did recognize that Ningirsu has "solar associations," but that Ningirsu was Saturn and not the Sun had already been demonstrated by Jastrow.⁷²

This identification is based on a series of deductions which not only *proves* the ancient identity of Ningirsu but also that of Ninurta. These deductions lead us back to those omens incorporating the formula "when Shamash stands in the halo of Sin" that we have already had occasion to note. Apart from the gloss already there discussed, which explains that Shamash is the name of the planet Saturn (Lu-Bat Sag-Uš), we also come across a clarification which names Ninib/Ninurta as "standing therein."⁷³ This indicates, *beyond any reasonable doubt*, that Ninib/Ninurta was the same as Lu-Bat Sag-Uš/Shamash/Saturn.⁷⁴ As Donald Mackenzie noted: "The sun god was identical with Ninip and Nin-Girsu...and resembling Babbar, 'the shining one,' the solar deity of Akkadian Sippar, whose Semitic name was Shamash."⁷⁵ Also, in a slab relief of the god retrieved from the temple of Ninurta in ancient Kalakh (or Kalhu), present-day Nimrud (still named after the very god), Ninurta is depicted with the scythe as one of his weapons. As is widely known, the scythe was the favored weapon of Kronos/Saturnus. Thus, as Jastrow admitted, Franz Kugler was correct in identifying "the planet (Lu-Bat) whose name is Ninib [i.e. Ninurta]" as referring to Saturn.⁷⁶ And, let's face it, in a bilingual list of the planets, now in the British Museum, Ninurta is *definitely* listed as the name of the planet Saturn.⁷⁷

Now it should be understood that the term "Lu-Bat" was also used to designate Mars and Mercury besides Saturn. A. F. O'D Alexander, however, misunderstood the usage of this term when he stated that a "further ambiguity was caused by using *lubad* [the same as Lu-Bat] ('planet') sometimes for Saturn, sometimes for Mercury."⁷⁸ What Alexander should

⁶⁷ W. G. Lambert, "The Gula Hymn of Bullutsa-rabi," *Orientalia: New Series*, 36 (1967), pp. 105 ff.

⁶⁸ W. F. Albright, "The Mouth of the Rivers," *The American Journal of Semitic Languages and Literatures*, 35:4 (July 1919), p. 165 (emphasis added).

⁶⁹ *Ibid.*, pp. 165-166.

⁷⁰ *Ibid.*

⁷¹ *Ibid.*, p. 166 (emphasis added).

⁷² M. Jastrow, Jr., *op. cit.*, p. 173.

⁷³ *Ibid.*, p. 172.

⁷⁴ *Ibid.*

⁷⁵ D. A. Mackenzie, *Myths of Babylonia and Assyria* (London, 1915), reprinted as *Mythology of the Babylonian People* (London, 1996), p. 132.

⁷⁶ *Ibid.*; F. X. Kugler, *Sternkunde und Sterndienst in Babel*, Vol. I (Munster, 1907-1913), pp. 221 ff.

⁷⁷ D. A. Mackenzie, *op. cit.*, p. 301.

⁷⁸ A. F. O'D. Alexander, *The Planet Saturn* (N. Y., 1962), p. 44.



Ningirsu—shown seated with his seven-headed weapon—from a cylinder seal impression.

have noted is that it is the descriptive epithets added to “Lu-Bat” that signifies which of these three planets is meant. Thus Lu-Bat Dir was Mars, Lu-Bat Gu-Ud was Mercury, and Lu-Bat Sag-Uš, as we have seen, was Saturn. Neither Jupiter nor Venus, on the other hand, was ever designated as Lu-Bat.⁷⁹

Meanwhile, an astrological text distinguishes Ningirsu as (An) Lu-Bat which identifies the deity as a planet even if we are left with a choice between Saturn, Mars, and Mercury. As Jastrow however pointed out, the listing of Ningirsu as an alias of Ninurta leaves no doubt as to which Lu-Bat—i.e. which planet—is intended. If Ninurta, as we have seen, was Lu-Bat Sag-Uš/Shamash/Saturn, then so must have been Ningirsu.⁸⁰

Of Ningirsu it was also said that “he changes darkness into light.”⁸¹ This is quite a claim to make of the planet Saturn and yet it is in keeping with the sun-like brilliance attributed to other Saturnian deities. Now while no conventional mythologist has, to my knowledge, ever sanctioned this hypothesis, the veneration of Saturn by the ancients as some sort of sun *has* been accepted as fact by more than one of them.⁸² Discretion, it seems, has kept them from going further.

⁷⁹ M. Jastrow, Jr., *op. cit.*, pp. 174-175.

⁸⁰ *Ibid.*, p. 173.

⁸¹ *Idem*, *The Religion of Babylonia and Assyria* (Boston, 1898), p. 57.

⁸² Besides Jastrow, see, for example, U. von Wilamowitz-Möllendorf, “Phaethon,” *Hermes* 18 (1883), pp. 421-422; F. Boll, “Kronos-Helios,” *Archiv für Religionswissenschaft* 19 (1916-1919), *in toto*.

(For those in the know: The association of Ninurta with Nergal, as also with the Greek Herakles, will be discussed in a future volume.)

THE TRUE SUN

Like that of other ancient nations, Hindu astronomy is inseparable from mythology. This particular mythology, however, *continues* to thrive as the basis of Hindu religion. In a way, it can therefore be said that, among the Hindus, planetary worship is practiced to this day—and not only in an indirect way. Here I would like to remind the reader of that passage from the *Linga Purana* we had earlier looked at which admonishes that “the worship of the planets should be pursued by good men.”⁸³ Moreover, the reason behind this admonition is the warding-off of evil at times of planetary “harassment.”⁸⁴ That, in these modern times, not many practicing Hindus are even aware of these words, and that few, if any, among them actually practice planetary worship, is besides the point. What *is* at issue here is that the admonition in question is contained in one of the missals, if you wish, by which one of the world’s great living religions is meant to abide.

Like the gods of other nations, Vedic deities are known by more than one name or epithet as so, also, are the planets. Thus, one of the names for the Sun in Sanskrit is Arka.⁸⁵ But then we find that three related designations for the planet Saturn in the same language are Arki,⁸⁶ Arka-putra,⁸⁷ and Arkatanayah.⁸⁸ Both Arka-putra and Arkatanayah translate as “son of the Sun.”⁸⁹ Arkaja, which means “sun-born” can also be applied to the planet Saturn,⁹⁰ as so, also, can Arkanandana.⁹¹ So, once again, we find the planet Saturn bearing a name which is shared by the Sun.

Hindu mythology, of course, is largely based on Vedic belief. And yet, as one critic pointed out quite a few years ago, it has never been proved to the general satisfaction of Indologists that *any* planets are mentioned in the Vedas.⁹² As I had earlier written in reference to this criticism, however, this lack can be compensated for “if it can be shown that certain deities mentioned in the [Vedic] hymns possess planetary traits and/or characteristics comparable to the [known] planetary deities of other nations.”⁹³ Today I can go even further because, if it can be shown that the names and/or epithets applied to the Vedic deities are identical to those applied to the planets by the same race and in the same language, the equivalence of deities and planets is proven on home ground without any recourse or appeal to comparative studies. Such, for instance, is the case with Brahma, the supreme creator of Indian mythology.

Strictly speaking, Brahma was not a Vedic deity. He more properly belongs to that corpus of Hindu lore known as Brahmanic mythology. He was proclaimed the first of the Devas, usually said to mean “gods,” but which properly translates as “shining ones. Here it should be noted that the Sanskrit adjective *brahmanya* means “relating [or belonging] to Brahma.”⁹⁴

⁸³ *Linga Purana*, I:57:32-39.

⁸⁴ *Ibid.*

⁸⁵ V. S. Apte, *op. cit.*, p. 147.

⁸⁶ *Ibid.*, p. 228; R. K. G. Temple, *The Sirius Mystery* (N. Y., 1976), p. 180.

⁸⁷ *Ibid.*, p. 181.

⁸⁸ V. S. Apte, *op. cit.*, p. 147.

⁸⁹ *Ibid.*; R. K. G. Temple, *op. cit.*, p. 180.

⁹⁰ *Ibid.*

⁹¹ *Ibid.*

⁹² F. Edgerton, “Still Colliding,” *Harper's Magazine* (August 1951).

⁹³ D. Cardona, “Child of Saturn,” Part II, *KRONOS* VII:2 (Winter 1982), p. 35.

⁹⁴ V. S. Apte, *op. cit.*, p. 707.



Brahma, whom certain Hindu sages identify as the planet Saturn and a form of the True Sun.

Brahmanyah, however, is yet another epithet of the planet Saturn.⁹⁵ As Brahmanyah, Saturn can therefore be said to be Brahma's planet. In fact, while Indologists may find it difficult to accept, Brahma has long been identified as Saturn by certain sages of Hindu religion itself.⁹⁶ What is of greater import to this study is that these sages consider Brahma to be the "true sun"⁹⁷—which is the same as saying that, *to them*, it is Saturn, and not the present solar orb, that is the real "sun." Since even these sages can see that this is absurdly not so, we can only assume, on the strength of what we have learned, that this dictum must have been believed to stem from *ancient* lore. But how could Saturn have been to ancient man what the Sun is to us today?

As any work on Indian mythology will assert, Surya is not only the name of the god of the Sun but is the most common Sanskrit name of the Sun it-

self. There are, however, lines of evidence which indicate that Surya, too, was originally Saturn, the least of which not being the reference to Surya as *graha* Surya, that is the *planet* Sun.⁹⁸ But let me forestall an objection.

It will be pointed out by the knowledgeable that in India, as in certain other nations, the Sun was counted, with the Moon, as one of the seven "planets."⁹⁹ But one hardly finds, among these *other* nations, the Sun itself alluded to *singly* by a term reserved for planets. Even so, one might argue that the Hindus allowed this exception. Maybe so. But, as in the case of the Egyptian Ra, Surya is described as having motions and characteristics which do not fit those of the Sun. Thus, to give but one example (and, later, I shall be giving others), Surya is said to have occupied *samanam dhama*, which means "the same place of rising and setting."¹⁰⁰ Everyone knows that the Sun does not rise and set in the same place. (How this oddity, in turn, applies to the primeval Saturn will be explained in a later chapter of this work.)

Let me, however, be a little more specific. Surya is also termed Suraj. But Suraj, again, is yet another name for the planet Saturn.¹⁰¹ So that, yet one more time, we can see that Saturn

⁹⁵ *Ibid.*, p. 708. (NOTE: I must here register my debt to Roger Ashton for this datum, as also, in fact, for all other references to V. S. Apte.)

⁹⁶ E. Moor, *Hindu Pantheon* (London, 1864), p. 218.

⁹⁷ *Ibid.*

⁹⁸ *Linga Purana*, I:54:65-68.

⁹⁹ *Ibid.*, I:57:19-20.

¹⁰⁰ H. D. Velanker, *Rgveda Mandala VII* (Bombay, 1963), p. 147.

¹⁰¹ *Bhargava's Standard Illustrated Dictionary of the Hindi Language* (Hindi-English edition, Varanasi, 1969), p. 1110.

and the Sun once shared the same name as, among the Hindus, at least in Sanskrit, they still do.

As earlier noted, another Sanskrit name for the planet Saturn is Grahanayakah, which means "chief, or leader, of the planets." But, again, Grahanayakah is also one of the names bestowed on the Sun.¹⁰²

THE SATURNIAN SUN

We have now reached a point where we face the risk of monotonous repetition. But ours is a precarious position since, while listening to the voice of antiquity, we seem to be lending a deaf ear to astronomical principles. For the moment, however, our main interest must focus on what the ancients had to say concerning the cosmos around them. Thus, if our inquiry is to have any meaning, our position will have to be fortified and, hopefully, sustained by invoking *first* the strength of numbers. Unless enough evidence is presented, we will always face the greater risk of being accused of selectivity. For that reason, and in order to show that the theme being developed here was well nigh universal, we must continue to press home with further examples until we have covered a fair share of the ancient world.

When it comes to astronomical lore, ancient Egypt presents something of a problem since the Egyptians were not possessed of a formal astronomy until Ptolemaic times. It almost seems as if the Egyptians were content to view the heavenly bodies as deities whose motions were too sacred to be reduced to mundane numbers. Despite their star maps, charts, and calendars, when it comes to the planets and their motions, nothing has survived from pre-Alexandrian Egypt that would allow us to claim an astronomical achievement on their part.

On the other hand, if conventional mythologists can treat of deities like Horus and Ra as solar representations, with the likes of Isis and Hathor as lunar or Venerian ones, then so are we allowed to treat them as celestial bodies. In fact, as already noted, ask any mythologist to name the solar god *par excellence* and the name of Ra (or Re) is bound to come up. Not only is Ra presented as the Egyptian sun god, he is believed to have been the Sun itself. As James Frazer echoed this Egyptological dictum: "That Ra was both the physical sun and the sun-



Surya—the sun-god whose motions fail to conform to those of the present Sun.

¹⁰² V. S. Apte, *op. cit.*, pp. 417, 542.



Ra, who, in Ptolemaic times, was actually identified as a representative of the planet Saturn.

ize that this last is something of a loaded question.)

god is of course undisputed..."¹⁰³ And yet, as we have already pointed out, the motions and characteristics of Ra do not match those of the Sun. In view of the ancient connections we have now discovered between Saturn and the Sun, we should not therefore be surprised to learn that an Egyptian ostrakon from Ptolemaic times actually identifies Ra as the Greek Kronos, which is the planet Saturn.¹⁰⁴

Egyptologists, of course, will object, pointing out that this is such a late, and isolated, case, stemming, no less, from *Greek* interpretation, that the datum should not be given any credence. Which is why I was surprised when it was brought to my attention¹⁰⁵ that Samuel Mercer came close to admitting something similar. In his study of the *Pyramid Texts*, Mercer noted that the Egyptian star designated *shd.w* "is compared to and identified with Re [the same as Ra], and might have been our Saturn..."¹⁰⁶ It is, of course, the "star" *shd.w* that Mercer thinks might have been the same as Saturn. But if *shd.w* was Saturn, its identification with Ra would be telling the same story the Ptolemaic ostrakon does.

Granting the uniqueness of the ostrakon in question, we at least have *one* direct identification of Ra as Saturn (plus a second *indirect* one if Mercer is correct). Besides, is it conceivable that, with the progress of astronomical science, it would have been forgotten by Ptolemaic times that Ra was the Sun? Or had the Greeks no word for the Sun for them to refer to it as Kronos? (In view of what follows, of course, I real-

¹⁰³ J. Frazer, *The Golden Bough* (N. Y., 1890/1981), Vol. I, p. 313.

¹⁰⁴ F. Boll, "Kronos-Helios," *Archiv für Religionswissenschaft*, XIX (1916-1919), pp 343 ff.

¹⁰⁵ E. Cochrane, "The Milky Way," *AEON* IV:4 (April 1996), pp. 49-50.

¹⁰⁶ S. Mercer, *The Pyramid Texts in Translation and Commentary*, Vol. 2 (N. Y., 1952), p. 157, as quoted in *ibid* (emphasis added).

Even so, on the basis of this one datum, I would not be bold enough to build an edifice. And, as a qualification I should perhaps add that this does not mean that Ra *never* stood for the Sun. It is obvious from texts of a *historical*, or *narrative*, but *not* mythological, nature that the Sun was also referred to as Ra. But is this not the same situation we have found among other nations where the planet Saturn and the Sun are made to share the same name?

Meanwhile, the Ptolemaic identification of Ra as Saturn is given additional credence by the Greek poet known as Nonnus. A native of Panapolis in Ptolemaic Egypt, Nonnus likewise referred to the Arabic Sun as Kronos¹⁰⁷ which, again, was the same as calling the Sun by the name of Saturn.

Now it is true that the Greeks, and after them the Romans, had a penchant for calling alien deities and celestial bodies by what they understood to be their Greek, or Roman, counterparts. It is also known that, in certain cases, their matching was somewhat arbitrary. But neither the planet Saturn nor the Sun could have contributed to such arbitrariness since both luminaries were beyond confusion. So why would Nonnus have chosen to call the Arabic Sun by the name of the planet Saturn? Is not one inclined to assume that a similar ambiguity between the Sun and the planet Saturn must have existed in Arabic nomenclature? And does this not indicate that the Graeco-Egyptian who had it recorded that Ra stood for Kronos/Saturn was, in fact, echoing the popular belief of the time?

The Greeks, of course, had their own lore to draw upon. Not only did they, as we have seen, refer to the planet Saturn as the star of Helios, that is the star of the Sun, they actually identified it outright as Helios. Thus, for instance, Plato (or Philip of Opus¹⁰⁸) wrote that pre-eminent among the planets for its slowness was the one whom "some call ...Kronos,"¹⁰⁹ which is Saturn. But, in the *earliest* copies of the text, the name used was not Kronos but, rather, Helios.¹¹⁰ It was only later copyists, who could not understand why the planet Saturn was here being alluded to by the name of the Sun, who "corrected" the text to read "Kronos," the "accepted" Greek name of the planet Saturn. As Franz Boll, whose illuminating study of this subject has long been ignored, demonstrated, the practice of "correcting" such texts—changing the name "Helios" to read "Kronos"—was *quite common* among later copyists.¹¹¹

To Porphyry, originally named Malchus, the Greek historian and Neoplatonist from Tyre, in Syria, Kronos/Saturn was also called Helios¹¹² as it was to Rhetorios and Claudius Ptolemy himself.¹¹³ All of which further indicates that the Ptolemaic identification of Ra as Kronos/Saturn was in keeping with the belief of the time.

As it happens, the name "Helios" closely resembles the Greek transliteration of the Canaanite/Phoenician "El," that is "Elos," a deity who, as Philo Byblius proclaimed, was the same as Kronos/Saturn.¹¹⁴ Thus a confusion between the names Elos and Helios has been suggested to be at the root of this belief.¹¹⁵ This point is somewhat tacky because, in my opinion, the Greek Helios, together with similar divinities incorporating the same philological root, does ultimately derive from El. But Plato, who already used the name Helios for

¹⁰⁷ Nonnus, *Dionysiaca*, XL:393.

¹⁰⁸ See next reference.

¹⁰⁹ Plato, *Epinomis*, 987c. (NOTE: There are some who ascribe the authorship of this work to Plato's pupil, Philip of Opus.)

¹¹⁰ F. Boll, *loc. cit.*

¹¹¹ *Ibid.*

¹¹² Macrobius, *Saturnalia*, I:22:8.

¹¹³ F. Boll, *op. cit.*, p. 344.

¹¹⁴ L. Delaporte, "Phoenician Mythology," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 83; see also W. A. Heidel, *op. cit.*, p. 470.

¹¹⁵ A. Bouche-Leclercq, *op. cit.*, p. 93.



Helios, the patron deity of ancient Rhodes, whom Plato named as the planet Saturn.
(Photograph by the author, courtesy of the Archaeological Museum of Rhodes.)

for the planet Saturn, would not have known this since he wrote some four hundred years before Philo. Besides, as Boll pointed out, and as we have seen, the association of Saturn with the Sun was much too widespread to be attributed to a Greek confusion based on Philo.¹¹⁶ Boll's own conclusion was that the naming of the planet Saturn as Helios was not due to any confusion of names, and hardly a confusion of the luminaries involved, but owed its cause to the simple fact that, originally, Helios and Kronos were one and the same god and, therefore, one and the same planet—that is Saturn.¹¹⁷

Ambrosius Theodosius Macrobius, the Roman philosopher and grammarian who lived between 395 and 423 A.D., has been much maligned for claiming, in the first book of his *Saturnalia*, that all forms of worship derived from that of the Sun. Among the misconceptions that are laid at his door is his identification of Kronos as the Sun.¹¹⁸ But, having learned what we now have, can we honestly say that Macrobius was that much in error? Was he not, in his own way, reporting what his ancestors, and those of the Greeks before them, had believed—that Saturn bore the name of the Sun?¹¹⁹ Should we fault him for believing that this sun was the same Sun that shone daily above *his* head? Have we not now seen that most modern mythologists have been trapped into committing the same error?

This belief was so inbred in the early sciences it even turns up in alchemy, the foster-mother of chemistry. When astrology embraced, and thus debased, what had commenced as a monopolized industry in the transformation of base metals into gold-*simulating* alloys by the priestly caste of Alexandria, ancient astronomical lore entrenched itself in mystical treatises that were to obsess alchemists well past medieval times. Among these astro-chemical echoes we encounter the statement that the planet Saturn constitutes "the best sun,"¹²⁰ which reminds us of Saturn as the "true sun" believed in by Hindu sages. As David Talbott well realized:

"...it is unlikely that [the alchemists] themselves knew what to do with the idea. But that the tradition was passed down from remote antiquity is both indisputable and crucial."¹²¹

This belief was so deeply entrenched that the Swiss psychologist, Carl Jung, could refer to Saturn as "the second sun" as if the oddity was well known.¹²²

FIRST INTERLUDE

The handing down of traditions from remote antiquity of which Talbott speaks above does not, however, explain the tenacity with which ancient man has held to the idea that Saturn was a sun. Neither does it explain how the belief itself originated. So that, despite the fact that ideas do travel over distance, across geographical boundaries, and through time, from centuries to millennia, it is not easy to understand why a belief in something that was obviously not so could have survived the advertency of the ages.

It is therefore not enough to maintain that this belief owes its spread to diffusion, cultural contact, or wholesale borrowing, because, for one thing, we are not here concerned with an idea that would readily have lent itself to popular appeal. What we are concerned with is an

¹¹⁶ F. Boll, *op. cit.*, p. 343.

¹¹⁷ *Ibid.*, pp. 345-346.

¹¹⁸ Macrobius, *lo. cit.*

¹¹⁹ In fact, to be sure, was not his statement based on the belief of Porphyry?—see *ibid.*

¹²⁰ J. Schwabe, *Archetyp und Tierkreis* (Basle, 1951), p. 492.

¹²¹ D. Talbott, *The Saturn Myth* (N. Y., 1980), p. 40.

¹²² C. Jung, *Symbols of Transformation* (N. Y., 1976).

astronomical belief, something that the common man in the street would not have cared about except as a curiosity. In this respect, it was no different then than it is now.

Granted that religion would have augmented the belief until it fossilized itself into a credo of faith, the question of why such an obvious falsity would have been incorporated in ritual litanies in the first place remains unanswered. More amazing is the fact that the belief survived the scrutiny of those who were in the best position to know otherwise—the astronomers and astrologers. How could these professional men have attempted to utilize the datum in a more practical way when the belief on which it was based belied reality.

We can, perhaps, understand how an error in astronomical observation, or a miscalculated set of figures, could have been misconstrued into a truth. Habitual acceptance of such a misconstrued fact might even, in time, have cemented the misconception into dogmatic belief. It happens. But the incongruity of a belief in something which was demonstrably false would have had a difficult time in being accepted as dogma by a culture and installed as a pillar of astrological wisdom supposedly based on astronomical verity. It is difficult to understand why ancient astronomers, astrologers, or priests looked up at the planet Saturn and asserted that it was a sun. More difficult to believe would be that such a preposterous idea, even if it was somehow believed in, say, by the Babylonians, could have been foisted on a people of a different culture. Everyone could look up into the sky and see that Saturn was not a sun. One need not have been an astronomer in order to expose such a deceit.

What people *might* have believed is that Saturn *could have once* shone as a sun. This would have been different because although everyone could see that Saturn did not shine as a sun, there was no way they could tell whether it once did. And, let us face it, man has long been prone to the possibility that things *could* have been different in remote antiquity—which renders this very study beyond exception.

On the other hand, whether imbedded in fact or fiction, every belief has to have an origin. So what could have been the origin of this particular one? One explanation offered by Pingree is that the Sun's hyposoma sets as Saturn's rises.¹²³ A hyposoma—plural, hyposomata—is the *astrological* term for the point in the zodiacal sign in which a planet is believed to exert its greatest influence. But, as Ulla Koch-Westenholz noted, "the earliest evidence for the hyposomata is from the seventh century BC,"¹²⁴ and the association of Saturn and the sun is certainly older and far more entrenched in the tradition than warranted by such arcane speculations."¹²⁵ The classicist R. Beck had a different explanation. As he had it stated:

"In ancient astrology it is widely attested...that Saturn was the star of the Sun...Graeco-Roman astrology made the [same] identification because Babylonian astrology had made it already, and the western tradition here simply drew on its older eastern relative."¹²⁶

But the Babylonians and, before them, the Sumerians, had absolutely no reason to invent the postulate, to perpetrate this astronomical lie. It could have served no purpose—religious, political, or otherwise. It would not have answered any questions posed by theology, sovereignty, or nature. Besides, if we are to invoke diffusion as a solution to this problem, how would we explain similar beliefs from the American continent which, we have been taught, could have had absolutely no contact with the world of the ancient Near East? I will not, at

¹²³ U. Koch-Westenholz, *Mesopotamian Astrology* (N. Y., 1995), pp. 122-123.

¹²⁴ And see here, S. Langdon, *op. cit.*, p. 304.

¹²⁵ *Ibid.*

¹²⁶ R. Beck, *Planetary Gods and Planetary Order in the Mysteries of Mithras* (Leiden, 1988), p. 86. (NOTE: I am indebted to Peter J. James for bringing this datum to my notice.)

this point, delve into Mesoamerican lore to uphold the thesis being developed, since I would like to reserve that for a later part of this work. But it would do no harm here to note that in analysing the Mayan holy book known as the *Popul Vuh*, which, among other things, deals with the glowing face of the sun, it comes out unreservedly that *certainly it was not the same sun which we see*.¹²⁷

Would it then be too much to consider what appears to be the only other alternative—that what the ancients believed was indeed what they, *or their ancestors*, had actually seen and experienced?

Before we answer that question, let us consider one additional point. The ancients did not merely maintain that Saturn was, or had been, a sun. They alluded to it as such as if it was, or once had been, general knowledge; as if everyone knew that this was, or had been, the case. No explanations, clarifications, or qualified rationalizations are ever encountered to account for the phenomenon. But, whether speaking of the Saturnian god as distinct from his luminary or of the luminary that was Saturn itself, it was always accepted that deity and planet, which in reality were one, coruscated, or had once coruscated, as a true sun. Personally, this was one aspect concerning the Saturnian phenomenon which further convinced me that not only did the ancients mean exactly what they “said,” but that they probably knew what they were “talking” about. But what, exactly, did this amount to?

At this point we had best lay the cards we have so far accumulated plainly on the table. We have, I believe, supplied ample evidence (and more will be forthcoming in the chapters that follow) to indicate that the ancients believed Saturn to have once radiated as a sun. As Hodder Westropp and Staniland Wake had concluded long before Jastrow on studying ancient symbolism, as far as the ancients were concerned, Saturn was the *first* irradiator of light.¹²⁸ But a question we posed earlier remains unanswered. This concerns the sharing of names between Saturn and the Sun. But then, what *is* true—that Saturn was given the former name of the Sun, or that the Sun was given the former name of Saturn?

Boll seems to have had no doubts about this. As far as *he* was concerned, the Greek Helios and the Latin Sol were originally the names of the planet Saturn.¹²⁹ Here I would like to mention the cult of Sol Invictus, the Unconquered Sun, which did not gain significant ascendancy until the third century A. D. Both the cult and the festivals associated with it were established by the Emperor Aurelian (Marcus Aurelius Antoninus, also known as Elagabalus) and celebrated on the 25th of December¹³⁰—what to the Western World today is Christmas. As Roger Wescott asked, why would the Sun have been deemed unconquered. “The common assumption about this theonymic phrase,” wrote Wescott, “is that it could be *loosely* equated with ‘the invincible sun’.”¹³¹ Wescott, however, was “inclined” to take the term literally. In which case the question could be asked: Was there also a cult of Sol Victus—“the *conquered* Sun”? As Wescott concluded: “Although this latter phrase [i.e. Sol Victus] does not occur in Roman literature, the phrase *Sol Indigetes* is found, referring to an *older* sun-god.”¹³²

It can therefore be conjectured that in each case where Saturn and the Sun share the same name, the name originally belonged to Saturn. This suspicion moves closer to certainty when we realize that, while every *major* ancient name of the Sun was also bestowed on Saturn, *not every ancient name of the planet Saturn was bestowed on the Sun*. The certainty grows when,

¹²⁷ D. Goetz & S. Morley, *Popul Vuh* (Norman, 1972), p. 188, (emphasis added).

¹²⁸ H. Westropp & C. S. Staniland, *Ancient Symbol Worship: Influence of the Phallic Idea in the Religions of Antiquity* (N. Y., 1875), p. 64.

¹²⁹ F. Boll, *op. cit.*, p. 344 ff.

¹³⁰ L. M. Greenberg, “The Lord of Light,” *AEON* III:4 (December 1993), p. 13.

¹³¹ R. W. Wescott, “Quantalism: The Big Picture,” *AEON* V:1 (November 1997), p. 47 (emphasis added).

¹³² *Ibid* (emphasis added).

as already intimated, we discover that the characteristics attributed to the ancient sun gods fail to fit the role of the Sun. Mythology, it now seems, was never concerned with *the* Sun—that is *our* Sun. The sun it speaks of was the Saturnian one. It therefore follows that the sun of the ancients—the “true sun”—was Saturn. And if, later, *some* of the names of Saturn were bestowed on the Sun, it could only have been because the Sun supplanted Saturn—not *merely mythologically, but physically*.

We can therefore offer the above conclusion as a hypothesis—which, for the time being, we will call Hypothesis #1—to the effect that, *according to the ancients*, the planet Saturn once shone as a sun. But, because we suspect that the reader may not be entirely satisfied with the evidence we have so far presented, we will seek to test the postulate further by analyzing what else the ancients had to offer on the subject because, if their sun of ages was Saturn rather than the present Sun, their traditions should also reflect *conditional* astronomical differences. And this, as we shall see, is *precisely* what we encounter in our continuing investigation of ancient astronomical lore.

Chapter 4

The Sun of Night

THE EGYPTIAN NIGHT SUN

The Egyptian god Atum bore a specific and strange characteristic. He was honored as a sun of night.¹

Students of Egyptian mythology have long grappled with the exact meaning that lies hidden beneath this strange characteristic. The best that Wallis Budge could offer by way of an explanation was that Atum, whom he referred to by the name's former reading of Temu, was the Sun *after* it had set.² By this he meant to imply that the Egyptians worshipped the Sun even when it was absent from the sky. Sun worship at night, however, makes for an incongruous institution. This fallacious interpretation should never have been derived, and it would not have, had the Egyptologists thought of comparing their texts more diligently with those in the hands of the Assyriologists.

There has never been any doubt that, as far as the Egyptians themselves were concerned, Atum "was held to be one of the forms of the great Sun-god Ra..."³ For the time being, we shall not bother ourselves with Budge's contention that Atum was the personification of the *setting* Sun,⁴ especially since, elsewhere, Atum is described as rising.⁵ As we shall see, both these terms—i.e. "rising" and "setting"—are based on mistranslations which will be clarified later on. Budge was also of the opinion that Atum "was originally the local god of the city of Annu, or Heliopolis,"⁶ and that only later was he assimilated with Ra. While this seems to have really been the case, it must not be assumed that the assimilation was an arbitrary one. This assimilation resulted in the double god known as Atum-Ra (or Ra-Atum)⁷ as indicated in the hymn contained in the Papyrus of Mut-hetep⁸ and elsewhere.

Here, perhaps, we could add that Ra was also worshipped by the same name in Mesopotamia, although his Semitic equivalent, El, was more popular.⁹ This should not surprise us. Far away in Tahiti, the sun-god was also known by the name of Ra.¹⁰ Thus, in Semitic, Babylon was rendered Bab-el, which translates as "Gate of El." The non-Semitic Kassites, however, seem to have referred to the city as Ka-ra, in which "ra" stood for the Semitic El.¹¹

¹ E. A. W. Budge, *Osiris and the Egyptian Resurrection* (N. Y., 1911/1973), Vol. I, pp. 65, 104.

² *Idem*, *The Egyptian Book of the Dead* (N. Y., 1895/1967), p. 246, where Atum, here called Tmu, is referred to as "the night sun, at the twelfth hour of the night." Elsewhere in the same work, Atum is referred to as Tum and/or Atemu—see p. cx.

³ *Idem*, *The Gods of the Egyptians*, Vol. I (N. Y., 1904/1969), p. 349.

⁴ *Ibid.*

⁵ *Ibid.*, p. 352.

⁶ *Ibid.*, p. 349.

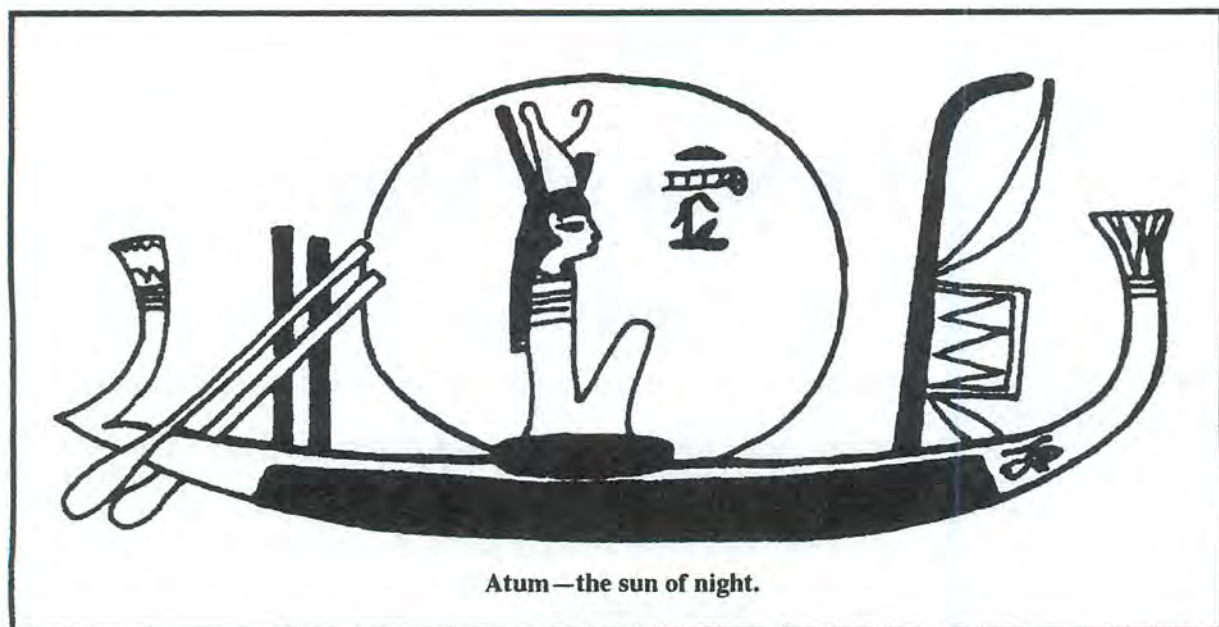
⁷ *Ibid.*, p. 330.

⁸ *Ibid.*, p. 351.

⁹ G. Rawlinson, *The Seven Great Monarchies of the Ancient Eastern World* (N. Y., 1885), Vol. I, p. 73.

¹⁰ T. Henry, *Ancient Tahiti* (Honolulu, 1928), p. 465.

¹¹ G. Rawlinson, *loc. cit.*, in which the author refers to the Kassite language as Cushite.



Atum—the sun of night.

I mention this here because even in ancient times, El (and, by extension, the Chaldean Ra) was known as a representative of the planet Saturn. George Rawlinson, writing in 1885, who did not accept the identification of god with planet, had this to say concerning this ancient belief:

“The identification of the Chaldean Il [i.e. El] or Ra with Saturn, which Diodorus makes, and which may seem to derive some confirmation from Philo-Byblius, is certainly incorrect, so far as the planet Saturn, which Diodorus especially mentions, is concerned; but it may be regarded as having a basis of truth, inasmuch as Saturn was in one sense the chief of the gods...”¹²

This, however, seems to have been the bane of mythologists from day one, in that they have always had the audacity to proclaim that, thousands of years after the fact, they are in a better position to know what the ancients believed than the very ancients themselves. Given all this, may we not assume that Atum, who was but a facet of Ra, had also originated as a personification of the planet Saturn? But then, if Atum was honored as a sun of night, should we not expect that so, also, had been Ra? This is exactly what we find. In a hymn, Ra is lauded as “the one alone... lying awake while all men lie asleep.”¹³ And if some find that somewhat ambiguous, it is made clearer in the Egyptian Book of the Dead, where the god in question is unambiguously made to state: “I am that god Re who shineth in the night.”¹⁴

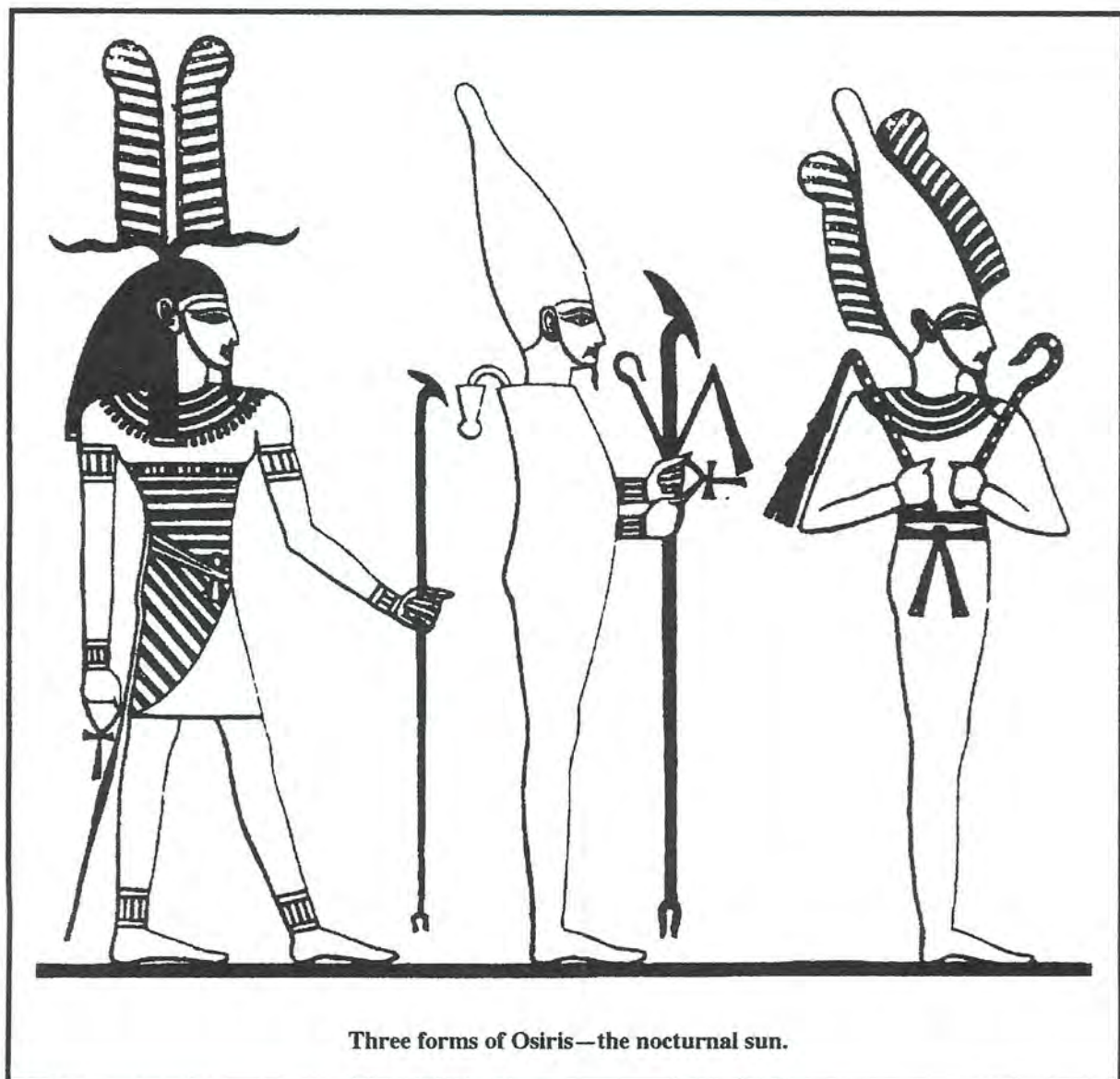
Besides Atum and Ra, this sun of night was also anthropomorphosed by the Egyptians as the god Osiris. Mariette-Bey long ago wrote that: “Originally, Osiris is the nocturnal sun; he is the primordial night of chaos; he is consequently anterior to Ra, the Sun of Day.”¹⁵ As we have already seen, however, Ra, also, was considered a sun of night so that, in this respect,

¹² *Ibid.*, p. 74.

¹³ R. Van Over, *Sun Songs: Creation Myths From Around the World* (N. Y., 1980), p. 289.

¹⁴ E. A. W. Budge, as cited by D. N. Talbott, *The Saturn Myth* (N. Y., 1980), p. 340.

¹⁵ A. F. F. Mariette-Bey, *Catalogue du Musée de Boulaq* (1864-1867), pp. 20-21, 100-101.

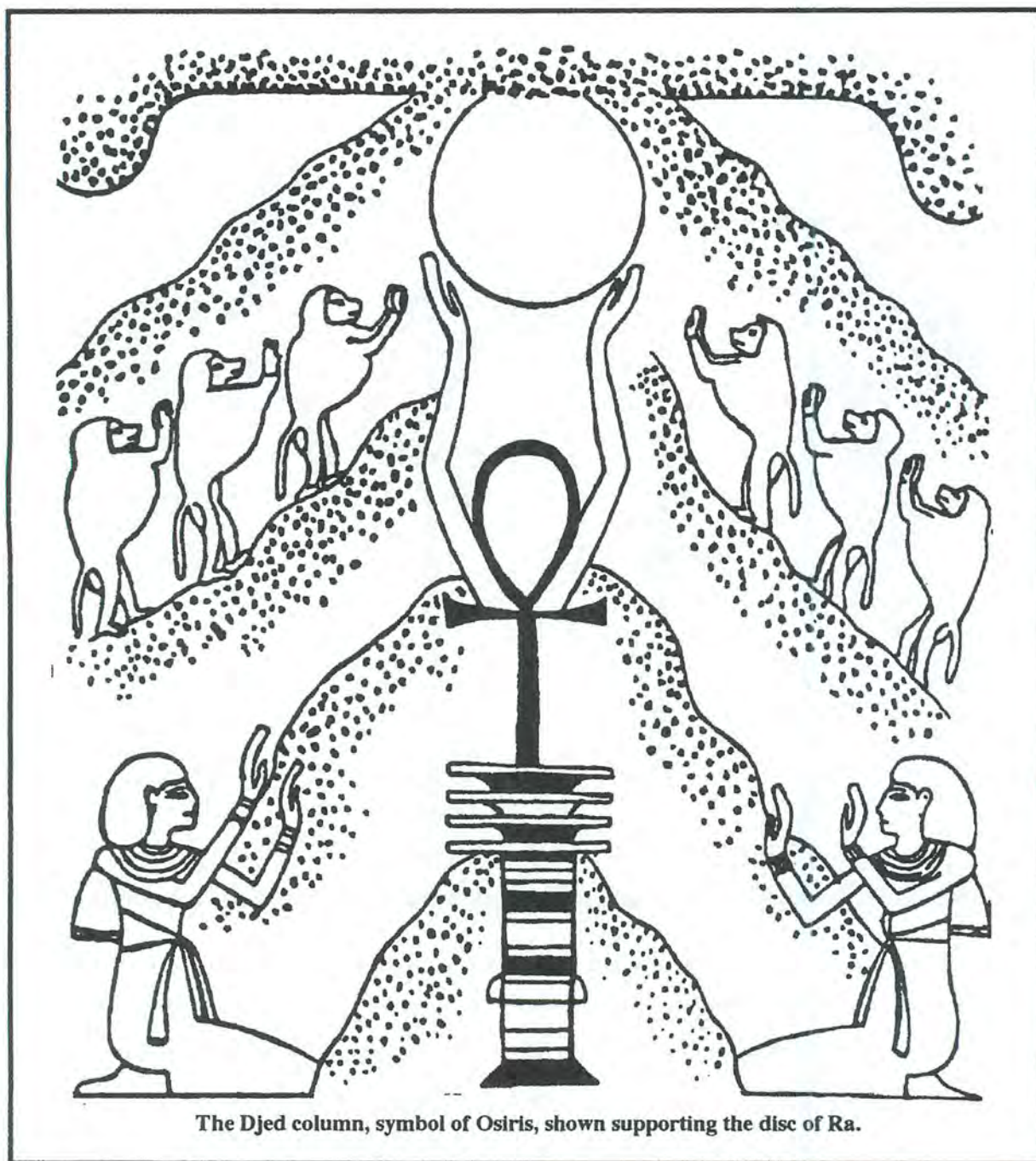


Osiris could not have been anterior to Ra. In fact, it is incorrect to allude to Ra as “the Sun of Day” even if he *did* fill that role in later times.

Wallis Budge shared the same opinion as Mariette-Bey when he informed his readers that “the Egyptian texts suggest that in late times the Sun-god of night may have been regarded as a form of Osiris.”¹⁶ O. D. Miller, who also had something to say about Osiris as a nocturnal sun, explains this situation by proposing that Osiris was “regarded as a type of the sun before its first rising.”¹⁷ This, of course, presupposes that the Sun’s first rising had been witnessed by ancient man, which then begs the question as to where the Sun could have been *before* its first rising. It is in this fashion that mythologists manage to muddy the entire issue because, in attempting to explain a mythological conundrum, they usually end up by creating

¹⁶ E. A. W. Budge, *Osiris and the Egyptian Resurrection* (N. Y., 1911/1973), Vol. I, p. 21.

¹⁷ O. D. Miller, “Solar Symbolism,” *American Antiquarian* (April 1881), p. 219.



The Djed column, symbol of Osiris, shown supporting the disc of Ra.

another.

Even so, are we now to assume that Osiris was also a personification of the planet Saturn? Or how many Egyptian deities are we going to identify with this planet? I will let William Mullen answer this one since it was he who indicated that Atum should be considered the alter-ego of a special aspect of Osiris: "Atum and Osiris are sometimes amalgamated

into one god; more frequently they are portrayed sitting back to back."¹⁸ So that if Atum, as also Ra, is identifiable as the planet in question, then logic dictates that so must Osiris. Granted that Mullen's equation may be considered as somewhat indefinite, there *are* other indications that both Atum and Ra were directly associated with Osiris. Thus, in a vignette of the Book of the Dead, as elsewhere, the disk of Ra, usually said to be that of the Sun, is shown resting on the pillar known as Djed (or Tet) which was the emblem of Osiris.¹⁹ Elsewhere in the same work, Atum is made to utter: "I am yesterday." But a few lines later it is stated that: "Yesterday is Osiris."²⁰ But let's cut across the lawn since the very same work leaves little doubt as to the equation of Ra with Osiris. In the liturgy for the dead, it is asked—and answered:

"'Who then is this? It is Osiris,' or (as others say), Ra is his name, even Ra the self-created."²¹

In other sections of the same work, Ra is presented as the soul of Osiris, while Osiris is presented as the soul of Ra, thus again indicating that the two gods were merely aspects of each other.²² As Lepsius pointed out, in the Book of the Dead, Osiris is even referred to as Osiris-Ra, while Isis, who was the wife of Osiris, is even there called "the royal consort of Ra."²³ It was precisely this assimilation with Ra that drove earlier mythologists to equate Osiris with the Sun.²⁴ James Frazer, of course, had his own reason for disagreeing with this identification since, as far as he was concerned, Osiris had been nothing more than a god of vegetation.²⁵

Actually, the identification of Osiris as a Saturnian deity, and even as a personification of the planet Saturn itself, is anything but new, having been proffered by many a mythologist.²⁶ Immanuel Velikovsky was much in agreement with this identification.²⁷ Few of these writers, however, ever presented any direct evidence that ties Osiris to Saturn. William Heidel was at least shrewd enough to point out that, just as Osiris was considered the judge of the dead, so, also, was Kronos/Saturn.²⁸ But it is not this or that particular datum that makes our case, but, rather, the collective weight of various clues and diligent reasoning. And to add to what we have already enumerated, I offer next the following information which refers us back to En-Me Šar-ra, that epithet of Shamash/Saturn which, as we have already seen, means "Lord of the Law of the Universe." The Indic Brahma, whom we have already seen identified as the same planet, was also honored as the "Lord of the Universe."²⁹ It could not then be through coincidence that another name for Osiris happens to be Neb-er-tcher, which also means "god of the universe."³⁰

¹⁸ W. Mullen, "A Reading of the Pyramid Texts," *Pensée* IVR III (Winter 1973), p. 14.

¹⁹ E. A. W. Budge, *The Egyptian Book of the Dead* (N. Y., 1895/1967), p. 252.

²⁰ *Ibid.*, p. 282.

²¹ *Ibid.*

²² M. Oldfield Howie, *The Encircled Serpent* (N. Y., 1955), p. 25.

²³ J. G. Frazer, *The Golden Bough* (N. Y., 1890/1981), pp. 312-313.

²⁴ *Ibid.*

²⁵ *Ibid.*, p. 316.

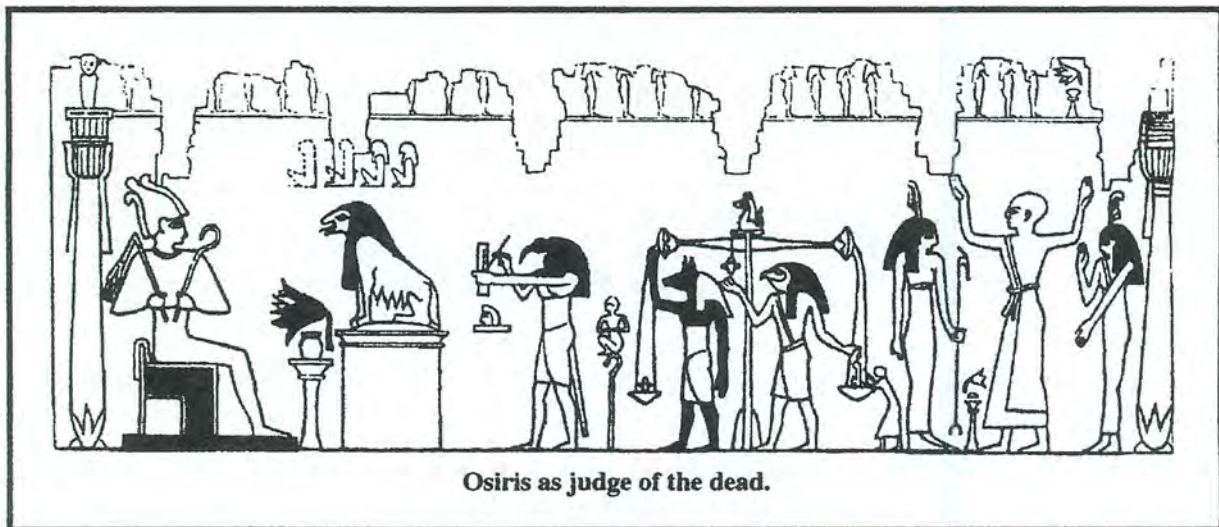
²⁶ See here, for instance, A. Hislop, *The Two Babylons* (London, 1916), pp. 328-329.

²⁷ I. Velikovsky, *Worlds in Collision* (N. Y., 1950), p. 174; *idem.*, "On Saturn and the Flood," *KRONOS* V:1 (Fall 1979), pp. 4, 5; *idem.*, *Mankind in Amnesia* (N. Y., 1982), pp. 98-99.

²⁸ W. A. Heidel, *The Day of Yahweh* (N. Y., 1929), p. 471.

²⁹ V. Ions, *Indian mythology* (London, 1967), p. 25.

³⁰ E. A. W. Budge, *op. cit.*, p. cxxiii.



Osiris as judge of the dead.

Nevertheless, at this point we have to return to the question: How many Egyptian deities are we going to identify as personifications of the planet Saturn? Or why were there so many names—and we shall be meeting many others—within the same nation for one and the same planet? Once again, I will let Mullen answer this one—at least in part. As he wrote:

“One cause for the complexity of the account is that when the Nile valley was united in one kingdom, it consisted of many tribes, each with its own names for the planetary gods and its own stories about them. After unification the cults of these gods were preserved and conflated even though in many cases one and the same planet was being worshipped under different names in different places.”³¹

As time went by, the ancestral memory of these former times dimmed. In Egypt, the sacred litanies continued to be chanted even when a full understanding of their content was partially lost. Eventually, even the identities of the gods were forgotten; and were it not for the present-day rediscoveries of ancient texts, we would be in no better position. In Egypt, a time came when not only were planetary deities worshipped under different names in *different* places, but also in the very same nomes under the roof of the very same temples.

When one remembers that this evolutionary process took place, not only in Egypt, but throughout the entire world, one begins to appreciate the complexity of the mytho-historical record and the reason behind the legion of names which now burden the gods of humankind. All of which reminds us of Fred Bratton’s words when he had it stated that: “It has been estimated that a list of Sumerian deities [alone] would contain *more than five thousand names*.”³² Add to that the thousands of deities from other ancient civilizations and the mind boggles. Let us face it, we are here talking about an astronomical number of divinities. Could we really hope to attach them all to just five planets, those which the ancients could see with the naked eye? And yet, as we saw on an earlier page, that is precisely what Giorgio de Santillana and Hertha von Dechend claimed:

“The real actors on the stage of the universe are few, if their adventures are many...The forces reside in the starry heavens, and all the stories, characters and ad-

³¹ W. Mullen, *op. cit.*, p. 13.

³² F. G. Bratton, *Myths and Legends of the Ancient Near East* (N. Y., 1970), p. 21 (emphasis added).

ventures narrated by mythology concentrate on the active powers among the stars, who are the planets. A prodigious assignment it may seem for those few planets to account for all those stories...³³

A prodigious assignment it surely is, but not an entirely impossible one because, for one thing, many of these deities turn out to be nothing but aliases of each other. Take Osiris, for example, seeing as we are on that subject—the god was known under sixty different names in the Theban recension, up to c. 1600 B.C.,³⁴ which had accumulated to one hundred and fifty-eight by the time of the Saite recension in c. 300 B.C.³⁵ In the Babylonian *Enuma Elish*, sometimes referred to as the Babylonian Creation Epic, the god Marduk is given fifty names.³⁶ And if you think that these two examples constitute extremes, think again. The Indic god Shiva is claimed to bear *one thousand and eight* different names.³⁷ In fact, it will be found that most of the deities of antiquity are merely aliases of each other. Nor will I be bold enough to proclaim that *all* these mythological characters are to be identified as planets since some actually personify planetary powers, while others are associated with various celestial phenomena.

But, before we lose the thread of our present topic, another question should now be asked: Was it only in Egypt that Saturn was lauded as a sun of night?

THE BABYLONIAN EXEMPLAR

Actually, there is undeniable evidence that the concept of a night sun existed in ancient Babylonian thought as well. As Morris Jastrow indicated, Saturn and the Sun were viewed as the “two chief lights of the heaven, one to serve during the day and the other at night.”³⁸ This is indicated by the fact, mentioned in the previous chapter, that when the Sun was intended, a gloss to that effect—Šamše u-mi (i.e. Shamash of the day)—was inserted in those astrological texts dealing with Shamash/Saturn.³⁹ A Shamash-of-the-day presupposes a Shamash-of-the-night. As Jastrow expressed this idea:

“Strange as it may seem to us, the planet Saturn appears to have been regarded as ‘the sun of night’ corresponding to Šamaš as ‘the sun of the daytime’ and the cause of such light as the night furnishes.”⁴⁰

It was only when trying to explain this phenomenon that Jastrow stumbled:

“It was argued, that since there was a sun furnishing the light of day, so there must be some corresponding power which causes the illuminations of the heaven at night.

³³ G. de Santillana & H. von Dechend, *Hamlet's Mill: An Essay on Myth and the Frame of Time* (Boston, 1969), p. 177.

³⁴ E. A. W. Budge, *The Gods of the Egyptians*, Vol. II (N. Y., 1904/1969), pp. 176-178.

³⁵ *Ibid.*, pp. 179-185.

³⁶ S. Langdon, “Semitic Mythology,” *Mythology of All races*, Vol. V (N. Y., 1964), pp. 310 ff.

³⁷ *Linga Purana*, I:65:54b-168.

³⁸ M. Jastrow, Jr., “Sun and Saturn,” *Revue D'Assyriologie et D'Archeologie Orientale* (Paris, September 1910), p. 172.

³⁹ *Ibid.*, p. 164.

⁴⁰ *Ibid.*

Saturn was chosen—in preference even to the moon—because of the slowness of its movement, which made it visible continuously for a long period.”⁴¹

As if there are no other stars in the heaven that are “visible continuously for a long period” of time, or none that are brighter than Saturn! Besides, what has the slowness of a planet to do with its brightness?

Jastrow went on to state that the light of the Moon, as well as that of the other planets and the stars, was, by the Babylonians, ascribed to Saturn.⁴² But would the Babylonians, who could calculate the complex motions of the heavenly bodies with mathematical accuracy, as we have seen in a previous chapter, have been so naive as to invent a concept in which even the most ignorant of their peasantry could hardly have believed? Should we not rather believe the words of Diodorus when he stated that the reason the Chaldeans called Saturn by the name of the Sun was because it was the most prominent of the five planets or the stars?

A colleague of Jastrow, Professor J. A. Montgomery, has even raised “the interesting question whether in *Genesis* 1:16 the two ‘lights’ may not at one time have referred to the Sun and Saturn?”⁴³ Without realizing that the second body might have been Saturn, James Strickling also suggested a similar interpretation.⁴⁴ While I do not wish to use this particular datum as evidence of anything, I have to admit that it is an interesting supposition for, in the Biblical passage referred to, which supposedly describes the creation of Sun and Moon, neither Sun nor Moon is mentioned. The passage merely reads:

“And Elohim [usually translated as ‘God’] made two great lights; the greater light to rule the day, and the lesser light to rule the night: He made the stars also.”⁴⁵

NOCTURNAL DEITIES

Well down into the present era, the ancient belief in a former nocturnal sun continued to resurface in art. A floor mosaic, showing Helios riding in his four-horse chariot, was discovered at the Beth Alpha Synagogue, dating to the sixth century A.D., in Israel’s Jezreel Valley. In it, the god is depicted riding through the night, with the Moon and a sky “sprinkled with stars” behind him. The incongruity has been explained by claiming that “[t]he night sky...still shines around him.”⁴⁶ At no time, however, can the night sky continue to shine around the Sun once it has risen. In view of the fact that Helios was originally interchangeable with Kronos/Saturn, the mosaic in question should be allowed to speak for itself. What it portrays is Helios as Saturn shining at night.

Carl Jung, among few, understood this much. He, too, had come across references to a sun of night. As he wrote of the Latin Sol: “[T]here is...also a Sol niger [that is “black sun,” which makes us think of what we earlier noted concerning “black Saturn”], which, significantly enough, is contrasted with the day-time sun and clearly distinguished from it.”⁴⁷

The Celtic tradition preserved in Irish and Welsh texts dates no earlier than the eighth century A.D. That it incorporates much earlier beliefs, which had been handed down orally

⁴¹ *Ibid.*, p. 170.

⁴² *Ibid.*

⁴³ *Ibid.*, p. 172.

⁴⁴ J. E. Strickling, “Birth of the Gods,” *Bible-Science Newsletter* XI:3 (March 1973). But see also, *idem*, “The Lesser Light,” *Catastrophism and Ancient History* III:2 (July 1981), pp. 114-117.

⁴⁵ *Genesis* 1:16.

⁴⁶ J. G. Taylor, “Was Yahweh Worshipped as the Sun?” *Biblical Archaeology Review* (May-June 1994), p. 61.

⁴⁷ C. Jung, *Mysterium Coniunctionis* (N. Y., 1977), p. 148 (emphasis added).

since time immemorial, has never however been doubted. Unfortunately, the ancient tales were written down in their present form by early Christian monks who saw fit to turn the ancient gods into men of flesh and blood. Such was Balor, he of the single flaming eye, whose name is ultimately derived from *bhel*, and thus equivalent to Beli or Bel. He who once had been a celestial divinity was turned into a terrestrial king. Despite this metamorphosis, even though the idea has not been widely accepted, the characteristics of Balor have been compared to those of the Sun.⁴⁸ That Balor, however, had been a nocturnal sun is indicated by his title. He was known as the King of Night.⁴⁹

THE GOD OF SATURDAY NIGHT

As befitted his nocturnal station, Osiris was venerated in a festival which took place at night.

"Herodotus tells us that the grave of Osiris was at Sais in Lower Egypt, and that there was a lake there upon which the sufferings of the god were displayed as a mystery by night. This commemoration of the divine passion was held once a year...and an image of a cow, made of gilt with a golden sun between its horns, was carried out of the chamber in which it stood the rest of the year...A great feature of the festival was the nocturnal illumination. People fastened rows of oil-lamps to the outside of their houses, and the lamps burned all night long. The custom was not confined to Sais, but was observed throughout the whole of Egypt."⁵⁰

Another celebration connected with Osiris was the Sed festival which has been claimed to be the oldest Egyptian feast of which we yet retain a trace.⁵¹ James Frazer has suggested that the ritual, which is known to have been celebrated until the end of the Roman period, was as old as Egypt itself. This particular event was held every thirty years—which makes it significant since thirty years is the period of Saturn's revolution around the Sun. As Frazer himself states, this correlation of the Sed festival with the planet's revolution has been noticed, and commented upon, by several scholars before him. Since then, the subject has been approached again by de Santillana and von Dechend, although here the authors present Ptah, rather than Osiris, as the "inventor" of the festival, even though they themselves identify Ptah as "the Egyptian Saturn."⁵² The Sed, of course, was a royal jubilee festival which the pharaoh held after having reigned thirty years. Lucky was the pharaoh who could celebrate two such jubilees.

Nor was this custom unique to Egypt. The Persian Shahs, who traced their lineage from the towering figures of the mythical kings—Kai Kubad, Kai Ka'us, and Kai Khusrau—also celebrated their royal jubilee after having reigned thirty years—a fact that did not escape the attention of de Santillana and von Dechend.⁵³

Meanwhile, a curious tale comes our way through Apuleius who tells us that, when being initiated into the mysteries of Isis, wife of Osiris, a certain Lucius was given "to see the sun

⁴⁸ See here, J. X. W. P. Corcoran, "Celtic Mythology," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 227.

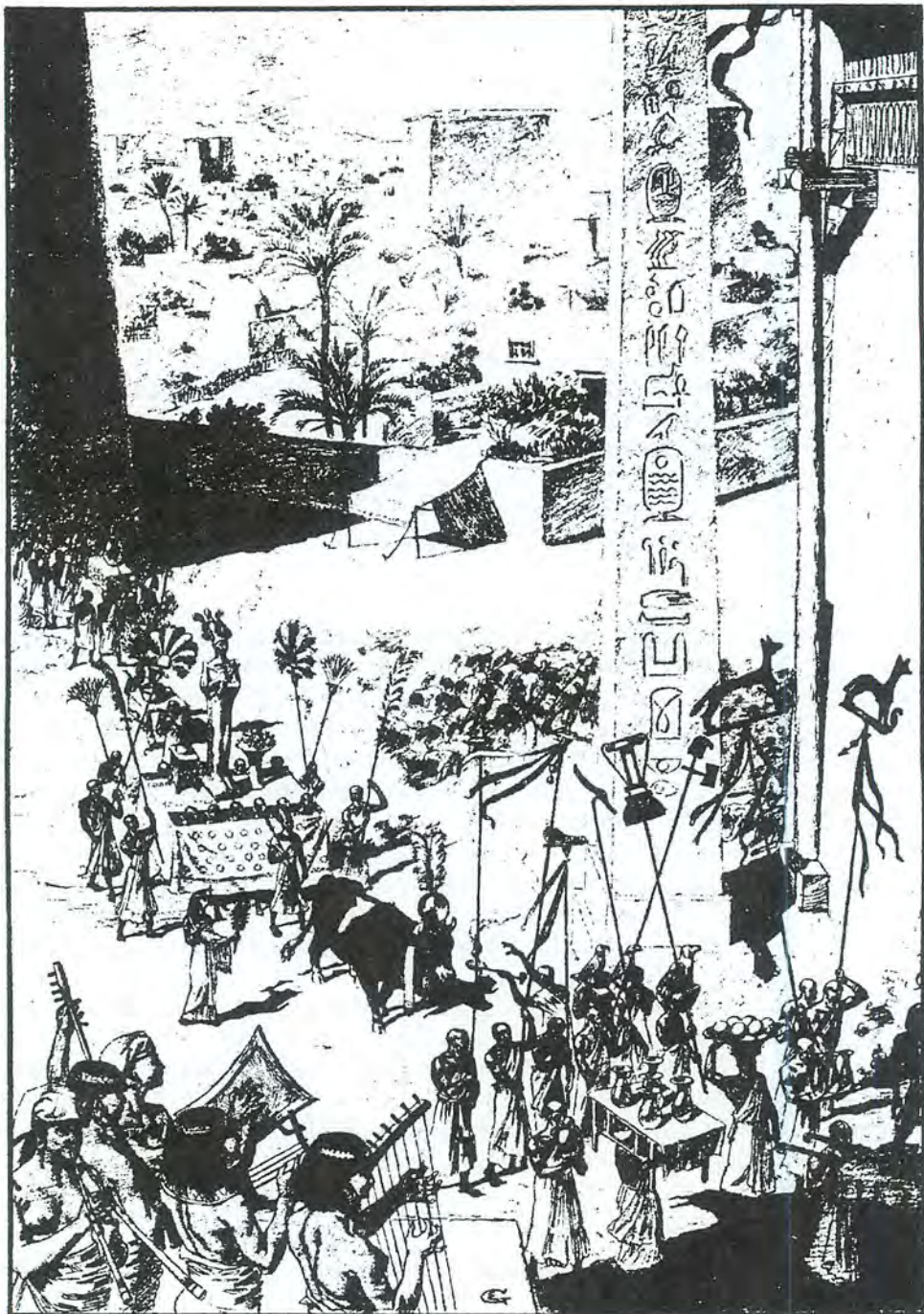
⁴⁹ D. A. Mackenzie, *Egyptian Myth and Legend* (N. Y., 1907/1978), p. 300.

⁵⁰ J. G. Frazer, *The Golden Bough: A Study in Magic and Religion* (London, 1922/1974), pp. 491-492.

⁵¹ *Idem*, *Adonis, Attis, Osiris* (London, 1919), p. 156.

⁵² G. de Santillana & H. von Dechend, *op. cit.*, p. 129.

⁵³ *Ibid.*



Procession during the festival of Osiris.

at midnight in its radiant light.”⁵³ Later, at the Iseum in Rome, the same Lucius is admitted to the degree of Osiris himself, during which initiation he spends ten days in fasting before he is introduced to the nocturnal rites, or *orgia*, of Osiris.⁵⁴

Another nocturnal feast, as brought to my attention by Roger Ashton, is also held in some parts of India when the thirteenth day of a lunar fortnight happens to fall on a Saturday. In Sanskrit, the day of Saturday is called Shanivar which, Shani being Saturn, translates as “Saturn’s Day.”⁵⁵ Actually, Saturday was the day held sacred to Saturn among more than one ancient nation and, to this day, it continues to bear the planet’s name not only in Sanskrit. To the Jews, Saturday is Shabbath (the Sabbath), which word is sometimes said to derive from the closely related *shabath*, which means “to repose” or “to rest.”⁵⁶ In fact, however, the Sabbath is named in honor of Saturn which, in Hebrew, is called Shabtai.⁵⁷ The word *shabath*—“to repose”—is then traceable to the same root, derived because Elohim was said to have rested from creation on that day.⁵⁸ In Italian, Saturday is rendered Sabato, derived from Hebrew through the Greek Sabbaton. In Maltese, Saturday is called Sibt, derived from the same Semitic root. The English name Saturday is itself a contraction of the Saxon Saterne’s Day (or Daeg) from the Latin Saturni Dies. Even in Indo-China, and more specifically Cambodia, Saturday is named in honor of Prah Sau, which is the planet Saturn.⁵⁹

Now while it is true that not every ceremony that is celebrated on a Saturday has to be Saturnian in character and/or origin, the Indian ceremony mentioned above is itself called Shani Pradosh.⁶⁰ Since *pradosh* means “night,” the festival in question is translatable as “Saturn’s Night.” A ceremony called Saturn’s Night held in the evening of Saturn’s Day is not just any ceremony conducted on a Saturday; it is obviously one conducted in honor of Saturn.

Thus it was that, among other things, Saturn became known as the Lord of the Sabbath,⁶¹ a belief which finds a curious echo in Persian cosmogony. As Al-Biruni, an Arabian scholar of the 11th century A.D., tells us:

“On the 6th day of Farwardin, the day Khurdadh, is the great Nauroz, for the Persians a feast of great importance. On this day—they say—God finished the creation, for it is the last of the six days...*On this day God created Saturn...*”⁶²

The pre-Islamic feast of Nauroz—or Naw Ruz, as it is sometimes transliterated—continues to be celebrated unto this day on the eve of the Persian New Year which traditionally takes place on the first day of spring. It continues to be celebrated not only in Iran (i.e. ancient Persia) but everywhere that Iranians, Afghans, Kashmiris, Kurds, and Zoroastrians (i.e. Parsis)

⁵³ Apuleius, *Metamorphoses*, IX:22, XI:23.

⁵⁴ R. E. Witt, *Isis in the Graeco-Roman World* (Ithaca, 1971), p. 159.

⁵⁵ Hindi-English edition of *Bhargava’s Standard Illustrated Dictionary of the Hindi Language* (Varanasi, 1960), p. 1017. V. S. Apte, *The Practical Sanskrit-English Dictionary* (Delhi, 1975), entry under “Shanivar.”

⁵⁶ J. Strong, *Hebrew and Chaldee Dictionary* (Madison, N. J., 1890), p. 112.

⁵⁷ W. A. Heidel, *op. cit.*, p. 465.

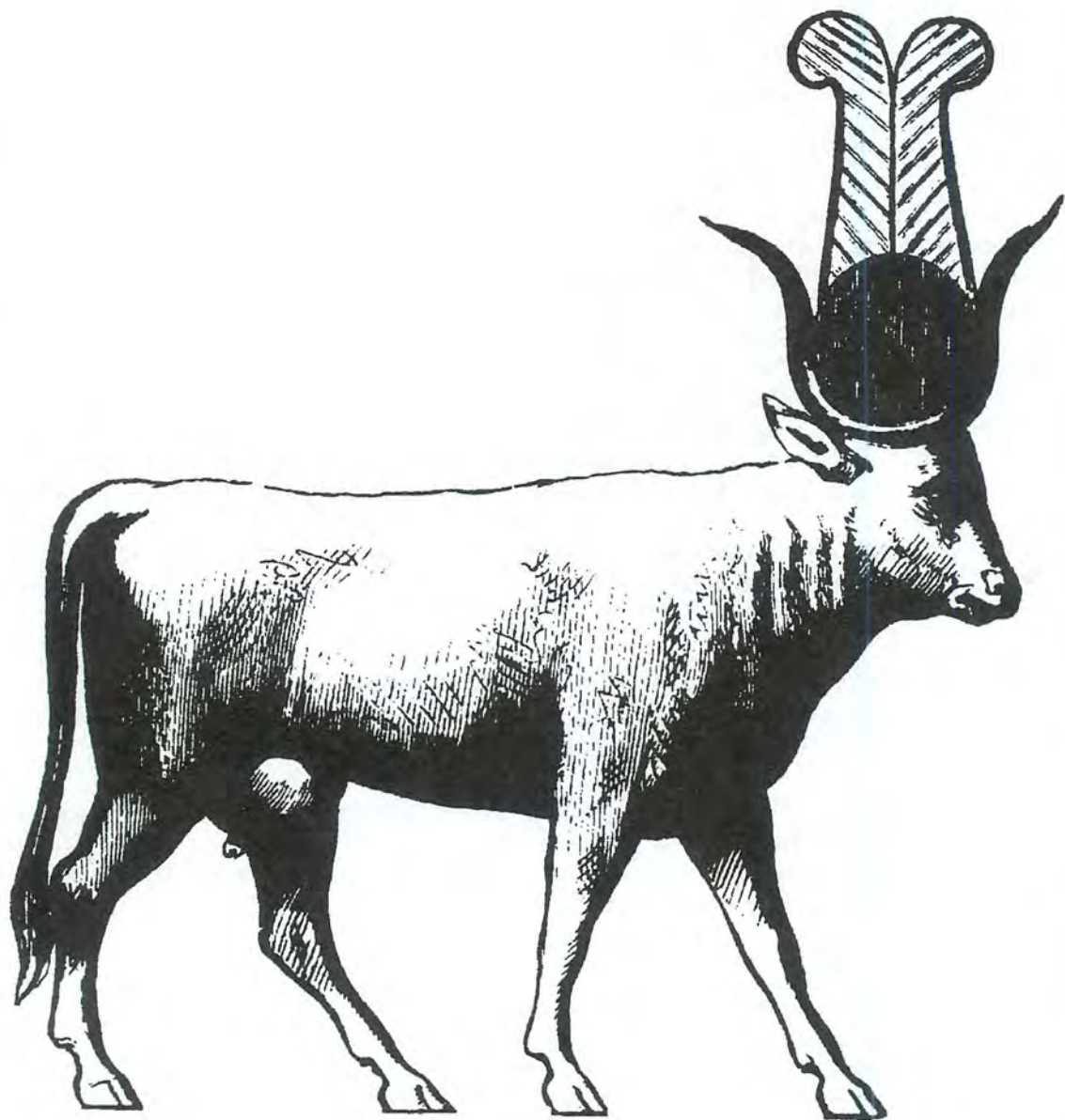
⁵⁸ Genesis 2:2.

⁵⁹ C. H. Marchal, “The Mythology of Indo-China and Java,” *Asiatic Mythology* (N. Y., 1972), p. 198.

⁶⁰ V. S. Apte, *op. cit.*, p. 907.

⁶¹ See here the index to E. Hoffman’s edition of Augustine’s *De Civitate Dei* (Vienna, 1899-1900); R. Klibansky, *et al*, *Saturn and Melancholy* (London, 1964), p. 161.

⁶² Al-Biruni, *The Chronology of the Ancient Nations* (London, 1879), p. 201 (emphasis added).



“...an image of a cow, made of gilt with a golden sun between its horns, was carried out of the chamber in which it stood the rest of the year.”

have settled, including this writer's domicile city of Vancouver in British Columbia.⁶³ And yet how many of these celebrants have an inkling that what they are really celebrating originated as a Saturnian festival? Of added interest is the fact that, like other festivals of its kind, the feast of Nauroz is celebrated at night; the festivities commence the minute the Sun goes down. Of course it will be pointed out that, being a New Year's Eve festival, its celebration at night would be logical. In fact, whether celebrated as New Year festivals or not, there is really nothing strange about the fact that Saturnian festivals were conducted at night. After all, in today's skies, it is at night that Saturn shines, as so it must have shone in ancient times. But, we ask, *as a sun*? If we are to believe our ancient forefathers, it seems that such was the case.

Even if one should disregard all this and assume, against all logic, that such an astronomical fantasy would have, through diffusion, been dispersed around the ancient world and accepted as a truth, how can one explain the migration of this idea across the waters of the Atlantic? For, according to Eric Thompson, even in Mesoamerica do we encounter this persistent belief in a night sun.⁶⁴

At this point we can add Hypothesis #2 to the effect that, *still according to the ancients*, the primeval Saturnian sun shone during that time we today call the night.

The question that should now be asked is: Is it possible that the planet we know as Saturn could have once radiated as a sun? Or what does astronomy and/or astrophysics have to offer concerning such a possibility?



Isis—wife of Osiris

⁶³ See here for instance, M. van Nimwegen, "Persians Get Fired Up to Mark New Year," *The Vancouver Sun* (March 22, 1993), p. C5.

⁶⁴ J. E. S. Thompson as cited by D. H. Kelley, "The Nine Lords of the Night," *Contributions of the University of California Archaeological Research Facility*, No. 16 (October 1972), p. 56.

Chapter 5

Dead Suns

DARK STARS

As late as 1966, most theories still pictured the planet Jupiter as consisting of a large inner core of ice under enormous pressure. This core was believed to be surrounded by a voluminous ocean of compressed and liquefied gases which, in turn, merged into an atmosphere of hydrogen. It was "known" that the planet could not be emitting heat from its own internal source. With a core of ice, obviously, this would have been impossible. Thermocouple measurements had in fact detected a very low temperature in the region of -130 to -155°C .¹

As with Jupiter, so with Saturn. The similar nature of these two planets was stressed. Temperatures on Saturn were estimated as being extremely low, approximately -150°C .²

What an embarrassing difference from the picture that emerged less than a year later!

Of course, as usual, there was no consensus among astronomers and some were painting pictures of a Jupiter with a much hotter interior. F. R. Moulton, for example, was speaking of Jupiter's internal heat as early as 1910.³ It will not be found stated in current scientific literature, but Immanuel Velikovsky was alluding to both Jupiter and Saturn as "dark stars" by 1950.⁴ This was not based on the scenario of his book, *Worlds in Collision*, in which the statement appeared, but on earlier events presented in a prequel to that work, which prequel remains unpublished to this day.⁵ It is not that I uphold either of Velikovsky's scenarios; I do not. But I am not about to throw the baby out with the bath water. Credit *should* be given where due. In any case, Velikovsky was not alone. By 1962, E. J. Öpik had calculated that Jupiter radiated from 1.2 to 2.0 times the energy it receives from the Sun.⁶ As Ralph Juergens pointed out: "Indeed, speculation that Jupiter is a dying star, radiating away internal heat, goes back more than a century."⁷

POTTED STARS

In 1967, Val Axel Firsoff brought to the attention of astronomers, of whom he was one, the reality of the deep convective atmosphere of these planets. He stressed the fact that, in such an environment, temperatures tend to decline upwards at a steady rate. With the known composition of such atmospheres, this steady rate could be determined. He thus calculated

¹ L. Rudaux & G. de Vaucouleurs, *Larousse Encyclopedia of Astronomy* (London, 1966 revised edition), pp. 212-213.

² *Ibid.*, p. 221.

³ F. R. Moulton, *An Introduction to Astronomy* (N. Y., 1910), p. 343.

⁴ I. Velikovsky, *Worlds in Collision* (N. Y., 1950), p. 373.

⁵ See, however, *idem*, "On Saturn and the Flood," *KRONOS* V:1 (Fall 1979), pp. 3 ff.

⁶ R. E. Juergens, "On Morrison: Some Final Remarks," *KRONOS* V:2 (Winter 1980), p. 71.

⁷ *Ibid.*

that if Jupiter's atmosphere was 300 miles deep, the temperature at its base should be in the region of 1800°K. This would be akin to the surface temperature of cool stars.⁸

"Indeed," wrote Firsoff, "Jupiter does emit microwave radiations corresponding to such temperatures." Allowing for some thermonuclear reactions to proceed at a slow rate in their central regions, and shielded as they are by their vast opaque and cold atmospheres, Firsoff assumed that stellar temperatures could easily obtain inside the Jovian planets. As he concluded: "They would thus be in the nature of 'potted stars'."⁹ By then, even the renowned Gerald Kuiper was referring to Jupiter as a star and the Sun-Jupiter system as a binary.¹⁰

FAILED STARS

December 3, 1973 is a historical date in the annals of astronomy. On that day, Pioneer 10 passed within 81,000 miles of Jupiter. Exactly a year later, Pioneer 11 skimmed within 27,000 miles of the planet's south polar region. The new data that these two space probes relayed to Earth sent astronomers and astrophysicists scurrying back to their slide rules and calculations. Observations in the infrared had already indicated that Jupiter was much brighter than would be the case had it merely been a planet reflecting light. D. A. Allen noted that, at 5 μ , Jupiter appeared so bright that it must be radiating more energy than it could absorb from the Sun.¹¹ "When the long wavelength data are also included," wrote Allen, "we find that Jupiter radiates nearly three times the energy it receives."¹²

As if he had been the only one or the first, D. McNally, who was then with the University of London Observatory, suggested the idea that Jupiter may be more like a star than a planet.¹³ John A. Simpson, then professor of physics at the University of Chicago, described Jupiter as "nature's best gift of what a poor man's star is like."¹⁴

What the data from the Pioneer probes had disclosed was that Jupiter is a fast rotating mass of liquid hydrogen. Its convective weather seems to be driven by what physicists began to call its "primordial internal heat." As time went by, more astronomers began to talk about Jupiter's "starlike properties" and its similarities to a "mini-solar system."¹⁵

"But Jupiter is definitely not a star," Henry Simmons stated and added that, although the planet's core may reach as much as 30,000°C, its temperature is "hundreds of times too low to ignite the thermonuclear reactions that heat the stars."¹⁶ These giant planets, Arielle Emmet echoed him, "could not heat up enough to begin deuterium burning."¹⁷

Firsoff did not quite agree. He stated that even the lowest assumed temperature of Jupiter's interior is adequate to initiate nuclear fusion. With deuterium, which has been discovered in the Jovian atmosphere, a reaction can start at 50,000°K. Lithium and beryllium burning would soon follow. "This could raise the central temperature to 1,000,000°C, required for the proton-proton reaction, which is the main source of power in the Sun."¹⁸

⁸ V. A. Firsoff, *Life, Mind, and Galaxies* (U. K., 1967), pp. 89-90.

⁹ *Ibid.*

¹⁰ I. Velikovsky, "A Rejoinder to Motz," *Yale Scientific Magazine* (April 1967), p. 14.

¹¹ D. A. Allen, *Infrared: The New Astronomy* (U. K., 1975), p. 61.

¹² *Ibid.*

¹³ D. McNally, "Are the Jovian Planets 'Failed' Stars?" *Nature*, 244 (August 1973), pp. 424-426.

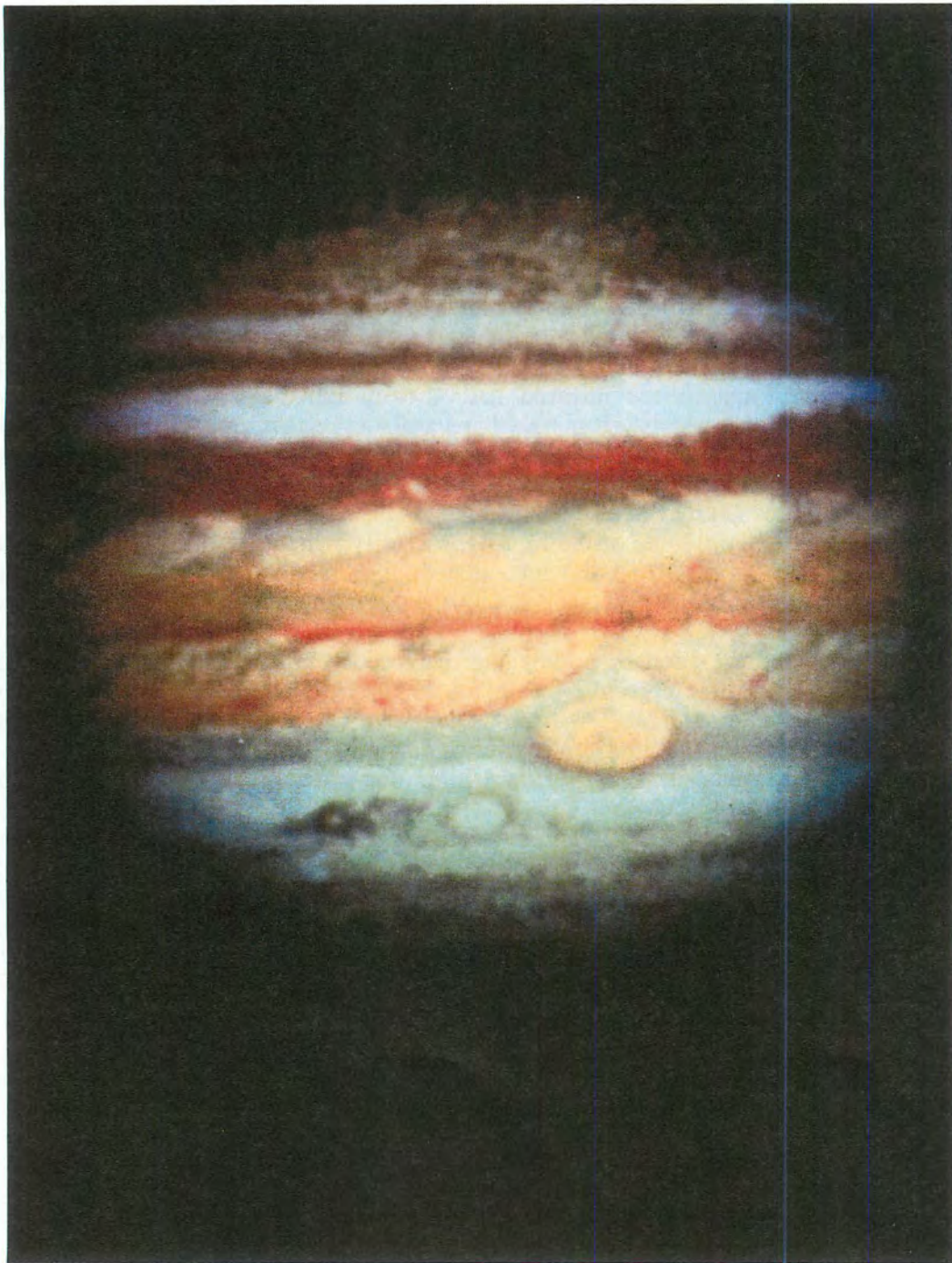
¹⁴ H. T. Simmons, "Visit to a Large Planet: The Pioneer Missions to Jupiter," *1976 Yearbook of Science and the Future* (Chicago, 1976), p. 28.

¹⁵ *Ibid.*

¹⁶ H. T. Simmons, *loc. cit.*

¹⁷ A. Emmet, "Living Planets and Proto-Stars," *Science Digest* (April 1976), p. 14.

¹⁸ V. A. Firsoff, *The Solar Planets* (Canada, 1977), pp. 162-163.



Jupiter—radiating more light than it reflects from the Sun.
(Photograph courtesy of NAASA)

According to McNally, it is not just Jupiter but the entire Jovian planets that can be classified as "failed stars."¹⁹ What applies to Jupiter must therefore also apply to Saturn.

PROTO-STARS

By late 1980, Voyager 1 did for Saturn what the earlier Pioneers had done for Jupiter. Garry Hunt, the Voyager mission meteorologist, stated: "We have this paradox of bodies that are somewhat like stars inside but have Earth-like weather on the outside."²⁰

It did not, of course, require Voyager 1, or the later Voyager 2, to bring this conclusion home. Writing in 1976, Simmons had already spoken for the scientific community at large when he stated that, like Jupiter, Saturn appears to emit more heat than it receives from the Sun.²¹

"Being further out [wrote Rick Gore], Saturn gets only a fourth the solar energy that Jupiter receives. At Jupiter the solar heat striking the atmosphere is equal to the internal heat coming up. At more distant Saturn *internal heating dominates*. The upwelling of this heat may generate the much stronger surface winds. In any event, both planets are a theorist's delight."²²

In fact, scientists found that Saturn generates bursts of energy in the one-megahertz frequency range.²³

Gore described Saturn as "a pale yellow giant, a turbulent ball of primordial gas that more resembles a star than the inner planets we know."²⁴ Emmet had earlier expressed similar views. "Recent observations of the giant planets, Jupiter and Saturn," he wrote, "lend credence to earlier speculation that both were actually proto-stars." Both have a system of accompanying satellites which have been likened to miniature solar systems.²⁵

Saturn's temperature was eventually given as $94.4 \pm 3^\circ \text{K}$. But this, it must be pointed out, was *not* the assumed temperature of the planet's interior. Its total heat emission has been calculated at about 2.2 times higher than its absorbed sunlight. It was then felt that this excess heat cannot be due to residue from the planet's formative period. An internal heat source, long postulated, was therefore thought to be certain.²⁶

In 1977 Firsoff had written that "it has been obvious for many years that Saturn is heated from within." According to him, Saturn must be powered by substantially the same nuclear processes he had postulated for Jupiter.²⁷

RED DWARF STAR

Dark stars, cool stars, potted stars, failed stars, proto-stars—all these terms have been applied to Jupiter and Saturn and more were about to be added to the list. Back in 1982, I suggested we discard them all in favor of a new term.²⁸ The Solar System, if anything, is

¹⁹ D. McNally, *loc. cit.*

²⁰ R. Gore, "Voyager 1 at Saturn: Riddles of the Rings," *National Geographic* (July 1981), p. 21.

²¹ H. T. Simmons, *op. cit.*, p. 43.

²² R. Gore, *loc. cit.* (emphasis added).

²³ H. T. Simmons, *loc. cit.*

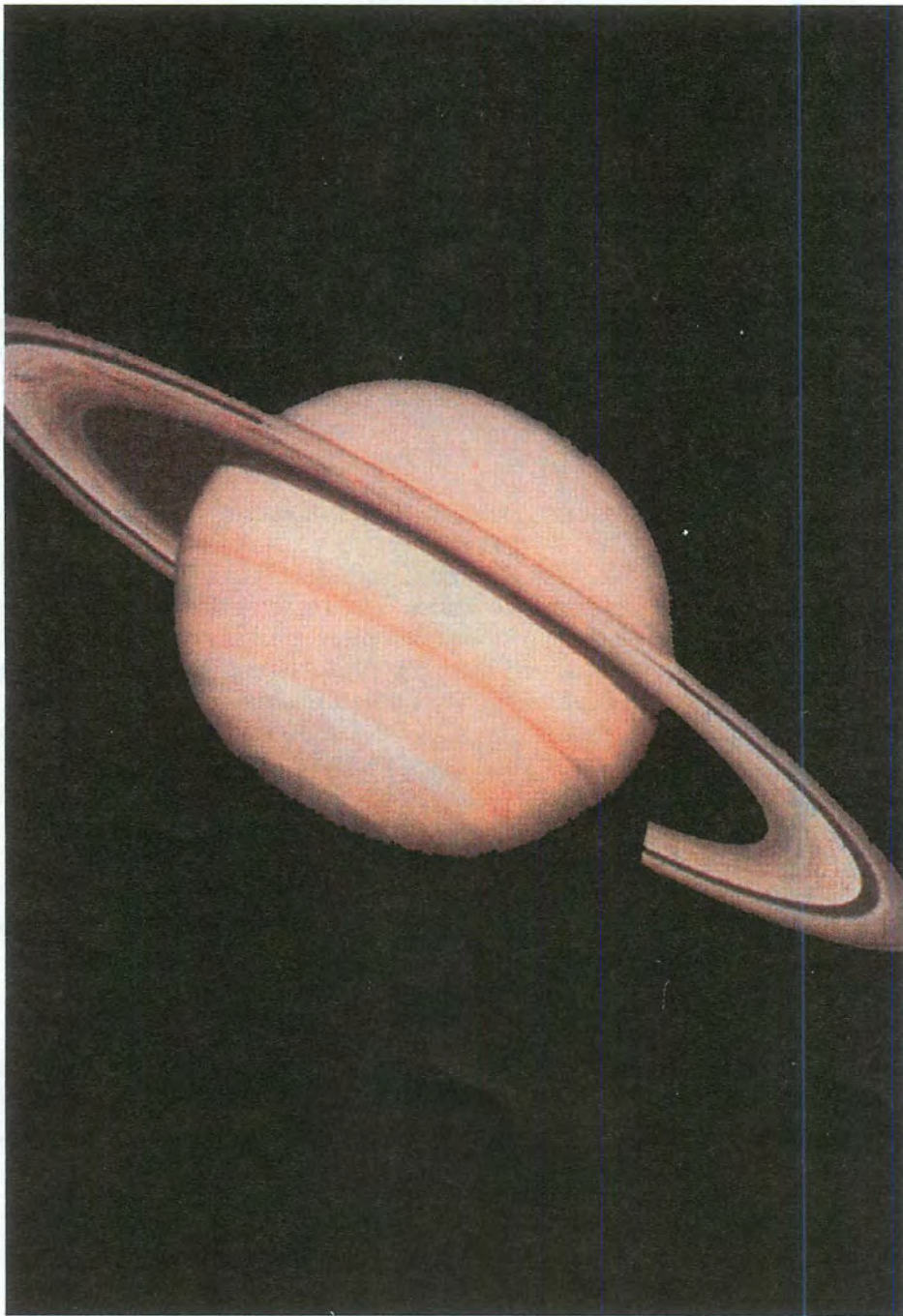
²⁴ R. Gore, *op. cit.*, p. 4.

²⁵ A. Emmet, *op. cit.*, pp. 14-15.

²⁶ Anonymous, "Ringside Seat," *Scientific American* (April 1980), p. 72.

²⁷ V. A. Firsoff, *op. cit.*, p. 164.

²⁸ D. Cardona, "Night Sun," *Frontiers of Science* (March-April 1982), p. 30.



Saturn—radiating more heat than it receives from the Sun.
(Photograph courtesy of NAASA.)

running down. If these planets are hot, would they not once have been hotter? Stars are suns. Is it not possible that Jupiter and Saturn had once burned as relatively miniature suns and that, through evolutionary or catastrophic processes, they became permanently dimmed? That, at least, seems to have been the final consensus as Jupiter won its place in popular books on astronomy as a body that was once much hotter. According to Roy Gallant, it would even have glowed:

"Jupiter, two and a half times as massive as all the other planets combined, began as an enormous gas ball that contracted and heated up...But, unlike the Sun, Jupiter had far too little mass to send its core temperature high enough to start fusion reactions. Instead of reaching the millions of degrees needed, the core heated up only a few thousands of degrees. So Jupiter became only hot enough to glow cherry-red, like a red dwarf star, and for a while it bathed its inner moons in light and heat that faded as Jupiter slowly cooled."²⁹

MINIATURE SUN

Richard Hoagland, in his usual recklessness, was more direct. "Jupiter was once a miniature sun according to our current concepts of solar system formation," he was reported as saying. True, he then added: "It only lasted a short time—a few million years at most,"³⁰ which would also mean that it had *stopped* radiating millions of years ago.

By 1981, Saturn was known to radiate from two to three times the energy it receives from the Sun.³¹ Its *estimated* internal temperature had by now risen to 20,000° K.³² By then there was no doubt that both Jupiter and Saturn were in possession of internal sources of heat. Even so, as Andrew Ingersoll repeated what had been preached ever since the discoveries by the Pioneer and Voyager probes, and in complete disregard of Firsoff's hypothesis, "neither planet is massive enough for gravitational self-compression to have initiated nuclear fusion." The final verdict was that "neither planet is a star."³³

And yet, as Ingersoll informed his readers, "James B. Pollack and his colleagues at the Ames Research Center of the National Aeronautics and Space Administration have developed models of the history of the giant planets and conclude that the interior of Jupiter and Saturn is still hot today."³⁴

But then the extra heat was explained away: "Models of the cooling of Jupiter over the history of the Solar System account for all the power that Jupiter is radiating today in excess of the amount it absorbs."³⁵ When it came to Saturn, however, the models in question fell short.

FAILED MODEL

Ingersoll himself had to admit that:

"Similar models fail, however, to account for about a third of the excess that Saturn radiates. Apparently Saturn has a source of internal heat not included in the

²⁹ R. A. Gallant, *Our Universe* (Washington, D.C., 1980), p. 165.

³⁰ Province News service, *The Province* (Vancouver, B.C., December 27, 1979), p. A8.

³¹ Beatty, O'Leary, & Chalkin, *The New Solar System* (London, 1981), p. 119.

³² *Ibid.*, p. 128.

³³ A. P. Ingersoll, "Jupiter and Saturn," *Scientific American* (December 1981), p. 92.

³⁴ *Ibid.*

³⁵ *Ibid.*, pp. 92-96.

calculations, a source Jupiter lacks."³⁶

Thus, while Jupiter's excess heat has been accepted as a residue from the planet's formative period, most of Saturn's has been relegated to kinetic energy released by the circulation of dissolved helium.³⁷ Why is there this supposed difference? Is it not simply because Saturn's total heat emission turned out to be significantly higher than had been predicted from models of the planet's cooling history?³⁸ Should not this model, then, have been discarded? After all, Jupiter's excess ratio of internal heat over solar input is just about identical to that of Saturn.³⁹ One is therefore led to believe that the internal heat of both planets must be due to near-identical causes. Or was the source of the internal heat of the two planets variously given for each of them because no single model could be found to account for both of them? As it turned out, for its size, Saturn was found to be more star-like than Jupiter, emitting more heat than Jupiter, overall being much more active than Jupiter.⁴⁰

Writing in 1985, Leroy Ellenberger did not quite agree. As he summed the situation up:

"All of the handwaving about Jupiter and Saturn being 'failed' or 'dark' stars notwithstanding, the great preponderance of present astronomical thinking, which is supported by detailed computations, indicates that planets are planets and stars are stars. *That Jupiter and Saturn are failed stars is an obsolete idea.*"⁴¹

That was Ellenberger's scholarly opinion. We, on the other hand, beg to differ.

BROWN DWARFS

By 1983, Jupiter had received a new tag; it was now pigeon-holed as a brown dwarf, the nature of which was best explained in layman's terms by Rick Gore:

"When a gas cloud along a galaxy's spiral arm is compressed, it will collapse under its own gravity and ignite as a star if the clump has sufficient mass; if less than one-tenth the mass of our sun, it may become a 'brown dwarf.' Jupiter is such an object, too small to 'turn on' by nuclear fusion but still shedding heat from its collapse. Brown dwarfs cannot be seen at great distances but may well account for a large part of a galaxy's mass."⁴²

Much more recently, the touted discovery of extra-solar planets have been given astrophysicists enough headaches. One such headache is that, if their theorizing is all that correct, some of these planets, with masses equal or greater than that of Jupiter, orbit much too close

³⁶ *Ibid.*, p. 96.

³⁷ *New Scientist* (September 3, 1981), p. 596; Anonymous, "Ringside Seat," *Scientific American* (April 1980), p. 72.

³⁸ *Ibid.*

³⁹ *Ibid.*

⁴⁰ J. M. McCanney, "The Nature and Origin of Comets and the Evolution of Celestial Bodies," Part II, *KRONOS* IX:3 (Summer 1984), pp. 72-73, 74, 80.

⁴¹ C. L. Ellenberger, "'Still facing...': A Reply to Comments and an Update," *KRONOS* XI:1 (Fall 1985), p. 106 (emphasis added).

⁴² R. Gore, "The Once and Future Universe," *National Geographic* (June 1983), p. 717.

to their primary. Others, of the same or similar mass, while orbiting far enough away from their primary, do so in highly eccentric paths. As Sam Flamsteed reported:

"One possible explanation would be that these are not planets at all but brown dwarf stars. A brown dwarf is about as close as a star can get to being a planet without actually being one. For one thing, it is small enough to be mistaken for a very large planet, at least from a distance. And since, being small, its core is not put under enough pressure for nuclear reactions to take hold, it emits only a dim glow at first and then gradually goes dark."⁴³

"Theorists have always assumed that brown dwarfs must be at least ten times more massive than Jupiter and probably more. But perhaps they've overestimated. Maybe a brown dwarf can be six times as massive as Jupiter *or even less*."⁴⁴

But, as Flamsteed was shrewd enough to notice:

"To assume that the theorists are baffled, is to underestimate them badly. A good astronomical theorist never lets the complete absence of information stand in the way of a nice theory and, conversely, never gets thrown when an actual observation arrives to spoil it. Lack of data can actually be an advantage. Unhindered by facts, some theorist is bound to have come up with a model that explains even the strangest discovery."⁴⁵

In their attempt to explain the anomalous behaviour of the extra-solar planets that everyone started discovering all over the place,⁴⁶ it was even conjectured that there was enough material in these systems "to make planets ten times bigger than Earth." Objects of such size, it has been theorized, would be in possession of such gravitational fields powerful enough "to act like a gigantic vacuum cleaner." Such objects tend to suck in "whatever nearby gas is left over." And the result? "In a mere 10,000 years or so you have Jupiter—a rocky core ten times the size of earth surrounded by an immense atmosphere 35,000 miles thick."⁴⁷

Apart from Jupiter-sized planets, this hypothesis was later applied to both Jupiter and Saturn themselves.⁴⁸ All of which might make one ask: If a Jupiter-sized planet can form in an extra-solar system in 10,000 years or so, how can anyone be positively certain that Jupiter itself, or for that matter Saturn, did not take a similarly short time to form? And if that is allowed as a possibility, then how can one be positively certain that Jupiter and Saturn are billions of years old?

Even more was yet to come. After having been so sure they knew just about everything they needed to know about Jupiter, astronomers were in for yet more surprises when Comet Shoemaker-Levy 9 impacted the planet in July of 1994. In analyzing the aftermath of the impact, they discovered that the planet has far less water than had been expected; the three predicted layers of the atmosphere were not detected; strong winds were found to be present at all levels of the atmosphere; and the amount of helium turned out to be only half of what had been theorized.

⁴³ S. Flamsteed, "Impossible Planets," *Discover* (September 1997), p. 82.

⁴⁴ *Ibid.*

⁴⁵ *Ibid.*, p. 81.

⁴⁶ See, for instance, S. Stephens, "Planet Hunters," *Astronomy* (July 1998), pp. 59 ff.

⁴⁷ S. Flamsteed, *op. cit.*, pp. 80-81.

⁴⁸ A. Boss, *Science* (June 20, 1997).

One factor, however, remained unchanged: Excess heat was still found to be escaping from Jupiter's deep interior; the planet was still emitting at least twice the amount of energy it receives from the Sun.

Finally—one more surprise; but not from any new discovery. This one came from the astrophysicists themselves. While Saturn's excess heat has been relegated to kinetic energy released by the circulation of dissolved helium, the *lack* of helium was now being blamed for Jupiter's internal warmth.⁴⁹

Go figure.

SECOND INTERLUDE

The last thing I wish to be accused of is that I apply the above information to improper use. So first let me state that, as the references themselves indicate, the information in question comes *untampered* from purely scientific sources. Nor am I here advocating that either Jupiter or Saturn could sustain nuclear reactions in their cores. Not even Firsoff dared go that far. But such reactions as Firsoff claimed possible were never specified as having to be, or having been, sustained. The very nature of the mytho-historical evidence I presented in the preceding chapters itself negates this possibility. Obviously, so does the present state of these two planets. Had such reactions been sustained, Jupiter and Saturn would still be flooding the night with their radiated light. To an extent, even Ellenberger is correct. Jupiter and Saturn *do* fail as stars, but only in their *present* condition.

Although it is my belief, and that of a few others, that Saturn was a *true* sun—which means that it radiated its own light rather than having reflected that of the Sun as it does now—it must not be understood that it shone with a continuous *blinding* light. Ancient sources impel us to believe that, although brighter than the Moon at night, Saturn was not as bright as the Sun. In fact, as will be indicated in a future work, additional evidence indicates that, during the day, Saturn paled in comparison to the Sun.

It should also be kept in mind that I am not here attempting to make a case for Saturn having been highly luminous *in historical times*, despite the fact that I have cited historical sources as evidence. It must be stressed that these sources allude to *past* events—that is, even though themselves ancient, their allusion is to an even older system. In actual fact, my contention is that Saturn shone as a nocturnal sun in *prehistoric* times—that is *before* the age of writing.

The stretch from prehistoric to historic times is measurable in only a few thousand years so that a critic would be absolutely correct in arguing that this does not change the fact that, for both planets in question, their luminous phase is believed to have terminated billions of years ago. While this *is* the generally accepted view, it can actually be safely stated that Jupiter is *still* slightly luminous.⁵⁰ At Jupiter's size—and mass—has it not occurred to anyone that something might be wrong with this implied rate of decreasing luminosity had degeneration really commenced *billions* of years ago? And, by the same token, could not the same be said for its implied rate of cooling?

Where the presently accepted scientific tenets and the hypothesis presented in this work differ is precisely in this time factor. And here, *as long as one accepts current theory*, the hypothesis must falter.

But *is* currently accepted theory necessarily correct? How often have we been cocksure of matters which turned out not to be so? Were astrophysicists not, until a few years ago, paint-

⁴⁹ *New Scientist* (January 27, 1996), p. 7; *ibid.* (February 3, 1996), p. 16; *ibid.* (March 23, 1996), p. 17; *The Washington Post* (January 23, 1996).

⁵⁰ D. A. Allen, *loc. cit.*

ing Jupiter as a cold planet with an icy core? Were they not, at the same time, estimating Saturn's temperature to be as low as -130°C ? Need I burden the reader with a long list of astronomical certainties which have only yesterday, so it seems, turned into myth?⁵¹

I am not raking mud as an exercise in scientific embarrassment. I *do* realize that this is the way science is meant to progress—by replacing old “truths” with new and, where possible, theory with fact.

Let not what I am about to state next be misconstrued into a fundamentalist stance. *Nothing* could be further from the truth. But, in the past, geologists and astronomers have steadily increased the age of Earth, the Solar System, and the Universe surrounding them. Is it accepted that not a single new discovery can ever make them reverse the process?

Personally, I have no recourse but to admit that the entire hypothesis presented in this work hinges on historical and mytho-historical sources. But before anyone raises the objection that historical sources have no validity where astronomy is concerned, allow me to remind them that the history of astronomical discoveries, as already indicated in a previous chapter, rightly *commences* with such sources.

The hypothesis that Saturn was once a sun that shone at night did not originate with me. Others have preceded me—and they stretch all the way back to Sumerian times. Lewis Greenberg and Warner Sizemore were the first to bring the matter to my attention.⁵² As we have already seen, Morris Jastrow and R. C. Thompson preceded *them*. But way back of us all there stretches a long line of writers who have left a record of this astronomical belief registered on vellum, papyrus, bark, and clay.

Moreover, the combined evidence that led me and my immediate predecessors to this re-discovery was not culled from mythic sources; it was not based on mythic interpretation. Granted that volumes could literally be filled with such *complimentary* evidence, the fact must be stressed that the original impetus behind this assumption came from what can best be described as ancient *astronomical* assertions.

In his 1910 paper on the subject, Jastrow attempted to rationalize what to him appeared as an impossibility. He could not see what there was in that small pin-point of light we call Saturn that could impel the ancients to allude to it as a sun. As indicated in a previous chapter, his rationalization was a lame one. To repeat what I have already stated—because it *does* bear repetition—anyone could look up and see that Saturn was anything but a sun. Most people, then as now, would not even have been capable of locating Saturn in the night sky. Besides, anyone could see that, Saturn or not, there was no such thing as a night sun. *That is unless it either was so or once had been.*

Even so, it would be amiss for me not to point out that ancient astronomical knowledge *can* be, as will be, complimented by mythology *as long as mythic interpretation retains the ancients' own original belief*. This is something that has not always been adhered to by modern mythologists.

Modern mythologists, on the other hand, should not be faulted for their misconceptions for they, too, looked up and the only sun they saw was the one that shines upon us now. Nor is this a uniquely modern misconception. The ancient Greeks, who appeared relatively late on the historical scene, among others, suffered the same confusion. To them, Saturn was the same pin-point of light we see in our own night sky. They could not therefore understand why some of their ancestors called this planet Helios since, to them, Helios was *the* Sun. As we have seen, the belief that Saturn had once been a sun was so ingrained in the minds of our

⁵¹ See here, just as an example, the chapter titled “The Re-Designed Solar System,” in W. Ley, *Another Look at Atlantis* (N. Y., 1969), pp. 208 ff.

⁵² L. M. Greenberg & W. B. Sizemore, “Saturn and Genesis,” *KRONOS* 1:3 (November 1975), p. 46.

forefathers that allusions to the phenomenon continued to surface up till the Roman era and even beyond that into medieval times.

Now it turns out that, among the planets visible to the naked eye, only Jupiter and Saturn have been found to exhibit star-like qualities. These characteristics are not even detectable in the field of a telescope. Without the sophistication of modern space technology, there is no way in which the ancients could have recognized such peculiarities. Yet, from among the entire planets visible to them, they picked on one of these two and persistently alluded to it as a sun.

The hypothesis presented in this work does not *necessarily* demand that the age of Earth or the Solar System be reduced. Nor even that of Saturn. Only that its luminous phase could not have terminated billions, but only a few thousand, years ago.

As we saw in Chapter 2 of this work, the ancient belief that stones, and even iron, were wont to fall from the sky, despite the fact that meteorites were not allotted the sanctity of scientific verity until 1803, turned out to be correct. The ancient belief that the Sun exhibits blemishes on its face, which, up until the seventeenth century of the present era, was still being contested, also proved to be correct. The ancient belief that the Sun, rather than Earth, was at the centre of the Solar System, which truth was not "re-discovered" until the sixteenth century, was proven to be so. The ancient belief that Earth was round, rather than flat, and that it rotated on its axis was found to be true. The ancient belief that comets were physical bodies, and that the appearance of these bodies in our skies followed a predictable periodicity, turned out to be accurate. In all these cases, as well as others, ancient belief turned out to be free from error while more modern assumptions turned out to be wrong. Dare we now repeat history by proclaiming that the ancient belief in a Saturnian sun *has* to be wrong?

Finally, I do not expect astronomers and astrophysicists, or anyone else for that matter, to accept the hypothesis on faith. Fools be they who do. My only plea at this point is for an open mind and a re-evaluation of the facts. Can science be imposed upon to give the matter *serious* consideration?

Besides, is deuterium burning, or nuclear fusion, the only way in which Saturn could have shone as a sun?

Chapter 6

Primordial Satellite

STARLIGHT: STAR BRIGHT

The Fiote of the African Loango Coast believe that the Star Way—which is usually, but erroneously, interpreted as the present Milky Way¹—“is the road to a funeral procession of a huge star which, once, shone brighter from the sky than the Sun.”² As Giorgio de Santillana and Hertha von Dechend commented on this myth, if it even could be called that: “Conveniently short, and no technicalities.”³

Even though the Fiote do not themselves identify this star, we will be forgiven if we accept this datum as an allusion to Saturn’s former sun-like brilliance. True, as stated earlier, there is no way in which Saturn could have shone as bright as the Sun but, for the time being, we will allow the Fiote that much. Even so, the question must be asked: How bright *could* Saturn have been?

Had Saturn, through whatever means, really radiated as a sun, *at its present distance* it would have been brighter than the full Moon but, *in size*, it would not have appeared much bigger than it presently does. As a star brighter than the full Moon, we can understand why the Assyro-Babylonians could allude to it as the most prominent among the planets. But why would the Saturnian deity, under whatever name, be allotted a place at the head of every ancient pantheon above the much brighter, and definitely more prominent, Sun? Why would Saturn have been considered a greater deity than the Sun itself? Because, let us face it, once we appropriate the roles of deities such as Shamash, Atum, Ra, Surya, Helios, Sol, and others, as applicable to Saturn, there is no deity of any significance left to fit the Sun. Call it a gut feeling for now, but something impels one to believe there was something more to this Saturnian sun besides its brightness that compelled the ancients to revere it, *inter alia*, as the Lord of the Law of the Universe.

JANUS

As I have already stated, ancient astronomical knowledge can be complimented by mythology. Much more than that, mythology will end up shouldering the main burden of the scenario we are attempting to reconstruct. Allow me then, at this point, to introduce the Latin god Janus and, through him, a series of interconnected deities.

Juvenal and Prokopios referred to Janus as the “most ancient of the gods” and “the first of the ancient gods,” while Herodian called him the “most ancient indigenous god of Italy.”⁴ This has led mythologists to label Janus as “a uniquely Roman god.”⁵ Guirand and

¹ See here E. Cochrane, “The Milky Way,” *AEON* IV:4 (April 1996), pp. 39 ff.

² E. Pechuel-Loesche, *Volksunde von Loango* (1907), p. 135, as quoted by G. de Santillana & H. von Dechend, *Hamlet’s Mill: An Essay on Myth and the Frame of Time* (Boston, 1969), p. 253.

³ *Ibid.*

⁴ A. B. Cook, *Zeus: A Study in Ancient Religion*, Vol. II, Part I (N. Y., 1965), p. 335.

⁵ P. Grimal, “Rome: Gods by Conquest,” *Larousse World Mythology* (London, 1972), p. 178.



Janus.
From a rare bust now at the Palazzo Spada in Rome.
(After E. Braun.)

Pierre tell us that Janus "appears in no other mythology."⁶ But in his ancient assimilation to the sky, or heaven, he is, in actuality, only the Latin counterpart of the Greek Ouranos. This is not to say that the Latins borrowed Janus from the Greeks, any more than the Greeks can be said to have derived their Ouranos from the Vedic Varuna who also, among other things, stood for the sky. I use the term "sky" here because that is the way mythologists have generally understood the meaning of the god's assimilation. But, despite Arthur Cook, who identified so many ancient deities as personifications of the sky, it is quite obvious that by "sky" something different is indicated. Thus, as reported by Varro, while some authorities did identify Janus as the sky, others were just as confident that the deity personified the universe.⁷ This "universe," "sky," and/or "heaven," however, was the *kosmos* of the Greeks, a term which literally meant "order," "harmony," or "an orderly arrangement." Thus Janus was considered a "god of beginnings"⁸ and ascribed "an essential role in the creation of the world,"⁹ which creation is a topic we shall have to reserve for a future work. As Janus Pater, the god was revered as the father of the gods¹⁰ and god of gods.¹¹

In all the above, Janus bears a close similarity to the Saturnian deities of other nations. Are we then saying that Janus was the same as Saturn?

AN OR ANU

According to Cook, the "most probable etymology" of the name Janus is derived from a series of related names. Thus he tell us that:

"Corresponding with the series *Diviana Diana Iana* we have the series *Divianus Divianus Ianus* [the same as Janus]. *Ianus*, therefore, can be legitimately connected with *dius* (for *diuios*), a word familiar to us in the phrase *sub dio*, 'under the open sky'."¹²

This derivation has been picked up and repeated by other scholars¹³ but, to me, it seems more likely that the name Janus owes its origin to a primitive root which also gave us the Sumero-Babylonian An or Anu, the Greek Ouranos, and the Indic Varuna—all of whom were *inter alia* assimilated with the mythological sky. This primitive root would then have belonged to a time when, in the words of Max Müller, "Sanskrit was not yet Sanskrit, Greek not yet Greek, but when both, together with Latin, German, and other Aryan dialects, existed as yet as one undivided language..."¹⁴

Like Janus, the Sumerian An was considered the father of all the gods¹⁵ and, like the Saturnian deities of other nations, he always stood at the beginning of every theological list from all periods.¹⁶ To be sure, An and Anu have always been identified as a personification of the

⁶ F. Guirand & A.-V. Pierre, "Roman Mythology," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 200.

⁷ Aurelius Augustinus, *De Civitate Dei*, VII:28.

⁸ P. Grimal, *loc. cit.*

⁹ F. Guirand & A.-V. Pierre, *loc. cit.*

¹⁰ *Ibid.*, p. 202.

¹¹ *Ibid.*, p. 200; Varro, *De Lingua Latina* VII:27.

¹² A. B. Cook, *op. cit.*, pp. 338-340

¹³ See, for instance, F. Guirand & A.-V. Pierre, *op. cit.*, p. 200; L. M. Greenberg, "The Lord of Light," *AEON* III:4 (December 1993), p. 19.

¹⁴ M. Müller, *Chips From a German Workshop*, Vol. II (N. Y., 1870), p. 16.

¹⁵ *Ibid.*, p. 94.

¹⁶ *Ibid.*

sky or heaven.¹⁷ But that An, in his Akkadian version of Anu, was a radiating body in the sky is ascertained not only, as we have seen, by the cuneiform sign which designates him, the stylized picture of a star—✱—but also by the allusion to “the terror of his splendour” radiating “in the midst of heaven.”¹⁸ This is not a description of the sky and mythologists should never have identified him as such. Rather than *being* the sky, Anu *creates* the sky.¹⁹ But is this enough to equate the celestial body that was An as Saturn? We dig further.

The god An also appears in Egypt. We find him there as an alias of the god Osiris.²⁰ In the “Lamentations of Isis and Nephthys,” Isis addresses Osiris as An.²¹ In a hymn to Osiris he is called the “god An of millions of years.”²² As we have seen, as the sun of night, Osiris is identifiable as Saturn as so, also, is his assimilation with both Atum and Ra. May we therefore claim that so must An be understood?

OURANOS

In Greek mythology, the place of the Latin Janus is taken up by Ouranos, which name the Latins rendered as Uranus. In Greek, *ouranos* means “heaven” but, as E. Tonnelat indicated, this must not be taken to mean that the god’s original function was the personification of the sky.²³ The association of Ouranos with the sky *might* have derived from the fact that an earlier name for the god seems to have been Epigeios, that is “the One who is above the earth.”²⁴ Plato himself referred to Ouranos as Kosmos,²⁵ concerning which see above. It was, however, the Phoenician Sanchoniathon who directly equated Ouranos with Kronos/Saturn.²⁶ So also, more recently, Lynn Rose even though his model is at variance with the one being constructed in this work.²⁷

VARUNA

We find the Indic version of the Greek Ouranos in the person of Varuna. Although the common identity of these two deities has been said to be exaggerated²⁸ and even doubtful,²⁹ Georges Dumézil has gone a long way in establishing the identification.³⁰ As Alexander Murray tells us in a more recent work:

“The name is derived from *Var*, to cover, or to overarch: and so far Varuna means the vault of heaven. Here, then, we seem to find a clue to the meaning of the Greek Oura-

¹⁷ This is so well known that no references are necessary.

¹⁸ A. Sayce, *Lectures on the Origin and Growth of Religion* (Oxford, 1898), p. 482.

¹⁹ S. Dalley, *Myths from Mesopotamia* (Oxford, 1991), p. 278.

²⁰ E. A. W. Budge, *The Gods of the Egyptians*, Vol. II (N. Y., 1905/1969), p. 154.

²¹ *Idem*, *Osiris & the Egyptian Resurrection*, Vol. II (N. Y., 1911/1973), p. 389.

²² *Idem*, *The Gods of the Egyptians* (see above), p. 154.

²³ E. Tonnelat, “Teutonic Mythology,” *New Larousse Encyclopedia of Mythology* (London, 1972), p. 252.

²⁴ J. Morgenstern, “The Divine Triad in Biblical Mythology,” *Journal of Biblical Literature*, Vol. LXIV (1945), p. 15.

²⁵ A. de Grazia, *Chaos and Creation* (Princeton, 1981), p. 123.

²⁶ A. Hislop, *The Two Babylons* (London, 1972), pp. 193-194.

²⁷ L. E. Rose, “The Afar Triangle as the Nether Reaches of Eden and Babel,” *AEON* II:4 (May 1991), p. 23.

²⁸ P. Masson-Oursel & L. Morin, “Indian Mythology,” *New Larousse Encyclopedia of Mythology* (London, 1972), pp. 328-329.

²⁹ A. B. Keith, *The Religion and Philosophy of the Veda and Upanishads* (Cambridge, 1925), p. 100; A. L. Basham, *The Wonder that was India* (London, 1956), p. 236.

³⁰ G. Dumézil, *Ouranos-Várna* (Paris, 1934), *in toto*.

nos, whom we already know to have been a sky-god: Ouranos means the coverer, but...the name would have remained unintelligible apart from its reference to the Sanskrit name."³¹

Given the equivocalness of translation, we are not surprised to find Wendy O'Flaherty giving the meaning of the name Varuna as "all-enveloping."³² Even so, and once again, temporarily leaving aside the god's assimilation to the sky, we find that Varuna was sometimes simply called Aditya—"eternal, celestial light"³³—which, like the other deities in the series we have been considering, identifies the deity as a celestial body.

Like the Saturnian deities of other nations, Varuna was considered "the first Sovereign"³⁴ and "universal monarch."³⁵ While Ovid spoke of "yellow-eyed Saturn,"³⁶ Varuna was said to have had yellow eyes.³⁷

True, some may consider the above as rather slim evidence on which to base the identity of Varuna as Saturn but, in following chapters, more will be presented. All that needs to be re-stated here is that, like Janus, with whom we are presently mainly concerned, the above series of gods were all believed to have represented that entity which the Greeks called *kosmos* and which, among modern mythologists, has come down to symbolize the sky or heaven. Using the old adage that things which are equal to the same thing must be equal to one another, one can therefore assume that, since the deities enumerated above are all, to some extent, identifiable as *avatars* of the Saturnian deity, then so must Janus be identified.

Actually, the above series of identifications has been presented more as an exercise in comparative mythology, and as a basis for coming chapters, than as evidence for the Saturnian identity of Janus since the comparisons are not really required to make our case. As will be seen directly below, we have *direct* evidence at our disposal.

SATURNUS

That Janus was merely another name for Saturn was known and acknowledged by the ancients themselves. Thus, in describing the New Year Festival, which we have already seen affiliated with the Saturnian planet through the Persian feast of Nauroz, Joannes Lydus had this to say:

"Our own Philadelphia still preserves a trace of the ancient belief. On the first day of the month [that is January, named after Janus] there goes in procession no less a personage than Janus himself, dressed up in a two-faced mask, and people call him *Saturnus*, identifying him with *Kronos*."³⁸

Here I must at once state that there is no point in claiming that Janus and Saturnus are presented as different deities in the Roman pantheon or that the quote from Lydus is too late, dating from the sixth century, for any credence to be attached to it. In the first place, it was not Lydus who called Janus by the name Saturnus. It was, as he tells us, the people who did so. In other words, he was reporting *general* belief. More than that, as Lydus himself stated, the knowledge he imparted still preserved "a trace of the *ancient* belief," meaning that the

³¹ A. S. Murray, *Who's Who in Mythology: Classic Guide to the Ancient World* (London, 1995), p. 328.

³² W. D. O'Flaherty, *Hindu Myths* (Harmondsworth, 1976), p. 356.

³³ V. Ions, *Indian Mythology* (London, 1967), p. 20.

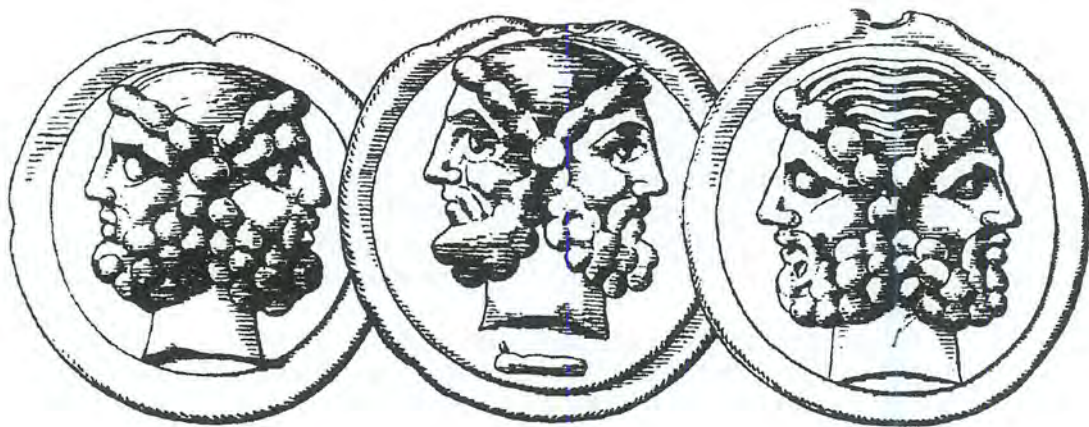
³⁴ M. Eliade, *The Myth of the Eternal Return* (London, 1955), p. 29.

³⁵ J. W. Perry, *Lord of the Four Quarters* (N. Y., 1970), p. 121.

³⁶ H. Gregory (trans.), *The Metamorphoses* (N. Y., 1958), p. 176.

³⁷ A. B. Keith, "Indian Mythology," *The Mythology of All Races*, Vol. VI (1964), p. 85.

³⁸ Joannes Laurentius Lydus, *De Mensibus* 4:2 (emphasis added).



The two-faced Janus.
Roman coins.

was itself already ancient in *his* time.

Meanwhile, the fact that Janus and Saturnus were considered separate deities has nothing to do with the issue. As noted earlier, and as has been recognized by others, there is nothing strange about having different deities, even within the same pantheon, as personifying the same celestial object. As far as Janus is concerned, he could be considered an older Saturn—Cook had no qualms about making him an older Jupiter,³⁹ with which this author naturally disagrees.

To be fair, since I mentioned him, Cook did not accept the statement of Lydus—but *not because he considered the source as a late one*. “The confusion of Ianus [the same as Janus] with Kronos,” he tells us, “no doubt presupposes the usual blunder Kronos = Chronos [that is Time personified], which from the fifth century B.C. onwards queered the course of Greek theology.”⁴⁰

Why did Cook bring this point up? He did so because he could not avoid the veneration of Janus as a god of time, or Time personified,⁴¹ which, through the rules of comparative mythology, would equate the Italic deity with the Greek Chronos. But, in the first place, according to Lydus, his countrymen did not call Janus by the name Kronos. They called him by the name Saturnus. The identification with Kronos was added because Kronos was simply the Greek counterpart of the Italic Saturnus. In the second place, as will be indicated *in detail* in a later chapter of this work, the blunder concerning the identification of Kronos/Saturn with Chronos/Time happens to be Cook’s. In fact, as we shall soon see, the identification of Janus as Saturn does not rest solely on the statement of Lydus but also on the comparison of this deity’s characteristics with those of the *known* Saturnian deities of other nations. Thus, for instance, William Heidel speaks of “the *recognized* association of Saturn with Janus”⁴²

³⁹ A. B. Cook, *op. cit.*, pp. 335 ff.

⁴⁰ *Ibid.*, p. 374.

⁴¹ *Ibid.*, pp. 336-337.

⁴² W. A. Heidel, *The Day of Yahweh* (N. Y., 1929), p. 469 (emphasis added).



Saturnus.



Winged Saturnus—with star above his head, indicating his function as a celestial body, and globe in his hands, indicating his original shape.

and gives a reference to Macrobius⁴³ besides the one to Lydus. For whatever it is worth, Hislop also identified Janus as Saturn.⁴⁴ It cannot therefore be said that Macrobius was *that much* in error when he presented Janus as a *solar deity*⁴⁵ if this solar deity is understood to have been the primeval *Saturnian sun*.

But why did I bring all this up at this particular point? Merely to indicate that Janus can also be seen as yet one more example of the Saturnian sun? Hardly. I brought all this up as a foundation for the next datum I wish to present—one that will take us into even *deeper* waters.

STELLA PROXIMA

One aspect concerning Janus that has bewildered mythologists in the past was originally presented by the Roman Poet Publius Ovidius Naso, who is better known simply as Ovid. It was he who reported Janus as having stated: "The ancients called me chaos, for a being from of old am I."⁴⁶ And, after having described the creation of the "world," the same Janus is made to declare: "T'was then that I, *till that time a mere ball*, a shapeless lump, assumed the face and members of a god."⁴⁷

What this tid-bit of a myth tells us is that, prior to Creation, Janus/Saturn was believed to have had the appearance of a sphere—"a mere ball." A similar myth is also told by the Eskimos who claim that Ataksak, one of their major divinities, lives in heaven but does not have

the form of a man. He merely looks like a sphere.⁴⁸

Ataksak is not identified as an aspect of the planet Saturn. But since he happens to share a Saturnian trait to which we shall come later, I will beg my readers' credence in allowing me

⁴³ Macrobius, *Saturnalia*, I:7 sq.

⁴⁴ A. Hislop, *op. cit.* (1916 edition), p. 271.

⁴⁵ Macrobius, *op. cit.*, I:9:9.

⁴⁶ Ovid, *Fasti* I:103.

⁴⁷ *Ibid.*, I:111 (emphasis added).

⁴⁸ M. Fauconnet, "Mythology of the Two Americas," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 427.

to assume the identification. In any case, even without the additional evidence of this Eskimo snippet, we are still left with the spherical shape of Janus/Saturn. The implication here is clear. If ancient man could remember a time when Saturn appeared as a sphere to the unaided eye, Saturn would have had to have been closer to Earth.

THE DOGON MYSTERY

At this point I wish to introduce a few items which archaeoastronomers have found quite bewildering. I start with the astronomical knowledge of the Dogon of Mali of what had once been the French Sudan, in Africa.

Thanks to the writings of Marcel Griaule, Germaine Dieterlen, and Robert Temple, the Dogon, once a little-known tribe with some very curious rituals, have now been placed on the tourist map. But more than their exotic costumes, bizarre masks, dances, and commemorative festivals, these people have become increasingly renowned for their astronomical lore. As Edwin Krupp reported:

"Counting the phases of the moon, keeping track of the configurations of Venus, and watching the arrivals and departures of the stars are all part of Dogon practical astronomy. The Dogon recognizes 266 stars or asterisms and associate them with 266 pictographic symbols that are painted on rock shelters, altars, and other shrines."⁴⁹

The Moon, say the Dogon, "is dry and dead like dry dead blood."⁵⁰ They know that the planets, which they call *tolo tanaze*—that is "stars that turn (around something)"⁵¹—revolve around the Sun. They claim that "Jupiter follows Venus by turning slowly around the sun."⁵² They possess four different kinds of calendar—a solar calendar, a lunar calendar, a Venus calendar, and, remarkably, one based on the star known to us as Sirius.⁵³ Either through intuition or otherwise, the Dogon are of the belief that an infinite number of stars and an infinite number of planets, together with their satellites, exist.⁵⁴

What mostly interests us here, however, has to do with what they have to say in relation to Saturn. Concerning this planet, the Dogon "affirm there is a permanent halo around the star, different from the one sometimes seen around the moon."⁵⁵ Their own drawing of Saturn actually shows the planet, depicted as a circle, distinctly surrounded by a ring. Saturn is also known to them as "the star of limiting the place,"⁵⁶ which probably alludes to the fact that Saturn is the outermost planet among those visible to the naked eye.

As Krupp was later to admit, these astronomical traditions of the Dogon "were bound to cause consternation among astronomers, for it seems impossible to reconcile the Dogon astronomical knowledge...with their instrumental resources, namely the unaided eye."⁵⁷ While Griaule and Dieterlen did not, themselves, come to a definite conclusion concerning how the Dogon came upon their astronomical lore, Robert Temple, who built an edifice on their

⁴⁹ E. C. Krupp, *Skywatchers, Shamans & Kings* (N. Y., 1997), p. 166.

⁵⁰ M. Griaule & G. Dieterlen, *La Renard Pâle* (Paris, 1965), p. 478.

⁵¹ *Ibid.*, pp. 480-481.

⁵² *Ibid.*

⁵³ *Ibid.*, p. 226.

⁵⁴ *Ibid.*, pp. 321, 323.

⁵⁵ *Ibid.*, p. 292.

⁵⁶ *Ibid.*, p. 291.

⁵⁷ E. C. Krupp, "Observatories of the Gods and Other Astronomical Fantasies," in E. C. Krupp (ed.), *In Search of Ancient Astronomies* (N. Y., 1977), p. 267.

work, was of the opinion that the knowledge was given to the Dogon's ancestors by visiting extraterrestrials.⁵⁸ Believe it if you will. (It has always fascinated me that such extraterrestrials would have bestowed such astronomical knowledge to the ancestors of the Dogon, knowledge which was of no practical use to them, while giving them nothing that might have alleviated the precarious living of their Stone Age primitiveness.)

Others would rather have the Dogon educated in these matters by other sorts of visiting aliens—Christian missionaries from the West. The missionary campaign in tropical Africa, however, did not commence in earnest until the late eighteenth/early nineteenth century.⁵⁹ But this is neither here nor there because, to be sure, the Sudan, including Mali, had much earlier come under the influence of Islam,⁶⁰ so that no Christian influence could have penetrated the region—and this despite the fact that the rural areas, such as the one occupied by the Dogon, continued to stick to their traditional animistic ways.⁶¹ And, in any case, would missionaries, Christian or otherwise, bent on converting primitive peoples to their faith, have filled the minds of these natives with astronomical knowledge? Or why was this knowledge, as adhered to by these natives, *first* reported to the outside world by missionaries who were as confounded by the knowledge as were later astronomers?

One other alternative that has been proposed is that the ancestors of the Dogon had been in possession of optical instruments. However, even Galileo, with his pioneering telescope, was not able to see Saturn as a ringed orb. In fact, the image of Saturn that he was capable of resolving through his optical instrument was so vague that he mistook the planet for three separate bodies. As he himself reported:

"I have observed with great admiration that Saturn is not a single star but three together, which, as it were, touch each other...the middle being much larger than the lateral ones...by employing a glass which multiplies the superficies [i.e., visible boundaries] *more than a thousand times*, the three globes will be seen very distinctly and almost touching, with only a small dark space between them."⁶²

It was not until 1655 that Christian Huygens, with a better instrument, was able to report (through his now famous encoded message) that Saturn was actually "girdled by a thin flat ring, nowhere touching, inclined to the ecliptic."⁶³

Is it then probable that the Dogon, who are still living in their primitive mud huts as I write this, could have been in possession of a better telescope than the one utilized by Galileo?

THE STAR OF NINE MOONS

The Efe Pygmies of the Ituri Forest in the eastern portion of Africa's Congo basin in what is now Upper Zaïre have been unceremoniously relegated by most anthropologists to the lowest rungs of human evolution. Although their ancient way of life started coming to an

⁵⁸ R. K. G. Temple, *The Sirius Mystery* (N. Y., 1976), p. 11 ff., and throughout the entire work.

⁵⁹ See here, E. Huxley, *The Challenge of Africa* (London, 1971), pp. 53 ff.

⁶⁰ A. Adu Boahen, "Kingdoms of West Africa," in A. M. Joseph, Jr. (ed.), *The Horizon History of Africa* (N. Y., 1971), pp. 185 ff.

⁶¹ *Ibid.*, p. 186; J. H. Clarke, "Time of Troubles," in *ibid.*, p. 388.

⁶² W. Bixby, *The Universe of Galileo and Newton* (N. Y., 1964), p. 57 (emphasis added).

⁶³ General knowledge.



Galileo Galilei.

Despite the fact that he was the first in modern times to telescopically view the rings of Saturn, he at first mistook them for two adjoining bodies. (Illustration by Charles Hogarth.)

end with the institution of the Ituri Research Station,⁶⁴ here were these diminutive people, trying to eke an existence in peaceful rapport with their overgrown environment in an area where stars are only partly visible at night through the narrow openings of jungle clearings. If ever there was a people who did not need any knowledge of the stars, or who, even if they did, would have been encumbered by their environment in properly observing the twinkling denizens of the night sky, it surely must have been these Pygmies. Of horizons, so crucial to astronomical observations, they could see nothing. And yet, hampered as they are by their encroaching jungle, they possess "some rather remarkable knowledge of the planets and constellations" which they continue to observe "with the keenest interest."⁶⁵

As with the Dogon, of special interest to us in this work is the Efe Pygmy knowledge concerning the planet Saturn. There are intimations that, like the Dogon, their ancestors were also aware that this planet is surrounded by a ring.⁶⁶ They definitely hold the belief that Saturn is surrounded by satellites. Up until the end of the nineteenth century, Saturn

was known to possess only eight satellites. Phoebe, the ninth satellite of Saturn, was discovered by W. H. Pickering in 1899. No further Saturnian satellites were discovered until the dawn of the space age. In the views of Earth-based telescopes, only nine of Saturn's satellites are visible. And yet, the Efe Pygmies "traditionally define the planet Saturn as 'the star of nine moons'."⁶⁷ Their name for the planet—Bibi Tiba Abutsiua'ani—means exactly that: The Star of Nine Moons.⁶⁸ They also call it Bibi Deba—"The good or perfect star."⁶⁹

Jean-Pierre Hallet, of course, is of the belief that the Efe Pygmies had not always occupied the land they do at present. "According to Pygmy legends," he wrote, "the ancient Pygmies smelted and worked metals, dwelled in 'great villages' or cities, practiced agriculture and animal husbandry, sailed about in boats, manufactured pottery, and in general lived on an exceedingly high level of material technology."⁷⁰ None of this has ever been verified by

⁶⁴ R. C. Bailey, "The Efe: Archers of the African Rain Forest," *National Geographic* (November 1989), pp. 664 ff.

⁶⁵ J-P Hallet (with A. Pelle), *Pygmy Kitabu* (N. Y., 1973), p. 110.

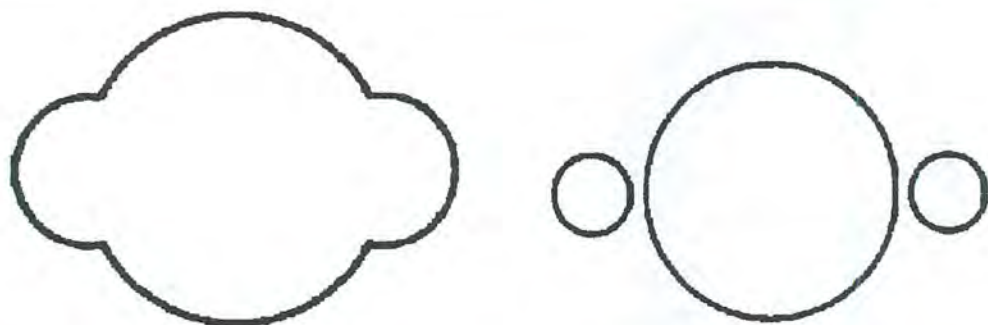
⁶⁶ *Ibid.*, p. 386.

⁶⁷ *Ibid.*, p. 291.

⁶⁸ *Ibid.*, p. 385.

⁶⁹ *Ibid.*

⁷⁰ *Ibid.*, p. 110.



Facsimile of Galileo's drawings of the planet Saturn, as he observed it through his relatively low-power telescope, which led him to believe that the planet was actually three separate bodies.

anthropology and/or archaeology. But even if there is a grain of truth in these legends, it still would not have enabled the Efe Pygmies, or their ancestors, to see the satellites surrounding the planet Saturn. So where did that information come from?

When all is said and done, the only other alternative left to explain the Dogon and Efe Pygmy knowledge of Saturn's ring structure and its satellites is that their ancestors had, in a far off time, been able to view the planet at closer proximity—which would mean that, somehow, Earth had been much closer to Saturn than it is at present. As outlandish as this idea may appear, there seems to be no other resolution to the problem—which brings to mind the oft-repeated words of Arthur Conan Doyle: "When you have eliminated the impossible, whatever remains, *however improbable*, has to be the truth."⁷¹ Besides, as forthcoming chapters will indicate, everything else that our ancient forefathers had to say about this planet continues to strengthen the supposition.

THIRD INTERLUDE

Science has forgotten Oskar Reichenbach who, as far back as 1884, had proposed a theory purporting to prove that land masses on Earth have rifted and moved northward.⁷² His ideas can therefore be said to have preceded the similar ones of Alfred Wegener, himself relegated to a footnote in the annals of science as the originator of the Continental Drift Theory, by some 33 years. But, more than that, Reichenbach was of the belief that, in the past, the Solar System had experienced a series of catastrophic events.⁷³ Basing his conclusions on the imperfect knowledge of his time, he had also formulated certain theories concerning the planet Saturn. As wrong as he might have been, and I am not here concerned with defending Reichenbach, he hit on the novel idea that Earth is "an offspring of Saturn,"⁷⁴ by which he meant to imply that Earth had once been a satellite of the giant gas planet.

Whether Immanuel Velikovsky was aware of Reichenbach's wild theory or not must remain a moot question but, many years later, he, too, came to the same conclusion. Originally, Velikovsky's *Worlds in Collision* contained a section on Saturn concerning events that predated the ones he described in that work. For various reasons, he was then advised to ex-

⁷¹ A. Conan Doyle, *The Sign of 4* (1890), Ch. 6 (emphasis as given).

⁷² O. Reichenbach, *On Some of the Remarkable Features in the Evolution of the Earth* (London, 1884), pp. 6 ff.

⁷³ *Ibid.*, p. 3.

⁷⁴ *Ibid.*, p. 5.

cise this section from his seminal work and to present it at a future time as a prequel. At one time, because of the manner in which he was treated by academia, Velikovsky threatened to take his Saturnian thesis with him to the grave but, as matters turned out, reason prevailed and he was able to expand and finalize his hypothesis under the title of *Saturn and the Flood and Jupiter of the Thunderbolt*, a title which was later changed to *In the Beginning*. As of this writing, this work still has to see the light of day.

In 1971, however, Velikovsky gave a lecture at the University of the New World in Valais, Switzerland, in which he presented a synopsis of his unpublished Saturnian scenario. Among the items he disclosed there was the hypothesis that Earth might once have been a satellite of Saturn.⁷⁵ The lecture was later transcribed by Jan Sammer and appeared as an article in *KRONOS*.⁷⁶

Independent of Velikovsky, but basing their work on his as also on the mytho-historical record, Harold Tresman and Bernard Newgrosh (writing under the name of Brendan O'Gheoghan), also came to the conclusion that Earth must once have orbited Saturn as a satellite,⁷⁷ a topic to which Tresman was later to return.⁷⁸

In analyzing the ambiguous, but tantalizing, planetary system proposed by Philolaos, the Pythagorean philosopher from Southern Italy who lived in the time of Socrates, Lynn Rose came to the same conclusion. Although this system of Philolaos had long been relegated to the library of Classical curiosities, Rose was able to recapture what it might have once intended to portray. Although what resulted was a Saturnian scenario the details of which are at variance with the one being presented here, it still contains some of its basic elements. As Rose explained: "According to the conventional interpretation, the system of Philolaos had Earth in orbit around a Central Fire..."⁷⁹ Since the Sun was described as orbiting this Central Fire,⁸⁰ it becomes obvious that the Central Fire could not have been the Sun. An in-depth study of this system, together with his *privileged* knowledge of Velikovsky's unpublished work on the subject, enabled Rose to conclude that this Central Fire was Saturn shining as a "sun," and that Earth was in those days in orbit around it.⁸¹

Combining Velikovsky's postulate with that of David Talbott and others, Frederick Hall embraced the same idea, presenting it in a speculative scenario concerning the history of the Solar System.⁸²

Certain fundamentals, based on specific proposals offered by others, are here accepted, *but also tested against the record*. The hypothesis that Earth had once been a satellite of Saturn, which originally came to this author via Velikovsky, is one of them. Additional research conducted independently by the present author has led to the same conclusion. This research has however made it apparent that prehistoric man, ignorant of astronomical matters, would not have been able to deduce that his world was a satellite of another planet. But, being close enough to Saturn, he would have been able to view that planet as something much bigger than the present pin-point of light we see in the night sky. Saturn, in fact, would have loomed large in the sky as a disk, or sphere, much larger than that of the present full Moon. And this

⁷⁵ I. Velikovsky, "On Saturn and the Flood," *KRONOS* V:1 (Fall 1979), p. 7; see also *idem*, *Mankind in Amnesia* (N. Y., 1982), p. 99.

⁷⁶ *Ibid.*, pp. 3-11.

⁷⁷ H. Tresman & B. O'Gheoghan, "The Primordial Light?" *SIS Review* II:2 (December 1977), p. 36.

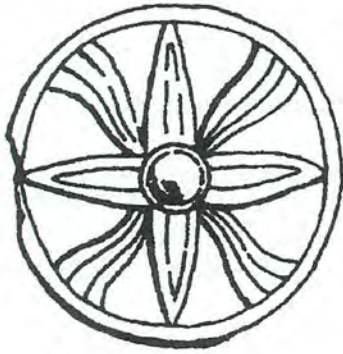
⁷⁸ H. Tresman, "Geological Genesis," *Chronology & Catastrophism Workshop*, 1992:2, pp. 4 ff.

⁷⁹ L. E. Rose, "Variations on a Theme of Philolaos," *KRONOS* V:1 (Fall 1979), p. 12.

⁸⁰ *Ibid.*

⁸¹ *Ibid.*, pp. 24, 26 ff.

⁸² F. F. Hall, "Solar System Studies," Part 2, *AEON* I:4 (July 1988), p. 26.



The sun-like symbol of Shamash (left) and the less elaborate one of Ra (right).

is precisely what we find intimated in the lore of our ancient forefathers, a lore that continues in the belief of some of our more primitive siblings.

This makes us better understand why Janus/Saturnus was made to state that, prior to Creation, he appeared as “a mere ball,” a claim also made for the Eskimo deity Ataksak who was said to look “like a sphere.” It also explains why the symbol of Shamash, identified as the planet Saturn by the Assyro-Babylonians themselves, was represented as a sun-like disk. So, likewise, with the disc-symbol representing Ra, whom we have also seen identified as Saturn, although in a less elaborate manner. It definitely explains the beliefs of the Dogon of Mali, as also those of the Efe pygmies of the Ituri forest.

This, then, *together with its radiating brightness*, better explains why Saturn was considered to have been the most prominent among the planets—which provides us with our next *numbered* hypothesis. But, rather than numbering this as Hypothesis #3, I would like to number it #1, while reshuffling our previous two hypotheses. What we have at this point then is the following:

Hypothesis #1: That, from what can be deduced from ancient as well as primitive astronomical lore, Earth had once been a satellite of the planet Saturn which, because of its proximity, loomed large in the sky as a distinct disc larger than the size of the full Moon.

Hypothesis #2: That, *according to the ancients*, the planet Saturn once shone as a sun.

Hypothesis #3: That, *still according to the ancients*, this primitive Saturnian sun shone during that time we today call the night.

But does astronomy, *as presently believed in*, allow for this state of affairs?

Chapter 7

Planetary Shuffle

THE UNSTABLE SOLAR SYSTEM

Since Earth is no longer a satellite of Saturn, it becomes obvious that the planets of the Solar System have been shuffled around since that time. And here another objection may be raised because such shuffling around would be seen by some as violating Bode's Law, to say nothing of the stability of the Solar System.

References concerning the belief in the immutability of the Solar System as a whole, and of its planets in particular, are not required since this one-time verity has been vouched for by many an astronomer and astrophysicist since the dawn of modern astronomical observation. It will be pointed out, for instance, that Simon Laplace (1749-1827) mathematically proved the near-eternal stability of the planets of the Solar System, which work was carried forward and supposedly improved upon by Joseph Lagrange and Siméon Poisson. In studying the work of Laplace, however, we find that what he presented was turned into a uniformitarian dogma against his intentions. Regardless of what historians of science have made of his so-called proofs, he himself was not averse to celestial disorder. "The sky itself, despite the orderliness of its movements," he wrote, "is not unalterable." As far as he was concerned, the stability of the present system is itself "disturbed by various causes that can be ascertained by careful analysis, but which are impossible to frame within a calculation."¹ More than that, he found himself wondering whether the heavenly bodies of the Solar System might be affected by forces other than gravitation, that is whether electric and magnetic energies might also play a role.² As Peter Warlow described the entire matter:

"...the first thing we must say here is that, *contrary to an often-repeated statement*, no-one has ever proved that the Solar System has been, or will be, stable for any significant length of time. The statement has its beginnings about two hundred years ago, and stems from the work of the Marquis de Laplace, who spent much of his life working out a mathematical model for the Solar System. The model was based on the assumption that Newton was right in attributing all of the motions to the effect of gravity alone, and it was limited to a consideration of the major bodies alone—the main planetary bodies plus the Sun. *The thirty or so other major bodies [since then many more], in the form of the main satellites of the planets, were ignored.*"³

And:

"Laplace, himself, fully appreciated the limitations of his model, and he recognized that it was quite possible for the system to become disturbed, either as a result of the

¹ S. Laplace, *Oeuvres Complètes*, VII:121.

² *Ibid.*, VI:347.

³ P. Warlow, *The Reversing Earth* (London, 1982), p. 182 (emphasis added).

appearance of a new body into the system, *or by some change of the bodies already within the system*. Indeed, it would probably be appropriate to class him as a catastrophist, and it is rather ironic that his name has been taken so much in vain by uniformitarians.”⁴

This, however, is not the place to review the impetus that Laplace’s mathematics had on those astronomers who came later and the extent to which they saw fit to reinterpret his work in order to force-fit it into their uniformitarian, *and even religious*, prejudices.⁵ As we will soon see, belief in this matter has changed considerably since the days of Laplace.

V. Szebehely and R. McKenzie have even contested G. Hills’ much earlier postulate of a stable Sun-Earth-Moon system,⁶ and have themselves reached the conclusion that the Moon may someday escape from Earth to become itself a planet.⁷ Thus, if the Moon can yet escape Earth’s attraction to become an independent planet, what is so bizarre about another satellite, in this instance Earth itself, escaping the clutches of Saturn to become the autonomous planet it now is?

The Moon, however, is not the only celestial body in our system that has recently been calculated to be capable of an orbital change. Computer simulations by Gerald Sussman have indicated that the orbits of the inner four planets—Mercury, Venus, Earth, and Mars—are unstable and liable to future orbital changes.⁸ Doug Lin had also suggested as far back as 1982 “that planets like Jupiter could migrate from the outer solar system in toward their parent stars.”⁹ While these are processes which are thought to take millions of years, the important thing to remember, for the time being, is that the new Science of Chaos shows beyond a reasonable doubt that the Solar System is not the “paragon of predictability that was once imagined,”¹⁰ and that Laplace’s deterministic world view no longer holds. What now turns up is that resonance pervades the Solar System and that it probably acts through tidal effects. As further computer retrocalculations conducted by Archie Roy and his team have shown, the orbits of the smaller bodies of the Solar System are actually chaotic and unpredictable.¹¹

And then, in a study of planetary perturbations performed by John Bagby, it was found that such computer simulations as the ones described above are not, of themselves, reliable beyond a certain length of time. As he had it stated: “I found that *every* outer planet all the way in to at least Mars, was so perturbed by some as yet unmodeled cause that their orbits *needed to be computerized every ten years*.”¹²

While Bagby’s simulations had to do with the outer planets, as opposed to the orbits of the inner ones simulated by Sussman, Roy, *et al*, it should be noted that Mars was included in both studies.

⁴ *Ibid.*, pp. 182-183 (emphasis added).

⁵ Those interested in this particular debate would do well to consult R. W. Bass, “‘Proofs’ of the Stability of the Solar System,” *KRONOS* II:2 (November 1976), pp. 27 ff.; A. E. Roy, “The Stability of the Solar System: An Historical Perspective,” *SIS Review* VI:1-3 (April 1983), pp. 66 ff.; R. W. Bass, “The Celestial Dynamics of ‘Worlds in Collision,’” in *ibid.*, pp. 69 ff.

⁶ G. W. Hill, *American Journal of Mathematics* (1878), as cited in the following reference.

⁷ V. Szebehely & R. McKenzie, “Stability of the Sun-Earth-Moon System,” *The Astronomical Journal*, 82:4 (April 1977), p. 303.

⁸ D. H. Friedman, “Gravity’s Revenge,” *Discover* (May 1990), p. 54; see also *Scientific American* (October 1988), p. 20; *Nature*, 338 (1989), pp. 207, 208, 237-238.

⁹ S. Flamsteed, “Impossible Planets,” *Discover* (September 1997), p. 81.

¹⁰ *New Scientist* (November 25, 1989), pp. 60-63.

¹¹ *Ibid.*

¹² J. P. Bagby, “Further Speculations on Planet ‘X,’” *KRONOS* IX:3 (Summer 1984), pp. 100-103 (first emphasis as given, second emphasis added).

Bagby himself reached the conclusion that a tenth planet, dubbed "X," or a stellar companion, orbited the Sun beyond the orbit of Uranus, and that it was this massive object that was causing the perturbations of the outer planets.¹³ But while Bagby's Planet "X" has yet to materialize, *the perturbations of the outer planets remain real.*

THE TITIUS-BODE LAW

But what, one might ask, of the *spacing* between the planetary orbits dictated by Bode's Law? Would this law not be violated had Earth once been a satellite of Saturn?

Bode's Law was actually discovered by Johann Daniel Titius of Wittenberg, Germany, in 1772. But because it was brought to prominence by Johann Elert Bode, another German astronomer—some say actually stolen by him¹⁴—it has become known by *his* name.

What is this law?

In order of distances, the planets of the Solar System moving outward from the Sun are Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto. What Titius discovered was that if we take the number 3, double it, then double the result, and keep on doubling in that manner, we end up with the series 3, 6, 12, 24, 48, 96, etc. Adding 4 to each of these numbers results in the series 7, 10, 16, 28, 52, 100, etc. If we then divide each of these numbers by 10, we finally end up with .7, 1, 1.6, 2.8, 5.2, 10, and so on. What is extraordinary about this final series is that it turns out to be in fair agreement with the actual *mean* distances of each planet from the Sun, still moving outward, when measured in astronomical units.¹⁵

Where this law was at first thought to fail was in its fourth placement, since there is no planet to be found at 2.8 astronomical units from the Sun. But then, when the asteroid belt was discovered between Mars and Jupiter close enough to this position, Bode's Law became engraved in granite—*never mind that the law breaks completely down when it comes to Neptune and Pluto.*

It was then "established" that the effects of this law had manifested themselves early in the history of the Solar System. But, in 1960, Robert Bass demonstrated mathematically that planets tend to space themselves in a Bode's Law type series of orbits, by what he termed the Principle of Least Mean Potential Energy,¹⁶ *even if initially disturbed.* Thus the Bode formula—for that is all it really is—reveals absolutely nothing about the *original* spacing of the Solar System planets. This was validated in 1968 by the then Soviet theoretician A. M. Molchanov, who claimed that Bode's Law is actually the result of orbital resonances and that it could *not* be of primeval origin.¹⁷ This was again stressed seven years later by Michael Ovenden, who renamed Bass' earlier axiom as the Principle of Least Interaction Action, when he reached a conclusion identical to Molchanov's—"that the present distribution of the planetary and satellite orbits is the result of mutual perturbations."¹⁸ What Ovenden deter-

¹³ *Idem*, "Evidence for a Tenth Planet or Massive Stellar Companion Beyond Uranus," presented at the Tomorrow Starts Here Conference, sponsored by NASA, TRW, RCA, National Space Institute and Delta Vee, at Palo Alto, California, September 11, 1982.

¹⁴ L. E. Rose, "Variations on a Theme by Philolaos," *KRONOS* V:1 (Fall 1979), p. 19.

¹⁵ One astronomical unit, abbreviated as "a.u.," is the *mean* distance of Earth from the Sun, calculated at approximately 93 million miles.

¹⁶ R. W. Bass at the Tenth International Astronautical Congress in Stockholm, 1960; *Idem*, Aeronca-Aerospace Technical Report, No. 60-5.

¹⁷ A. M. Molchanov, "The Resonant Structure of the Solar System," *Icarus* 8 (1968), p. 203.

¹⁸ M. W. Ovenden, "Bode's Law—Truth or Consequences?" *Vistas in Astronomy* 16 (1975), Kepler Memorial Volume.

mined from all this is that "the present distribution gives no information concerning the *origin* of the solar system."¹⁹

In 1970, J. G. Hills computed simulations of the N-body problem and discovered that "arbitrary planetary configurations, started with purely random initial positions and velocities, tend, during a few thousand to a few hundred thousand subsequent years, to 'relax' into a Bode's-law type of resonant configuration."²⁰ So much, then, for "millions of years."

Now it is true that the planetary system that relaxed the fastest in Hills' simulations, at something like 2000 years, consisted of the Sun with four planets, each of which contained ten times the mass of the Jovian planets—hardly a portrait of *our* Solar System. However, the actual planetary composition of this simulation is not the central issue being discussed here. What is important to keep in mind is that Hills showed that, under certain conditions, planets *can* relax into a Bode's Law type of configuration within a comparatively short time. And this *is* important because, up to then, this had generally been thought to be impossible—which, if nothing else, proves that what is thought to be impossible in astronomy today may be thought of as being quite possible tomorrow.

Actually, as Bass informed his readers in 1974,²¹ the phenomenon discovered by Hills was foreseen by Ernest Brown as early as 1931,²² but no one seems to have paid him any heed.

What all this implies is that Bode's Law is an empiricism based on the *present* spacing of the planets. Lynn Rose explained it best:

"It is usually not the case that mathematical gimmickry comes first, and that an inventory of the heavens is taken later. Usually the heavenly body count comes first, and the tissue of mathematical rationalization is developed later. Thus Kepler first considered that there were six bodies orbiting the Sun—Mercury, Venus, Earth, Mars, Jupiter, and Saturn [since the rest had not yet been discovered]—and then invented his scheme involving the five regular solids to explain why there could be only those six bodies. And in the eighteenth century, when Titius was working on his law and Bode was stealing it, the properties of the known bodies were examined first, and *then* the artificial mathematical formula—now known as 'Bode's Law'—was developed in an effort to rationalize what was already known."²³

In fact, one of the most reputable encyclopedias of astronomy has it stated that "the Titius-Bode Law...is most probably a mere coincidence."²⁴

Be that as it may, when it comes to the *actual* Solar System, Hills' above-described model *suggested* to him that a reasonable estimate for the relaxation of the Jovian planets into their present orbits would be between 100,000 and a million years. Thus, while it may be pointed out that Bass himself was more concerned with the orbital crossings of an erratic Venus as proposed by Immanuel Velikovsky, which does not concern us here, than he was with the Jovian giants, Hills' conclusion may be said to bode disaster for the Saturnian scenario being proposed here. After all, a hundred thousand to a million years would hardly place our posited event within human memory.

¹⁹ *Ibid.* (emphasis added).

²⁰ R. W. Bass, "Did Worlds Collide?" *Pensée* IVR VIII (Summer 1974), p. 11.

²¹ *Ibid.*

²² E. W. Brown, "Observation and Gravitational Theory in the Solar System," *Publications of the Astronomical Society of the Pacific*, 44 (1932), pp. 21-40.

²³ L. E. Rose, *loc. cit.* (emphasis as given).

²⁴ S. Mitton (ed.), *The Cambridge Encyclopedia of Astronomy* (London, 1977), p. 162 (emphasis added).

What must not be lost track of, however, is that these computer simulations, as well as Ovenden's calculations, involve point-particle (or point-mass) motions and not those of semi-rigid solid bodies. This, also, is important because, according to point-particle Newtonian mechanics, the relaxation of planets into resonant orbits would be reversible. It was for this reason that, despite Ovenden's own disclaimer,²⁵ Bass suggested the inclusion of tidal friction as this would be one way of breaking this reversing tendency.²⁶ Hills, as later Ovenden, saw no reason to take this drag into consideration. Had they done so, their results would have been entirely different. As Bass indicated, the addition of tidal friction "could put the planets on to vastly different orbits."²⁷

Personally, I will not claim that tidal friction, *or tidal friction alone*, would resolve the Saturnian problem. In the meantime, however, it should be kept in mind that Bass was not relying on Hills' discovery as much as he was on an adaptation of it.

Eventually, Ovenden's Principle of Least Interaction Action failed in predicting the present orbits of the Jovian planets. Ovenden could only save his Principle by postulating the one-time existence of an additional massive object *and then getting rid of it at some point in time*. According to this postulate—which, at first glance, should seem wilder than the one being proposed in this work—the Solar System has still not reached equilibrium²⁸ (which reminds us very much of Bagby's postulate concerning *his* undiscovered planet as the cause for planetary perturbations). Ovenden placed the catastrophe which got rid of his one-time planet at 16 million (1.6×10^7) years ago, while also stating that it would take something like another 280 million (2.8×10^8) years for the Solar System to reach complete equilibrium (thus allowing his Principle of Least Interaction Action to fulfill itself). Since, however, I am here only concerned with the past and present orbits of the planets, Ovenden's 280 million years of *future* orbital re-adjustments are irrelevant to our case. But we *will* take note that, according to Ovenden, the present near-equilibrium of the Solar System is not its final stage—that, in fact, the Solar System is still adjusting to a relatively recent planetary shuffle.

Needless to say, it will again be pointed out that an event which supposedly occurred 16 million years ago is hardly "recent." But let us not get carried away just yet because one thing that Ovenden himself stressed takes the wind out of the above objection.

"...if it can be shown that processes operate within the solar system that can rearrange the planetary orbits on a *sufficiently short time-scale* then we must conclude that the present distribution of planetary and satellite orbits contain *no information* about conditions at the time of formation of the solar system."²⁹

This was expanded on later by Archie Roy when he wrote:

"We have seen that the work of J. G. Hills and M. W. Ovenden demonstrated that after a short period of wild behaviour, a planetary system could settle down into a distribution of orbits very similar to a commensurable Bode-type configuration. Such a configuration would, under the action of other forces such as tidal friction, nudge the system into a neighbouring truly stable configuration, which on inspection might be

²⁵ M. W. Ovenden, "Planetary Distances and the Missing Planet," *Recent Advances in Dynamical Astronomy*, ed. by B. D. Tapley & V. Szebehely (Dordrecht, Holland, 1973), pp. 319-320.

²⁶ R. W. Bass, *op. cit.*, p. 69; *idem*, "The Celestial Dynamics of 'Worlds in Collision'," *SIS Review* VI:1-3 (April 1983), p. 71.

²⁷ *Ibid.*

²⁸ M. W. Ovenden, "Bode's Law and the Missing Planet," *Nature* 239 (October 27, 1972), p. 509.

²⁹ *Idem*, "Bode's Law—Truth or Consequences?" (see reference #18), p. 479 (emphasis as given).

thought to have been the system's state for a very long time. *Indeed numerical integrations backward in time could take the system, still well behaved, through the episode of wild behaviour as if it had never been.*"³⁰

Ovenden himself went even further when he theorized that the close approach of planets to each other is not only possible but possibly inherent in the very nature of the cosmos.³¹ From this he also reached the conclusion that "a system of planets (or satellites) will change its configuration slowly when the planets are far apart" but "*quickly when they are close together and interacting violently.*"³²

This brings us to W. M. Smart who, in 1953, had already understood that such "perturbation series" could not be relied upon except for a very short time—*one or two centuries*" to be exact.³³ Later, Bass demonstrated that:

"...it is perfectly possible, according to Newton's Laws of Dynamics and Gravitation when three or more bodies are involved, for planets to nearly collide and then relax into an apparently stable Bode's Law type of configuration within a relatively short time..."³⁴

Moreover, by "a relatively short time," Bass meant "in a few centuries."³⁵

If it can therefore be shown that the planets approached and interacted with each other during the age of man, the resonances inherent in Bode's Law will not admit to dating in millions of years. And, on this issue, the historical record seems to be clear enough even if still unrecognized by most conventionalists.

RETROACTIVE CALCULATIONS

What then of retroactive calculations (or retrocalculations, for short)? Retrocalculation "is the method which relies on the assumption that the Earth has been behaving in a nice sedate uniformitarian manner, and it is assumed that it is possible to calculate backwards in time to establish the exact date of astronomical events."³⁶ Do not such calculations prove that no change in the orbits or placements of the planets have taken place in the past? No, they do not. As Leroy Ellenberger indicated when he was still a Velikovskian catastrophist: "No retro-calculations to date have been inherently capable of duplicating near-collisions [among the planets] *even if one occurred.*"³⁷ William Mullen, too, observed that such retrocalculations are futile since they involve "a problem rather like taking the position of a few billiard-balls towards the end of the game and calculating the positions of the complete set back to the beginning."³⁸ Or, as Warlow pointed out: "In fact, as far as the stability of the system is concerned, there are experts in the field today who admit that, if we take the system in its present state, it is only reasonable to calculate forward or backward in time for about three

³⁰ A. E. Roy, *Orbital Motion* (Bristol, 1978), p. 244.

³¹ M. W. Ovenden, *op. cit.*, p. 485.

³² *Idem*, "Planetary Distances and the Missing Planet" (see reference #25), p. 331 (emphasis added).

³³ W. M. Smart, *Celestial Mechanics* (London, 1953), pp. 4, 194-195, 198.

³⁴ R. W. Bass, "Did Worlds Collide?" (see reference #20), p. 9 (emphasis added).

³⁵ *Ibid.*, p. 11.

³⁶ P. Warlow, *op. cit.*, p. 178.

³⁷ C. L. Ellenberger, "Words in Collision," *Frontiers of Science* IV:1 (March-April 1982), p. 35 (emphasis added).

³⁸ W. Mullen, "Catastrophism and the Compulsion to Meaning," *Proceedings of the Symposium held at the Saidye Bronfman Centre* (Montreal, Quebec, January 10-12, 1975), p. 45.

hundred years [two hundred, according to Smart] before we reach a level of unacceptable uncertainty."³⁹ Granted, Warlow goes on to say that: "Equally, there are experts who would deny that the time of validity is so short, and they speak with apparent confidence in megayears. However," he continues, "they would admit that there is much we do not understand."⁴⁰

The astronomers Victor Clube and Bill Napier are of the same mind:

"Unfortunately," they wrote, "it is not generally possible to calculate past and future orbits in great detail, small uncertainties magnifying rapidly. Most calculations involving three or more solar system bodies are unreliable beyond a few hundred years."⁴¹

Or, as Jill Aberly succinctly phrased it:

"Forget all those old computer calculations of past and future behaviour of the Solar System. Mathematicians now realise that the system is too complicated for conventional computers to ever come up with the right answer. However, they have a new mathematical system which ignores the laws of motion in our familiar 3-dimensional space. Interestingly it demonstrates that the Solar System's behaviour is very chaotic with many possible scenarios."⁴²

Let us not forget the words of astronomer Archie Roy, reviewed above, to the effect that "numerical integrations backward in time could take the system, still well behaved, through the episode of wild behaviour as if it had never been."

In the end, nobody put it better than Lynn Rose and Raymond Vaughan. "Retrocalculation is a very iffy business at best," they wrote. "Suppose that a spacecraft was launched into orbit this morning. Retrocalculation would show where that spacecraft was located on its orbit at this same time yesterday, when it was still on its launching pad!"⁴³

FORMER ORBITS

As Wallace Thornhill wrote in 1997, "it is well known among astronomers that Newton's law of gravity when applied to more than 2 orbiting bodies results in chaotic motion after a relatively short time."⁴⁴ But, more important than that, he also asked:

"How can the solar system have remained in its apparently stable configuration for the 5 aeons required by current theories of solar system evolution? And why, if the planets and moons were formed from the same primordial cloud of gas and dust, are they such a fruit salad of physical characteristics, axial tilts, rotation rates and orbits?"⁴⁵

³⁹ P. Warlow, *op. cit.*, p. 183.

⁴⁰ *Ibid.*

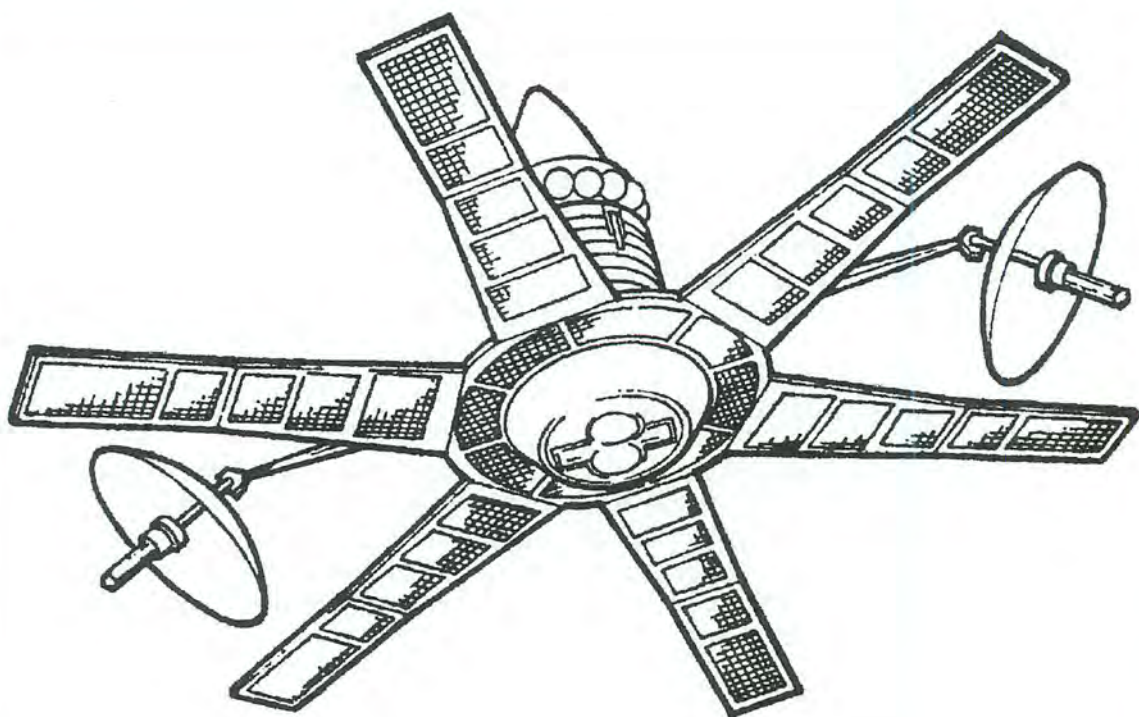
⁴¹ V. Clube & B. Napier, *The Cosmic Serpent* (London, 1982), p. 73.

⁴² J. Aberly, "Monitor," *Chronology & Catastrophism Workshop* 1994:1, p. 24; see also *New Scientist* (March 19, 1994), pp. 32-35.

⁴³ L. E. Rose & R. C. Vaughan, "The Venus Tablets: A Fresh Approach," *KRONOS X:2* (Winter 1985), p. 11.

⁴⁴ W. Thornhill, *The Electric Universe* (Beaverton, Oregon, 1997), p. 2.

⁴⁵ *Ibid.*



Retrocalculation of the motions of an artificial Earth satellite—such as the Soviet Molnya 1 shown above—will show that the satellite was in orbit well before it was even launched.

And then, after all that was said above, have not astronomers themselves shown that they care but little about the Solar System's supposed stability as a whole or the Titius-Bode Law in particular? I can say this with confidence because they themselves have not been exactly averse to postulating scenarios in which orbital paths are shown to be capable of change. Among them, Thomas Van Flandern came close to an unheard-of sensationalism when he wrote:

"We are only now beginning to see the Universe as a place of constant change with a rich and varied history and as the site of a great many unique events that continue to this day. Mercury, for example, may once have been a satellite of Venus that, in the not-so-distant past, escaped. Whether or not this happened, it is clear that some event caused Venus to spin in a different direction and at a slower speed...than any other planet. Both satellites of Mars and most of Jupiter's did not originate with those planets but also seem to have been captured relatively recently..."

"Saturn's rings could be yet another example of the solar system's dynamism. Were they once a satellite that broke apart?...What event tilted Uranus on its side? What disrupted the existing satellites of Neptune? Could the planet Pluto be an escaped satellite of Neptune? If so, how did Pluto get its own satellite? Where did the newly

discovered minor planet Chiron, whose unstable orbit crosses those of Saturn and Uranus, come from?"⁴⁶

Robert Harrington, a colleague of Van Flandern, has also proposed the idea that "Mercury originated as an escaped satellite of Venus early in the formation of the solar system."⁴⁷ As Philip Burns stated:

"This doesn't appear to have garnered a lot of support, but on the other hand, I don't think it's been refuted, either. The 'Mercury as Venus's Moon' theory explains at one stroke many observations, such as the reduced/reversed spin of Venus, its massive atmosphere, the 2/3 spin resonance of Mercury, the oblate shape of Mercury, and many more."⁴⁸

George Wetherhill posited an even wilder scenario for Mercury in which the planet had originally orbited the Sun at Earth's present distance. Then, according to this particular theory, Mercury was involved in a violent collision in which the planet was melted. A second collision then resulted in the stripping away of Mercury's crust and its ejection out of its orbit. Deflected from its path by Earth's gravity field, together with that of Venus, Mercury eventually settled down into its present circular track.⁴⁹

Alan Stern, on the other hand, came out with a proposition of satellite *capture*, rather than *escape*. Not that the capture of satellites by planets had not been propounded before. But this one deals with the planet Neptune and its companion, Triton, a moon the size of the planet Pluto. Triton, it was found out, orbits Neptune in what astronomers call "the wrong direction," that is clockwise as seen from "above," when all other satellites revolve counterclockwise. The most likely explanation for this, according to Stern, is that Triton had once orbited freely but, passing too close to Neptune, was captured by the larger planet as its moon.⁵⁰

So, similarly, with the planet Pluto which, until 1978, was still believed to be without a moon. But a later ground-based photograph of Pluto revealed the presence of a satellite—since then named Charon— orbiting the planet. Because Charon is larger than our Moon, and one third as large as Pluto itself, Stern has said that it is "really more accurate to call this a double planet."⁵¹ Stern is thus of the opinion that these two planets had also once orbited freely but that, coming too close, they managed to capture each other.⁵²

But what of Earth itself? Has anyone before us ever posited that it, too, may have shifted?

THE SHIFTING EARTH

As Tom Yulsman reported:

"We like to think that the Earth's orbit and the shape of its magnetic field are changeless—that as the years pass, the planet follows a rock-steady route about the Sun while the compass points resolutely north. Not only is this not true, but scientists

⁴⁶ T. Van Flandern, "Exploding Planets," *Science Digest* (April 1982), pp. 94-95 (emphasis added); concerning Mercury as a former satellite of Venus, see also *idem*, *Dark Matter, Missing Planets and New Comets* (Berkeley, California, 1993), p. 251.

⁴⁷ P. Burns, "Gingerich & Velikovsky," posted on the Kronia internet private discussion group, Monday, October 28, 1996.

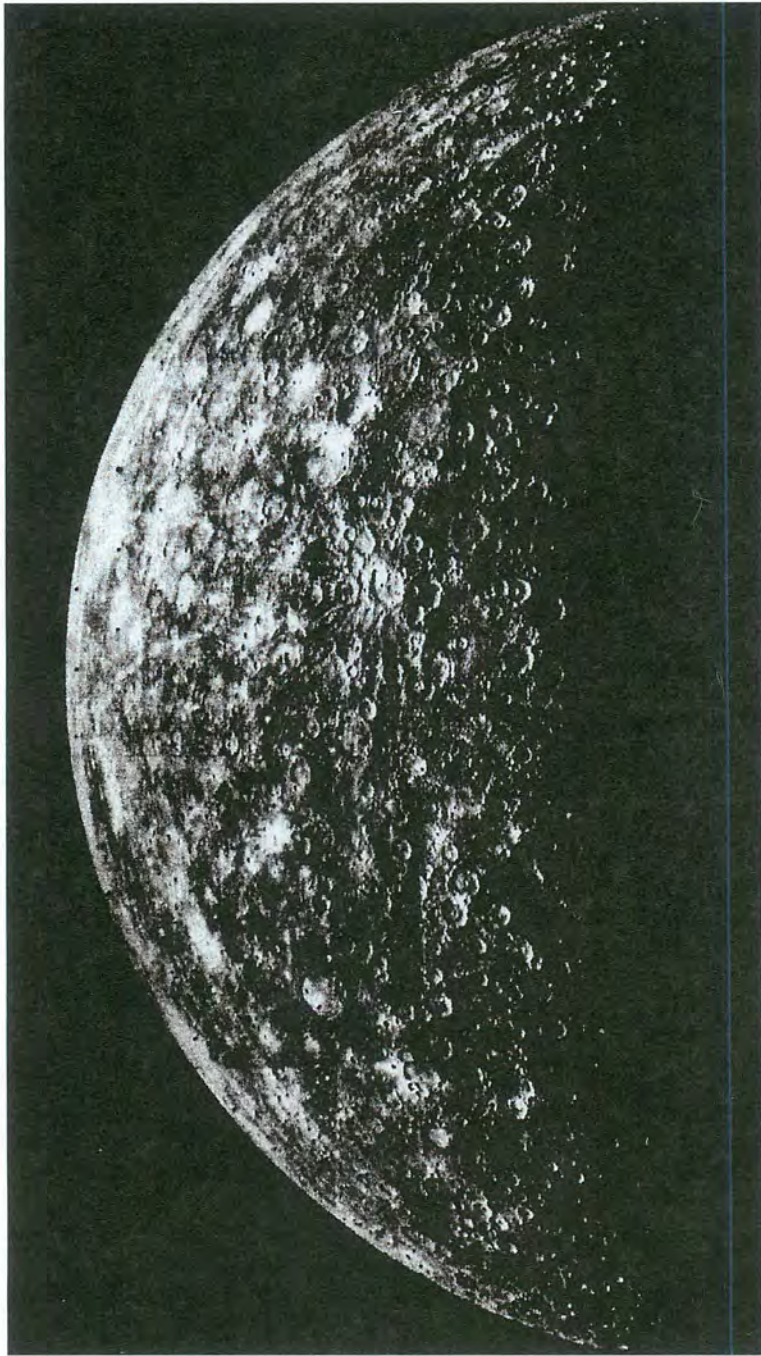
⁴⁸ *Ibid.*

⁴⁹ C. R. Chapman, "Mercury's Heart of Iron," *Astronomy* (November 1988), p. 32.

⁵⁰ S. Flamsteed, "Planets by the Carload," *Discover* (February 1992), p. 16.

⁵¹ *Ibid.*

⁵² *Ibid.*



Mercury—was it once a satellite of the planet Venus?
(Photograph courtesy of NASA.)

believe that what *does* happen is unsettling. Both orbit and magnetic field indeed change..."⁵³

We will not concern ourselves here with the change in Earth's magnetic field, nor will we concern ourselves much with what led to this "discovery" beyond the shortest of synopses. What is at the bottom of it is the conclusion reached by the geologist Madeline Briskin in her investigation of seafloor core samples. Sediment has always been deemed a reliable indicator of past climatic conditions. What Briskin discovered through the age and molecular design of the ocean fossils imbedded in the sediments she studied, led her to conclude that Earth's climate follows a repetitive cycle of changes of approximately 413,000 years duration. This cycle, according to her, is brought about by Earth's changing orbit as it moves closer to, then farther away from, the Sun.⁵⁴ As far as the present work is concerned, no judgment will be passed on the possible validity or otherwise of this deduction. We merely note it as one indication of various theories from the establishment in which changes in Earth's orbit are deduced from certain evidences and made to account for certain past situations.

Are any of these scenarios any wilder than one which posits Earth to be an escaped satellite of Saturn? Ah yes—but the above events, whether they ever transpired or not, have all been dated to millions of years ago as opposed to the scenario being presented here which claims Earth to have still been a satellite of Saturn during the advent of man. This is an objection we will be running into time and again.

In 1986, Lynn Rose, who, with Raymond Vaughan, had been working on the Babylonian Ninsianna tablets, surprised Velikovsky's followers by correcting their earlier conclusion, and that of Velikovsky himself, concerning the not-so-ancient orbit of the planet Venus. In 1950, Velikovsky had been of the opinion that the astronomical observations contained in these tablets—sometimes referred to as the Tablets of Ammizaduqa, sometimes simply as the Venus tablets—showed beyond a reasonable doubt that Venus had been moving on an entirely different orbit at the time the observations were conducted.⁵⁵ Originally concurring with him, Rose and Vaughan eventually came to an entirely different conclusion.

"Like many others, including Velikovsky, we at one time took it for granted that the Venus tablets would tell us about a radically different orbit of Venus... We have gradually come to realize, however, that at the time of the observations Venus might have been on or close to its present orbit... The strangeness of these eighth-century [B.C.] observations of Venus seems to be mainly due to their having been made from an *Earth* that was on a radically different orbit from the present orbit of Earth."⁵⁶

In 1993, Michael Reade came to similar conclusions,⁵⁷ although the amount in Earth's orbital expansion as given by him—from a posited 0.9904 AU to the present 1.000 AU—would not lend itself to being called radical, representing a mere 0.97% to 1% expansion.⁵⁸

⁵³ T. Yulsman, "Muck Reveals Ancient Orbit," *Science Digest* (September 1982), p. 18 (emphasis as given).

⁵⁴ *Ibid.*

⁵⁵ I. Velikovsky, *Worlds in Collision* (N. Y., 1950), pp. 198 ff.

⁵⁶ L. E. Rose, "Answers to Further Critics," *KRONOS* XI:3 (Summer 1986), p. 57 (emphasis as given).

⁵⁷ M. G. Reade, "The Ninsianna Tablets, a Preliminary Reconstruction," *Chronology and Catastrophism Review* XV (1993), p. 9.

⁵⁸ *Ibid.*, pp. 10, 13.

Once again, I shall not here comment on the validity, or otherwise, of these deductions. I merely mention them as the possible—even probable—fall-out of a set of Babylonian astronomical observations. On the other hand, I shall have more to say about this particular datum, but in a *future* work which will deal with the attainment of Earth's *present* orbital path.

THE HABITABLE ZONE

An entirely different problem that our hypothesis raises concerns the distance of Earth from the Sun during the time it spent as a satellite of Saturn. It has, for instance, been pointed out that, were it not for the insulation provided by its atmosphere, Earth's temperature would fall well below the freezing point of water, similar to that of the Moon. And that would be at Earth's *present* distance from the Sun. What, then, would Earth's temperature have been at Saturn's present distance from the Sun—insulating atmosphere or not? This is most important because, needless to say, Earth's temperature has a direct bearing on the sustenance of life. The existence of life on Earth, it has often been stated, is manifestly due to our planet's distance from the Sun—it just happens to be positioned in the Sun's habitable zone—which is the reason why it is the only planet in the Solar System capable of bearing life.

Earth, it should be remembered, is at 1 AU from the Sun (approximately 93 million miles). Saturn is at 9.5 AU from the Sun (approximately 886.3 million miles). As a satellite of Saturn, would not Earth have been in the "freeze zone"? How, then, could it have sustained life, including that of man?

What, exactly, is the extent of the Sun's habitable zone? At one time the habitable zone was believed to stretch between 0.7 and 1.3 AU. In 1977, however, Michael Hart reduced this zone to the narrow range extending from 0.95 to 1.01 AU.⁵⁹ This would still have meant that had Earth been 5% closer to the Sun, its oceans would evaporate; had it been only 1% further away, total glaciation would put an end to life. But then, in 1988, the scientists at NASA's Ames centre found reason to increase the distance of the habitable zone by 50%.⁶⁰

Life, however, requires more than the right amount of heat and sun-light. It also requires water, of which Earth has an abundance. But now here's the rub. Long-range exploration of the planets has convinced astronomers that Venus and Mars also once possessed abundant water. In the case of Venus, its water is said to have evaporated into space because of its closer proximity to the Sun.⁶¹ This mechanism, however, does not work for Mars which is farther out from the Sun than is Earth. An entirely different process had therefore to be worked out for the red planet. As James Kasting wrote: "Mars is freeze-dried today, not because it is too far from the sun but because it is a small planet and therefore cooled off comparatively quickly."⁶²

All this has led to the belief that the habitable zone, which has now been revised to range "from just inside the orbit of Earth to beyond the orbit of Mars," has "migrated slowly outward from its position when the planets first formed...about 4.6 billion years ago, *because the sun has gradually brightened over time.*"⁶³ What this additionally entails is that in another billion years, as the Sun continues to brighten and becomes ever hotter, Earth's orbit

⁵⁹ M. H. Hart, "The Evolution of the Atmosphere of the Earth," *Icarus* 33 (January 1978), p. 23; *idem*, "Habitable Zones About Main Sequence Stars," *Icarus* 37 (January 1979), p. 351; R. Breuer, *Contact With the Stars* (San Francisco, 1982), pp. 27-32.

⁶⁰ *New Scientist* (July 1, 1988), p. 41.

⁶¹ J. F. Kasting, "The Origins of Water on Earth," *Scientific American* (November 30, 1998), pp. 19-20.

⁶² *Ibid.*, p. 22.

⁶³ *Ibid.*, p. 19 (emphasis added).

will eventually fall outside "this expanding zone." Earth's oceans will then evaporate "leaving the world as dry and lifeless as Venus is today."⁶⁴

It is not that I, personally, adhere to the above scenario—and, in a future work, I hope to have much to say concerning the past histories of Venus and Mars—but it *does* show that, when the facts seem to demand it, astronomers are not exactly nervous about shifting planets and their habitable zones around, to say nothing of varying the Sun's radiative output, in order to fit their theories.

But, the reader may complain, is it at all possible to shift this habitable zone all the way out to Saturn? Maybe not, but, theoretically at least, could we not perhaps shift Saturn *into* the habitable zone? Actually, back in 1982, Ragnar Forshufvud theorized just that, moving a Saturn that had once been much larger to "much closer to the Sun".⁶⁵ But I only present this datum as an interesting exercise because, judging by what can be deduced from the mytho-historical record, the truth may have been exactly the opposite.

Be that as it may, it is not really necessary to move a celestial body into the so-called habitable zone, or even closer to the Sun, in order to have it appropriately heated. Io, one of Jupiter's satellites, is said to be heated through Jupiter's tidal pull.⁶⁶ Then why not Earth as a satellite of Saturn? And even then, do we really need Saturn's tidal pull in order to heat Earth? Have we not already seen that Saturn radiates more heat than it actually receives from the Sun? Can not this excessive heat be seen as the residue from a time when Saturn was much hotter? Have we not, on the strength of the mytho-historical record, posited that Saturn had once been a miniature sun radiating its own heat and light? True enough, Saturn could never have been as hot as the Sun. *The proximity of Earth to Saturn, however, would have more than compensated for this.*

⁶⁴ *Ibid.*

⁶⁵ R. Forshufvud, "On the Circularization of the Orbit of Venus," *KRONOS* VII:2 (Winter 1982), p. 5.

⁶⁶ J. Winters, "Postcards From the Edge," *Discover* (March 1999), p. 90.

Chapter 8

The Solitary Deity

THE ONE ALONE

In an article written in 1977, Harold Tresman and Bernard Newgrosh (writing under the name of Brendan O’Gheoghan) presented what might have been their finest disclosure when they wrote that “there is every indication that this original deity [that is Saturn] was at one time *the only visible planetary body of the heavens*.”¹ Roger Wescott, on the basis of his own research, came to the same conclusion: “The sky, instead of being dominated alternately by the Sun and the Moon, was constantly dominated by a single huge and luminous body, here called Aster.”² What Wescott referred to as Aster is to us the planet Saturn.

If this had really been the case—in other words, had Saturn been the only celestial body visible from Earth during the indeterminate time with which we are concerned—it would add even more to the ancient belief that Saturn had been the most prominent heavenly body that could be seen in Earth’s primordial sky. Think about it: We have seen that Earth had been a satellite of what is now the planet Saturn, which planet was described as having been near enough to Earth to be remembered as a sphere, which sphere, in turn, was described as a sun that shone at night during a time *when no other heavenly body could be seen*. What could have been more prominent?

But does the mytho-historical record uphold the view that Saturn *was* the only visible body during the time in question? David Talbott has long focused attention on this topic. As he had it stated:

“The Egyptians remembered the creator as the solitary Atum or Ra, whom we recognize as the planet Saturn. In the accounts of all periods, Ra is originally a solitary god. The ancient sun is he...who had no companions.”³

“I am Atum, when I was alone in Nun,” the god is made to state.⁴ The deity is thus called “the God One,” the “Only God”—“except whom at the beginning none other existed.”⁵ Time and again, in Egyptian liturgies, we hear of Atum being made to state “when I was alone.”⁶ Time and again, Atum is lauded as he who “was alone.”⁷ Thus the god, “in his earliest remembered state,” as Talbott has noted, is inactive and motionless—“doing nothing, lacking

¹ H. Tresman & B. O’Gheoghan, “The Primordial Light?” *SIS review* II:2 (December 1977), p. 36 (emphasis added).

² R. W. Wescott, “Aster and Disaster: The Golden Age—I,” *KRONOS* X:1 (Fall 1984), p. 42.

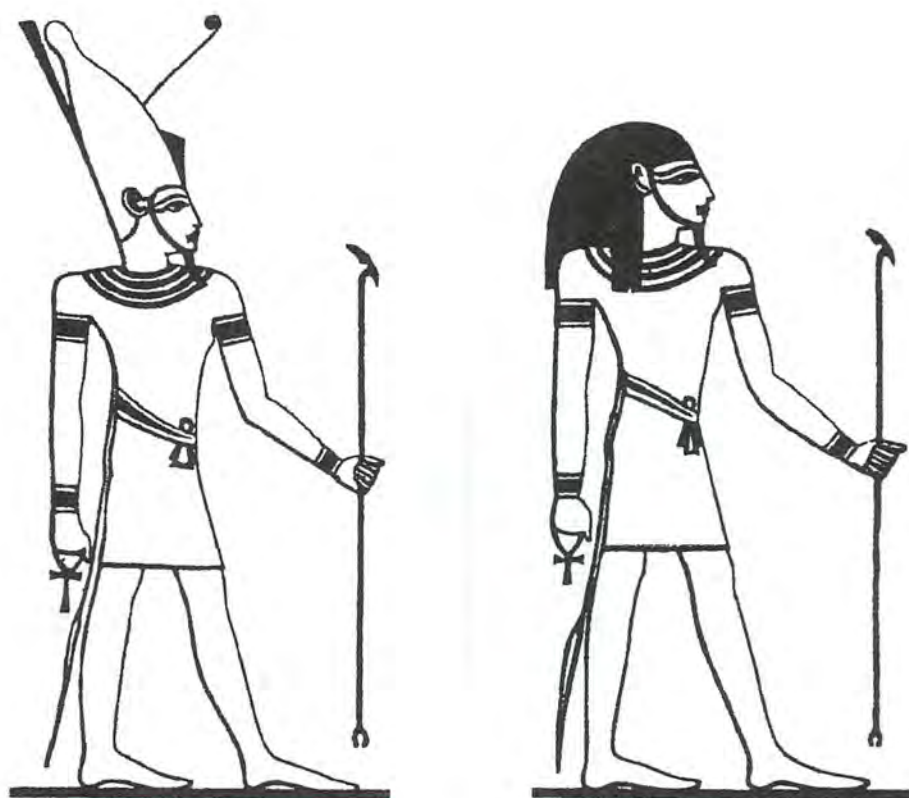
³ D. Talbott, “Mother Goddess and Warrior-Hero,” Part One, *AEON* I:5 (September 1988), p. 43.

⁴ J. A. Wilson, “Egyptian Myths, Tales and Mortuary Texts,” in J. Pritchard, *Ancient Near Eastern Texts Relating to the Old Testament* (Princeton, 1969), p. 3.

⁵ E. A. W. Budge, *The Gods of the Egyptians*, Vol. I (N. Y., 1969), pp. 131 ff., 400, 501.

⁶ R. T. Rundle Clark, *Myth and Symbol in Ancient Egypt* (N. Y., 1959), p. 46.

⁷ *Ibid.*, pp. 94, 95.



Two forms of Atum—the god who was alone in the beginning.

activity or animation.”⁸

In an Egyptian *Coffin Text*, the god is made to claim: “[I was] he who had no companion when my name came into existence...I was the maker of myself”⁹ and “I came into being of myself.”¹⁰

In the Nesi-Khonsu Papyrus, we find the god described as “Lord of all the gods...the holy soul who came into being in the beginning...the first divine matter...the One One...*except whom at the beginning none other existed.*”¹¹

Likewise with Ra who, in the accounts of all periods, was remembered as having originally been a solitary god. Ra was “he who had no companion.”¹²

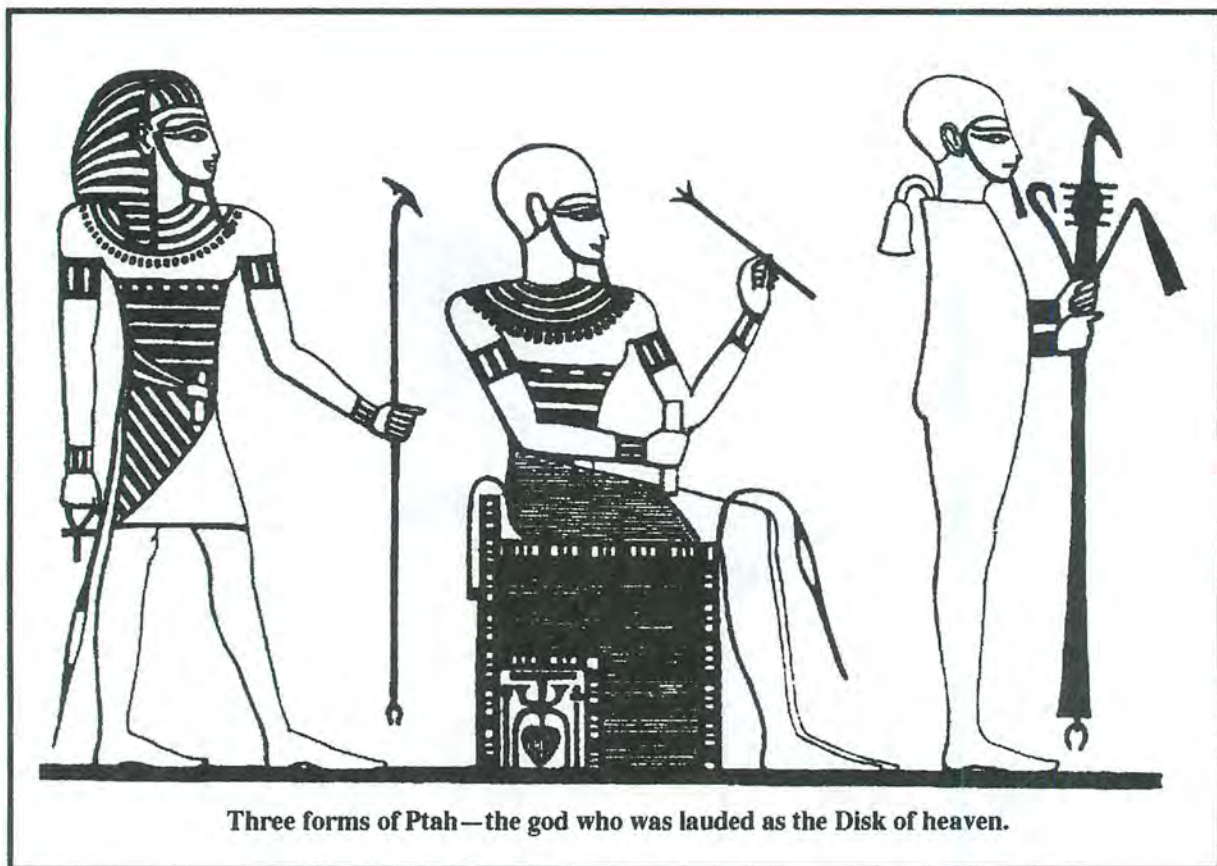
⁸ D. Talbott, “On Models and Scenarios,” *AEON* I:4 (July 1988), p. 7.

⁹ R. T. Rundle Clark, *op. cit.*, p. 74.

¹⁰ *Ibid.*, p. 40.

¹¹ E. A. W. Budge, *The Book of the Dead*, Vol. III (London, 1901), pp. 645-648 (emphasis added).

¹² R. T. Rundle Clark, *loc. cit.*



PTAH-SEKER-ASAR

Yet one more Egyptian god who originated as a personification of Saturn was Ptah, recognized as such by Giorgio de Santillana and Hertha von Dechend.¹³ Ptah was the “greatest of all the old gods of Memphis”¹⁴ and, as Wallis Budge informs us, “his worship, in one form or another, goes back to the earliest part of the dynastic period.”¹⁵ He was referred to as “the very great god who came into being in the earliest time...father of fathers, Power of powers...father of beginnings...who created his own image, who fashioned his own body...the Disk of heaven...”¹⁶ and “the great god, who came into being in the beginning.”¹⁷

“O father of all the fathers of all the gods,” Ptah is lauded in one hymn, “thou Disk of heaven.”¹⁸ Usually understood as the disc of the Sun, but understood here as the disc of Saturn, this “Disk of heaven” is yet one more allusion to the fact that Saturn had been seen as a sizable orb, thus indicating its closer proximity to Earth. Ptah’s self-generation is again alluded to in no uncertain terms in another hymn in which he is lauded with the following

¹³ G. de Santillana & H. von Dechend, *Hamlet’s Mill: An Essay on Myth and the Frame of Time* (Boston, 1969), pp. 129, 222.

¹⁴ E. A. W. Budge, *The Gods of the Egyptians* (N. Y., 1904/1969), p. 500; see also *ibid.*, p. 512.

¹⁵ *Ibid.*, p. 500.

¹⁶ *Ibid.*, p. 501; see also *ibid.*, p. 510.

¹⁷ *Ibid.*, p. 504.

¹⁸ *Ibid.*, p. 509.



Seker (left) and Seker-Asar (right)—god of darkness and of the night sun.

words:

“Thou hadst no father to begat thee...and thou hadst no mother to give birth unto thee; thou didst fashion thyself without the help of any other being. Fully equipped thou didst come forth...”¹⁹

Ptah was identified by the Egyptians themselves with the god Osiris and, in religious and funeral texts, we often find him called Ptah-Asar (that is Ptah-Osiris).²⁰ Thus, in yet one more famous Egyptian hymn, we find Osiris himself lauded as Ptah-Seker-Tem²¹ (that is Ptah-Seker-Atum), which, as Budge maintained, is not only a form of Osiris but also “of the night sun.”²² Seker himself “was originally a power of darkness, or of the night” which “was identified with forms of the night sun like Tem [that is Atum].”²³ “Under the name Ptah-

¹⁹ *Ibid.*, p. 510.

²⁰ *Ibid.*, p. 502.

²¹ *Ibid.*

²² *Ibid.*, p. 503.

²³ *Ibid.*

Seker-Asar we [again] find Ptah and Seker united [and eventually identified] with Osiris..."²⁴

We are therefore not surprised to also find Ptah being remembered as "the splendid god who existed alone in the beginning."²⁵

What all the above implies, therefore, is that the god who personified the planet Saturn was believed to have come into being of his own accord and that, at least "in the beginning," he was the only god in existence. No other deity existed with him or before him.

PRAJAPATI

We have already seen the Indic Brahma, known as the "father of gods and men,"²⁶ identified as Saturn through the name Brahmanyah. In that respect, it is noteworthy that Brahma is considered to have been the *first* of the Devas, which term is understood as meaning "deities," but which, in effect, means the "shining ones,"²⁷ an apt term for heavenly bodies. It is therefore telling that Brahma, too, was described as having originally been alone: "He hovers, alone, above everything."²⁸

An epithet, usually translated to mean "Lord of Creatures,"²⁹ by which Brahma was known is Prajapati.³⁰ This is so true that, in the *Vishnu Purana*, Prajapati is given as an *additional* name for Brahma.³¹ Like others of the Saturnian deities we have been examining, Prajapati was also referred to as "the One God."³²

Prajapati's identity as Saturn does not solely rely on that of Brahma. As the 11th century A.D. Arabian scholar, Al-Biruni, discovered during his travels in India, the Lord of Saturn is called Prajapati—pure and simple.³³

It should therefore not surprise us that, in distinction to Brahma, who was actually his own self, Prajapati was believed to have originally ruled alone. This we find in the *Satapatha Brahmana* which, among other matters, states that "Prajapati alone, indeed, existed here in the beginning."³⁴

FOUR FROM THE "PRIMITIVE" WORLD

The doctrinal conviction we have been investigating is to be found not only among the great faiths of the ancient world, but also among more primitive peoples.

Among the American Indians of the north-west, the creator was known as Raven. But here we have to differentiate between two Ravens. Most tales concerning Raven present this mysterious being as a shape-shifter and trickster who was often meddling with what had been created, even though he himself was also responsible for creating certain elements. As a meddler, shape-shifter, and trickster, Raven is identifiable as a personification of the planet

²⁴ *Ibid.*, p. 507.

²⁵ M. Selim Hassan, *Hymnes Religieuses du Moyen Empire* (Cairo, 1928), pp. 160-161, as quoted by D. N. Talbott, *The Saturn Myth* (N. Y., 1980), p. 9 (emphasis added).

²⁶ H. de Wilman-Grabowska, "Brahmanic Mythology," *Asiatic Mythology* (N. Y., 1972), p. 117.

²⁷ R. Van Over, *Sun Songs: Creation Myths From Around the World* (N. Y., 1980), p. 310.

²⁸ H. de Wilman-Grabowska, *loc. cit.*

²⁹ *Ibid.*

³⁰ W. D. O'Flaherty, *Hindu Myths* (Harmondsworth, 1976), p. 350.

³¹ R. Van Over, *op. cit.*, p. 312.

³² H. de Wilman-Grabowska, *op. cit.*, p. 116.

³³ D. H. Kelley, "The Nine Lords of the Night," in J. A. Graham (Ed.), "Studies in the Archaeology of Mexico and Guatemala," *Contributions of the University of California, Archaeological Research Facility*, No. 16 (October 1972), p. 59; see also, E. C. Sachau, *Alberuni's India* (London, 1914), pp. ii, 121.

³⁴ *Satapatha Brahmana* II:2:4:1.

Mars. But as the prime creator of the cosmos,³⁵ Raven has to be identified as the planet Saturn.

Now it is true that most myths do not differentiate between the two but, at least among the Eskimos and the Tlingit, the difference between them is remembered and indicated by the appearance of Raven Boy in addition to Raven.³⁶ Presented as the son of Raven,³⁷ it is Raven Boy who is there painted as the mischievous trickster.³⁸

In keeping with our present topic, note now the Haida creed as paraphrased by Helmut Hirschall:

"No one is exempt from loneliness, and the old and wise ones who teach the ways of living and tell stories at campfires say that even Raven, the Creator, knew the burden of loneliness."³⁹

In order to have known "the burden of loneliness," Raven had to have been alone—that is the only deity in existence. Through the rules of comparative mythology, it will have to be assumed that, in this instance, it is Raven/Saturn that is meant and not Raven Boy/Mars.

Here we should also mention the Yuki creator whose name, Taikó-mol translates as "Solitude Walker."⁴⁰ There is no need to explain that a solitude walker walks alone and, in this Yuki myth, we are merely catching a glimpse of Raven in different guise.

According to the Samoans, their creator, Tangaloa, who "lived in the far spaces," was alone before there was heaven and earth.⁴¹

And so, similarly, in a myth from New Hebrides where it is said that the creator, Naareau the Elder, "was the First of All." Nothing was before him:⁴²

"He was in the void. There was only Naareau sitting in the void. Long he sat, and there was only he."⁴³

FOURTH INTERLUDE

It has been assumed by a bevy of students of religion that man's concept of deity emerged out of the primitive fear our ancestors experienced in encountering the mysteries of nature around them. These mysteries, we are then told, were eventually explained through the slow and accumulating creation—invention, really—of invisible entities, spirits and demons, most of which were seen as being antagonistic to man. By the same token, natural phenomena, such as thunder and lightning, were anthropomorphized, that is given life, named, and even appealed to. In the end, we are told, even such natural items as vegetation⁴⁴ and sexual

³⁵ See here, for instance, M. Wood, *Spirits, Heroes & Hunters From North American Indian Mythology* (N. Y., 1981), pp. 48, 53.

³⁶ *Ibid.*, pp. 20, 49.

³⁷ *Ibid.*, p. 20.

³⁸ The shape-shifting and meddling of Raven as the planet Mars will be explained in a future work.

³⁹ H. Hirschall, *The Song of Creation* (West Vancouver, 1979), myth 9.

⁴⁰ J. Bierhorst (ed.), *The Red Swan* (N. Y., 1976), p. 39.

⁴¹ R. Van Over, *op. cit.*, p. 381.

⁴² *Ibid.*, p. 382.

⁴³ *Ibid.*

⁴⁴ See here, for instance, the monumental study by James G. Frazer—*The Golden Bough*—which went through many editions, eventually evolving into several volumes, and continues to be reprinted, mainly in abridged versions, up to the present.

prowess became the recipients of animated embodiments which, little by little, evolved into gods.

Some have claimed that man's own ancestors, long dead, perhaps through the medium of dreams, were also vivified into ghosts, or lost souls, which were eventually incorporated into an ever evolving religious belief. Others insist that the ancient deities evolved out of a respect for certain historical persons of note—an old idea which has recently been gloriously revived by David Rohl in his sensational attempt to rewrite ancient history.⁴⁵ Those who hold to this view usually point with pride to the Mesopotamian Gilgamesh, a supposed king of Uruk, and the Egyptian Imhotep, architect to King Djoser, as prime examples of their evidence. But that Gilgamesh was anything *but* a historical person has finally been established beyond a reasonable doubt, once and for all, by Ev Cochrane,⁴⁶ while the case of Imhotep is somewhat unique. The first builder of a pyramid—a stepped one to be sure—later dynasts were so impressed by Imhotep's accomplishments that he was elevated to the stature of a god. This is not to be wondered at because, after all, the Egyptian pharaohs themselves were all looked upon as living gods. We do not, however, encounter Imhotep in any mythological themes, let alone any of a cosmogonic nature. For whatever it is worth, and Rohl notwithstanding, the belief that the ancient gods were really deified historical persons, never adhered to by many, is now accepted by even less. On the contrary, the reverse is true, in that some of the primeval deities were eventually demythologized and presented in human garb even by the ancients themselves.⁴⁷

Our own hypothesis, as presented in this work, holds to the view that the concept of deity owes its origin to the planets, especially the planet Saturn, and not to such invented spirits, ghosts, demons, or historical persons as described above. I am not here asserting that the mysteries of everyday life, as they pertained to our primitive forebears, were not conducive of the myth-making process. But to say that our ancestors were more concerned with the threatening character of everyday life, such as flood, famine, earthquakes, and the like, is to go against what they themselves told us concerning their beliefs. If the truth need be known, even such calamities as enumerated above were often connected with the planetary deities, and they were so connected by the ancients themselves. Thus, to give but a few examples: Among the Incas, Saturn was considered the god of famine.⁴⁸ Almost throughout the entire world, Mars was considered the god of pestilence.⁴⁹ Venus was associated with fear, darkness and death.⁵⁰ The Babylonians, moreover, never discarded their belief that even earthquakes were actually caused by the planets.⁵¹

Adherents of the animistic theory, however, base their concepts of the origin of religion on the beliefs of present primitive peoples, rather than the civilized nations of the ancient world. But even there, their theory meets with various objections. Consider, for instance, the Efe pygmies of the Ituri forest whom we had occasion to mention in a previous chapter. These pygmies do not cower in fear of thunder and lightning. Their lives are not ruled, or terrorized, by a squadron of jungle spirits that have to be appeased every time a calamity hits

⁴⁵ D. Rohl, *Legend: The Genesis of Civilization* (London, 1998), *in toto*.

⁴⁶ E. Cochrane, *Martian Metamorphoses: The Planet Mars in Ancient Myth and Religion* (Ames, Iowa, 1997), pp. 8 ff.

⁴⁷ See here, for example, *idem*, "Kronos, Minos, and the Celestial Labyrinth," *KRONOS* IX:2 (Winter 1984), pp. 11-20.

⁴⁸ J. N. Sammer, "The Cosmology of Tawantinsuyu," *KRONOS* IX:2 (Winter 1984), pp. 25-26.

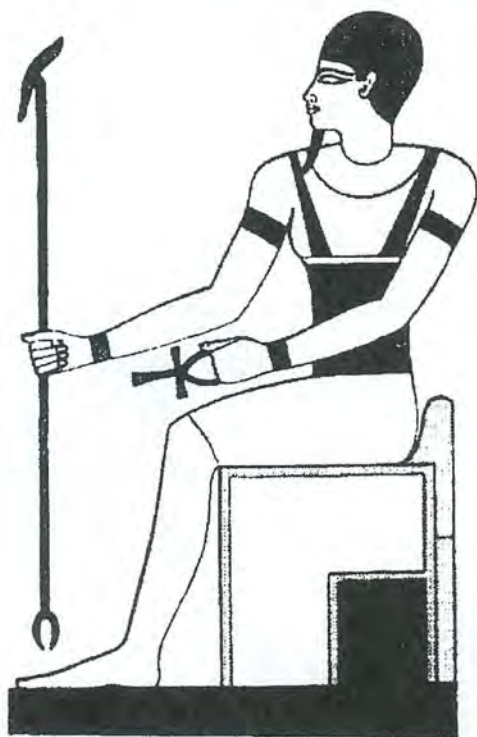
⁴⁹ M. Jastrow, *Aspects of Religious Beliefs and Practice in Babylonia and Assyria* (1911), pp. 224-225.

⁵⁰ Numerous sources can be quoted here, but see D. Talbott, "Velikovsky's Comet Venus," Part 8, *Thoth* (electronic newsletter) I:24 (October 20, 1997), pp. 1-2.

⁵¹ Pliny, *Historiae Naturalis* II:81.



King Djoser with Imhotep, architect and builder of the first Egyptian (stepped) pyramid.
(Illustration by John Green.)



The deified Imhotep.

their community. On the contrary, they believe in a supreme deity who, despite his innumerable divine appellations,⁶⁰ is commonly referred to simply as Father.⁶¹

This god, as well as his son, is also known as Efe,⁶² from whom the tribe derived its name; but Efe the father was also Saturn.⁶³ The planet itself is also known by them as Bibi Deba—"the good or perfect star."⁶⁴ As we have already noted in a previous chapter, hemmed in as they are by the almost impenetrable jungles of the Congo, these pygmies know that Saturn is surrounded by satellites, for which reason they also allude to the planet as Bibi Tiba Abutsiua'ani—"the star of nine moons."⁶⁵

The greatest calamity that these diminutive but highly intelligent people remember is that of a universal flood—which gives the lie to those mythologists who claim that Deluge myths are unknown from Africa—and even this they associate with Efe/Saturn.⁶⁶

But what then of non-planetary disasters, of *ordinary* floods, famines, and thunder, and wind, etc.? True—man *did* imbue these non-planetary forces with a will of their own and, yes, they often anthropomorphized them. This holds true not only for those forces which terrified early man but also for those aspects of nature that were passive, beautiful, and even

⁶⁰ J-P Hallet (with A. Pelle), *Pygmy Kitabu* (N. Y., 1973), p. 80.

⁶¹ *Ibid.*, p. 62.

⁶² *Ibid.*, p. 129.

⁶³ *Ibid.*, p. 403, although an entire reading of the book is required to properly appreciate this identification.

⁶⁴ *Ibid.*, p. 385.

⁶⁵ *Ibid.*

⁶⁶ *Ibid.*, p. 212.

benign—such as fog,⁶⁷ the northern lights,⁶⁸ and even fair weather,⁶⁹ to give but a few examples.

Thus de Santillana and von Dechend were not entirely correct when they stated that “all the stories, characters and adventures narrated by mythology concentrate on the active powers among the stars, who are the planets.”⁷⁰ Regardless of the impetus behind its origin, a fair share of primitive mythology *does* concern itself with non-planetary spirits of nature.

We notice, however, that these spirits of nature, a few among which have been mentioned above, were not *deified*—that is they were not regarded as demiurges with powers over the destiny of man. Only among the more sophisticated Incas, long out of primitiveness, was Thunder, for instance, considered something of a deity, and even then he was subservient to the Creator.⁷¹ And there, I must stress, lies the difference, because, *according to his own statements*, ancient man was not concerned with the purported antics of fog, fair weather, or other nature spirits, demons, and fairies. What concerns us in this study are the great deities of mankind—the creators and destroyers, the movers of the world—which we find imbuing the religions and cosmic beliefs of early civilizations and primitive tribes alike.

Again, I am not attempting to negate the fact that so-called primitive cultures perceive the world as being spirit animated. But what of it? Until a few hundred years ago, were not the most sophisticated centers of European civilization also imbued with superstition, which is what a spirit-animating belief amounts to? Are countries like China and India, Indonesia, and heaven knows where else, not superstition-ridden to this day? Do they not still throw live chickens into volcanic craters in Java,⁷² and pour gin, in lieu of *awa*, to Pele in America's fiftieth state, as endeavors meant to pacify the destructive force exhibited by volcanoes?⁷³ Does any of this negate the fact that the countries in question also pay homage to a higher deity dictated by whatever religion these societies adhere to? Why, then, could not primitive planetary worship have co-existed with a more down-to-earth animism?

As research implies, residual planetary worship continues to saturate the most primitive beliefs up to the present, as exemplified by the religion of the Efe pygmies mentioned above. Nor must this particular example be viewed as unique. Space does not here permit anything close to a fair sampling of such cases but I could easily have included a catalogue of similar residues found embedded in the beliefs of such people as the Dogon of the Sudan, which is present-day Mali, the astronomical lore of whom we have already discussed in a previous chapter; the Negroes of Mozambique; the Bambala of the Congo; the Bushongo; and many other tribes from the African heartland. The mythology of Oceania is likewise saturated with residual planetary worship as is that of the Inuit from Alaska to Greenland. None of these primitive societies, and others like them, can be said to be astronomically adept, yet, when traced to their basic fundamentals, the roots of their religious beliefs exhibit an uncanny similarity to the planetary motifs found scattered among the more sophisticated early civilizations of man. True, demons and nature spirits also abound, but none of these play a cosmogonic role or hold a prominent place in the complex religious rituals performed by these societies.

Students of religion will tell us that logic dictates that man would have first endowed what he could see around him with spiritual life before he would have done likewise with the far away planets. But, in that case, should he not have looked upon the Sun and the Moon as

⁶⁷ H. Hirschall, *op. cit.*, myth 34.

⁶⁸ *Ibid.*, myth 35.

⁶⁹ *Ibid.*, myth 18.

⁷⁰ G. de Santillana & H. von Dechend, *op. cit.*, p. 177 (emphasis added).

⁷¹ D. Gifford, *Warriors, Gods & Spirits from Central & South American Mythology* (London, 1983), p. 57.

⁷² D. B. Vitaliano, *Legends of the Earth* (London, 1973), p. 104.

⁷³ *Ibid.*, p. 118.

part of his all-surrounding environment? Could he then have believed that rivers and trees and wind and thunder were animated by spirits before he believed similarly of the most comforting object he was aware of—the Sun?

Given that the Sun and the Moon are much more conspicuous than the planets, theirs should have been the major role in primitive mythology. How is it then that, while not always readily obvious from cursory studies, the prime protagonists were invariably the planets and planet-induced phenomena?

This poses something of a conundrum to those who view mythology through uniformitarian eyes, one that has already been commented on by Immanuel Velikovsky⁷⁴ and David Talbott.⁷⁵ The riddle, however, is solved when we discover, as in fact the sources themselves convincingly illustrate, that the planets, or at least some of them, prime among them the planet Saturn, were once more conspicuous than Sun and Moon.

Once this is accepted, as it is by an ever-growing body of neo-catastrophists, it becomes much easier to accept that *before man had developed an awareness of the heavenly bodies, he had no gods at all.*

This would seem to lead to the assumption that early man lived for long ages before he discovered his first god but the fruits of research indicate otherwise. In the first place, one must stop thinking of the planets in this instance as mere pin-points of light in the night sky. It should by now have become obvious to the readers of this work that man's *earliest* memory of the planets is one that hints at recognizable orbs hanging low in the sky.

As we have thus far seen, originally there seems to have been only one such orb visible in the sky—the planet Saturn. Mankind, it now seems, discovered its identity under the close influence of this planetary body which is why the Saturnian deity, in his many guises, *is to be found at the head of every major pantheon throughout the ancient civilized world.*

This primeval Saturn entered man's memory first as a passive entity which was originally looked upon with neither fear nor awe. But, as I intend to show in a future work, this was not to remain so. In time, a series of events transpired which so impressed the human mind that Saturn became, for man, the very centre of his environment, his ever-increasing awe and, eventually, the deduced reason for his very being. Given all this, while not wishing to borrow credence, what would be so difficult in accepting that (a) man's original deity was a planetary body and that (b) prime among these deified bodies was the planet Saturn?

The question, of course, is simply this: Is there any proof that any of this transpired? So let me be quite honest. If *proof* is what we are after, it is not forthcoming—*any more than proof to the contrary is.* But the evidence now at hand, which we shall continue to present, is more than enough to upset antiquated views of man's emergence as a religious being and quite capable of upholding this new, if revolutionary, theory.

Further evidence concerning our proposition that, during the indeterminate period with which we are concerned, Saturn was the only celestial body visible from Earth will be presented in following chapters. In the meantime, it is again time to reshuffle our previous set of hypotheses while incorporating this new datum in the set. Our hypotheses, then, will read as follows:

⁷⁴ I. Velikovsky, *Worlds in Collision* (N. Y., 1950), p. 301.

⁷⁵ D. N. Talbott, in interview with J. Gibson, "Saturn's Age," *Research Communications Network Newsletter* #3 (October 15, 1977), p. 2.

Hypothesis #1: That, from what can be deduced from ancient as well as primitive astronomical lore, Earth had once been a satellite of the planet Saturn which, because of its proximity, loomed large in the sky as a distinct disc larger than the size of the full Moon.

Hypothesis #2: That, still according to ancient astronomical lore, during this indeterminate period, Saturn was the only visible celestial body in Earth's primordial sky.

Hypothesis #3: That, still according to the ancients, during this same period, Saturn shone as a sun.

Hypothesis #4: That this primordial Saturnian sun shone during that time we today call the night.

Needless to say, the reader may be wondering how it could have been possible for Saturn to have been the only visible body, even if Earth was its satellite. Would not the Sun, the Moon, and the stars have also been visible in Earth's primordial sky? In order to answer that question, we will have to wade into deeper waters still. But answer it we will.

Chapter 9

The Immobile God

THE SABBATH STAR

In Chapter 4 we claimed that the Hebrew name for the planet Saturn, that is Shabtai,¹ was responsible for the naming of the Sabbath, in Hebrew *Shabbath*, the Saturday of the Jews. As we also noted in that same chapter, the word *Shabbath* is sometimes said to derive from the closely related *shabath*, which means “to repose” or “to rest.”² This meaning, in turn, has been said to have arisen because Elohim *rested* from his work of Creation on that day.³ What is indicated by this is that Elohim’s rest came first, for which the Sabbath was then named. It seems, however, that there is more to this “resting” business than meets the eye. Or why would the planet in question have been named for that *particular* day, thus also receiving the meaning of “rest”?

The connection of Saturn with the Creation is not restricted to Hebrew tradition. In Chapter 4, we also had occasion to mention a similar tradition as believed in by the Persians. We repeat that tradition here as recorded by Al-Biruni:

“On the 6th day of Farwardin, the day Khurdadh, is the great Nauroz, for the Persians a feast of great importance. On this day—they say—God finished the creation, for it is the last of the six days... *On this day God created Saturn...*”⁴

What did the planet Saturn have to do with Creation or the resting of Elohim? Why was Saturn known as the Lord of the Sabbath?⁵

One of the strange things about the Sabbath is that it is the only day to which the Israelites gave a name. The rest of the days of the week were called by their ordinal numbers.⁶ Why this exception? Why was Saturn of importance even to the ancient Hebrews? Not that, in later times, they were overly proud of this. In fact, as William Heidel informs us, they resented the identification of the Sabbath with Saturn’s day for long afterwards.⁷

That Shabtai, sometimes referred to as Kokab Sabet,⁸ also called the Sabbath Star,⁹ meant “the resting Star or Planet” is well known.¹⁰ In his attempt to connect the order of Creation, day by day, as described in the Book of *Genesis*, with the different planetary deities honored traditionally on the successive days of the seven-day week, Robert Graves, as usual,

¹ W. A. Heidel, *The Day of Yahweh* (N. Y., 1929), p. 465.

² J. Strong, *Hebrew and Chaldee Dictionary* (Madison, N. J., 1890), p. 112.

³ Genesis 2:2.

⁴ Al-Biruni (translated by E. C. Sachau), *The Chronology of Ancient Nations* (London, 1879), p. 201.

⁵ R. Klibansky *et al.*, *Saturn and Melancholy* (London, 1964), p. 161.

⁶ W. A. Heidel, *op. cit.*, p. 437.

⁷ *Ibid.*

⁸ R. H. Stieglitz, “The Hebrew Names of the Seven Planets,” *Journal of Near Eastern Studies* 40:2 (April 1980).

⁹ W. A. Heidel, *op. cit.*, p. 465.

¹⁰ R. H. Stieglitz, *loc. cit.*

muddled the entire issue.¹¹ The only points of validity that he mentioned is the well known association of the Jewish Sabbath with Saturn and the fact that this planetary deity had long been known as the god of repose, that is of rest.¹² But, if we discount the derivation of the name Shabtai from the business of Elohim's rest after Creation, what can we offer by way of an explanation for this unusual characteristic? Or, why was the planet Saturn called the Resting Star or Planet?

THE GOD OF THE JEWS

The Israelite connection with the planet Saturn goes beyond the naming of the Sabbath after this planetary deity. Thus, for instance, when the prophet Amos was riling against the Israelites, he accused them of having carried images of a stellar deity in a tabernacle. The King James version of the passage in question is made to read:

"Have ye offered...sacrifices and offerings in the wilderness forty years, O house of Israel? But ye have borne the tabernacle of your Moloch and Chiun your images, the star of your god, which ye made to yourselves."¹³

This memory was still vivid in the days of the New Testament and is repeated in the Acts of the Apostles where the figure of Chiun is replaced with that of Remphan:

"...O ye house of Israel, have ye offered...slain beasts and sacrifices by the space of forty years in the wilderness? Yea, ye took up the tabernacle of Moloch, and the star of your god Remphan, figures which ye made to worship them..."¹⁴

This is in keeping with the Septuagint version of the same passage which reads:

"Have ye offered...victims and sacrifices, O house of Israel, forty years in the wilderness? Yea, ye took up the tabernacle of Moloch, and the star of your god Ræphan, the images of them which ye made for yourselves."

The forty years in the wilderness alluded to in the above verses refer to the wandering of the Israelites following their departure, or exodus, from Egypt under Moses. Concerning the deity called Moloch we will offer nothing here, reserving the topic for a future work. Here I wish to concentrate on the god called Chiun in one version and Remphan/Ræphan in the others. Who was this deity? In both *Amos* and *Acts* this god is alluded to as "the star of your god"—that is the star of the Israelites' god. But what star did Remphan personify?

In the *Testament of Solomon*, Remphan is rendered Raphan concerning whom Solomon was said to have built a temple in conjunction with one to Baal/Moloch.¹⁵ The *Testament of Solomon* is of Jewish origin but, as Louis Ginzberg informs us, *as we now have it*, it is laden "with many Christian layers."¹⁶ This is noted here because the name Raphan (or Ramphan or Ræphan) is unknown in Hebrew and must therefore have been introduced, or transliterated, by one of the Christian editors. Ginzberg was of the opinion that Raphan (or Reaphaim) is a

¹¹ R. Graves, *The White Goddess: A Historical Grammar of Poetic Myth* (N. Y., 1979), p. 265.

¹² *Ibid.*

¹³ Amos 5:25-26.

¹⁴ Acts 7:42-43.

¹⁵ L. Ginzberg, *The Legends of the Jews*, Vol. IV (Philadelphia 1968), pp. 153-154.

¹⁶ *Ibid.*, Vol. VI, p. 292.

reminiscence of a Hebrew word meaning "the shades,"¹⁷ but it is more than probable that the name Remphan is nothing but a mistransliteration into Greek of the same Chiun in the King James version of Amos.¹⁸

Jerome interpreted the star of Chiun as Lucifer¹⁹ which is popularly, *but erroneously*, believed to have stood for the planet Venus.²⁰ But as Martin Sieff *correctly* stated, Chiun was the Assyrian name for Saturn, the same as the Syriac Kewan (and the very Hebrew Khevan).²¹

One question that comes to mind at this point is: What were the Israelites doing running about the desert with the image of the Saturnian star in their tabernacle?

Let us be honest: Present Jewish and Christian sentiments notwithstanding, it has long been known that Saturn was the god of the Jews. In more recent years, for instance, Carl Jung knew very well that Saturn was the star of Israel.²² Much earlier, Aurelius Augustinus was more explicit when he informed his readers that the ancients considered the planet Saturn as the god of the Jews.²³ Throughout the Middle Ages, the Jews were largely known as the People of Saturn²⁴ (as so, incidentally, were the Scythians²⁵). This belief, however, is much older than that since even the Roman historian Tacitus (c. A.D. 55-117) described the Jews as worshipping the planet Saturn as their god.²⁶

Whether the tabernacle in question was the acclaimed one that Moses was said to have had constructed, and in which the famed ark of the covenant was housed, remains a moot question. This much, however, should be stated: While the tabernacle which Moses had had built is usually referred to as the Mishkan and/or the Ohel, the tabernacle mentioned in the Hebrew version of Amos is simply called *sukot*, the plural of *suka*, meaning "tents."

THE TROUBLE WITH AMOS

Scholars of the Jewish faith have, naturally enough, found much to criticize in the above interpretation of the Amosian verse in question.²⁷ As it has been said, this "is a difficult verse and the subject of very diverse interpretation"²⁸ —or, as M. Weinfeld put it, a verse on which many a pen has been broken,²⁹ (although, in my opinion, his has fared no better). This difficulty is not abated by the fact that the Hebrew—that is Masoretic—version of the passage in question replaces Moloch with Siccuth (or Sikut, Sikkut) while placing the event as coming in the future rather than having occurred in the past. Thus: "So *shall* you take up Siccuth your king and Chiun your images, the star of your god, which you made to yourselves."

¹⁷ *Ibid.*, p. 293.

¹⁸ J. Strong, *A Concise Dictionary of the Words in the Greek Testament* (N. J., 1890), p. 63.

¹⁹ See, I. Velikovsky, *Worlds in Collision* (N. Y., 1950), p. 176.

²⁰ See here, D. Cardona, "Morning Star," II, *AEON* IV:2 (August 1995), pp. 36 ff.

²¹ J. Lewy, "The Old West Semitic Sun-God Hammu," *Hebrew Union College Annual* (Cincinnati, 1943-1944), pp. 456-457.

²² C. Jung, *Symbols of Transformation* (N. Y., 1976), p. 401.

²³ See the Index to E. Hoffman's edition of Augustine's *De Civitate Dei* (Vienna, 1899-1900).

²⁴ H. Lewy, "Origin and Significance of the Mâgên Dâwîd," *Archiv Orientalni* 18, Pt. 3 (1950), p. 360.

²⁵ I. Velikovsky, "On Saturn and the Flood," *KRONOS* V:1 (Fall 1979), p. 10.

²⁶ Tacitus, *The Histories*, V:iv.

²⁷ See here, for instance, M. Danino, "Molochian Rites and Cannibalism," *KRONOS* X:3 (Summer 1985), pp. 87-88; M. Weinfeld, "The Worship of Molech and of the Queen of Heaven and its Background," *Ugarit-Forschungen* 4 (1972), pp. 149-150.

²⁸ G. A. Buttrick, *et al.*, *The Interpreter's Bible*, Vol. VI (N. Y., 1956), p. 821.

²⁹ M. Weinfeld, *op. cit.*, p. 149.

One of the things that has happened here is quite obvious. The reading "the *suka* of your Moloch" is rendered as "Siccuth your *melek*"—that is, "Siccuth your king." This, in turn, was based on the assumption that Siccuth is the same name of the Assyrian god Sakkuth.³⁰

The Masoretic version is thus interpreted this way: In his accusation of Israel, Amos condemns the people to carry these idols, Sikut and Chiun, with them into the coming Babylonian exile as punishment for having worshipped them in *his* day.

We will not here enter into a discussion concerning which version is to be preferred.³¹ To us, whether Chiun was worshipped by the Israelites during the time of Moses or the days of Amos does not change the fact that the Israelites *did* worship this god. Nor does it change the fact that this deity was no other than the Saturn of other nations.

There will now be those who will want to tell me that it is no secret that the Israelites often fell prone to worshipping false idols and that the case in question reflects no more than that. And, in truth, this is the way in which the verse has been understood by adherents of both the Gentile and Hebrew versions. The association of Shabtai/Saturn with the Hebrew Sabbath, however, as well as the additional data we will be presenting in the following pages, including, incidentally, the very name of Israel, speaks against this.

Moreover, hidden within the expression of the Masoretic version of *Amos* is a datum that will actually strengthen our case. Here I can safely state that even were *sikut* (that is "tents/tabernacles") made to read Siccuth (in reference to the Assyrian Sakkuth), it would in no way invalidate our thesis. Not only would the Saturnian connection of this verse remain through the undisputed inclusion of Chiun/Kewan, but, ironically, the Assyrian god Sakkuth is himself associated in Akkadian texts with the planet Saturn.³²

Now it so happens that, just as Shabtai/Saturn translates as "the resting Planet," so is Chiun/Saturn related to a similar characteristic. The word *chun*, from which the name is derived,³³ carries the meanings of "establish," "fix and/or fixed," "firm," and "stable."³⁴ Very much like Shabtai, Chiun can therefore be translated as "the fixed, firm, or stable planet Saturn." In other words, the reference is to a planet at rest. What could this mean?

THE STABLE ONE

The old west Semitic deity named Hammu has long been considered to be a sun god.³⁵ This is the deity for whom the famous Hammurabi, the first king of the Amorite Dynasty of Babylon, was named (or named himself).³⁶ Hammu's identity as the Sun has been seen to be strengthened by the name of Hammurabi's fourth successor, Ammizaduqa, which name translates as "Ammi [that is Hammu] is Justice." This, as Julius Lewy pointed out, accords well with the Assyro-Babylonian Shamash who, in Akkadian hymns, is invoked as *kittum*, that is "justice."³⁷ As we have seen, however, Shamash had originally been a name reserved for the planet Saturn. Should we not then see in Hammu a name for the same planet? Thus, for instance, Hammurabi, named after Saturn, would not have been guilty of apostasy when

³⁰ G. A. Buttrick, *et al.*, *op. cit.*, pp. 821-822.

³¹ But see, D. Cardona, "Molochian Rites and Cannibalism," *KRONOS* X:3 (Summer 1985), pp. 89 ff.

³² G. A. Buttrick, *loc. cit.*

³³ J. Strong, see ref #2, p. 55.

³⁴ *Ibid.*, p. 54.

³⁵ J. Lewy, *op. cit.*, pp. 429 ff.

³⁶ *Ibid.* NOTE: Stephen Langdon's translation of Hammurabi's name as "the uncle is great"—S. Langdon, "Hammurabi," *Encyclopaedia Britannica* (1959 edition), Vol. 11, p. 135—cannot be withheld. See here, D. Cardona, "The Two Sargons and Their Successors," Part II, *AEON* I:6 (December 1988), p. 93.

³⁷ J. Lewy, *op. cit.*, p. 435.

he named his son Samsuiluna, a name usually translated as "The Sun is Our God,"³⁸ but more correctly rendered "Saturn is Our God," since both Shamash (Šamaš or Šamšu) and Hammu were different names for the same planet.³⁹ Likewise, when Hammurabi had the laws for which he became famous inscribed on a stela, he had himself depicted as receiving them from Shamash. One cannot, therefore, rightly blame mythologists for identifying Hammu as a sun-god since, in effect, he was the personification of just that—a sun; the primeval Saturnian sun to be sure, but a sun nonetheless.

The association with justice, however, is not the only datum on which we can base the identification of Hammu as a personification of the planet Saturn? As Lewy noted, Hammu is equivalent to 'Amân which was a name for the planet Saturn.⁴⁰ How is this identity derived? 'Amân, as well as other related names, belong to a linguistic root which means "stable" and/or "the stable one." And, as Lewy pointed out, "the stable one" is the meaning of the Akkadian name of Saturn, that is Kaimânu, the same as the Arabic Kaiwân and the Syriac Kêwân,⁴¹ the Chiun of the Book of *Amos*.

Morris Jastrow tells us that the reason Saturn was called "stable" and/or "regular" and/or "steady" was "because of the slow and regular motion which is [the planet's] distinguishing feature."⁴² To be sure, this is the usual explanation that is still given to account for the close-to-universal ancient belief we are here considering. But while "stable," "regular," and "steady," may account for the slowness of the planet as seen with the naked eye from Earth, its slowness cannot be made to account for its additional characteristics of being "fixed" or "firm," to say nothing of it being described as being "at rest." Slow the planet may seem to move, *but it moves*. What the ancients seem to be telling us here is that, in a time long gone by, the planet Saturn did not appear to move. Can this be validated?

THE GOD OF JERUSALEM

The claim that the famed Ebla tablets have shown that Salem and Jerusalem were two different places⁴³ has not been validated. We must therefore continue to accept the statement of Flavius Josephus who claimed that Salem had been an earlier name for Jerusalem.⁴⁴ *Salem*, or *shalem*, once thought to signify "peace," is now known to have been the name of an early Canaanite deity.⁴⁵ Up until recently, this deity had been identified as Venus⁴⁶ but, as we shall see, this identity does not hold.

In Chaldean, Jerusalem was rendered Yerushalem; in Hebrew, it changed to Yerushalaim. Both names mean "founded by Shalem." Moreover, in a letter sent to an Egyptian king of the Eighteenth Dynasty, Jerusalem is mentioned both by that name and as Bit Šulmani.⁴⁷ As Julius Lewy concluded, this letter "leaves no doubt that the city was then known not only as

³⁸ *Ibid.*.

³⁹ *Ibid.*, p. 471.

⁴⁰ *Ibid.*, pp. 456, 470.

⁴¹ *Ibid.*, p. 456-457; see here also P. Jensen, *Die Kosmologie der Babylonier* (Strassburg, 1890), pp. 111 ff; H. Lewy, *op. cit.*, p. 332.

⁴² M. Jastrow, Jr., "The Sign and Name for Planet in Babylonian," *Proceedings of the American Philosophical Society* XLVII: 189 (May-August, 1908), p. 155.

⁴³ H. Macoby, "Ebla, the Plain Dealer," *SIS Review* II:4 (Spring 1978), p. 97.

⁴⁴ Flavius Josephus, *Antiquities of the Jews* (also known as *The Jewish Antiquities*), I:10:2; *idem*, *The Jewish Wars* (also known as *Wars of the Jews*), VI:10.

⁴⁵ M. Burrows, "Jerusalem," *The Interpreter's Dictionary of the Bible* Vol. II (N. Y., 1962), p. 844.

⁴⁶ J. Gray, "Shalem," in *ibid.*, Vol. IV, pp. 303-304.

⁴⁷ J. Lewy, "The Šulman Temple in Jerusalem," *Journal of Biblical Literature* LIX (1940), p. 520.

Jerusalem, but also as Bēt (or Bit) Šulman.”⁴⁸ The designation “House”—i.e. Bēt(h)—for cities in Palestine is, of course, quite common. Easily coming to mind are such cities as Beth-aven, Beth-el, Bethlehem, Beth-haran, Bethshemesh, Beth-horon, Beth-eden (in Syria), Beth-peor, Beth-shan, and many others. Lewy himself explains such place names as due to the one-time existence of sanctuaries each of which was dedicated to the deity there named.⁴⁹ Thus, Jerusalem would have been referred to as Beth Shulman because a temple of Shulman would have existed there.

Lewy’s conclusion was that a temple of Shulman supplanted an earlier one dedicated to Shalim but that it did not last for long. During the same period, the name of the city changed from Urusalim to Bet Shulman; but, with the destruction of the Shulman temple, the name of the city reverted back to Urusalim. This would explain why the name Bet Shulman never became popular.⁵⁰

Needless to say, this was all conjecture on Lewy’s part. For one thing, Lewy himself accepted that Shalim and Shulman(u) were slightly different versions of the same deity,⁵¹ so that no replacement of sanctuaries need enter the picture. Nor need the name Bet Shulman have ever supplanted that of Urusalim since, in effect, the meaning of both names is theologically, even if not philologically, synonymous—the former meaning “House of Shulman,” the latter, as we have seen, “Founded by Shalim.”⁵² It is thus more than possible that Bet Shulman was merely another designation for Urusalim, the one derived from Assyrian, the other from Chaldean sources. The Chaldean name passed into Hebrew; the Assyrian did not. The one became popular; the other not.

In any case, whether called by the very name of the god (Salem); referred to as having been founded by him (Urusalim/Yerushalem); or simply called his city (Bet Shulman); it remains obvious that the city we call Jerusalem was named in honor and dedicated to the god Shalem/Shulman.⁵³

Indications that this god was worshipped there can be traced at least to the time of Israel’s United Monarchy.⁵⁴ Also rendered Shulman or Shulmanu,⁵⁵ this god’s name gave Jedidiah, son of David and king of Israel, his more popular name of Solomon.⁵⁶ Rendered Shlomoh in Hebrew, this monarch’s name has also been stated to have been derived from *shalom*, which, as everyone knows, does, *inter alia*, mean “peace.” (Compare also the Arabic *salam* and Maltese *sliema*.) The probability, however, is that both the monarch’s name and the word for “peace” derived from the name of the god. As Roy Rosenberg tells us, Šlomoh (Shlomoh) means “belonging to Šalim”⁵⁷

Biblical theophoric names derived from Shalem are common including the names of kings of Israel and Judah. Among such names we find: Shallum, Shelemiah, Shelomi, Shelomith (or Shulamit), after whom Immanuel Velikovsky named one of his daughters, and Shelemoth.

⁴⁸ *Ibid.*, pp. 520-521.

⁴⁹ *Ibid.*, p. 521.

⁵⁰ *Ibid.*

⁵¹ *Ibid.*, p. 519.

⁵² Lewy gives the meaning of the latter as “Creation of Shalem”—see *ibid.*, p. 521—but the Hebrew *yeru* is more in keeping with the meaning “founded.”

⁵³ R. A. Rosenberg, “The God Sedeq,” *Hebrew Union College Annual*, Vol. XXXVI (Cincinnati, 1965), p. 166.

⁵⁴ J. Lewy, see reference #21, pp. 441, 454.

⁵⁵ *Ibid.*, p. 454.

⁵⁶ J. Gray, *op. cit.*, p. 304; *idem*, *The Canaanites* (N. Y., 1964), pp. 124-125.

⁵⁷ R. A. Rosenberg, *loc. cit.*

Outside of the Old Testament, we find this theophoric name adopted by Shalamanu, King of Moab.⁵⁸ It also appears in the name of Shalmaneser, a name borne by more than one Assyrian king. Perhaps less known is the fact that Salummati was an epithet of the great Assurnasirpal.⁵⁹

As a god, Shulman was worshipped in Nineveh and, under the variant Shulmanuha or Shulmanuhi, is found mentioned in Assyrian tablets.⁶⁰

Shulman is known to have had a feminine counterpart named Shulmanitu⁶¹—but also Shala.⁶² This goddess—but not Shulman—has been identified with Astarte and Ishtar,⁶³ both personifications of the planet Venus. Moreover, Assyrian sources define Šulmanitu (the same as Shulmanitu) as *distar Urusilimma* which Michael Astour has rendered “Ištar of Jerusalem.”⁶⁴ That this goddess was known in Jerusalem is verified by her laudation in the famous *Song of Solomon* in which she is referred to merely as the Shulammitte.⁶⁵

The sacrifices performed in Solomon’s temple were referred to in Hebrew as *she-lamim*—the plural of *shelem*. Usually translated as “peace offering(s),” R. de Vaux is of a different opinion in that *shelamim* “implies the idea of a tribute offered to God...”⁶⁶ If this is correct, the god in question must originally have been Shalem.

As they appear in cuneiform, the words *salummatu* and *salummati* are usually thought to signify “brightness” and “splendor” respectively.⁶⁷ As epithets, these descriptive terms were applied to Enlil (Saturn), Nergal (Mars), and Nabu (Mercury).⁶⁸ On their own, they throw no light on the real identity of Shalem. Who, then, was this god?

Very much like other names of Saturn, Shalem (or Šalim) meant “the Stable One.”⁶⁹ Solomon’s name, “belonging to Šalim,” can then be translated as “belonging to Saturn.” David, his father, must have been very partial to the Saturnian deity for not only did he name Solomon in his honor, but also his first-born son, ‘Amnon, which means “belonging to ‘Amin—i.e. the Stable One,” and even his third, Abšalom, which means “the Father is Šalim.”⁷⁰ It can now safely be said that Jerusalem was the City of Saturn, a conclusion that was additionally reached by Lewis Greenberg.⁷¹ (And did not Isaiah himself refer to Jerusalem as the city of justice,⁷² which justice, in Akkadian *kittum*, we have already found to be an epithet of Shamash/Saturn?) Finally, those of the Jewish faith will hate me for

⁵⁸ J. Gray, *loc. cit.*

⁵⁹ I. Engnell, *Studies in Divine Kingship in the Ancient Near East* (Oxford, 1967), p. 183.

⁶⁰ W. F. Albright, *Yahweh and the Gods of Canaan* (N. Y., 1968), p. 149.

⁶¹ *Ibid.*, pp. 133-134, 150.

⁶² N. K. Gottwald, “The Shulammitte,” *The Interpreter’s Dictionary of the Bible* Vol. IV (N. Y., 1962), p. 341; H. H. Rowley, “The Meaning of ‘The Shulammitte,’” *American Journal of Semitic Languages and Literature*, LVI (1939), pp. 84-91.

⁶³ W. F. Albright, *loc. cit.*

⁶⁴ M. C. Astour, *Hellenosemitica* (Leiden, 1965), pp. 154-155.

⁶⁵ *Song of Solomon* (also known as *Song of Songs* and/or *Canticle of Canticles*—see especially 6:10 & 6:13. (NOTE: Hyam Macoby’s contention that the Shulammitte mentioned in this source is to be understood as a reference to the Queen of Sheba—“The Queen of Sheba and the Song of Songs,” *SIS Review* IV:4 (Spring 1980), pp. 98-100—cannot be accepted.)

⁶⁶ R. de Vaux, *Ancient Israel* (N. Y., 1965), pp. 417, 427, 440.

⁶⁷ I. Engnell, *loc. cit.*

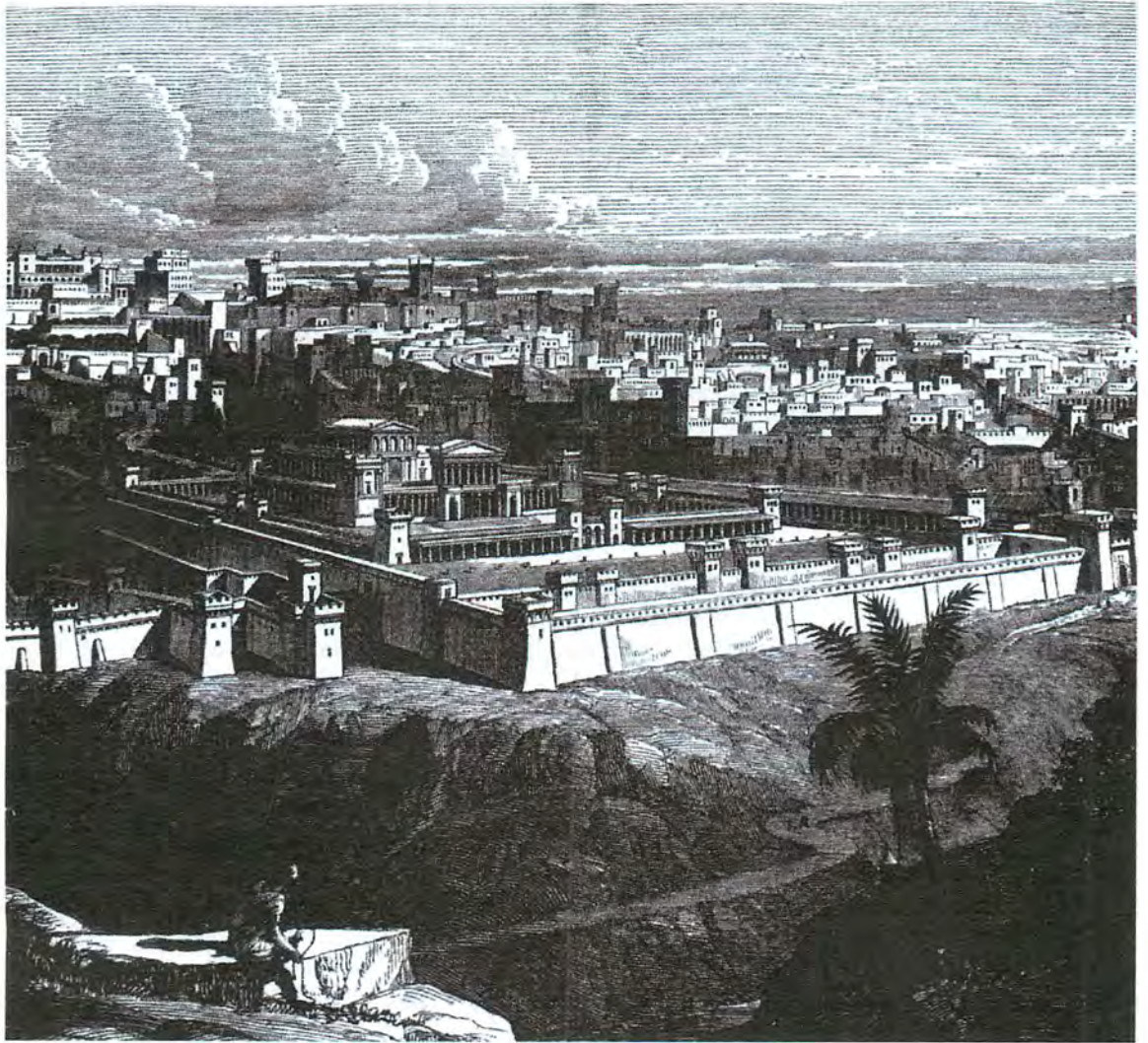
⁶⁸ *Ibid.*

⁶⁹ R. A. Rosenberg, *loc. cit.*

⁷⁰ *Ibid.*

⁷¹ L. M. Greenberg, “Jerusalem—City of Saturn,” *KRONOS* X:2 (Winter 1985), pp. 94 ff.

⁷² Isaiah 1:26.



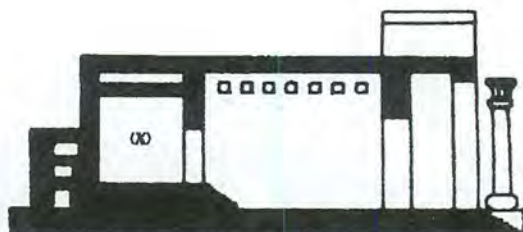
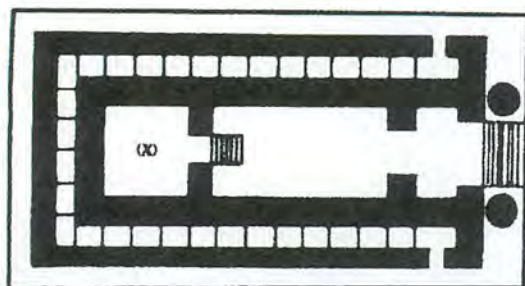
Jerusalem—(Roman period)—the City of Saturn

saying this, but the sacrifices called *shelamim* which were offered in Solomon's temple could only mean that the famous Israelite temple, as Hildegard Lewy showed in 1950,⁷³ was really one dedicated to the planetary god Šalim/Saturn. This is all the more true since the inner sanctum, that is the Holy of Holies, of the temple was constructed in the shape of a cube, *which was the characteristic shape of Saturnian temples*.⁷⁴ In fact, for some now forgotten reason, the cube had been a traditional representation of Saturn from ages past.⁷⁵

⁷³ H. Lewy, *op. cit.*, in toto.

⁷⁴ *Ibid.*, p. 69.

⁷⁵ G. de Santillana & H. von Dechend, *Saturn's Mill: An Essay on Myth and the Frame of Time* (Boston, 1969), pp. 221-222.



Floor plan and cross section of Solomon's Temple, showing the Holy of Holies, marked X, the cubic construction of which bespeaks its dedication to the planetary god Saturn.
(Adapted from plans drawn by Marie-Josèphe Devaux.)

THE HOUSE OF SHULMAN

Further connections between Shalem/Shulman and Saturn can be derived from the el-Amarna correspondence, letters written in Akkadian cuneiform dispatched to the Pharaoh Akhnaton and his father by the rulers of Palestine. In two of these letters which Egyptologists have numbered 74 and 290, reference is made to a place which transliterators have rendered differently. In 1915, J. Knudtzon settled on the reading of this place as Bet Ninib⁷⁶—i.e., House of Ninib.

Some time later, in 1940, Julius Lewy re-read the name of this place as Bit Shulmanu—House (or Sanctuary) of Shulman.⁷⁷

William Albright did not accept Lewy's transliteration, claiming that the ideogram which he read as "Shulmanu" did not incorporate the determinative for divinity.⁷⁸

In 1969, the team of Tadmor and Kalai re-read the ideogram again, this time as Beth Ninurta.⁷⁹

Which, then, was the correct reading?

This problem has given birth to many a debate,⁸⁰ but it should never have done so. Let me say that Knudtzon was perfectly correct in reading the name as Bet Ninib since the cuneiform ideogram which "spells" the name of the god in question is ^dNIN.IB. *Of that, there never was any doubt.*⁸¹ As pointed out in an earlier chapter of this work, Ninib, sometimes rendered Ninip and/or Nirig, was the planetary god Saturn.⁸²

The reason behind Lewy's re-reading of the name as Shulman may not appear clear to the uninitiated. Suffice it to say that cuneiform characters can be read ideographically and/or phonetically. Thus the ideogram ^dNIN.IB can also be read ^dNinurta⁸³—which means that

⁷⁶ J. A. Knudtzon, *Die El-Amarna-Tafeln* (Leipzig, 1915), pp. 1160, 1343.

⁷⁷ J. Lewy, "The Šulman Temple in Jerusalem," *Journal of Biblical Literature* LIX (1940), pp. 519 ff.

⁷⁸ As cited by I. Velikovsky, "The Šulman Temple in Jerusalem," *SIS Review* II:3 (1977/78), p. 86.

⁷⁹ *Ibid.*

⁸⁰ See, for instance, the discussion in the *International Standard Bible Encyclopedia*, Vol. 2, pp. 999-1000.

⁸¹ J. Lewy, *op. cit.*, p. 520.

⁸² G. Rawlinson, *The Seven Great Monarchies of the Ancient Eastern World*, Vol. I (1870 second ed.), p. 86; D. A. Mackenzie, *Myths of Babylonia and Assyria* (London), p. 314; M. Jastrow, Jr., "Sun and Saturn," *Revue d'Assyriologie et d'Archeologie Orientale* (September 1910), p. 172.

⁸³ J. Lewy, *op. cit.*, p. 519.

Tadmor and Kalai's reading of the place in question as Beth Ninurta was also correct. As we have already documented, Ninurta was also one of the names by which the planet Saturn was known.

Lewy's re-reading, meanwhile, was based on an equation which is to be found in an Assyrian explanatory list of divine names. In this list, the Assyrians themselves equated ^dNIN.IB with ^dDI.MES.⁸⁴ Just as ^dNIN.IB can be read as ^dNinurta, so also can ^dDI.MES be read as ^dShulmanu.⁸⁵ It therefore follows that, like Ninib/Ninurta, with whom he was equated, Shulman was simply an alias of the planetary god Saturn.

From this it can be seen that all three readings—Bet Ninib, Beth Ninurta, and Bit Shulmanu—are correct. They all mean the same thing: "House (or Sanctuary) of Saturn."

On the other hand, Albright was entirely wrong when he claimed that the name Shulman did not incorporate the determinative for divinity. The name Shulman, as it appears in el-Amarna letter 290, *does* incorporate the determinative —*dingir*—for divinity. Lewy reproduced it by the usual transliteration—*viz.*, "^dŠulmani."⁸⁶

The equation of Shulman with Ninurta/Saturn, as revealed in the above, is of additional importance to the subject of this chapter because, very much like Shulman/Shalem, Ninurta was also considered an immobile god. Thus, in Akkadian, Ninurta was styled *kaimanu*, that is "the steady star."⁸⁷

(For those in the know: The association of Shulman with Resheph, like that of Ninurta with Nergal, will be discussed in a future work.)

THE MESOPOTAMIAN EVIDENCE

While we have already seen that one of the Assyro-Babylonian names for the planet Saturn was (Mul) Lu-Bat Sag-Uš, we have so far refrained from saying what the name stood for. Simply put, Lu-Bat Sag-Uš means "the steady planet."⁸⁸ The term "steady planet" is not much different than the term "stable planet," so that we can see that this characteristic of the Saturnian deity was by no means a rarity.

In keeping with this topic, we also find that Shamash/Saturn was said to have occupied "the house of rest."⁸⁹ Here there is no intimation of slow movement. A deity who occupies a house of rest must himself *be* at rest.

When speaking of the Sumerian god Ea, Berossus, writing in Greek, used the name Kronos⁹⁰ who was Saturn. And did we not, in Chapter 6, see Ea identified precisely as that very same planet?

The Babylonian name of Ea was Enki.⁹¹ In fact, Ea was actually *written* with the ideogram EN.KI. Our interest here lies in the fact that Enki, who must, therefore, also be equated with Saturn, was known as "the motionless lord" and god of "stability."⁹² As the god of stability, Enki compares favorably with Saturn's epithet as the Stable One. As the

⁸⁴ *Ibid.*

⁸⁵ *Ibid.*

⁸⁶ *Ibid.*, p. 520.

⁸⁷ S. H. Langdon, "Semitic Mythology," *The Mythology of All Races*, Vol. V (N. Y., 1964), p. 134.

⁸⁸ M. Jastrow, Jr., *op. cit.*, p. 170; H. Lewy, *op. cit.*, p. 332.

⁸⁹ *Idem*, *The Religion of Babylonia and Assyria* (Boston, 1898), pp. 638-641.

⁹⁰ G. Michanowsky, *The Once and Future Star* (N. Y., 1977), p. 74.

⁹¹ J. Morgenstern, "The Divine Triad in Biblical Mythology," *Journal of Biblical Literature* LXIV (1945), pp. 15, 16; G. Michanowsky, *op. cit.*, p. 31.

⁹² D. Talbott, *Symbols of an Alien Sky* (Beaverton, Oregon, 1997), p. 38.

motionless lord, we again see that this stability had nothing to do with slowness of movement. What is being described here is an immobile god, a planet bereft of motion.

THE EGYPTIAN EXPLICITNESS

When we come to Egypt, there is no longer any ambiguity concerning the Saturnian characteristic we have been investigating. In a hymn to Ra, the deity is addressed with these words: "O thou firstborn, who dost lie without movement..."⁹³ Here, once again, it remains for Egyptologists to explain why, if Ra was truly the Sun, it was described as lying "without movement." Ra, it was said, "rests on his high place."⁹⁴

Atum was also said to have been immobile. Called "the Firm Heart of the Sky," it was distinctly said of him that "the Great God lives fixed in the middle of the sky."⁹⁵

In the *Papyrus of Ani*, the deceased is addressed with these words: "O thou who art without motion like unto Osiris!"—and this phrase is twice repeated.⁹⁶ The immobility of Osiris is also mentioned in the *Text of Teta*: "Thou art stable in thy name of 'Menu'," it is there stated, where "Menu" itself has the meaning of "Stable One,"⁹⁷ the very same epithet we have found attached to other Saturnian deities.

The Egyptian god Ptah, whom we have also seen being identified as a personification of Saturn, was also syncretized with Tenen or Tatanen, a primeval deity who was also lauded as the Disk of Heaven,⁹⁸ a definite identification of the god as a celestial body. Here, Wallis Budge informs us that the "exact attributes" of this deity "appear to have been unknown *even to the Egyptians*."⁹⁹ And yet, he had no difficulty in deriving the god's name from the word *enen*, or *nen*, which means "inertness, inactivity, rest, motionless," and the like.¹⁰⁰ Despite Budge, what this *really* tells us is that Tenen was considered to be without motion. If this god can truly be equated with Saturn, as his assimilation with Ptah forces us to conclude, it would again register the planet in question as having been immobile.

SHINING IN THE LIGHTLAND

Those familiar with Egyptian mythology, especially Egyptologists, can—actually *should*—raise one telling objection against all of the above. And the objection is this: that, despite his being lauded as lying without movement and as resting on his high place, there are various tracts which describe Ra as rising and setting. For instance, in a hymn to Ra, the god is lauded with the words:

"Homage to thee, O thou who art Ra when thou risesth and Temu [that is Atum] when thou settest. Thou risest, thou risest, thou shinest, thou shinest, thou who are crowned king of the gods...the company of the gods rejoice when thou risest..."¹⁰¹

⁹³ E. A. W. Budge, *The Egyptian Book of the Dead* (N. Y., 1895/1967), p. 250.

⁹⁴ *Idem*, *From Fetish to God in Ancient Egypt* (London, 1934), p. 394.

⁹⁵ T. Rundle Clark, *Myth and Symbol in Ancient Egypt* (N. Y., 1959), p. 59.

⁹⁶ E. A. W. Budge, *The Egyptian Book of the Dead* (see reference #81), p. 315.

⁹⁷ *Idem*, *Osiris and the Egyptian resurrection*, Vol. I (N. Y., 1911/1973), p. 141.

⁹⁸ *Idem*, *The Gods of the Egyptians*, Vol. I (N. Y., 1904/1969), p. 509.

⁹⁹ *Ibid.*, p. 508 (emphasis added).

¹⁰⁰ *Ibid.*, p. 509.

¹⁰¹ *Ibid.*, pp. 335-336.

"Hail, thou Disk, thou lord of rays, who risest on the horizon day by day! Homage to thee...when thou risest on the horizon and sheddest thy beams of light...Homage to thee, O thou who risest in the horizon as Ra..."¹⁰²

How, then, can we reconcile the above passages, and many more like them, with the idea of a motionless Ra?

Well, in the first place, the word translated as "horizon"—*ḥt*—actually means "light-land,"¹⁰³ and while this term continues to be accepted as meaning "horizon," it should never have been.

In the second place, the word translated as "rises" actually means "shines," as Patricia Spencer indicated.¹⁰⁴ There are various Egyptian words which carry these ambiguous meanings. *Nen*, for instance, means "to rise," often used in relation to a celestial body, but it also means "to shine."¹⁰⁵ More than that, as we have just seen, *nen* also carries the meanings "inertness, inactivity, rest," and "motionless." *Khaut* signifies the "rising of a god," but also "appearance, splendor, radiance, or brilliance of a god."¹⁰⁶ *Skhai* means "to make to rise up," but also "to appear."¹⁰⁷ When it comes to the rising of the very Ra in question, one word that is often used is *kha* or *khai*, meaning "to rise" or "to ascend," but also "to shine" or "to appear."¹⁰⁸ So, similarly, with such words as *pert* (to come forth),¹⁰⁹ *uben* (to grow bright), and *un*.¹¹⁰

As for "setting," there is an Egyptian word—*urt*—which has been rendered as meaning just that, but it is only used for "the setting of a star."¹¹¹ On the other hand, a related word—*urt-t*—actually means "immobility," while *Urt* refers to "a motionless god."¹¹²

Egyptologists who have translated such phrases as "O thou who risest in the horizon as Ra" did so because the words "O thou who shines in the lightland" made little sense. On the other hand, and in face of the fact that Ra is often described as having been motionless, translators should have kept these additional meanings in mind. A motionless god, or celestial body, that rises and sets is an impossibility. A god, or celestial body, that shines without movement is not. Thus, As David Talbott indicated, the god does not rise or set but comes forth and recedes, that is he grows bright, he shines, and he dims.¹¹³

REIGNING EM HETEP

We have already seen it said of Atum that he "lives *fixed* in the middle of the sky."

Inter alia, the god was also said to have reigned in peace. "Homage to thee, O thou who art in peace," is a phrase twice repeated in the Papyrus of Mut-hetep. "Come, come in peace!" he is implored, "thou wakest in peace..."¹¹⁴

¹⁰² *Ibid.*, p. 336.

¹⁰³ M. Lichtheim, *Ancient Egyptian Literature—Volume I: The Old and Middle Kingdoms* (Berkeley, California, 1975), p. 115.

¹⁰⁴ P. Spenser to B. Forrest, private communiqué, in B. Forrest, *Velikovsky's Sources, Notes & Index Volume* (Manchester, 1983), p. 513.

¹⁰⁵ E. A. W. Budge, *An Egyptian Hieroglyphic Dictionary*, Vol. I (N. Y., 1920/1978), p. 351.

¹⁰⁶ *Ibid.*, p. 535.

¹⁰⁷ *Ibid.*, Vol. II, p. 615.

¹⁰⁸ *Ibid.*, Vol. I, p. 534.

¹⁰⁹ *Idem*, *The Gods of the Egyptians*, Vol. I (N. Y., 1904/1969), p. 385.

¹¹⁰ Cf. A. Piankoff, *The Litany of Re* (N. Y., 1964), p. 25.

¹¹¹ E. A. W. Budge, *op. cit.*, p. 175.

¹¹² *Ibid.*

¹¹³ D. N. Talbott, *The Saturn Myth* (N. Y., 1980), p. 49.

¹¹⁴ E. A. W. Budge, *op. cit.*, p. 351.

We suggested above that the Semitic word for “peace”—*shalom*, *salam*, *sliema*—derived from the name of the Saturnian deity called Shulman, Shulmanu, and/or Shalem. We have also seen that the name of this god translates as “the Stable One.” But what, then, is the connection between peace and stability?

The Hebrew *shalom* derives from *shalam*, which means “to be safe.”¹¹⁵ So, also, with the Maltese *sliema* which also means “safety.”¹¹⁶ “Peace” and “safety” are allied terms but, in a sense, is not also “stability”?

Now, as it happens, the Egyptian word *sharm* means “to be peaceful,” but also “to be idle”¹¹⁷—that is “to be doing nothing,” which negates motion. Another Egyptian word meaning “to be at peace” is *heri*, but *heri* also means “to rest.”¹¹⁸ The Egyptian word most commonly used for “to be at peace,” however, is *hetep* which also means “to repose,” “to rest,” and “to be at rest.”¹¹⁹

This, then, raises the question: Given that Atum was described as being *fixed* in the middle of the sky, what is the logical characteristic to be allotted him when he is stated to have been *em hetep*—to have been at peace, or to have been at rest?

This, incidentally, brings us back to the god Imhotep—the same as *Em Hetep*—and makes us ask the question: Was Imhotep really the deified architect who built Djoser’s pyramid, as generally believed? Or was he yet another manifestation of the immobile god we have learned to recognize as Saturn? Talbott, who embraced the meaning of this god’s name as “the one who comes forth while standing in one place,”¹²⁰ seems to have had no doubt.

IMMOVABLY FIXED

The Egyptian Ra is not the only supposed sun-god said to have been devoid of motion. In chapter 3 we saw the Indic Surya called Suraj, which latter name belongs to the planet Saturn. We also noted there that Surya is said to have occupied *samanam dhama*, “the same place of rising and setting.” We did not there explain the meaning behind this term, having used it only to denote that Surya could not possibly have been the *present* Sun. What is easier to believe, that a celestial body can climb vertically up the sky and vertically down on the same path, or that it brightens and fades while remaining in the same spot? In view of what we have now disclosed, does not the latter seem preferable? In fact, we can state it unequivocally, since it is unambiguously written that Surya “stands firmly,” and he does so on a “safe resting place.” The belief in Surya’s immobility was so ingrained that he continued to be remembered as “the immovable center of his system.”¹²¹ So how can Indologists continue to perpetrate the disinformation that Surya is the Sun?

Even Brahma, we are told, does not rise and set. He “remains alone in the center.”¹²² And if there are those who think that this immobility may have applied to planetary deities, but not necessarily to the planets they once personified, they are mistaken. Sthirah, for instance, is yet one more Sanskrit name for the planet Saturn.¹²³ No deity is involved here. And yet we

¹¹⁵ J. Strong, *op. cit.*, pp. 116, 117.

¹¹⁶ E. D. Busuttill, *Kalepin Tliet IIsna* (Valletta, 1978), p. 87.

¹¹⁷ E. A. W. Budge, *An Egyptian Hieroglyphic Dictionary*, Vol. II (N. Y., 1920/1978), p. 727.

¹¹⁸ *Ibid.*, Vol. I, p. 449.

¹¹⁹ *Ibid.*, p. 517.

¹²⁰ D. N. Talbott, *op. cit.*, p. 50, where, following Budge, he refers to Imhotep as Iemhetep.

¹²¹ *Satapatha Brahmana*, IV:3:4:9; V. S. Agrawala, *Sparks from the Vedic Fire* (Benares, 1962), pp. 82-83.

¹²² *Chandogya Upanishad*, III:ii:1-3.

¹²³ V. S. Apte, *The Practical Sanskrit-English Dictionary* (Delhi, 1890/1978)p. 1009.

find that this name is arguably related to, or derived from, *sthira*, which means "firm, steady, fixed, immovable, still, motionless," and "immovably fixed."¹²⁴

So, similarly, in China, where one of the ancient names for the planet Saturn is Zhenxing which means the "Stable Star" or "Stable Planet," since *zhen* means "stable" and *xing* means "star" but also "planet."¹²⁵ No planetary deities enter this equation. It is a pure astronomical assertion deduced from the very meaning of the planet's name.

THE NEVER-SETTING PLANET

Lynn Rose deduced that the bizarre astronomical system of Philolaos, the Pythagorean philosopher from Southern Italy, was merely a "garbled" version of the primeval Saturnian system.¹²⁶ This, needless to say, led him to the conclusion that the Central Fire of which Philolaos spoke was really an allusion to the old Saturnian sun. As Rose then tells us:

"Historians of philosophy are fond of referring to the 'dark sayings' of Heraclitus. If Heraclitus was at times reflecting back to conditions during the Age of Kronos, perhaps we are now in a position to understand some of his mysterious remarks. The Central Fire is always at the same location in the sky (as viewed from one spot); this may be why Heraclitus asks, 'How can anyone hide from that which never sets?'"¹²⁷

As Rose continues:

"Even some of the Philolaos fragments, although their authenticity has been questioned, make more sense now. We are also told that 'it [the Central Fire] is ruler and teacher of all things; it is God, One ever-existing, stable, unmoving, itself like to itself, different from the rest,' and that it 'remains One for ever in the same position and condition'."¹²⁸

Greek knowledge of the immobile Saturnian sun, however, was not restricted to the "garbled" version of Philolaos. In his evaluation of the Greek Helios and other so-called ancient sun-gods, E. A. Butterworth also came to the conclusion that this luminary "is not the natural sun of heaven, for it neither rises nor sets, but is, as it seems, ever at the zenith..."¹²⁹

So similarly from other parts of the world. For example, in Roman tradition, among the poets, Saturn was remembered as the god of "the steadfast star."¹³⁰

The Incas, too, preserved a memory of a sun-god—a resting one, to be sure—who was able "to light the world from one spot."¹³¹ We can therefore be assured that when the Makiritare of the Upper Orinoco River, in Venezuela, tell us that their god Wanadi was "like a sun that never sets,"¹³² they are referring to an old tradition about the planet Saturn. That Wanadi was not the present Sun is additionally indicated by the fact that the Makiritare name for the Sun is Shi.¹³³

¹²⁴ *Ibid.*

¹²⁵ Sima Qian, *Shiji-tianguanshu* (early first century B.C.).

¹²⁶ L. E. Rose, "Variations on a Theme of Philolaos," *KRONOS* V:1 (Fall 1979), pp. 12 ff.

¹²⁷ *Ibid.*, p. 26 (emphasis added).

¹²⁸ *Ibid.*, p. 27.

¹²⁹ D. N. Talbott, *op. cit.*, p. 41.

¹³⁰ See here *Minor Latin Poets* in the Loeb Classical Library (Harvard, 1968), p. 381.

¹³¹ Z. Nuttall, "Fundamental Principles of Old and New World Civilizations," *Archaeological and Ethnological Papers of the Peabody Museum*, Vol. II (Harvard, 1901), p. 161.

¹³² M. de Civrieux, *Watunna: An Orinoco Creation Cycle* (Berkeley, California, 1980), p. 21.

¹³³ *Ibid.*, p. 28.



Surya—the god who stood firmly in one place.
(Photograph by the author—courtesy of the British Museum, London, England.)

The Yakut of Siberia knew of a celestial locality called "the still center of the world" from which "the sun never sets."¹³⁴

Of course, there will now be those who will argue that, in Earth's polar regions, the Sun remains above the horizon for half of the year and, in that respect, it never sets. Unfortunately for this argument, the Sun *does* eventually set, and it remains absent for the second half of the year. Besides, while visible during the short summer months, the polar Sun is hardly immobile as it circles around the sky above the horizon. In view of what we have already uncovered concerning the immobility of the primeval Saturn, it is more than obvious that what the Yakut were describing was the dimly remembered Saturnian sun. This will become all the more apparent in the next chapter when we will throw further light on that celestial locality here called "the still center of the world."

What we have learned in this chapter, therefore, is self-illuminating—that, still according to the ancients, and during the time we have been investigating, the planet Saturn not only shone as a sun in a sky that was devoid of other astronomical bodies, but, as seen from Earth, this Saturnian sun was seen to neither rise nor set. It seemed, instead, to have radiated down on mankind while being permanently fixed in one spot.

How could this have been possible?

¹³⁴ E. A. Butterworth, *The Tree at the Navel of the Earth* (Berlin, 1970), p. 29.

Chapter 10

The Polar Station

A CHOICE OF MODELS

Given that Earth *was* a satellite of Saturn, one way in which the giant planet could have appeared immobile in Earth's primeval sky is if Earth had been in phase-lock with its primary. This is precisely the case with our Moon which is in phase-lock with Earth. What this means is that the Moon *rotates* on its axis in the same time it takes it to *revolve* around Earth. Thus, as seen from Earth, the Moon always presents the same face to us. The other side of the Moon, usually called the *far* side, is not visible from Earth. (It was revealed to Earth-bound eyes for the first time through the photographic capabilities of twentieth century space-probes.) What this also means is that, as seen from the lunar hemisphere facing Earth, as those astronauts who landed on the Moon could see for themselves, our world appears motionless, that is fixed in one spot, pasted on the darkness of the lunar sky. Whether Earth appears stationary at the zenith of the lunar sky, half way down the sky, or permanently fixed on the horizon, or even half hidden by the horizon, would depend on the lunar locality from which it is viewed. There is, of course, no need to point out that, from the *far* side of the Moon, Earth is simply not visible.

As Alan Stern and Jacqueline Milton pointed out, a similar situation, but somewhat in reverse, holds for the planet Pluto and its satellite Charon. Since Charon's *orbital* period is the same as Pluto's *rotational* period, to a Plutonian, Charon would appear to be similarly fixed in the sky.¹ (Patrick Moore misspoke when he called this "a situation unique in the Solar System,"² since he seems to have forgotten the case of the Moon when he penned these words.)

There *is* another way in which Saturn could have appeared immobile in Earth's sky. This could have come about if Earth had been suspended directly "beneath" or "above" one of Saturn's poles, with both planets sharing the same axis of rotation. In that case, Saturn would have appeared fixed in Earth's north or south celestial sphere. This, however, is not only an unheard-of situation which is nowhere duplicated in our present Solar System, it is also one which defies presently accepted celestial mechanics. All it inspires is disbelief.

It is, therefore, understandable that, in *his* Saturnian scenario, as extracted from the "garbled" system of Philolaos, Lynn Rose opted for an Earth in phase lock with Saturn.³ And yet for years I had reason to object to Rose's explanation of this phenomenon,⁴ just as he found reason to object to mine⁵—since, almost from the very start of my research, I had come to the conclusion that Saturn's proper placement in Earth's primordial sky *had* to have

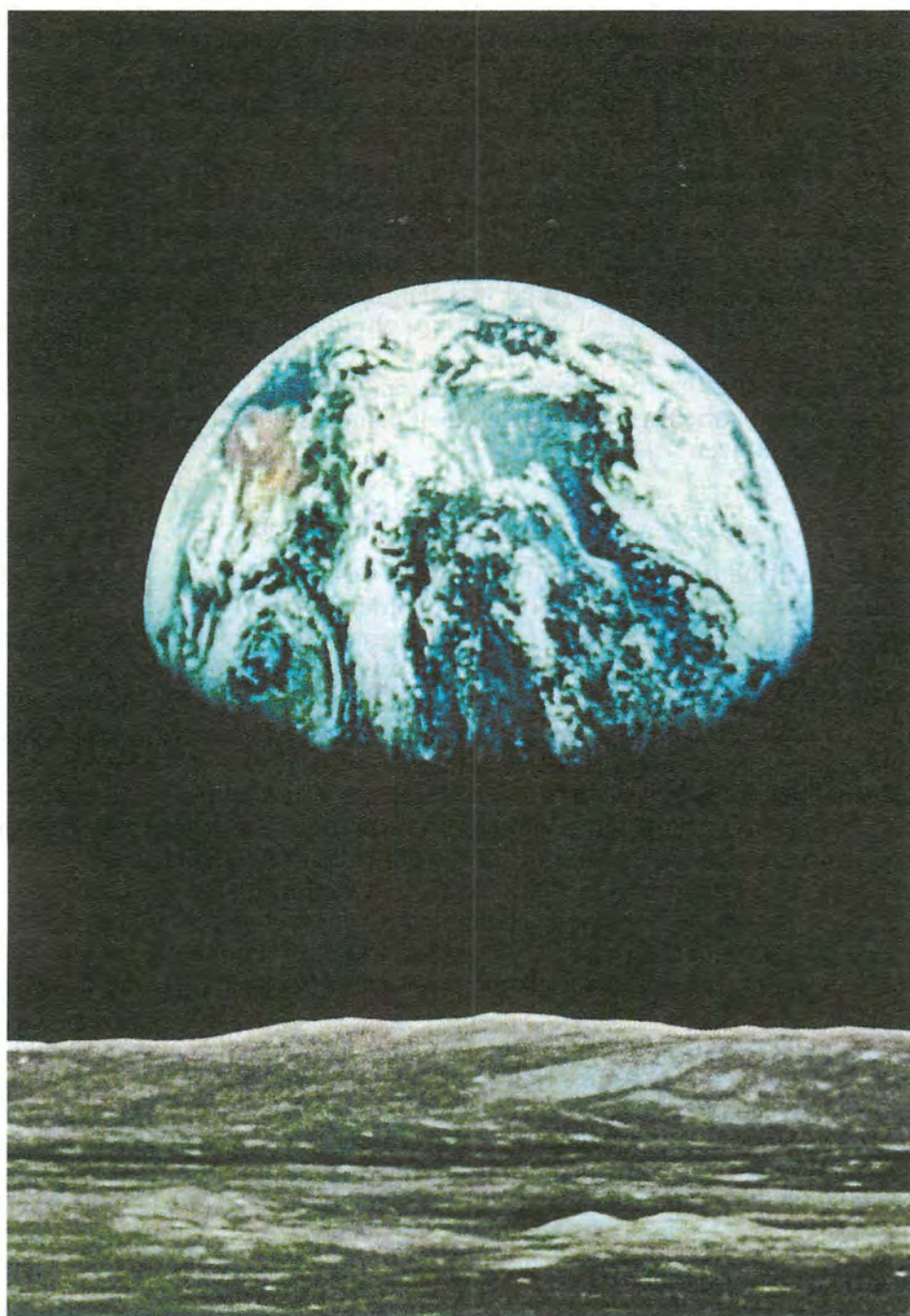
¹ P. Moore, "Worlds on the Edge," *New Scientist* (January 3, 1998), p. 39.

² *Ibid.*

³ L. E. Rose, "Variations on a Theme of Philolaos," *KRONOS* V:1 (Fall 1979), p. 26.

⁴ See, for instance, D. Cardona, "The Reconstruction of Cosmic History," *AEON* II:2 (February 1990), pp. 116 ff.

⁵ L. E. Rose, *op. cit.*, pp. 12 ff.; *idem*, "On Saturn at the North Pole," *AEON* I:6 (December 1988), p. 39.



Earth as seen from the surface of the Moon—permanently fixed in one place.
(Photograph courtesy of NASA.)

been in Earth's *north* celestial sphere.⁶ Given that Rose's model is more feasible from a physical point of view, why do I opt for this bizarre idea? The answer is simple enough: *That* is where the mytho-historical record places the primeval Saturn—plumb in the centre of Earth's north celestial sphere, the very place which is presently occupied by the Pole Star.

That this is an outlandish theory there is no doubt. Despite the fruit of my research, even I ended up disbelieving the entire thing, and I must honestly admit that it was not until I had read *Hamlet's Mill* that I finally accepted all that my research had unearthed. If, as I reasoned at the time, scholars of the caliber of Giorgio de Santillana and Hertha von Dechend, the authors of *Hamlet's Mill*, had been able to unearth the same set of bizarre situations in connection with Saturn's polar station, I could not be that far off the mark myself. If the authors in question could discuss the ancient belief in a Saturn that was permanently fixed in Earth's north celestial sphere, then so could I. That de Santillana and von Dechend chose not to accept what they themselves had discovered was their business.⁷ But the lameness with which they ended up explaining away what they had brought to light made me all the more ready to accept it all.

Now it has to be said that both Rose's model and mine (as well as David Talbott's) are based on the mytho-historical record. Let us then examine what the mytho-historical record has to say about the subject.

EL—ELOAH—ELOHIM

Because we shall be delving more into the Old Testament as we go along, a few words concerning this collection of Hebrew books are in order.

The *oldest complete version* of the Old Testament is the Greek Septuagint (2nd century B.C.). The Hebrew text from which it was translated is no longer extant in any complete form. The oldest *Hebrew* version that we now possess *in entirety* is the Massoretic Text (6th to 8th century A. D.) Not only is there something like eight hundred years separating the two, there are also major differences between them.

While the Septuagint is not always to be preferred, it *is* superior to the Massoretic Text which, *beyond dispute*, contains more numerous corruptions. To be sure, the Massoretic Text has remained unchanged since its "fixing" in the 6th century A.D., but that a great number of changes had been introduced before that date is also well known.⁸ Textual comparison has long made it obvious that the Septuagint, compiled by the Jewish scholars of Jerusalem at the behest of Demetrius Phalereus and Aristaeas for Ptolemy Philadelphus and the Jews of Alexandria,⁹ was translated from a Hebrew text that was purer than the much later Massoretic version.

The issue, of course, is more complex than that, but the above should suffice to remind the reader that, when it comes to interpretation, not all versions of the Old Testament are of equal value. In what follows, and throughout this work, we shall therefore be comparing various versions in an attempt to ferret out what the original beliefs might have been. In matters where even comparison will leave us stranded at an impasse, however, it is to the Septuagint that we shall bow our heads, simply because, where no other arbiter is available, it is the *oldest* version that should receive the benefit of the doubt.

⁶ See here, D. Cardona, "The Road to Saturn," *AEON* I:1 (January 1988), pp. 108-129; *idem*, "The Road to Saturn," Part II, *AEON* I:3 (May 1988), pp. 109-138.

⁷ G. de Santillana & H. von Dechend, *Hamlet's Mill: An Essay on Myth and the Frame of Time* (Boston, 1969), p. 136.

⁸ J. F. Stenning, *et al.*, "Bible," *Encyclopaedia Britannica* (1959 ed.), Vol. 3, pp. 504-505.

⁹ L. Canfora, *The Vanished Library* (Los Angeles, 1990), pp. 15 ff.

What I wish to stress at this point, more than anything else, is that the Old Testament speaks of various deities which, in English and other translations, were changed to read "God," "Lord," "Lord God," "Most High God," etc. Leaving all sectarian biases aside, we shall therefore re-insert the correct *Hebrew* names of these deities in the quotes we shall be citing throughout the rest of this work. As we progress, we shall also see whether these various names were merely cognomens of one and the same deity. The first three such names which will concern us in this study are El, Eloah, and Elohim.

Now it has sometimes been stated that "Elohim," which name is mentioned 2570 times in the Old Testament,¹⁰ is "the plural of a lost singular."¹¹ The singular, or synonym, of "Elohim," however, is hardly lost; it is merely "El" and/or "Eloah."¹² To William Heidel, the Elohim were the allies of El¹³—whatever these might have been. The name "Elohim," however, was not *always* used as a plural. A. Murtonen, for instance, tells us: "As to the primary meaning there cannot be any doubt, the word being formally a plural, but the singular meaning is also very old, as the Ras Shamra [i.e., Ugaritic] texts prove."¹⁴ Murtonen goes out of his way in attempting to explain this plurality,¹⁵ but, in the end, it seems to boil down to an old usage equivalent to the more modern royal "we." As David Rohl succinctly phrased it:

"Biblical Hebrew occasionally employs something scholars call the 'majestic plural.' In effect it is a plural ending added to a deity's name to confer status or majesty. In the Old Testament the best example is *Elohim* which does not mean 'the gods' but is rather the god El with the majestic plural *im* appended."¹⁶

Eloah, on the other hand, only appears 57 times in the Old Testament, "and almost entirely in poetry"¹⁷ such as the Book of *Job*. That Eloah was the equivalent of El,¹⁸ meanwhile, is brought out in the same Book of *Job* where the two names are used interchangeably.¹⁹ According to Murtonen, this variant of the name is merely the vocative of "El"²⁰—that is the form used in invocation.

Which leaves us with the shortened form "El" which, apart from its inclusion in theophoric names, appears 230 times in the Old Testament.²¹ That El was the god of Israel *par excellence* is borne out by the fact that when Jacob arrived in the city of Shechem, in the land of Canaan, following his twenty-year sojourn working for Laban, he set up an altar and called it *El-elohe-yisrael*, which means "El, God of Israel."²²

More than that, however, is the very name Israel itself. Although, as Hans Goedicke noted, all efforts to explain the name have been unsuccessful, it is definitely a theophoric one

¹⁰ A. Murtonen, *A Philological and Literary Treatise on the Old Testament Divine Names* (Helsinki, 1952), p. 25.

¹¹ "Biblical Encyclopedia, Concordance, and Subject Index," to the King James version of *The Holy Bible* (N. Y., 1913/1954), p. 120.

¹² A. Murtonen, *op. cit.*, p. 42; J. Morgenstern, "Divine Triad in Biblical Mythology," *Journal of Biblical Literature* LXIV (1945), pp. 22, 23; W. A. Heidel, *The Day of Yahweh* (N. Y., 1929), p. 470.

¹³ *Ibid.*

¹⁴ A. Murtonen, *loc. cit.*

¹⁵ *Ibid.*

¹⁶ D. M. Rohl, *A Test of Time: The Bible—From Myth to History* (London, 1995), p. 228.

¹⁷ A. Murtonen, *op. cit.*, p. 25.

¹⁸ And see here also, J. Morgenstern, *op. cit.*, p. 23.

¹⁹ See, for instance, Job 22 where Eloah is used in verse 12, and El in verse 13.

²⁰ A. Murtonen, *op. cit.*, p. 41.

²¹ *Ibid.*, p. 25.

²² Genesis 33: 18, 20.

incorporating the very name of El.²³ Interpretations of the name have included such laudations as "he who fights for El," "he whom El fights," "the upright one of El," and other similarities,²⁴ but none of these are true to the etymology of the name. The name "Israel" appears first in the Book of *Genesis* where the Patriarch Jacob is described as having wrestled with a mysterious stranger, at the end of which the stranger told Jacob: "Thy name shall be called no more Jacob, but Israel: for as a prince hast thou power with Elohim and with men, and hast prevailed."²⁵ The name Israel was, therefore, bestowed on Jacob because he "prevailed" like a prince over the stranger with the power of Elohim. And, as it has been assumed by others before me, the name "Israel" is composed of the word *sârâh*—"to prevail"—and "El." Thus it might not be amiss to say that "Israel" most likely means "to prevail like El" or "let El prevail."

As Ronald Hendel argued, El was the oldest god of the Israelites. This is evidenced by the fact that, in the Old Testament, up until the time of the Exodus, theophoric names incorporate *only* the name of El (as, for example, Israel, Ishmael, and Bethuel).²⁶ This coincides with what is known of Canaanite religion in the pre-Israelite period. "The evidence, from Ugarit in the north to Sinai in the south, testifies that during [the pre-Israelite period] the high god of various local Canaanite pantheons was named El."²⁷ Murtonen goes even further when he states that the name can be traced to *primitive* times. "That 'el is a very primitive word is proved by 1) its existence in all the Semitic languages with the (possible) exception of Ethiopic...2) the fact that it was composed of only two radicals...and 3) that these radicals are numbered among the most primitive ones."²⁸ As for the *origin* of El, the same authority informs us:

"'El itself can have been derived only from a concrete conception, i.e., from immediate experience. In other words, the question is philologically unsolvable."²⁹

Philologically unsolvable—perhaps; but not necessarily *cosmogonically* so, as we shall soon see. We start by asking the question: What could this "concrete conception," this "immediate experience," of which Murtonen speaks, have been? Having already touched upon the subject on an earlier page, the identity of El should not surprise the reader. Even so, for starters we mention here the fact that, in Akkadian inscriptions, the *phonetic* writing for El (or Il) is sometimes used for the logogram otherwise read as An.³⁰ In god lists found at Mari, the two names are interchangeable. As Alfred Eaton disclosed: "It is known that the name El was written with the sign AN (Ik-ru-ub-AN and Ik-ru-ub-IL)..."³¹ In discussing the same material, Herman Wohlstein argues simply for an identification of El/An as a tutelary deity,³² an equation that could only have been reached because of the widespread acceptance of El, by Jews and Christians alike, as a name simply meaning "God." But that "El" was

²³ H. Goedicke, in M. Rowland (Ed.), *Exodus: Myth or History* (Basingstoke, Hants, England, 1994), p. 4.

²⁴ A. E. Guinness (Ed.), *Mysteries of the Bible* (N. Y., 1988), p. 56 (where "God" is substituted for "El").

²⁵ Genesis 32: 28.

²⁶ R. S. Hendel, "Finding Historical Memories in the Patriarchal Narratives," *Biblical Archaeology Review* (July/August 1995), p. 59.

²⁷ *Ibid* (where various other sources are also cited).

²⁸ A. Murtonen, *op. cit.*, p. 38.

²⁹ *Ibid.*, p. 39.

³⁰ *Ibid.*, p. 29.

³¹ A. Eaton, *The Goddess Anat: The History of Her Cult, Her Mythology and Her Iconography* (Ph.D. dissertation, Yale University, 1964), p. 13.

³² H. Wohlstein, *The Sky-God An-Anu* (Jericho, N. Y., 1976), p. 33.

originally a proper name has been shown by Murtonen.³³ Meanwhile, as we have already seen, the god An and/or Anu was a personification of the planet Saturn.

Julius Morgenstern tells us that, in his role of the all-knowing god, "El seems to have much in common with the Babylonian deity, Enki-Ea, the all-wise one."³⁴ And, on an earlier page, we have shown that Enki/Ea is also identifiable as the same planet Saturn.

None of this should really surprise anyone. As Frank Moore Cross indicated, El was the chief deity of the Mesopotamian Semites, as he was also that of the pre-Islamic Arabs besides the Canaanites.³⁵ In fact it has long been known that the pre-Islamic Allah traces to the same root as El or Eloah.³⁶ Cross also cites evidence which equates El with the Egyptian Ptah (yet another deity we have already seen identified as Saturn) as also with Ba'al (of whom we shall have more to say elsewhere).

William Albright equated El with the Assyro-Babylonian Shamash³⁷ which, once again, we have already shown to be an alternate name for the planet Saturn.

William Heidel goes straight to the heart of the matter when he tells us that "Cronos [or Kronos—the Greek name for the planet Saturn] is called El by the Phoenicians."³⁸ This identification traces to the Phoenician scholar Sanchoniathon himself, as quoted by Philo of Byblos, who identified the Canaanite El with the Greek Kronos.³⁹ As Cross submitted: "Philo Byblius, and other classical sources, and inscriptions in Greek and Latin all establish the formula that B'l Hmn [i.e., Ba'al Hamon] on the one hand, and El on the other, are Greek Kronos, Latin Saturnus."⁴⁰ Moreover, as Cross admits: "These equations have long been known, and all new data confirm the ancient."⁴¹ Albright, therefore, was on track when he identified El outright with the Latin Saturnus.⁴²

We did not, therefore, misspeak when, on an earlier page, we pointed out that, according to the ancients, it was the planet Saturn that was really the god of the Jews. When the Old Testament itself, as we have seen, declares El to have been the "God of Israel," it is the same as saying that Saturn was that god. And, in fact, is this not additionally borne out by the very *name* Israel which, as we have pointed out, incorporates the theophoric name of El who *was* Saturn? Thus, incidentally, when J. Glen Taylor, on Biblical and archaeological evidence, was forced to conclude that it was the "sun" that was worshipped in the Jerusalem Temple by the Kings of Judah,⁴³ we can be certain that the "sun" in question was the Saturnian one.

THE LEFT HAND OF GOD

In a Hebrew psalm we read:

"Unto thee, O Elohim do we give thanks...When I shall receive the congregation I will judge uprightly...Promotion [i.e., exaltation] cometh not from the East, nor from the West, nor from the South."⁴⁴

³³ A. Murtonen, *op. cit.*, p. 30.

³⁴ J. Morgenstern, *loc. cit.*

³⁵ F. M. Cross, *Canaanite Myth and Hebrew Epic: Essays in the History of the Religion of Israel* (Cambridge, 1973), p. 71.

³⁶ A. Murtonen, *op. cit.*, pp. 25-26.

³⁷ W. F. Albright, *Yahweh and the Gods of Canaan* (N. Y., 1968), p. 141.

³⁸ W. A. Heidel, *loc. cit.*

³⁹ L. Delaporte, "Phoenician Mythology," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 83.

⁴⁰ F. M. Cross, *op. cit.*, p. 25.

⁴¹ *Ibid.*

⁴² W. F. Albright, *op. cit.*, p. 144.

⁴³ J. G. Taylor, "Was Yahweh Worshipped as the Sun?" *Biblical Archaeology Review* (May/June 1994), p. 58.

⁴⁴ Psalms 75:1, 2, 6.

As William Warren asked: "Why this singular enumeration of three of the points of the compass, and this omission of the fourth [that is, the North]?"⁴⁵ Is it not, as T. K. Cheyne surmised, because a "peculiar sanctity is attached to the North in the Old Testament records"?⁴⁶ And does this not then mean that Elohim's exaltation can only come from the north? Does this not, in itself, also mean that Elohim resided in the north? And if Elohim, as we have seen, was identified by the ancients themselves as Saturn, would it not also mean that Saturn's locus was in the north?

As Warren continues: "A curious trace of the same conception appears in the book of Job..."⁴⁷ Here Warren is referring to that specific incident in which Job, while lamenting the bitter deal that fate had dealt him, complains that he has looked for Eloah but could not find him:

"Behold, I look forward [or 'in front'], but he is not there; and backward [or 'behind'], but I cannot perceive him. On the left hand, where he doth work, but I cannot behold him. He hideth himself on the right hand, that I cannot see him."⁴⁸

Here, the Hebrew word translated "forward" or "in front" is *qedem* or *qedmah* which, among other things, means "eastward."⁴⁹ As is to be expected, *'achor*, the Hebrew word translated as "backward" or "behind" also means "westward."⁵⁰ *Semo'l*, translated "left," also means "north."⁵¹ While *yamin*, that is "right," also means "south."⁵² Job's words, above, should therefore read:

"Behold, I look eastward, but he [i.e., Eloah] is not there; and westward, but I cannot perceive him. To the north, where he doth work, but I cannot behold him. He hideth himself in the south, that I cannot see him."

The designations "in front," "behind," "left hand," and "right hand," for "east," "west," "north," and "south," came into common use among the Semites much later when the Sun—that is the *present* Sun—had replaced the Saturnian one. Because of other factors which do not here concern us, orientation was indicated by facing east in which the Sun rose. Thus the east was in front, the west was behind, the north was at one's left hand, and the south on one's right.

But here, now, as Warren noted,⁵³ is the odd thing about the manner in which Job's lament is worded. While lodging his grievance that nowhere—east, west, north, or south—could he find Eloah, he made a telling distinction concerning the north. The left hand, that is the north, is described as the place "where he [that is Eloah] doth work." So that, again, we find that it was precisely in the north that Eloah, the same as Elohim/El/Saturn, was believed to accomplish his handiwork.

It is, therefore, somewhat ironical that the left hand, the place where the god's goodly deeds were accomplished, became synonymous with bad luck. Although now obsolete, the

⁴⁵ W. F. Warren, *Paradise Found* (Boston, 1885), p. 204.

⁴⁶ T. K. Cheyne, *The Book of Isaiah* (London, 1870), pp. 140, 141.

⁴⁷ W. F. Warren, *loc. cit.*

⁴⁸ Job 23:8-9.

⁴⁹ J. Strong, *Hebrew and Chaldee Dictionary* (Madison, New Jersey, 1890), p. 102.

⁵⁰ *Ibid.*, p. 10.

⁵¹ *Ibid.*, p. 117.

⁵² *Ibid.*, p. 50.

⁵³ W. F. Warren, *op. cit.*, p. 205

very term "left hand" used to mean "unfavorable" and/or "unlucky."⁵⁴ Moreover, the Latin word for "left," which is *sinister*, in English came to mean "evil." As I intend to show in a future work, this is because the god of mankind was not always benign.

THE SACRED QUARTER

The northern locus of the god of Israel is also referred to in the Book of *Ezekiel*. When Elohim was said to have revealed himself to the prophet Ezekiel, as described in the very first chapters of that book, he is said to have appeared from the north.⁵⁵

It was for this very reason that, when the High Priest of Israel officiated at the altar in both the Tabernacle and, later, in the Jerusalem temple, he was obliged to face north.⁵⁶ In fact, this priestly ritual of facing north while officiating was practiced by the prelates of other ancient nations, among them the priests of the Haranite Sabæans.⁵⁷ As A. Fornander noted:

"The Hawaiian soothsayer, or *kilo-kilo*, turned always to the North when observing the heavens for signs or omens...The ancient Hindus turned also to the North for divining purposes, and so did the Iranians before the schism...so did the Greeks, and so did the Scandinavians before their conversion to Christianity."⁵⁸

This northernism, meanwhile, must not be understood in a *terrestrial* sense, but, rather, in a *celestial* one. This is brought out by the fact that the circumpolar stars were alluded to as *Kokkabe 'El* (the "stars of El").⁵⁹ The throne of El was considered to be "the pole of the universe."⁶⁰ Given all of the above, El (Eloah/Elohim) could only have resided in the north *celestial* pole. As Warren observed:

"The Pole, the unmoving centre-point of the heavens directly overhead, would naturally have seemed to be the top of the world, the true heaven, the changeless seat of the supreme, all-ruling God. And if, accordingly, through all the long lifetime of the ante-diluvian world, the *circumpolar* sky was to human thought the true abode of God, the oldest post-diluvian peoples, though scattered down the sides of the globe half or two thirds the distance to the equator, could not easily have forgotten that at the centre and true top of the rotating sky was the throne of its great Creator, and that there, in the far North, was 'the sacred quarter' of the world."⁶¹

And:

"The religions of all ancient nations signally confirm and satisfy this antecedent expectation. With a marvelous unanimity *they associate the abode of the supreme God with the North Pole, 'the centre of heaven,' or with the celestial space immediately surrounding it.*"⁶²

⁵⁴ Webster's Twentieth-Century Dictionary of the English Language (N. Y., 1939), p. 950.

⁵⁵ Ezekiel 1:1-4.

⁵⁶ See here, Leviticus 1:11; W. F. Warren, *op. cit.*, p. 207.

⁵⁷ *Ibid.*, p. 210.

⁵⁸ A. Fornander, *The Polynesian Race*, Vol. I (London, 1878), p. 240.

⁵⁹ W. F. Albright, *op. cit.*, p. 232.

⁶⁰ A. J. Wensinck, "The Ideas of the Western Semites Concerning the Navel of the Earth," *Afdeeling Letterkunde* XIX:2, p. 55.

⁶¹ W. F. Warren, *op. cit.*, pp. 50-51 (emphasis as given).

⁶² *Ibid.*, p. 203 (emphasis as given).



High Priest of Israel—who faced north while officiating.

Unfortunately, Warren was not aware of the Saturnian association with the "God" he alludes to. Having, however, seen that, *according to the ancients themselves*, the god of the Old Testament was really a personification of the planet Saturn, we will have to assume that, as astronomically impossible as it might at first seem, the primeval Saturn was believed to have once been situated in the place now occupied by the Pole Star.

One discordant item the reader may have noted concerns the circumpolar stars themselves—for have we not, on a previous page, argued for the solitude of the very same planetary deity, where no other heavenly body was visible. And, to be sure, we will posit here that, while Saturn shone as a sun, no stars, except perhaps those of first magnitude, could have been seen in the night sky. So how, then, could the circumpolar stars have been seen, let alone proclaimed as being the stars of El/Saturn? These stars, which we shall meet again below, could not have been considered the property of El during that time when Saturn ruled the pole. It was only when Saturn resigned his lofty position that the stars came into view for the first time. It was then seen that the circumpolar stars circled around that very area in the center of which the god of humanity had once resided. For that reason they became sacred to the memory of the god who had, by then, moved elsewhere. But all this will have to be left for a future work.⁶¹ What is of *immediate* concern here is whether this Saturnian northernism is upheld by the beliefs of ancient nations other than the Semites.

THE STARS OF ANU

In their astronomical treatises, the Babylonians placed their Prime Meridian through the north pole. The Prime Meridian is the point from which star locations are measured. As Norman Schwarz noted: "For everyone, ever since the time of the Babylonians, the Zero of Longitude was an abstract; for the Babylonians, it was a matter of geography."⁶² But then: "If the Babylonians had been like the Greeks, Spanish, British, etc., they would have put their Prime Meridian through Babylon; but they did not!"⁶³ Instead they chose the north pole. But how does this relate to Babylonian geography? The geography of which Schwarz speaks was not terrestrial, but, rather, celestial. As he himself informs us, the North Pole was "*the location where the gods had resided*," that is "*in the North*."⁶⁴

As was the case with El, the northern stars were held sacred to Anu.⁶⁵ Stephen Langdon tells us that An, or Anu, was associated with the "northern polar stars." At Erech, sacrifices were offered "to the polar stars of Anu." The Pole Star itself was even called the "star of Anu." Thus, a prayer to the Pole Star began with the words "O star of Anu, prince of the heavens."⁶⁶

We thus find out that, in Mesopotamia, the gods were believed to reside in the north. More than that, the prime god of the Mesopotamians, An (or Anu) was not only associated with the circumpolar stars, but with the Pole Star itself. That Anu (or An) was a personification of the planet Saturn, we have seen on an earlier page. That the Pole Star was revered as the star of Anu is thus understandable. As we explained in relation to the circumpolar stars themselves, once the planet Saturn was removed from its north polar placement, the Pole Star would have been seen to have taken its place.

⁶¹ An intimation of the scenario alluded to above can be obtained in D. Cardona, "The Demands of the Saturnian Configuration Theory," *AEON* VI:1 (February 2001), p. 71.

⁶² N. Schwarz, "Old World Maps—A response to Charles Ginethal," *The Velikovskian* II:2 (1994), p. 49.

⁶³ *Ibid.*

⁶⁴ *Ibid.* (emphasis as given).

⁶⁵ R. H. Allen, *Star Names and Their Meanings* (N. Y., 1936), p. 20.

⁶⁶ S. H. Langdon, "Semitic Mythology," *The Mythology of All Races*, Vol. V (N. Y., 1964), p. 94.

UNAS AND THE CIRCUMPOLAR STARS

During the first four hundred years of Egypt's Old Kingdom, royal tombs were covered with rounded mounds which later evolved into stepped pyramids. These were located in traditional ancestral cemeteries at Abydos and Saqqara. It is of interest that, associated with these tombs were vast rectangular niched enclosures the long sides of which ran north to south. Royal officials also built their tombs in ancestral cemeteries apart from those of the kings. They, too, were oriented north-south.⁶⁷

As Ann Macy Roth pointed out:

"Both the orientation and the size of these early burial complexes provide clues to the ancient Egyptians' beliefs about immortality. The tombs' sloped northern entrance pointed to stars in the northern sky that never sank below the horizon [the circumpolar stars]—suggesting that immortality could be attained by joining these 'unwearying' stars."⁶⁸

By the end of the Third, and the beginning of the Fourth, Dynasty, royal burials shifted to within true smooth-sided pyramids. Roth was of the opinion that the change came about because "the diurnal death and rebirth of the sun supplanted the perpetual northern stars as the most important symbol of the afterlife."⁶⁹ But, other than the recognition that Ra originated as a personification of the planet Saturn, rather than the Sun, Roth's conclusion is altogether erroneous because, even in the pyramids she herself mentions, the connection with the circumpolar stars continued to be retained.

In the *Pyramid Texts* found inscribed on the walls of the Pyramid of Unas, the circumpolar stars are indirectly associated with Atum. The text deals with the final location in the sky that Unas is meant to achieve after his death. There it is stated:

"The Father of Unas, Atum, seizes the arm of Unas and he assigns Unas to...the Circumpolar Stars."⁷⁰

"Thou art to purify thyself with the cool water of the Circumpolar Stars."⁷¹

"The sun-folk shall call out to you, for the Circumpolar Stars have raised you aloft."⁷²

From this it becomes obvious that, in order to reach his final resting place in the here-after, and be together with Atum for evermore, King Unas needed to travel to the region of the circumpolar stars. That Atum is to be identified as the planet Saturn need not be repeated.

THE EGYPTIAN CREED OF RESURRECTION

On the inner side of a lid to a granite sarcophagus discovered at Kom Abu Yasin are recorded the monthly variations of the polar constellation which is usually represented by a bull. In this instance, as in others, the celestial bull is symbolized only by its foreleg.⁷³ This symbolism is not merely reserved for pictorial depictions; it is also invoked in verbal incantations. Thus, for instance, it is written: "Hail to thee, O thou Thigh which dwellest in the

⁶⁷ A. M. Roth, "Architecture of the Afterlife," *Archaeology Odyssey* (Spring 1998), p. 58.

⁶⁸ *Ibid.*

⁶⁹ *Ibid.*

⁷⁰ *Pyramid Texts*, Utterance 269, Spell 380.

⁷¹ *Ibid.*, Utterance 214, Spell 138.

⁷² *Ibid.*, Spells 138-139.

⁷³ W. R. Fix, *Star Maps* (London, 1979), p. 86.

northern heaven..."⁷⁴ The bull's thigh, of course, represented the constellation Mshtyw, that is what we call the Big Dipper. The accompanying text on the Kom Abu Yasin sarcophagus lid, however, equates Osiris with this heavenly bull.⁷⁵ That the planet Saturn was known as Heru-ka-Pet—that is, Horus Bull of Heaven—is well known.⁷⁶ What is of interest to us here is that the inscription on the lid of the sarcophagus in question can be said to place Osiris, as the Bull of Heaven, that is the planet Saturn, in the north polar sphere.

We do not, however, have to rely on this inscription, since it is well known that Osiris was considered the god of the north,⁷⁷ even though, unfortunately, Wallis Budge understood this in a terrestrial way.⁷⁸ But that the northern locality of Osiris was celestial is evidenced by the fact that his abode was believed to have been "permanent in Sekhet-hetepet, among the imperishable stars," to which the deceased hoped to ascend.⁷⁹ The "imperishable stars" are none other than the "circumpolar stars" which, because they circle around the celestial pole, are never seen to dip below the horizon and, therefore, viewed as imperishable by the ancient Egyptians. The same text also speaks of the deceased as moving and traveling, but this should be understood in relation to the journey of the deceased from Earth to the abode of Osiris. This is so true that when the deceased, in this case Pepi I, finally reaches his destination, he "stands up at the north of heaven with him,"⁸⁰ that is with Osiris.

So, likewise, with Ra, as we learn from the same inscriptions inscribed on the walls of the Pyramid of Pepi I. In his afterlife, the king was believed to achieve his spiritual destiny only when he was finally united with Ra *in the north of heaven*. As it is written: "When Pepi standeth upon the north of heaven *with Ra*, he becometh the lord of the universe, like unto the king of the gods."⁸¹

That this is so is also evidenced by the fact that Amon-Ra was said to have resided in the Divine Land. "Beautiful of Face," he was lauded, "who comest from the Divine Land."⁸² In Egyptian, the Divine Land is rendered as Neter-ta.⁸³ Brugsch, however, defined "Neter-ta" or, more correctly, "Neter-ta-Mehti," as "the *northern* land of the gods" and this, as Gerald Massey pointed out, is not to be confused with "an elevated part of our earth," but is to be understood as "the *polar* paradise in heaven."⁸⁴ For that reason, the deceased was lauded with the words: "May your face be in the north of the sky, may Re summon you from the zenith ["top" or "crown," really] of the sky."⁸⁵

It can therefore be seen that the Egyptians believed that, once dead, they would be resurrected and made to join their god—Atum, Re, Osiris, all of whom are identifiable as personifications of the planet Saturn—in the north polar sky.

THE GUARDIAN OF THE POLE

The Persian *Bundahish* contains some curious passages which bear directly on the topic at hand. In that work, the starry constellations are likened to a war-like army destined for

⁷⁴ G. A. Wainwright, "Letopolis," *Journal of Egyptian Archaeology* XVIII (1932), p. 167.

⁷⁵ W. R. Fix, *loc. cit.*

⁷⁶ E. A. W. Budge, *The Gods of the Egyptians*, Vol. II (N. Y., 1904/1969), pp. 302-303.

⁷⁷ *Idem*, *Osiris and the Egyptian Resurrection*, Vol. I (N. Y., 1911/1973), p. 37.

⁷⁸ *Ibid.*

⁷⁹ *Ibid.*, p. 148.

⁸⁰ *Ibid.*, p. 155.

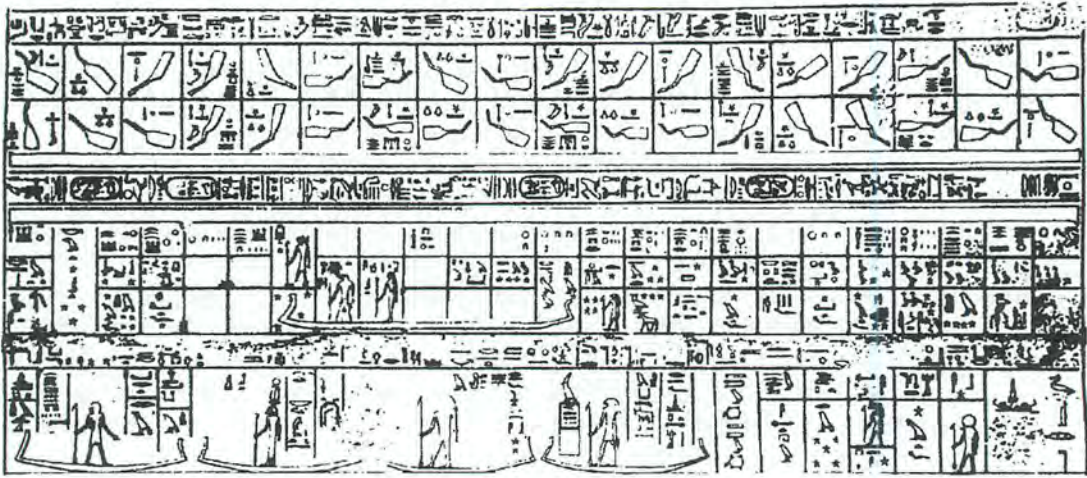
⁸¹ *Idem*, *The Book of the Dead* (New Hyde Park, 1960), p. 86.

⁸² *Idem*, *The Gods of the Egyptians*, Vol. II (N. Y., 1904/1969), p. 7.

⁸³ *Ibid.*

⁸⁴ G. Massey, *Ancient Egypt* (N. Y., 1970), p. 378 (emphasis added).

⁸⁵ *Pyramid Text* 1016.



The inner side of the lid to the Kom Abu Yasin sarcophagus, the upper two registers of which show Mshtyw—the thigh of the celestial bull (our Big Dipper)—as it rotates around the north celestial pole. The inscription also equates the celestial bull with Osiris.

battle. Among these constellations, some stars are chosen as “chieftains.” Predominant among these starry chieftains was Gah “which they say is the great one of the middle of the sky”—in other words the Pole Star.⁸⁶

In a later section of the same work, seven planets are allotted to the seven chieftains. The guardianship of “the great one of the middle of the sky”—that is the Pole Star—was assigned to the planet Saturn.⁸⁷

It is not that we have little faith in the planetary identification of the deities we have been parading before the reader, but, even so, let it be noted that, in the above, we are not dealing with planetary *deities* but with actual planets and stars.

Nor need we rely on this indirect evidence because the ancient Persians, or Iranians, were very positive when it came to the place once occupied by the planet in question. According to them, Kevan (Khevan, Kewan), which, as we have already seen, was one of their names for the planet Saturn, occupied the polar center.⁸⁸

For that reason, very much like the Israelite high priests and the Hawaiian soothsayers, like the Hindus, the Greeks, and the Scandinavians, the ancient Iranians also faced north for divination purposes.⁸⁹

DHRUVA

In the *Shiva Purana*, Brahma is associated with the Pole Star.⁹⁰ An epithet of Brahma is Dhruva.⁹¹ This is interesting because, despite the fact that we have already seen Brahma

⁸⁶ *Bundahish* II:5-8.

⁸⁷ *Ibid.*, V:1-2.

⁸⁸ L. de Saussure, as cited by D. N. Talbott, *The Saturn Myth* (N. Y., 1980), p. 44.

⁸⁹ A. Fornander, *loc. cit.*

⁹⁰ *Shiva Purana* IX:19:8.

⁹¹ V. S. Apte, *The Practical Sanskrit-English Dictionary* (Delhi, 1975), p. 531.

identified as a personification of the planet Saturn, Dhruva happens to be the Sanskrit name of the Pole Star. But, in view of what has been disclosed above, this should not surprise us.

Now, as it happens, in the *Bhagavata Purana*, the celestial north pole is described as the "highest region of Vishnu."⁹² Again, in the same work, it is stated that "above Ursa Major lies what they call the highest abode of Vishnu" around whom the stars respectfully go round.⁹³ The question, here, becomes this: Is Vishnu, like Brahma, to be identified with Saturn or with the Pole Star? The question seems to be answered for us in the *Kurma Purana* where it is stated that the Lord Vishnu abides in the place of Dhruva, which is the Pole Star.⁹⁴ In other words, Vishnu was *not* identified with the Pole Star; it is merely stated that he *abides* in its place. But is there any evidence that Vishnu personified the planet Saturn?

Little seems to have been known of Vishnu in the Vedic age, and not much is said about him in the oldest Sanskrit work known to us, the *Rig Veda*. In later Hinduism, however, Vishnu comes to the forefront as one of the most important deities together with Shiva and Indra. In this later mythology, Vishnu is presented as an oft-reincarnated deity who, to use the very words put into his mouth, comes down to Earth "whenever order, justice and morals are in danger."⁹⁵ These reincarnations of Vishnu, called avatars—(literally "descents")⁹⁶—will not here concern us. We will, instead, focus on the primal godhead himself who, among various other epithets, is known as Svayambhu, he "who exists of himself."⁹⁷ Of more importance to us, however, is that we have it on the authority of both the *Vishnu Purana* and the *Linga Purana* that Vishnu is to be equated with Brahma.⁹⁸

Another epithet of Vishnu is Prajapati,⁹⁹ whom we have already seen identified as Saturn. According to the *Brahma Purana*, one of his manifestations is that of Surya.¹⁰⁰ To this day, a sculptured depiction of Vishnu as Surya exists in the thirteenth century A.D. Temple of Surya at Konarak, Orissa.¹⁰¹

Yet one more epithet of the god is Yamakilah, derived from Yama.¹⁰² As we pointed out in our first chapter, the *Linga Purana* tells us that "the great planet Shaniscara, the slow-moving Saturn, is Yama, the lord of the worlds."¹⁰³ And, to be sure, that Yama was a personification of the planet Saturn is well known.¹⁰⁴

In the same *Linga Purana*, Vishnu is made to claim: "I am Kala."¹⁰⁵ Not to be confused with Kali, Kala is also a name of Yama¹⁰⁶ who was Saturn. Actually, the name Kala itself was that of the planet Saturn. Additionally, a name of Vishnu is Kalakunchah,¹⁰⁷ derived from Kala.

⁹² *Bhagavata Purana* IV:12:25-26.

⁹³ *Ibid.* V:23:1.

⁹⁴ *Kurma Purana* I:41:12.

⁹⁵ J. Herbert, "Hindu Mythology," in "India: The Eternal Cycle," *Larousse World Mythology* (London, 1972), p. 212.

⁹⁶ P. Masson-Oursel & L. Morin, "Indian Mythology," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 362.

⁹⁷ *Ibid.*, p. 359.

⁹⁸ *Vishnu Purana* I:2:45 ff.; *Linga Purana* LIV:63-64.

⁹⁹ V. S. Apte, *op. cit.*, p. 642.

¹⁰⁰ P. Masson-Oursel & L. Morin, *op. cit.*, p. 325.

¹⁰¹ *Ibid.*

¹⁰² V. S. Apte, *op. cit.*, p. 781.

¹⁰³ *Linga Purana* I:60:2-5.

¹⁰⁴ See for instance, G. de Santillana & H. von Dechend, *op. cit.*, pp. 146, 373.

¹⁰⁵ *Linga Purana* I:96:33-35.

¹⁰⁶ V. S. Apte, *op. cit.*, p. 353.

¹⁰⁷ *Ibid.*, pp. 353-354.



Iranian priest (Parthian Magus) who faced north for divination purposes.
(From a Parthian bass relief.)



Vishnu.

(Photograph by the author—courtesy of the British Museum, London, England.)

More than that, another of Vishnu's various epithets is Mahakala,¹⁰⁸ which translates as "Great Saturn."

Yet one more epithet of Vishnu is Darunah, a name derived from *daruna*, meaning "terrible."¹⁰⁹ In the *Garuda Purana*, however, Daruna is given as a name for Saturn.¹¹⁰

Finally, the name Shaurih is shared by both Vishnu and the planet Saturn.¹¹¹

There is therefore little doubt that, *regardless of what Vishnu's avatars turn out to be*, the primal god himself was remembered as a personification of the planet Saturn, which connection, as we have just seen, was tendered through various interconnecting equations.

Now the *Linga Purana* contains a myth, in the form of a parable, which tells how Dhruva became the Pole Star.¹¹² According to this parable, Dhruva was placed at his station by Vishnu. Moreover, Vishnu impressed on Dhruva that the abode in which he placed him had formerly been his. "This abode," Vishnu is made to state, "is *mine*, the greatest, the steady splendid abode."¹¹³

The same parable, in slightly different guise, is also contained in the *Bhagavata Purana*, where Dhruva is described ascending to the highest pole "to the exalted seat of Vishnu, round which the starry spheres forever wander..."¹¹⁴ We can thus see that it was the belief of the Hindus that the polar station had been Vishnu's, that is Saturn's, *before* it became Dhruva's, that is the Pole Star's.

Even more intriguing is the fact that, elsewhere, we learn that Dhruva had previously been one of the names of the Saturnian sun god himself. Thus, the word *dhruva* means "fixed, firm, stable, permanent, constant, unchangeable"¹¹⁵—which is an apt name for the Pole Star. Another Sanskrit word with similar meanings of "fixed, firm, unalterable, imperishable, indestructible, undecaying" is *akshara*.¹¹⁶ It is therefore noteworthy that one of Vishnu's epithets is an amalgam of these two words—Dhruva-akshara.¹¹⁷

We have seen that, according to the *Linga Purana*, "Shaniscara, the slow-moving Saturn, is [called] Yama"—a name that was also borne as an epithet by Vishnu. It is interesting, then, that, as Warren tells us, Yama, too, once occupied the north celestial polar station. In his treatment concerning the north polar placement of various deities, he wrote:

"That the East Aryans had the same idea is also evident from the Laws of Manu. Among this people Yama—the same as the Iranian Yima—was the first man. His first abode...was at the North Pole..."¹¹⁸

And, like their Iranian counterparts, and others from other parts of the ancient world, the Hindus also faced north for divining purposes.¹¹⁹

¹⁰⁸ *Ibid.*, p. 749.

¹⁰⁹ *Ibid.*, p. 497.

¹¹⁰ *Garuda Purana* 1:62:14.

¹¹¹ V. S. Apte, *op. cit.*, p. 928.

¹¹² *Linga Purana* 1:62:1 ff.

¹¹³ *Ibid.* 1:62:36 (emphasis added).

¹¹⁴ G. de Santillana & H. von Dechend, *op. cit.*, p. 138.

¹¹⁵ V. S. Apte, *op. cit.*, p. 531.

¹¹⁶ *Ibid.*, p. 6.

¹¹⁷ *Ibid.*, p. 531.

¹¹⁸ W. F. Warren, *op. cit.*, p. 198.

¹¹⁹ A. Fornander, *loc. cit.*

THE GENIE OF THE PIVOT

So, also, in China. As Warren tells us:

"The oldest traceable worship among the Chinese is that of Shang-te [or Shang-ti], the highest of all gods...Shang-te is usually...described as the god of heaven. But his proper place of abode, his palace, is called Tsze-wei. And if we inquire as to the meaning and location of Tsze-wei, the native commentators upon the sacred books inform us that it is 'a celestial space about the North Pole'."¹²⁰

Thus we find it stated that "Shang-te's throne is in Tsze-wei, i.e., the Polar Star." And: "Immediately over the central peak of Kwen-lun appears the Polar Star, which is Shang-te's heavenly abode."¹²¹ Shang-ti's title was The Holy and Propitious Prince of the North Pole.¹²² One of his symbols, upon which he is sometimes depicted as standing, was the tortoise. The tortoise is also sometimes accompanied by a snake. It is therefore noteworthy that the symbolism of the tortoise and serpent goes at least as far back as the Han dynasty and was used as an emblem for the northern region of the world.¹²³

More than that, as Lord of the Centre, Shang-ti was also revered as Huang-ti,¹²⁴ who is perhaps better known as the Yellow Lord¹²⁵ or Yellow Emperor.¹²⁶ The Yellow Emperor has long been acknowledged to be the representative of Saturn.¹²⁷

When it comes to ancient Chinese lore, however, we need not merely rely on the mytho-historical record. Their astronomy echoed the same message. Thus, for instance, the Chinese referred to the Pole Star as T'ien-Tchou which, appropriately enough, means "Pivot of the Sky." Stars which are close to the Pole Star were also referred to as "pivots."¹²⁸ The same name was additionally applied to two stars in the constellation Draco¹²⁹ and, since Draco had been the polar constellation around 2300 B.C., some authorities have concluded that this proves that Chinese observational astronomy dates to at least that remote time.

Be that as it may, the term "pivot" for these Draconian stars fits in with their former polar, or near-polar, location. What has baffled commentators on ancient Chinese astronomy, however, is the fact that the planet Saturn is given the name Tchou-niou-tchi-chin, which translates as "Genie [or spirit] of the Pivot,"¹³⁰ since this is tantamount to calling Saturn "the Soul of the Pole Star."

That, to the Chinese, the planet Saturn once occupied the north polar center is actually well known. As Jan Sammer indicated:

"According to the Han historian Ssuma Ts'ien, the planet Saturn 'corresponds to the center ... Saturn was placed at the pole, and the entire stellar sphere was said to

¹²⁰ W. F. Warren, *op. cit.*, pp. 215-216.

¹²¹ *Ibid.*, p. 216.

¹²² H. Maspero, "The Mythology of Modern China," *Asiatic Mythology* (N. Y., 1972), p. 339.

¹²³ *Ibid.*, p. 340.

¹²⁴ *Ibid.*, p. 339.

¹²⁵ *Ibid.*

¹²⁶ *Ibid.*, p. 332.

¹²⁷ G. de Santillana & H. von Dechend, *op. cit.*, p. 129.

¹²⁸ G. Schlegel, *Uranographie Chinoise* (Leyden, 1875), p. 525.

¹²⁹ *Ibid.*, p. 507.

¹³⁰ *Ibid.*, p. 630.



Shang-ti/Huang-ti—the Yellow Emperor—standing on his emblems, the tortoise and serpent, symbolizing the northern region of the world.
(From a Sung Dynasty painting.)

revolve around it."¹³¹

Like the priests of other nations, we learn that, when officiating before the Altar of Heaven, the Chinese Emperor always faced north.

THE EUROPEAN EVIDENCE

It was no different in ancient Greece. In neo-Platonist philosophy, for instance, Kronos/Saturn was associated with the pole.¹³⁰ Orphic thought also identified Chronos who, as we shall see, was the same as Kronos, as the power behind the turning of the heavens around the polar axis.¹³¹ It is therefore no surprise that, when praying, the ancient Greeks, too, faced to the north.¹³²

In time, the sacredness of the north was bound to touch *terrestrial* realms which, in European thought, remained philologically bound to Saturn through Kronos. The Greeks themselves referred to the North Sea as Kronios Okeanos, or the Saturnian Sea.¹³³ The adjective "Cronian," derived from "Kronos," has even survived in the English language as descriptive of the Arctic Ocean.¹³⁴

As Warren discovered, the same idea persisted in Etruria, before Rome:

"Varro and other Latin writers confirm this general representation, so that all modern expounders of the old Etruscan religion unite in locating the abode of the gods of Etruria in the Centre of Heaven, the northern circumpolar sky. Niebuhr and other authorities of the highest rank assure us that the Romans shared the same faith."¹³⁵

Thus, Ovid, in his *Fasti*, offers a description of Creation, at the conclusion of which Janus is made to state: "The guardianship of this vast universe is in my hands alone, and none but me may rule the wheeling pole."¹³⁶ As Roger Ashton indicated:

"The centre of the wheeling pole is motionless to the terrestrial observer. Janus, ruler of the motionless celestial pole, must thus be located at the Celestial Pole."¹³⁷

When Saturnus was flung down from his celestial seat, he was said to have continued ruling from "the opposite end of the world axis,"¹³⁸ which presupposes a former position corresponding to the northern polar station. But even here, we do not really require such a circuitous route to the Latin Saturn's former polar placement since Saturnus himself was remembered as the god of "the steadfast star,"¹³⁹ which star is understood as the Pole Star.

¹³¹ J. Sammer, "The Cosmology of Tawantinsuyu," *KRONOS* IX:2 (Winter 1984), p. 28, who references L. de Saussure, "Le système cosmologique sino-iranien," *Journal Asiatique* 203, pp. 235-297, and *idem*, "La série septenaire, cosmologique et planétaire," in *ibid.*, 204 (1924), pp. 333-370.

¹³⁰ A. B. Cook, *Zeus: A Study in Ancient Religion*, Vol. II (N. Y., 1965), p. 557.

¹³¹ U. Holmberg, *Der Baum des Lebens* (Helsinki, 1922), p. 109, as cited by D. Talbott, "On Testing the Polar Configuration," *AEON* I:2 (February 1988), p. 101.

¹³² W. F. Warren, *op. cit.*, p. 213.

¹³³ Webster's *Twentieth-Century Dictionary of the English Language* (N. Y., 1939), p. 401.

¹³⁴ *Ibid.*

¹³⁵ W. F. Warren, *op. cit.*, p. 214.

¹³⁶ Ovid, *Fasti* I:119-120.

¹³⁷ R. Ashton, "The Genie of the Pivot," *KRONOS* X:1 (Fall 1984), p. 21.

¹³⁸ Manilius, *Astronomica*, as cited in R. Klibansky, *et al*, *Saturn and Melancholy* (London, 1964), p. 141.

¹³⁹ See here the Latin poem "Aetna," *Minor Latin Poets* (Harvard, 1968), p. 381.

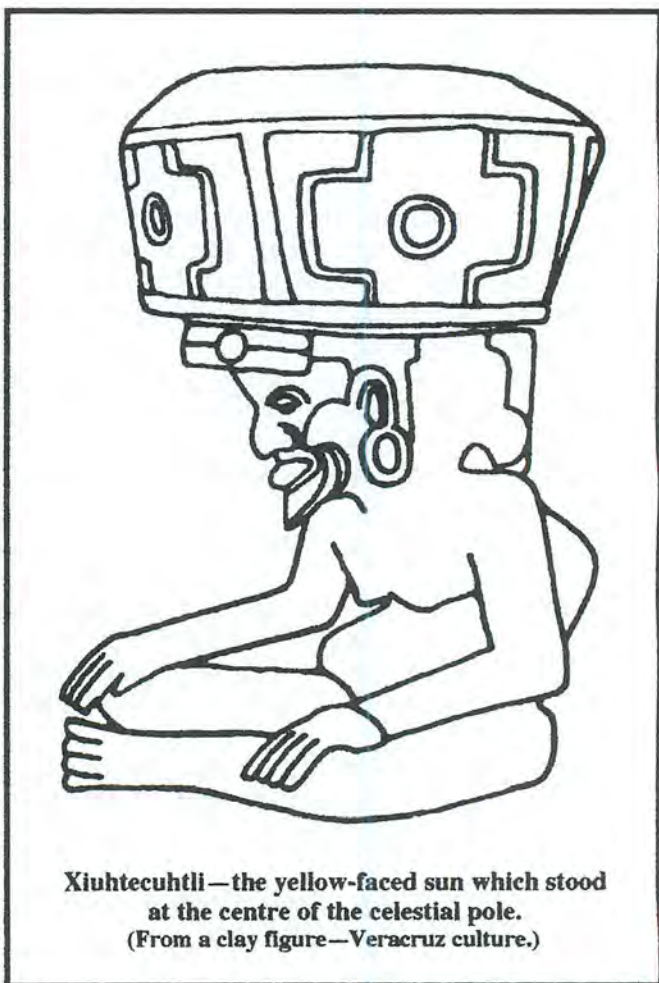
THE SUN OF THE CENTRE AND OTHER ECHOES

The Aztec god Xiuhtecuhtli was also known as Huehueteotl, that is "the old god,"¹⁶⁰ and/or "the old god of the centre,"¹⁶¹ as well as Ixcozauhqui, that is "he of the yellow face."¹⁶² He was revered as "the sun of the centre"¹⁶³ and "the central fire,"¹⁶⁴ thus bringing to mind the central fire of Philolaos. He was described as the pivot of the turning heavens and identified with the celestial pole.¹⁶⁵ Although Xiuhtecuhtli is nowhere in Mesoamerican mythology specifically identified as the planet Saturn, we can see that he was a very old god who personified a yellow-faced sun which stood at the centre of the celestial pole. The description is apt and, to be sure, Brundage was astute enough to recognize Xiuhtecuhtli as "the Aztec Cronus [the same as Kronos/Saturn], the first king and Lord of Time."¹⁶⁶

It should perhaps be noted here that, as the god of fire, and very much like the Mesopotamian Ninurta—if not for similar reasons—Xiuhtecuhtli also bore some non-Saturnian traits which we shall endeavor to resolve in a future work. In the meantime, there is yet one more motif which ties the deity in question inextricably to Saturn that we shall have reason to explore in a following page of this work.

Meanwhile, in a previous chapter we met the Yuki creator Taikó-mol, whose name translates as "Solitude Walker," and who we had reason to identify as the solitary Saturnian sun. It is, therefore, worth noting that Taikó-mol was also said to have resided in the north.¹⁶⁷

Thus, when the Damaras of Africa claim that their "highest deity," Omakuru, "dwells in the far North,"¹⁶⁸ we can be certain that the reference is to their own version of the Saturnian deity.



**Xiuhtecuhtli—the yellow-faced sun which stood
at the centre of the celestial pole.
(From a clay figure—Veracruz culture.)**

¹⁶⁰ M. Simoni, "Central America: Gods of Sacrifice," *Larousse World Mythology* (London, 1972), p. 468.

¹⁶¹ M. Fauconnet, "Mythology of the Two Americas," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 435.

¹⁶² I. Nicholson, *Mexican and Central American Mythology* (London, 1967), pp. 106-107.

¹⁶³ M. Simoni, *op. cit.*, p. 463.

¹⁶⁴ C. A. Burland, *The Gods of Mexico* (N. Y., 1967), p. 77.

¹⁶⁵ *Ibid.*, pp. 77, 80.

¹⁶⁶ B. C. Brundage, *The Fifth Sun* (Austin, 1983), pp. 22 ff.

¹⁶⁷ J. Bierhorst (Editor), *The Red Swan: Myths and Tales of the American Indians* (N. Y., 1976), p. 40.

¹⁶⁸ E. B. Tylor, *Primitive Culture*, Vol. II, p. 259.

SINTERKLAAS

The belief in the northern placement of the Saturnian sun perpetuated itself down through the ages in various mystic societies and other traditions in which Saturn continued to be remembered as "the old man who lives at the north pole."¹⁶⁹ If this has a familiar ring to it, the reader is not mistaken. In fact, as Manly Hall observed:

"Saturn, the old man who lives at the north pole, and brings with him to the children of men a sprig of evergreen (the Christmas tree), is familiar to the little folks under the name Santa Claus."¹⁷⁰

To be sure, Santa Claus can be said to have had an entirely different origin, one that stemmed from the life of Nicholas of Myra. While the history of Nicholas is somewhat obscure, his cult became a very popular one in Christian circles. What is known of him is that he was the bishop of Myra, in Lycia, a region in present-day Turkey, during the time of the Roman emperor Diocletian (A.D. 245-313). Persecuted and tortured for his Christian faith, Nicholas was then imprisoned until released during the tolerant reign of Constantine. Sanctified by the Christian Church, he was honored by Latins as well as Greeks by an annual feast held on December 6th.

Nicholas' connection with the myth of Santa Claus arose out of the legend which claims that he was once responsible for clandestinely bestowing dowries to three daughters of a poor citizen who, not having been able to procure decent marriages for them, was about to give them up to a house of prostitution. This event inaugurated the tradition of giving presents in secret on the eve of his feast day, that is on December 5th.

The name Santa Claus itself is merely the English corruption of the Dutch form of Saint Nicholas—that is Sinterklaas—which transpired when the tradition was introduced to America by early Dutch colonists.

There is, of course, no direct connection between Saint Nicholas and the north pole in which Santa Claus is said to reside. So how did the belief originate?

The date of Jesus' birth has never been ascertained (and it never will be). The Christian feast commemorating the event had originally shifted to and fro all over the calendar. Somewhere around 354 A.D., Latin Christians decided on December 25th since this had been the date on which the feast of Mithra, whose religion had become the main competitor of the Christian one, and which had been amalgamated with that of Sol Invictus, was held. This raised dissent among the Christian community of other countries, especially among the Syrians and Armenians, who continued to celebrate the birth of Jesus on whatever day their own tradition had dictated. In A.D. 440, however, the Fathers of the Christian Church decided to revert to December 25th as the official date since this was also the day of the winter solstice which had for long been a day of celebration.¹⁷¹ This was also the time during which the feast of Saturn, known as the Saturnalia, was celebrated. Originating as a New Year festival, the Saturnalia was held on December 17th, but was gradually extended to seven days up to December 23rd.¹⁷² The Greek, and original, version of the Roman Saturnalia, however, was the Greek Kronia, likewise dedicated to Kronos/Saturn, and this used to be held on December

¹⁶⁹ M. P. Hall, *An Encyclopedic Outline of Masonic, Hermetic, Qabalistic and Rosicrucian Symbolic Philosophy* (1928), LXXIX, as cited by D. Talbott, "On Testing the Polar Configuration," *AEON* I:2 (February 1988), p. 101.

¹⁷⁰ *Ibid.*, as cited by D. N. Talbott, *The Saturn Myth* (N. Y., 1980), p. 42.

¹⁷¹ Because of changes made at various times in Christian calendars, the actual time of the solstice and the traditional date of Christmas now vary by a few days.

¹⁷² See, here, L. M. Greenberg, "The Lord of Light," *AEON* III:4 (December 1993), p. 14.



Mithra—slaying the Saturnian bull—whose festival in Rome was held on December 25th.

25th.¹⁷³ Presents had also been freely exchanged during the festivities of the Saturnalia, which custom then coincided with that held in honor of Saint Nicholas.

We can then see how the two traditions were merged into one—the giving of presents by Saint Nicholas on the eve of December 6th and the giving of presents by, or in honor of, Saturn anywhere from December 17th to December 25th. In the minds of the common people, Saint Nicholas was thus merged with Saturn, “the old man who lives at the north pole,” and the myth of Santa Claus was *inadvertently* born.

¹⁷³ S. Langdon, *Semitic Mythology* (Boston, 1931), p. 18.

FIFTH INTERLUDE

As we have seen, the mytho-historical record consistently bombards one with allusions from every mythological quarter that persistently associate the ancient Saturnian sun god with the north and, more specifically, the north celestial sphere. And it is the collective strength of such traditions, ranging all the way from Sumero/Babylonian times to the present, that impels one to believe that, as far as our ancient forefathers were concerned, the primeval sun god had once inhabited that place in Earth's northern sky that is presently occupied by the Pole Star. Although all this might be new to the public-at-large, I am not revealing any esoteric secrets. Mythologists have known it all for quite some time. Gerald Massey,¹⁷⁴ William Warren,¹⁷⁵ Zelia Nuttall,¹⁷⁶ Uno Holmberg,¹⁷⁷ René Guenon,¹⁷⁸ and others we have already had occasion to mention as well as those mentioned below—they all wrote extensive works bearing on the subject. As David Talbott noted:

“...the tradition of a former *polar* god or *polar* sun has been chronicled by a host of scholars; together they have succeeded in demonstrating a universal tradition. In the late nineteenth century John J. O'Neill¹⁷⁹ even recognized the god as Saturn and had to contrive a distinction between the god and the planet to account for the identity. Later, the specific connection of the planet [Saturn] with the Pole was noted by Léopold de Saussure.¹⁸⁰ But not one of these innovative researchers ever wondered if their polar suns or polar gods *might have actually been there!*”¹⁸¹

Giorgio de Santillana and Hertha von Dechend are prime among those who have researched the subject, but have objected to a literal interpretation of what these ancient messages portray. Since their own research took them far and wide across the entire world in digging through the mytho-historical record, they had no option but to accept that, as far as the ancients were concerned, Saturn had once resided in the place now occupied by the Pole Star. “This is puzzling at first,” they state.¹⁸² “What has Saturn, the far-out planet, to do with the pole?” they ask.¹⁸³ They even admit that “the reader is not the first to be perplexed by an imagery which allows for the presence of planets at the pole...”¹⁸⁴ And then comes the objection: “It is not in the line of modern astronomy to establish any link connecting the planets with Polaris, or with any star, indeed, out of reach of the members of the zodiacal system.”¹⁸⁵ So how *do* they explain the ancient belief in Saturn's former polar placement? Their answer is that “such figures of speech were an essential part of the technical idiom of archaic astrology...”¹⁸⁶ Nowhere, however, do they tell us what it was that gave rise to these “figures of speech.” Nowhere do they tell us why “such figures of speech” were thought to be

¹⁷⁴ G. Massey, *The Natural Genesis*, Vols. I & II (London, 1883) and *Ancient Egypt*, Vols. I & II (N. Y., 1970).

¹⁷⁵ W. F. Warren, *op. cit.*

¹⁷⁶ Z. Nuttall, *Fundamental Principles of Old and New World Civilizations in Archaeological and Ethnological Papers of the Peabody Museum*, Vol. II (Harvard, 1901).

¹⁷⁷ U. Holmberg, *Der Baum des Lebens* (Helsinki, 1922).

¹⁷⁸ R. Guenon, *Le Symbolisme de la Croix* (Paris, 1931) and *Le Roi du Monde* (Paris, 1958).

¹⁷⁹ J. O'Neill, *The Night of the Gods* (London, 1893).

¹⁸⁰ L. de Saussure, *Les Origines de l'Astronomie Chinoise* (Paris, 1930).

¹⁸¹ D. Talbott, “Guidelines to the Saturn Myth,” *KRONOS* X:3 (Summer 1985), p. 47 (emphasis as given).

¹⁸² G. de Santillana & H. von Dechend, *op. cit.*, p. 136.

¹⁸³ *Ibid.*

¹⁸⁴ *Ibid.*, p. 140.

¹⁸⁵ *Ibid.*, p. 136.

¹⁸⁶ *Ibid.*

"essential." Nowhere do they tell us why "such figures of speech" should incorporate what *to them* is the astronomical falsity of a north polar placement for Saturn. And then, would such "figures of speech" have been incorporated throughout the entire world? Would all the ancient races have chosen the same "figures of speech"? Would they all have decided to place Saturn in a locality it never occupied? And would they all have chosen the north celestial pole as that locality? What purpose would it have served?

Despite the fact that, in *his* Saturnian scenario, Lynn Rose opted for an Earth phase-locked with Saturn to account for the latter's apparent immobility, even *he* had to admit that, *as far as the ancients were concerned*, Saturn's *stated* celestial station was at the north celestial pole. So how, then, did *he* get around the mytho-historical record's obvious message? Taking a different, and more plausible, tack than de Santillana and von Dechend, he offered the following:

"The traditions about an immovable Saturn atop some special pole made little sense after the Age of Kronos had come to an end. Those traditions were later revised and were attributed to the only 'immovable' point...that could be found in the newer sky. To people in the northern hemisphere...this was the north celestial pole..."¹⁸⁷

And:

"As long as Saturn was atop its pole, the Age of Kronos endured. The immobility of that body was a sign of the stability of the cosmic order. Later...the stability of the north star was seen as an indication that the world or the world age was not yet coming to an end. The Age of Kronos had ended when the only immobile body in the sky had left its position atop the axis of the world; that was the main reason that the later ancients looked to the north star: *it* was now the body that lay atop the axis of the world, and, as long as it remained there, the world was stable. Thus there was a transfer from Saturn to the north star, with much attendant garbling. Traditions that emphasize the north, and especially those traditions that associate *Saturn* with the north, need to be interpreted very carefully. After Saturn left us, or we left Saturn, there was only one fixed point in the sky: the celestial pole of rotation...Much that has been said about Saturn would, in the absence of Saturn, have been transferred to the only thing in the new sky that displayed the sort of stability that Saturn had once displayed."¹⁸⁸

Thus, Rose believes that Saturn's polar placement was the result of later revisions by those who could not otherwise make sense of the original accounts pertaining to Saturn's immobility. But, as I had stated once before,¹⁸⁹ this rationalization is not supported by the mytho-historical record. Rose does not even hazard a guess as to *when* this revision might have taken place or by *whom*. All he leaves us with is the statement that it happened "after the Age of Kronos had come to an end."

Now, while possible, is it *probable* that "these traditions" would have later been "revised" just about all over the world? And would they all have been revised in the same manner? Besides, had such revisions occurred, the revisionists would have been bound to overlook some data that would contradict the modified scheme. Yet nowhere in the mytho-historical record can one find such overlooked clues. Could the ancients have been *that*

¹⁸⁷ L. E. Rose, *op. cit.*, p. 30.

¹⁸⁸ *Ibid.*, pp. 41-42 (emphasis as given).

¹⁸⁹ D. Cardona, "The Reconstruction of Cosmic History," *AEON* II:2 (February 1990), pp. 119 ff.



Lynn E. Rose.
(Photograph—1996—by the author.)

diligent in expurgating their received traditions? Is it believable that such expurgation would have taken place all over the world *with such completeness*?

Rose correctly informs us that, during the Saturnian age, the planet's immobility was tantamount to cosmic stability. When Saturn's immobile placement was catastrophically displaced, the stability of the cosmic order was impaired. Following this event, the only immobile object in the sky was the North or Pole Star. The immobility of this star became a sign of the stability of the new celestial order. It was because of this, according to Rose, that Saturn's former phase-locked immobility was transferred to the North Star's polar station. Yet, as we have seen through the parable of Vishnu and Dhruva, the record dictates *exactly the opposite*—that the polar station had been Saturn's *before* it became the Pole Star's.

After all, what is the point in attempting to reconstruct a cosmic history based on the mytho-historical record if one ends up tampering with that record in order to make the data fit a different model than the one dictated by the record? As Frederic Jueneman once admonished, "the tapestry of myth is intricately woven, and each thread must be followed to wherever it leads, *however improbable the initial appearance*."¹⁹⁰ Despite the fact that Jueneman himself ended up by ignoring his own dictum,¹⁹¹ the point should be well taken. In Rose's case, his Saturnian model was supposedly constructed on a system said to have been laid out by Philolaos. But, as I had indicated in an earlier work,¹⁹² Rose's model bears but little resemblance to that system. When he, therefore, calls his scheme "Variations on a Theme of Philolaos," the emphasis has to be on "Variations." Rose himself indicated his awareness of this when he wrote:

"We have supposedly been composing variations on a theme of Philolaos, but if there is truth in these variations, it will emerge that Philolaos or someone else was composing variations on another theme, and that what we know as the system of Philolaos is *a garbled and misapplied* version of or variations on what was once fact."¹⁹³

All of which explains the changes, assumptions, deductions, arguments, stipulations, suggestions, ifs, and buts, that Rose was forced to lead his readers through in his effort to make sense of this "garbled" system and force-fit it into one of his own making. As I have pointed out once before,¹⁹⁴ Rose will be the first to argue that this juggling was necessary to rid the system of its unrealistic aspects and supplanting them with something more defensible. Through similar procedures, however, the Philolaos system could be turned into any scheme of one's own liking.

In our own scheme, as presented in this work, we make no changes to the mytho-historical record. We do not assume anything that is not there spelled out. Our deductions are based on what we find recorded. In other words, heeding Jueneman's admonition, we have taken, as we will continue to take, the mytho-historical record at face value, no matter how improbable its *initial* appearance may be. There really would be no point in doing otherwise.

It may now be objected that had Saturn really occupied a position in Earth's north celestial sphere, those people inhabiting Earth's southern hemisphere would not have been able to see it. It therefore becomes obvious that any beliefs concerning these early cosmic events that

¹⁹⁰ F. B. Jueneman, "The Polar Column: A Physical Model of Myth," *AEON* 1:4 (July 1988), p. 37 (emphasis added).

¹⁹¹ See, here, D. Cardona, *op. cit.*, pp. 111 ff.

¹⁹² *Ibid.*, pp. 117-118.

¹⁹³ L. E. Rose, *op. cit.*, p. 29 (emphasis added).

¹⁹⁴ D. Cardona, *op. cit.*, p. 118.

emerge from the southern sector of our globe will have had to have migrated with the people who brought them there from areas farther north.

Needless to say, the only way in which Saturn could have appeared immobile in Earth's north celestial sphere is if Earth had been stationed directly "beneath" Saturn's south pole, *a situation which would also mean that both planets had been sharing the same axis of rotation.* We can therefore add Saturn's immobility and its polar placement to our growing list of hypotheses which would now read as follows:

Hypothesis #1: That, from what can be deduced from ancient as well as primitive astronomical lore, Earth had once been a satellite of the planet Saturn which, because of its proximity, loomed large in the sky as a distinct disc larger than the apparent size of the full Moon.

Hypothesis #2: That, still according to ancient astronomical lore, during this indeterminate period, Saturn was the only visible celestial body in Earth's primordial sky.

Hypothesis #3: That, still according to the ancients, during this same period, Saturn shone as a sun.

Hypothesis #4: That this primordial Saturnian sun shone during that time we today call the night.

Hypothesis #5: That, as seen from Earth, the Saturnian sun did not rise and/or set, but remained visibly immobile at all times.

Hypothesis #6: That Saturn's immobility was due to the fact that Earth was stationed directly "below" Saturn's south pole and that, from Earth, Saturn therefore appeared to be permanently fixed in the north celestial sphere, the very same place now occupied by the Pole Star. What this also means is that Saturn and Earth were linearly aligned with the both of them sharing the same axis of rotation.

Seeing as there are no planets, or other celestial bodies, similarly aligned in the present order of our Solar System, the next logical question to ask is whether such an alignment of planets is physically possible.

Chapter 11

Testing the Model

THE DEMANDS OF A THEORY

I make no apologies for the fact that the theory presented in this work was constructed on the basis of the mytho-historical record rather than through astrophysical considerations. I will only say in passing that, other than its mythological content, as we have seen, the mytho-historical record also incorporates the world-wide astronomical beliefs of our ancient forefathers, and that these beliefs coincide with their mytho-religious convictions. Ancient astronomical beliefs are therefore here being considered together with mythology as a unified whole regardless of the fact that what is thus coming to light tends to describe a Solar System that was entirely alien to the one we now inhabit.

Later in this work we will attempt a validation of the physical feasibility of the model we have so far delineated, even though not all of the players in this unfolding cosmic scheme are yet in place. What I *will* add here is a reminder to the effect that many were the things once thought impossible which were eventually found to be possible, and that many of these ended up becoming dogmas of science. Easily coming to mind in this respect are the occurrence of meteoric falls, the non-illusory nature of comets, and continental drift. But let us put all that aside for the time being. Allow me instead to concentrate on the demands which our model itself raises, and whether or not these demands can be met.

What do I mean by "demands"?

Theories do not stand, if they are to stand at all, in isolation. They raise certain demands. For instance, the theory concerning the nuclear fueling of the Sun demands that the Sun shed a vast amount of subatomic particles known as neutrinos. But, despite large sums of money spent in constructing complex instruments to register them,¹ not enough neutrinos, if any, have so far been detected. Raymond Davis, who has been "trapping" neutrinos for decades, "has consistently detected about one-third *fewer* neutrinos than predicted by theories of the solar interior"²—which means only *two-thirds* the amount predicted. Most other experimenters, however, can only vouch for about *one-third* the predicted amount.³ As John Bahcall

¹ The Sudbury Neutrino Observatory alone was estimated to cost \$70-million, with the heavy water needed costing as much as \$300-million. See D. Hawaleshka, "Probing the Deeps for Cosmic Clues," *Macleans's* (September 2, 1996), pp. 48, 49.

² C. Sutton, "Where Have All the Solar Neutrinos Gone?" *New Scientist* (August 18, 1990), p. 24 (emphasis added).

³ Anonymous, "Neutrinos Have Mass," *Astronomy* (September 1988), p. 26; S. L. Glashow, "Closing the Circle," *Discover* (October 1989), p. 68.

stated, no matter what the true figure is, "some flaw seems to exist either in the current models of the sun or in our present understanding of the laws of physics."⁴

Also:

"The only *direct* signal of the stellar nuclear reactions predicted by the standard model is the neutrino flux from the sun. The problem is, the prediction seems to be wrong."⁵

Nor is the lack of neutrinos an illusory state of affairs brought about by imperfect detectors. As Bahcall stated, "a *real* deficit of solar neutrinos exists."⁶ Danylo Hawaleshka went one step further: "One possible explanation [for this lack of neutrinos] is that prevailing theories of how the sun works are wrong—which, if true, would turn astrophysics upside down."⁷

It is not that astrophysicists have not attempted to explain the mystery of the missing neutrinos, but only by pre-supposing solar elements which are themselves undetected—such as assuming that the interior of the Sun is cooler than otherwise believed;⁸ that neutrinos interact with undetected particles nick-named "wimps";⁹ or that "the sun is undergoing a temporary lull in activity."¹⁰ But, as Bahcall noted: "None of these models has proved to be consistent with all the observed characteristics of the sun."¹¹ And: "None of the modified models is fully consistent with the well-established physics, and each involves ad hoc assumptions designed primarily to accommodate the observed neutrino fluxes."¹²

Worse, however, was to come when, at the Neutrino '90 conference held at CERN near Geneva, came the news that what was then the latest experiment (known as SAGE) carried out by a joint team from the then Soviet Union and the United States *detected no solar neutrinos at all!*¹³

A second example concerns the Big Bang theory which demands a vaster amount of matter in the universe than has so far been detected. This was made clear in 1932 when Jan Oort attempted to calculate the mass required to produce the observed motion of stars outside the visible disc of the Galaxy. His calculations showed that the *actual* mass of the Galaxy was 50% less than required by theory.¹⁴ This was confirmed by Fritz Zwicky who, on measuring the velocities of galaxies within the Coma cluster, came to the realization that "there

⁴ J. N. Bahcall, "The Solar Neutrino Problem," *Scientific American* (May 1990), p. 54.

⁵ *Ibid.*, p. 56 (emphasis added).

⁶ *Ibid.*, p. 58 (emphasis added).

⁷ D. Hawaleshka, *op. cit.*, p. 48.

⁸ See here, for example, *New Scientist* (June 23, 1983), p. 856.

⁹ S. Boxer, "A Wimpy Solution," *Discover* (November 1985), pp. 16-17; see also, S. L. Glashow, *loc. cit.*; M. Bartusiak, "Wanted: Dark Matter," *Discover* (December 1988), pp. 64, 66.

¹⁰ J. N. Bahcall, *loc. cit.*

¹¹ *Ibid.*, p. 57.

¹² *Ibid.*, p. 60.

¹³ C. Sutton, *loc. cit.* (NOTE: Since the above was written, astrophysicists have fallen on the additional *ad hoc* hypothesis that solar neutrinos are undetectable because they change "flavors" on their way from the Sun to Earth.)

¹⁴ J. Davis, *Journey to the Center of Our Galaxy* (Chicago, 1985), p. 197.

was not enough visible, or luminous, matter around to gravitationally bind the speeding galaxies to one another."¹⁵ Zwicky was therefore forced to assume that some kind of dark matter must be present in the Coma cluster "to provide an additional gravitational glue."¹⁶ By the 1970s, the problem had spread from our Galaxy, that is the Milky Way, to beyond the Coma cluster when it was realized that, according to theory, all nearby galaxies had to contain more matter than previously assumed.¹⁷ This led to a dilemma when astrophysicists were forced to either modify "one of astronomy's theoretical cornerstones" or opt for the existence of something that couldn't be seen—Zwicky's dark matter. As Marcia Bartusiak reported, this was no contest since astronomers were not about to accept the radical suggestion that Newton's law of gravitation tended to break down with distance.¹⁸ As Lawrence Krauss admitted:

"It may be slightly radical to suggest that galaxies are dominated by dark matter. But to suggest an alteration in one of the...known forces of nature to explain these observations seems to me excessive."¹⁹

What this then demanded was that "five to ten times more dark matter than visible stuff exists in galaxies."²⁰ This, of course, affected the Big Bang theory which assumes that galaxies form by gravitational attraction. The theory thus required the same amount of matter that the gravitational model of the universe demanded.²¹ But where was this dark matter hiding? What did it consist of? As Halton Arp explained:

"Hypotheses include everything from subatomic particles like neutrinos to dark rocks surrounding galaxies...But in actuality, postulating undetected matter is equivalent to inventing observations that do not exist in order to explain contradictions to our currently assumed physical laws..."²²

It is not that dark matter is not being looked for. Just as in the case of the elusive neutrinos, sensitive detectors arrayed around the world are waiting to register this enigmatic stuff now said to be made up of subatomic particles and to constitute 90% of the universe.²³ As of this writing, not a single one of these detectors has succeeded in registering a single particle of dark matter.

Douglas Lin tried a different method. With his colleagues, Lin set about comparing photographs of the Large Magellanic Cloud, a neighboring galaxy, taken in 1974 with others taken in 1989, and measuring "the almost imperceptible distance" that "some 250 stars" had

¹⁵ M. Bartusiak, *Thursday's Universe* (N. Y., 1988), pp. 188-189.

¹⁶ *Ibid.*

¹⁷ *Ibid.*

¹⁸ *Ibid.*, p. 191.

¹⁹ L. M. Krauss, *The Fifth Essence* (N. Y., 1989), p. 89.

²⁰ *Ibid.*, p. 74.

²¹ See here especially, E. Lerner, *The Big Bang Never Happened* (N. Y., 1991), pp. 33-34.

²² H. Arp, *Quasars, Redshifts and Controversies* (Berkeley, California, 1987), pp. 103-104.

²³ See here, for instance, M. Bartusiak, "Wanted: Dark Matter," *Discover* (December 1988), pp. 62 ff.

moved in the intervening years.²⁴ The amount of displacement on the photographic plates, as described by Lin himself, was "like standing in San Francisco and measuring the speed of a person on top of the World Trade Center in New York who takes a single step sideways over the course of the year."²⁵ Even so, in 1994 Lin was confident enough to announce that this displacement allowed him and his colleagues to actually measure the velocities of the stars in question and thus calculate the amount of mass needed to exert "that pull," which came out to "five to ten times more mass than we see in all the visible stars."²⁶ But, in view of the fact that the existence of dark matter had already been accepted, was this experiment really required? And was this the same as *detecting* the actual missing mass?

Lin himself suggested that the missing mass "lies in a halo of dark matter extending 300,000 light-years or more from our galactic center."²⁷ A suggestion, however, is one thing; direct proof is something else. As an editorial comment in *New Scientist* summed it all up that same year, belief in dark matter is akin to that of 19th century scientists who believed in the just as nebulous existence of aether.²⁸

These two theories—the nuclear fueling of the Sun and the Big Bang—should not, therefore, be allowed to stand, but because science is still optimistic in that it will eventually detect both the missing neutrinos and the missing dark matter, they are *allowed* to stand. Personally, I shall not be using similar optimism as a crutch in an endeavor to validate the Saturnian model we have been slowly reconstructing. On the contrary, I aim to present a series of demands which this theory raises, both within itself and also through hard science, and how these can be met.

INTERNAL CONSISTENCY

The first demand of our theory is an obvious one. Seeing as our model has been constructed on the strength of the mytho-historical record, the theory demands that the mytho-historical record should be internally consistent. There would be no point in constructing a model based on a record if that same record contains items which contradict the model being constructed. If the model being constructed is to be considered valid, the record on which it is based must be able to test itself.

As we have seen, we commenced the construction of our model by zeroing in on the ancient belief that, once upon a time, to use an old cliché, the planet Saturn was the most prominent body in Earth's sky.

In order for this datum to be accepted, however, the record should contain additional data which tell us *how* the planet Saturn could have appeared as the most prominent body in the sky. This demand was met when we found it stated in the same record that Saturn had previously shone as a sun; that it was at that time the *only* visible body in the sky; and that it was

²⁴ B. A. Smith, "New Eyes on the Universe," *National Geographic* (December 1994), p. 38.

²⁵ *Ibid.*

²⁶ *Ibid.*

²⁷ *Ibid.*

²⁸ Editorial, *New Scientist* (June 4, 1994), p. 3.

fixed permanently in one spot without rising and setting. The same set of data also led us to believe that, during this same unspecified time, Earth had been a satellite of Saturn.

In presenting our evidence that Saturn did in fact shine as a sun, we also had to appropriate the roles of so-called sun-gods and present them in a new Saturnian guise. But here, again, the theory demands that the record itself should so identify these deities.

In the case of Shamash, which (or who) has for many years been presented by mythologists as the representation of the Sun, we found that this celestial entity was *not* by the Assyro-Babylonians themselves identified as such, but, rather, as the planet Saturn. In the case of Helios, we have seen that the ancient Greeks themselves had originally used this name to designate the planet Saturn, and that only later was the name imposed upon the Sun. In the case of the Egyptian Ra, the so-called sun-god *par excellence*, we presented an ostraca which directly identified this luminary as Kronos, which was the name the Greeks bestowed on the planet Saturn. But because this datum is both late and solitary, the theory then demands that the characteristics of Ra should not coincide with those of the Sun. And, as we in fact saw in the very first Chapter of this work, the characteristics of Ra as described in ancient texts fit anything but those of the Sun. So, also, with the Indic Surya, as was pointed out in Chapter 3, and a host of other so-called sun-gods.

Our assumption that Earth had once been a satellite of Saturn raises its own demands in that the mytho-historical record should at least contain some data to indicate that Saturn had been close enough to be seen as a distinct and large sphere suspended in the sky. And, to be sure, besides the fact that most of the so-called sun-gods are actually depicted in the form of a disc, we also found it specifically stated that Janus/Saturn, to say nothing of Ataksak, was actually described as a sphere. Additional evidence was also presented from Africa where, to this day, natives of that continent are not only able to point to the present pin-point of light that is the planet Saturn, but insist that the planet is surrounded both by a ring and by a bevy of nine moons. Barring intervention from extra-terrestrials—which we have already had reason to discount—the only way in which these natives could have come upon this knowledge is through the assertion of their ancient ancestors who would have viewed the planet at close quarters.

In presenting our evidence that Saturn was fixed permanently in one spot, we relied solely on the record itself. But here a disconcerting item reared its ugly head in that various ancient texts describe the Egyptian Ra as rising and setting. The record therefore demands that this apparent contradiction be resolved. In studying the *original* texts in which these statements are contained, we came to the realization that the risings and settings of Ra are due to mistranslation. The *mythological* texts in question say nothing about a rising or setting Ra. What they *do* describe is the “coming forth” and “going in” of Ra. That mythologists, believing Ra to have been the Sun, understood these terms as “rising” and “setting” is, of course, understandable. But, in view of Ra’s lack of solar characteristics, and in view of Ra’s identification as an immobile luminary, the terms in question are here understood to refer to the shining and dimming of the Saturnian sun, a cycle which will be explored in a future volume.

In its turn, this immobility demands an explanation. From a physical point of view, two mechanisms are possible. The first, and simplest, explanation is of an Earth that was phase-

locked with Saturn so that, very much like the Moon in relation to Earth, our globe would have presented the same hemisphere toward Saturn in its orbit around it. The second, but more unbelievable, explanation is of an Earth suspended directly "beneath" Saturn in which the latter would have appeared immobile in Earth's north celestial pole. This then demands that the mytho-historical record should be able to let us ascertain which of these two possibilities, if any, best fits what the ancients themselves described to have witnessed in the sky. As unbelievable as the polar placement of Saturn appears to be, it was found to be *this* explanation which fits the information contained in the mytho-historical record. In fact, the texts state it unequivocally.

We can therefore see that, so far, the mytho-historical record meets the demands it itself raises; that each demand that is met raises more demands; and that these demands are also met. It is a snowballing effect that has to be followed, as it will be followed, to the end no matter how big our snowball grows.

THE LITHOSPHERIC BULGE

Our theory also raises geophysical demands. For instance, we all know how terrestrial tides are raised—at least to an extent. They are caused by the attraction of the Sun and Moon on Earth's oceanic waters. We know that when the Sun and Moon apply their combined attractive force while being at right angles to each other, the tides are somewhat low. The tides become much higher when the Sun and Moon apply their combined attractive forces when in direct line with each other.

Now consider: With the massive Saturn in proximity to Earth, the tides that would have been raised should have exceeded those at present. More than that, with Saturn having been positioned in Earth's north celestial sphere, terrestrial tides should have accumulated at Earth's north polar region. The hydrosphere, moreover, would not have been the only terrestrial element to respond to Saturn's attractive force. The atmosphere should also have piled up at Earth's northern areas. And so, also, should have Earth's crust. This, then, is what the Saturn thesis demands. Do we find it so?

Well, let us be fair now. What was, no longer is, so that we cannot now take a trip up north to see if the water of the world is actually piled up in a tide around the north pole. Earth's crust, however, is a different matter. Earth's hydrosphere and atmosphere would have easily rebounded to settle in a more uniform shell around the world once the linear link with Saturn was broken. Earth's crust, on the other hand, would have taken a much longer period to re-adjust to the new conditions. And since the scenario we have been positing is theorized to have played its drama just prior to the rise of civilization, we should expect this northern lithospheric bulge not yet to have *entirely* subsided. Do we find any evidence of it?

Of course we do—and it has been known since 1958. This might come as a surprise to some because we have been taught since childhood that Earth is an imperfect sphere which is slightly *flattened* at the poles and distended at the *equator*. But the orbits of the first artificial satellites, launched in 1957 and 1958, surprised everyone by showing that Earth's polar flat-

tening is less than had been previously believed.²⁹ More than that, the aberrations in the orbit of Vanguard I around Earth in 1958 led NASA to the disclosure that Earth is actually pear-shaped, with its bulge positioned at the north pole.³⁰ (Strangely enough, back in 1500, Christopher Columbus had actually suggested as much.³¹) Other satellites since Vanguard I have confirmed this discovery.

The real shape of Earth, as now deduced, is better described as a triaxial spheroid rather than an oblate one and, as Desmond King-Hele, who conducted a study of the phenomenon, had to admit: "*No one has yet satisfactorily explained why the 'stem of the pear' is at the north rather than the south ...*"³² To be sure, King-Hele offered the suggestion that "the alternate melting and solidifying of the south-polar ice down through the ages may well have had some influence."³³ How this melting and solidifying of ice could have resulted in a northern lithospheric bulge, however, has never to my knowledge been demonstrated. True, King-Hele was here appealing to glacial rebound, but it must be kept in mind that the melting and re-solidifying of glacial ice occurred *simultaneously* in both the north and south poles. Glacial rebound should therefore also have been simultaneous. So why would this isostatic rebound create a lithospheric bulge only in the north? Frederick Hall proved more astute when he pointed out that:

"[The phenomenon] poses a question which, though obvious, is virtually never asked. *What pulled Earth out of shape from above its north pole?*"³⁴

Now it is true that Earth's bulge has been measured at only 10 meters (33 feet),³⁵ although others have vouched for as much as 18 meters. This might not be considered much of a bulge but, as a *residue*, or remnant, of a former greater uplift of land, even meters are of significance. As Hall indicated:

"The small dimensions of this shift indicate the pull was short term (as in centuries to millennia) rather than eons. *Furthermore the effect is relaxing, and in geological terms the distorting influence must have been remarkably recent.*"³⁶

Leroy Ellenberger, an avowed antagonist of the Saturn thesis, found fault with this theoretical base. As he advised me, any "tidal bulge that would have been raised would not have had time to relax since the disruption [of the Saturnian system]."³⁷ "Fred Hall cites the 18

²⁹ D. King-Hele, "The Shape of the Earth." *Scientific American* (October 1967), pp. 67, 72.

³⁰ *Ibid.*, p. 74.

³¹ *Ibid.*

³² *Ibid.*, p. 75 (emphasis added).

³³ *Ibid.*

³⁴ F. F. Hall, "Solar System Studies," Part 2, *AEON* I:4 (July 1988), pp. 18-19 (emphasis as given); see also, E. Spedicato, "Numerical Analysis of Planetary Distances in a Polar Model," *AEON* V:4 (July 1999), pp. 27, 28; R. B. Driscoll, "Magnetic Models of the Polar Configuration," *AEON* IV:2 (August 1995), p. 25.

³⁵ D. King-Hele, *loc. cit.*

³⁶ F. F. Hall, *loc. cit.* (emphasis as given);

³⁷ C. L. Ellenberger to D. Cardona, private communiqué, September 26, 1988.

meter polar bulge in Earth's figure," he continued, "but any polar Saturn would have produced a bulge which today would be measured in kilometers!"³⁸

But, if I may ask, how does Ellenberger *know* this? How does he know how far Saturn was from Earth in order to deduce the height of Earth's tidal bulge under its influence? How does he know how long this tidal bulge would have existed? And how does he know when the Saturnian configuration disrupted? I, for one, had never as much as hinted at these parameters and, without knowing any of these quantities, nothing can be said concerning the height of the original bulge or to what extent it should have relaxed by now. (Besides, as Ellenberger himself knows, and as others have pointed out,³⁹ it was not just the positioning of Saturn above Earth's northern pole that was responsible for raising the world's lithospheric bulge. There *were* additional forces which came into play, but it would be premature at this point to go into all that.)

And then, is it just the northern bulge *per se* that we should be concerned with? What about the fact that Earth's crust is generally thicker in the northern hemisphere than it is in the southern? Sure enough, this has been explained as arising from the additional fact that "most dry land exists north of the equator,"⁴⁰ but it has never been asked why this *should* be the case.

Exponents of the continental drift theory look at the configuration of Earth's land masses and conclude that the continents must have once been joined together. I look at the same configuration and see something else. I do not, by this, deny continental drift and plate tectonics. But consider:

Two of the biggest continents on Earth, and India also, taper toward the south pole. None taper toward the north. The highest percentage of Earth's land masses, as noted above, occurs north of the equator; the highest percentage of the Earth's oceans, south of the equator. In the extreme north, the continents come together at the "top" of the world to form a circle which is filled with the Arctic Ocean. As if to counterbalance this, in the extreme south we see that it is the oceans which come together at the "bottom" of the world to form a circle which is filled with the Antarctic continent. Earth's axis passes from the centre of the Arctic Ocean to the centre of Antarctica. Is this merely fortuitous? Is it merely by chance that Earth's land masses are mainly congregated in the north? (As to whether or not the Arctic Ocean existed during the era of Saturn's proximity, I shall leave to a future work.)

There is another problem to consider. Encircling the Arctic Ocean is a blanket of detritus known as muck. This area is so vast it actually covers one seventh of Earth's land surface.⁴¹ This muck is composed of deep-frozen "goo with silt, sand, pebbles, and boulders, often with masses of preserved, semi-decayed, or fully decayed vegetable and animal matter."⁴² This frozen mess lies on low level plains. As one astute writer in *Pursuit* noted: "Unless it was

³⁸ *Ibid.*

³⁹ See here especially, E. Spedicato, *op. cit.*, p. 28.

⁴⁰ J. B. Delair, "Planet in Crisis: The Earth's Last 12,000 Years," *SIS Review* 1997: 2, p. 4.

⁴¹ Anonymous, "Much About Muck," *Pursuit*, Vol. 2 (October 1969), p. 68.

⁴² *Ibid.*

caused by some cosmic forces that we have not yet detected, it would appear to be a sub-aerial deposit derived from massive erosion of higher ground and with steeper slopes.”⁴³

“However, its depth in some places, and over enormous areas, has always caused even the most open-minded geologists to boggle. The Russians, who own the major land areas covered by this substance have conducted prolonged studies on it for [over] half a century, and have in some places drilled down to over 4,000 feet but still without reaching solid rock.”⁴⁴

Although we will have much more to say about the *formation* of this muck in a future work, the problem we wish to focus on here is this: From what heights did this material erode? As the writer in *Pursuit* pointed out:

“...the lands now blanketed with this material *must at one time have been much higher above sea level...*”⁴⁵

But:

“To suggest that the uplands from which this stuff came were once much higher and had a steeper run-off is begging the question and doesn’t help at all. Yet there is the bloody muck lying all over the lot and to enormous depths. It has to be accounted for.”⁴⁶

One additional fact to consider is that no such muck exists at Earth’s south pole.

THE NATURE OF TIDAL FORCES

One might now well ask: Since the Moon also has one side perpetually facing Earth, should it not also exhibit a tidal bulge on that hemisphere? As a matter of fact, it does. This was discovered by orbiting Apollo spacecraft using “a laser device to measure accurately the heights of features over much of the lunar surface.”⁴⁷ What came to light is that the Moon, rather than being a perfect sphere, is actually slightly egg-shaped, with its narrow end pointing toward Earth.⁴⁸ This lithospheric bulge rises 2 kilometers above the lunar surface. Unlike Earth’s northern distortion, this is a “living” bulge, not the remnant of one. Even so, as Harold Urey noted, this lunar ellipticity “is some seventeen times as great as would be calculated from *present* tidal forces.”⁴⁹ What Urey is saying here is that Earth’s pull on the Moon

⁴³ *Ibid.*

⁴⁴ *Ibid.*

⁴⁵ *Ibid.* (emphasis added).

⁴⁶ *Ibid.*

⁴⁷ B. M. French, “The Moon,” in J. Kelly Beatty, *et al* (Eds.), *The New Solar System* (Cambridge, 1982), p. 79.

⁴⁸ *Ibid.*

⁴⁹ H. C. Urey, “The Moon,” *Science in Space* (N. Y., 1961), p. 191 (emphasis added).

is not powerful enough to raise this lunar bulge. By the same token, however—and this might come as a surprise to some readers—neither is the Moon's gravitational pull powerful enough to raise oceanic tides.⁵⁰ And yet it does.

Another objection raised by Urey is that it "is difficult to believe that the interior of the Moon can support such stresses for geological periods of time."⁵¹ That may be so, but the bulge is there, so that no matter what forces came into play to raise it, the "interior of the Moon" does *presently* support it. There is no point in saying that this is impossible.

Moreover, as Keith Runcorn admitted, under present conditions, the lunar bulge "would have disappeared long ago."⁵² For that reason, some authorities have been claiming that the lunar bulge is not raised by tidal forces, but by some other unknown mechanism. However, while this is not the place to go into this particular subject, the height of the lunar bulge would conform rather well if it was formed relatively recently, even more recently than the terrestrial one, under conditions other than those presently postulated.

One other thing to keep in mind here is that, given what we know, or think we know, about tidal forces, Earth is *bound* to tidally affect the lunar surface, and that this effect is *bound* to manifest itself on the lunar hemisphere facing Earth. So that if the lunar bulge in question is not the result of Earth's tidal attraction, where, then, is the manifestation of that force?

Now, as it happens, Ellenberger has had reason to raise further objections to our hypothesis concerning Earth's lithospheric bulge. As he had it stated:

"...were the miniscule northern bulge manifested in the geoid truly of tidal origin as claimed, then the geoid would not be pear-shaped, but would instead be a prolate ellipsoid, with the bulges at north *and* south. This follows from the elementary fact that tidal bulges express themselves on both the near and far side of the subject body, as with the lunar tide which occurs twice a day..."⁵³

Roy Gallant succinctly explained the phenomenon in the following words:

"Gravitation, remember, weakens as distance becomes greater. So the Moon tugs with greater force on that side of Earth facing the Moon, with less force on matter at Earth's center, and with the least force on Earth's far side. A second tidal bulge thus forms on the far side where a hill of water is 'left behind'. Since this water is farthest away from the Moon, it is tugged with the least force."⁵⁴

The fact that lunar tides affect Earth's oceanic waters *twice* a day is due to Earth's rotation as it catches up with the secondary tidal bulge. But even this is nothing but an idealized

⁵⁰ J. Gilluly, A. C. Waters, & A. O. Woodford, *Principles of Geology* (1951), p. 398.

⁵¹ H. C. Urey, *loc. cit.*

⁵² S. K. Runcorn, "The Moon's Ancient Magnetism," *Scientific American* (December 1987), p. 63.

⁵³ C. L. Ellenberger, "The Lithic Bulge," electronic message dated January 22, 2000.

⁵⁴ R. A. Gallant, *Our Universe* (Washington, D. C., 1980), p. 116.

version of the real situation as assumed by astronomers and physicists.⁵⁵ It is not, for instance, *entirely* true that oceanic tides occur twice daily. There are many areas which are affected by only one tide per lunar day.⁵⁶

Even so, why did not Earth develop a secondary bulge at its south pole?

Actually, who can say it did not? To begin with, the hydrosphere is one thing, the lithosphere is something else. Water, being a liquid, responds much easier to tidal forces than does the solid lithosphere. And then, with the pull from the stationary Saturn being weakest at Earth's south pole, a secondary bulge at that location would have been much lower than the northern one. Who is to say that a southern bulge did not form under Saturn's constant pull and that this bulge, being much lower than its northern counterpart, has since completely settled down?

Of course, we can never know whether such a southern bulge ever formed. But then, is it adamant that such a southern bulge *should* have formed? There is no secondary bulge on the Moon counteracting the one facing Earth. But because this lunar bulge has been disqualified as a tidal one, we look for a better example. I therefore point to Phobos, one of the Moons of Mars, an irregular chunk of rock measuring a mere seventeen miles across its longest axis. It, too, exerts a gravitational pull on Mars and, yes, it, too, raises a slight bulge on that planet.⁵⁷ Because Phobos orbits the planet faster than Mars is able to rotate, this Martian bulge tends to lag behind—but there it is, *and there is no opposing secondary bulge to counteract it.*

But then how much do we really know about tidal forces? We know so little about them that we cannot even predict the tide for any point on an ocean.⁵⁸ Oh yes, we can forecast the tides for all principal ports and other shore lines, but “these are not computed from general theory...but from analysis of tidal records over a long period of years at the particular port concerned.”⁵⁹

There is also no point in appealing to Isaac Newton's laws because the Newtonian scheme fails to explain these vagaries.⁶⁰ As James Gilluly and his associates pointed out: “These *and many other facts* make it clear that the tides are not a simple direct response to the vertical component of the moon's gravitational pull, *which is really far too small for effective lifting of the water masses anyway.*”⁶¹ Granted that these words were written in 1951, in the interim nothing much has changed in that respect

So what, then, is the bottom line? From the little we know about tidal forces, the Saturnian model we have been investigating *still* demands that a lithospheric bulge would have been raised at Earth's north pole, and that this bulge would have subsided somewhat once Earth's linear alignment with Saturn was broken. The *remnant* of such a northern lithospheric bulge exists to this day. We can therefore safely claim that this demand is met.

⁵⁵ J. Gilluly, *et al.*, *op. cit.*, p. 396.

⁵⁶ *Ibid.*, p. 398.

⁵⁷ Anonymous, “Fear of Phobos,” *Discover* (July 1989), p. 13.

⁵⁸ J. Gilluly, *et al.*, *op. cit.*, p. 396.

⁵⁹ *Ibid.*

⁶⁰ *Ibid.*, p. 398.

⁶¹ *Ibid.* (emphasis added).



Phobos, one of the two moons of Mars, a mere seventeen miles across, is enough to raise a tidal bulge on the Martian surface.
(Photograph courtesy of NASA.)

THE ASTRONOMICAL DILEMMA

Needless to say, our theory also demands an astronomical solution to the problem inherent in Saturn's polar placement. As already noted, there are no bodies in the present Solar System which are linearly aligned. Worse than that, present Solar System theories, based on purely gravitational forces, do not seem to allow for celestial bodies so aligned. In the past, various authorities have attempted to scientifically account for, or discount, this polar alignment⁶² but, as of this writing, none of them have been able to encompass the totality of the model and/or the entire events dictated by the Saturnian scenario. This is not to be wondered at because the events in question have so far been scattered over an ever-growing array of piece-meal publications without much regard for their chronological order. Worse than that, not all of the events, with all their celestial interactions, and their consequential outcomes, have so far received treatment. Nor can the present work alleviate that particular problem

⁶² See here especially, R. Ashton, "The Unworkable Polar Saturn," *AEON* I:3 (May 1988), pp. 39 ff.; F. Hall, "Solar System Studies," Part 2, *AEON* I:4 (July 1988), pp. 25 ff.; R. Driscoll, "The Saturn Myth: A Tentative Physical Model," in *ibid.*, pp. 50 ff.; R. Grubaugh, "A Proposed Model for the Polar Configuration," *AEON* III:3 (October 1993), pp. 39 ff.; V. Slabinski, "A Dynamical Objection to Grubaugh's Model," *AEON* III:6 (December 1994), pp. 1 ff.; B. Grubaugh, "Grubaugh responds," in *ibid.*, pp. 11 ff.; R. Driscoll, "Magnetic Models of the Polar Configuration," *AEON* IV:2 (August 1995), pp. 5 ff.; *idem*, "Stability and Dimensions of the Polar Configuration," *AEON* IV:5 (November 1996), pp. 11 ff.; E. Spedicato, "Numerical Analysis of Planetary Distances in a Polar Model," *AEON* V:4 (July 1999), pp. 23 ff.; W. Thornhill, "Stars in an Electric Universe," *AEON* V:5 (January 2000), pp. 47 ff.; E. Spedicato & A. Del Popolo, "Dynamical Evolution of a Collinear Planetary System," *AEON* V:6 (August 2000), pp. 14 ff.

because, while a chronology of sorts is here being attempted, the history of the Saturnian system contains too many constituents, and too many events, only a few of which have so far been touched upon. Despite all that, as promised at the beginning of this chapter, a solution to this dilemma *will* be offered toward the end of this work. Before that can be attempted, however, we need to add a few more details to our scenario, even though it will tend to deepen the waters we have been wading in enough to cover our chin.

Chapter 12

In the Beginning

BEING AND NOT BEING

Had Saturn always been visible in the sky as far as mankind was concerned? Actually, the implication derived from the mytho-historical record is that there was a time when not even Saturn was yet *quite* visible. The record, for instance, hints at a time when the unseen god was still to emerge from an all-encompassing darkness. Mankind continued to remember this as the time of beginnings, a time *before* Creation commenced. Thus the later compilers of the *Rig Veda* could philosophically state that, before there were any gods, there was neither "existent" nor "non-existent."¹ And yet there was something which was described in the same source as "that One Thing" and "this All." As it is stated: "That One Thing, breathless, breathed by its own nature: apart from it was nothing whatsoever."²

And:

"Darkness there was: at first concealed in darkness this All was indiscriminated chaos. All that existed then was void and formless."³

As we shall soon see, this all-encompassing darkness is spoken of by the mythologies of almost all races. In fact, this milieu is stressed so often that one cannot help but assume that few situations impressed early man as much as this prolonged environmental state. And yet, in this darkness, up in the sky, there seems to have been something indistinct, the "void and formless" substance of the *Rig Veda*.

TOHU WA BOHU

As David Talbott noted from the very inception of his Saturnian studies, man described the creation of what has been termed "the earth" as if he had been an actual witness to it all. He was there when it happened and saw it all unveil with his very own eyes.⁴ Some will counter that this was the natural outcome of man's budding philosophical yearning. Looking around him, we are told, man would eventually have fallen upon the question of how everything had come to be. But, apart from the fact that the doctrine of beginnings was not universally adhered to, why would all those races who believed in Creation have described it in

¹ *Rig Veda*, X: cxxix: 1.

² *Ibid.*, X: cxxix: 2.

³ *Ibid.*, X: cxxix: 3.

⁴ J. Gibson, "Saturn's Age," *Research Communications NETWORK*, Newsletter #3 (October 15, 1977), p. 3.

similar, if not near-identical, terms? The answer, of course, has to do with the fact that the mythic tales of Creation have always been misunderstood. Let us then continue to re-examine them.

The father of all Creation myths, at least in the Western World, is that contained in the very first chapter of the Book of *Genesis*. It is there stated that:

"In the beginning Elohim created the *shemayim* and '*eret*. And '*eret* was *tohu wa bohu*, and darkness was on the surface of the *tehom*. And the *ruach* of Elohim moved upon the face of the *mayim*."⁵

As we have already seen, Elohim was one of the ancient names of Saturn. *Shemayim* are "the heavens"—in the plural. *Eretz* is the word usually translated as "Earth," but it more properly means "land." The words *tohu wa bohu* are traditionally translated as "without form and void" or "void and empty." The *tehom* is understood as a watery abyss—the deep. *Ruach* means "spirit" or "soul," but also "wind," while the *mayim* are merely "the waters"—also in the plural.

What follows might offend those of a religious bent but, in a scholarly work, this cannot always be helped. Devoid of all religious significance, what the words of *Genesis* actually tell us is that, "in the beginning"—that is, as far back as man can remember—Saturn fashioned the "land"—which *originally* meant the land of the gods—which was formless and empty, while the "spirit," or "wind," of the same Saturn moved over the darkened waters.

CHAOS

Tohu wa bohu, however, can also mean "utter chaos."⁶ Thus, in the Phoenician cosmogony of Philo Byblius, we find "dark chaos" presiding as the ruling principle before Creation.⁷

It was no different among the ancient Greeks. In describing the Creation as remembered by his countrymen, Hesiod asks: "From the beginning, which first came to be?" And he answers: "Chaos was first of all..."⁸ Thus, according to Hesiod, in the beginning there was nothing but Chaos, "vast and dark."⁹ This Chaos was surrounded by Night,¹⁰ which means surrounded by, or enveloped in, darkness.

Guirand tells us that, among the Greeks, Chaos was "a pure cosmic principle devoid of god-like characteristics."¹¹ In this, however, he was simply falling prey to a later philosophic doctrine. Guirand also muddles the issue when he claims that "the first principle was Cronus, or Time, from which came Chaos, which symbolized the infinite..."¹² It is obvious that, here,

⁵ Transcription of *Genesis* 1:1-2, with Hebrew transliterations.

⁶ I am indebted to both Curtis Taub and David Lorton for this revelation.

⁷ L. Delaporte, "Phoenician Mythology," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 82.

⁸ Hesiod, *Theogony* 115-116.

⁹ F. Guirand, "Greek Mythology," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 87.

¹⁰ *Ibid.*, p. 90.

¹¹ *Ibid.*, p. 89.

¹² *Ibid.*, p. 90.

Guirand meant to say "Chronos, or Time," since by "Cronus" he really meant "Kronos" who was Saturn.

All of this reminds us of what Ovid had to say concerning the Creation as believed in by the Romans: "All nature was Chaos...Earth, Air, Water heaved and turned in darkness..."¹³ And this, in turn, leads us back to Janus who, as we have seen on a previous page, was also made to refer to himself as "Chaos." It was said that when the elements of Creation separated, Chaos took on the form of Janus.¹⁴ But since Janus was the same as Saturnus/Kronos, what is indicated here is that this "Chaos" was Saturn itself or, to be more precise, the element out of which Saturn was seen to emerge.¹⁵

TAO

Likewise, the Chinese philosopher Lao-tzu (Lao-tse, Lao-tze) had it stated that:

"There is something chaotic yet complete which existed before heaven and earth. Oh how still it is and formless, standing alone without changing, reaching everywhere without suffering harm. Its name I know not. To designate it I call it Tao."¹⁶

Or, in a different translation:

"Before Heaven and Earth existed—There was something nebulous—Silent, isolated—Standing alone, changing not—Eternally revolving without fail—Worthy to be the Mother of All Things—I do not know its name—And address it as Tao."¹⁷

Notice the description of this entity as "something nebulous," standing alone and "revolving without fail." As Lao Tzu claimed: "I do not know whose Son it is, an image of what existed *before* God."¹⁸ In other words, this thing called Tao had no progenitors; it existed of its own, and did so before anything distinct that could have been termed God made its appearance. Moreover, this thing called Tao was believed to be located "about the celestial pole which was considered to be the seat of power because all revolves about it."¹⁹ This is the same locality in which the ancients insisted in placing the planet Saturn. More than that, the

¹³ H. Gregory, *The Metamorphosis* (N. Y., 1979), p. 15.

¹⁴ F. Guirand & A.-V. Pierre, "Roman Mythology," *New Larousse Encyclopedia of Mythology* (London, 1972), pp. 200-202; see also, E. G. Suhr, *Before Olympus* (N. Y., 1967), p. 107.

¹⁵ It should be pointed out, here, that the Greek word "chaos" has been said to derive from a root meaning "to gape"—see F. Guirand, *op. cit.*, pp. 88-89. Graves gives it as "yawning"—R. Graves, *The Greek Myths*, Vol. 2 (Harmondsworth, 1962), p. 385. The truth of the matter, however, is that the ancient root from which the word is derived has long been lost.

¹⁶ L. Graham, *Deceptions and Myths of the Bible* (N. Y., 1979), p. 15.

¹⁷ *The Tao Teh Ching*, in Lin Yutang, *The Wisdom of China and India* (N. Y., 1942), p. 596.

¹⁸ L. Barnett, *et al*, *The World's Great Religions* (N. Y., 1957), p. 77 (emphasis added).

¹⁹ L. Hodus, "Taoism," *Encyclopaedia Britannica*, 14th edition, as quoted by I. Velikovsky, *Worlds in Collision* (N. Y., 1950), p. 256.

way of Tao was said to have been the "Way of the Yellow Emperor,"²⁰ that same Shang-ti or Huang-ti we have presented on an earlier page as the very personification of the planet Saturn. Thus, despite the different terms in which it is couched, the entity being described, this Tao, appears to be no different than that described by other races as the first principle from which Creation was said to have proceeded.

It is upon this "all-embracing First Principle" that Lao-tzu was able to base an entire philosophy whose influence on Chinese thought, art, and literature, despite varying interpretation, has been prodigious. Taoism, in fact, became the dominant philosophy, called *Tao-chia*, and even religion, differentiated as *Tao-chiao*, of China. But that the basic idea behind both derives from the primeval events with which we are presently concerned, there seems to be no doubt.

THE NEBULAR CLOUD

A Yuki Creation myth refers to this indistinct something as a "fog" and/or "foam" that "moved round and round continually" during a time, in the beginning, when there was yet "no light."²¹ A similar fog is also mentioned in Oceanic mythology. From Nias we have the following: "In the beginning there was a thick fog, which condensed and became a being without speech or movement or head or arms or legs."²² This being, without head or arms or legs, reminds us of the Eskimo entity Ataksak, whom we have already met, who also was a being without arms and legs and who, very much like the Latin Janus/Saturn, existed in the shape of a sphere. It should also be noted that, while the entity which emerged from the fog was said to have been without movement, which accords well with Saturn's immobility, the lack of motion does not necessarily apply to the fog itself. Here, then, we seem to catch sight of what might have been a spherical body emerging out of a substance which had the appearance of a fog.

In their Creation myth, the Pima state that:

"In the beginning there was nothing at all except darkness. All was darkness and emptiness. For a long, long while, the darkness gathered until it became a great mass. Over this the spirit of Earth Doctor drifted to and fro like a fluffy bit of cotton in the breeze. Then the Earth Doctor decided to make for himself an abiding place."²³

It is obvious that the entity that was eventually translated into English as "Earth Doctor" was the Pima Creator. Meanwhile, a rotating "fog," "foam," and/or "fluffy cotton" in darkness seems to imply a spinning nebular cloud. The whirling nature of this entity is lent further support by a Creation myth of the Marquesas Islands which declares that "the primeval void started a swelling, a whirling, a vague growth..."²⁴ This would be in keeping with an

²⁰ W. Chan, "Taoism," *Encyclopaedia Britannica* (1959 ed.), Vol. 21, p. 796.

²¹ J. Bierhorst, *The Red Swan: Myths and Tales of the American Indians* (N. Y., 1976), p. 39.

²² G. H. Luquet, "Oceanic Mythology," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 457.

²³ R. Van Over, *Sun Songs: Creation Myths From Around the World* (N. Y., 1980), p. 28.

²⁴ G. H. Luquet, *op. cit.*, p. 460 (emphasis added).

idea proffered by the late David Griffard who, back in 1979, suggested to this author that Saturn could conceivably have been “enshrouded in some obscurity *emanating from the parent body itself* which blotted out...a good share of its own radiance.”²⁵ This idea seems to be borne out by the Zoroastrian creation myth in which Zurvan was said to have provided, or emitted, the “original unformed matter.”²⁶ This is very interesting because, for one thing, the Iranian Zurvan was a very ancient deity.²⁷ He was regarded by the Zoroastrians as the “first principle,” the “original seed,” and “the father of the Cosmos.”²⁸ But, more than that, this ancient deity had a well-known identity. Thus, van der Waerden tells us that, in Armenian texts, Saturn is called Zruan which is the same as Zurvan.²⁹ The later worshippers of Mithra were not therefore wrong when they identified Kronos, the Greek Saturn, with Zurvan.³⁰ Actually, the identity of Zurvan as Saturn is well attested.³¹

The implication here is that this nebular cloud was spun off by the rotating Saturnian body out of which the solitary deity—i.e. Saturn—slowly emerged into view. A near-identical idea was later proposed by David Talbott when he stated that: “There is also evidence...that the participating planets [of the Saturnian system] moved through a diffuse gaseous envelope, which almost certainly would have prevented a view of the stars.”³²

Griffard’s 1979 suggestion, that an obscuration of sorts could have been emitted by the planet Saturn itself, directed me to the so-called accretion disc, or placental cloud, from which the planets of the Solar System were supposed to have accreted. Dramatic paintings of such clouds by noted space artists such as Chesley Bonestell³³ have appeared quite regularly in astronomical journals and illustrated coffee-table books. Turning such pictures upside down, so that I could view the entire panorama from below instead of from above, gave me an inkling of what Saturn might have looked like had it also been surrounded by a similar placental cloud. The sky would have been almost completely obscured by the colossal nebular disc. Part of Saturn’s southern hemisphere would have protruded through its equatorial cloud, thus rendering itself quite clearly as a dull red disc to human eyes. What intrigued me about these graphic illustrations many years later was that these circumstellar clouds all had the appearance of a whirlpool that seemed to be composed of both fog and dirty foam (and even greenish fluffy cotton), thus rendering them somewhat comparable to what was described in some of the myths paraded in the previous section.

A similar doughnut of gas was found surrounding a nearby star by space scientists at the University of California, Berkeley, in 1985.³⁴ Dust disks around so-called newborn stars were

²⁵ D. Griffard to D. Cardona, private communiqué, November 29, 1979 (emphasis added).

²⁶ D. N. Talbott, *The Saturn Myth* (N. Y., 1980), p. 34.

²⁷ S. G. F. Brandon, *Creation Legends of the Ancient Near East* (1963), p. 203.

²⁸ R. C. Zaehner, *Zurvan: A Zoroastrian Dilemma* (Oxford, 1955), p. 222.

²⁹ B. L. van der Waerden, *Science Awakening II: The Birth of Astronomy* (Netherlands, 1974), p. 194.

³⁰ J. de Menasce, “Persia: Cosmic Dualism,” *Larousse World Mythology* (London, 1972), p. 203.

³¹ J. O’Neill, *The Night of the Gods* (London, 1893), pp. 778-779.

³² D. Talbott, “From Myth to a Physical Model,” *AEON* III:3 (October 1993), p. 19.

³³ L. Barnett, *The World We Live In* (N. Y., 1955), p. 9.

³⁴ A. Yee, “Astronomers Find Nearby Stars Constantly Bombarded by Comets,” *SIS Internet Digest* 1998:2, p. 12.

actually imaged by the Hubble telescope in 1994.³⁵ And then, in 1998, Philip Nicholson and his colleagues at Cornell University theorized that, in the early days of the Solar System, Uranus might have been surrounded by a similar gaseous nebula.³⁶ Could not such a nebular cloud have surrounded the planet Saturn in mankind's infancy?

MOT

In Jewish myth, the chaotic *bohu* was understood as an expanse of mud.³⁷ This is identical to the Phoenician *mot* which was produced at the very beginning of things.

"Some say that this [*mot*] was slime and others a rotting of aquatic composition. From it came all the germs of all created things and it was the origin of everything."³⁸

Now when one examines illustrations of these so-called accretion disks, one can see that these nebular clouds not only look as if they are composed of swirling fog, foam, or fluffy cotton, they also have the appearance of churning mud or slime.

Baudissin, on the other hand, supposed the word *mot* to connote water.³⁹ Gaston Maspero likewise understood that "Mot...is probably a Phoenician form of a word which means *water* in the Semitic language."⁴⁰

The Babylonians told the story differently but they, too, held that Creation commenced out of the waters. Consider the *Enuma Elish*:

"When on high the heaven had not been named—Firm ground below had not been called by name—There was naught but primordial Apsu, their begetter—And mother Tiamat, who bore them all—Their waters commingling in a single body."⁴¹

From this and other sections of the *Enuma Elish* we learn that Apsu (or Abzu—also Zuab) stood for the primordial ocean of sweet water.⁴² Abzu might even have been the origin of the Greek *abyssos*—(Latin *abyssus*)—from which the English derived the word "abyss" and thus "the deep."⁴³ The Babylonian Tiamat, on the other hand, is equivalent to the Hebrew *tehom*⁴⁴ or, more correctly, the feminine *tehomoth*.⁴⁵ What seems to be indicated here is that

³⁵ R. Naeye, "The Pull of Planets," *Discover* (January 1995), p. 35.

³⁶ Cornell University News Service (May 5, 1998).

³⁷ H. S. Bellamy, *Moons, Myths and Man* (London, 1949), p. 150.

³⁸ L. Delaporte, *loc. cit.*

³⁹ W. W. Baudissin, *Studien zur Semitischen Religionsgeschichte* (Leipzig, 1876), pp. i, 11 ff., 195.

⁴⁰ G. Maspero, *The Struggle of the Nations* (London, 1896), p. 168.

⁴¹ J. Gray, *Near Eastern Mythology* (London, 1969), p. 117.

⁴² A. Heidel, *The Babylonian Genesis* (Chicago, 1942), p. 10; M. Veyra, "Empires of the Ancient Near East: The Hymns of Creation," *Larousse World Mythology* (London, 1972), p. 65.

⁴³ G. Michanowsky, *The Once and Future Star* (N. Y., 1977), p. 49.

⁴⁴ A. Heidel, *op. cit.*, p. 84.

⁴⁵ Again, I am indebted to David Lorton for this revelation, but see also A. B. Cook, *Zeus: A Study in Ancient Religion*, Vol. II, Part II (N. Y., 1965), p. 1038.

Apsu and Tiamat were two bodies of water joined as a single unit. The Babylonian Berossus additionally informs us that, during this time—i.e. in the beginning—“all was darkness.” Even Tiamat, according to him, was shrouded in darkness.⁴⁶

NU

Now, as it happens, the Egyptian Chaos was styled Nu (or Nun.)⁴⁷ But Nu more properly refers to “the primordial ocean in which before the creation lay the germs of all things and all beings.”⁴⁸

“The texts call him [i.e. Nu] the ‘father of the gods,’ but he remains a purely intellectual concept and had neither temples nor worshippers. He is sometimes found represented as a personage *plunged up to his waist in water*, holding up his arms to support the gods who have issued from him.”⁴⁹

It should here be mentioned that while Nu might have had no temples or worshippers, a festival, known as the *Per-t Nu*, used to be held in his honor.⁵⁰ Of special meaning to us is also the fact that Nu was also a name of Amen-Ra,⁵¹ our very own Saturn. Thus, in the Egyptian *Book of the Dead*, Nu is made to state: “I am the great god self created...” But then the question is asked: “Who then is this?” And the answer given is: “It is Ra...”⁵² And it was Ra who was believed to have raised all that came into existence “from out of Nu.”⁵³

As Wallis Budge informs us:

“From various passages found in the religious, mythological, and funeral texts of all periods it is abundantly clear that in primeval times at least the Egyptians believed in the existence of a deep and boundless watery mass out of which had come into being the heavens, and the earth, and everything that is in them.”⁵⁴

Even the Biblical El/Elohim was known as the god of the cosmic ocean. It has, for instance, been suggested by Barry Frank that, keeping in mind that vowels were inserted into Hebrew at a late date, the consonants which spell “Elohim” can be read as “El ha Yam,” which means “God of the Sea.”⁵⁵ The same derivation was suggested six years later by Pro-

⁴⁶ A. Heidel, *op. cit.*, p. 86.

⁴⁷ J. Vial, “Egyptian Mythology,” *New Larousse Encyclopedia of Mythology* (London, 1972), p. 11.

⁴⁸ *Ibid.*

⁴⁹ *Ibid.*

⁵⁰ E. A. W. Budge, *An Egyptian Hieroglyphic Dictionary*, Vol. I (N. Y., 1920/1978), p. 242.

⁵¹ *Ibid.*, p. 350.

⁵² *Idem*, *The Gods of the Egyptians*, Vol. I (N. Y., 1904/1969), p. 134.

⁵³ *Ibid.*, p. 309.

⁵⁴ *Ibid.*, p. 283.

⁵⁵ B. Frank, as reported by R. Wescott, “Horizons,” *Chronology & Catastrophism Workshop* 1986:2, p. 35.

fessor Elihu Katz, but Baruch Margalit shot the idea down.⁵⁶ Among Margalit's objections was the fact that the *He* (i.e., "h") in the name "Elohim" is a radical, and not the definitive article; and that the Israelites were "land-lubbers" and thus not given to oceanic deities.⁵⁷ No one has, however, suggested that the *he* in "Elohim" stands for the definitive article. What has been suggested is that the name "Elohim" may have been derived from "El ha Yam." Margalit should also have considered that the "sea" referred to, as in the Creation myths of other races, was a *celestial* one, so that the land-lubbed Israelites need not even enter into the picture. To be sure, this derivation of the name will remain controversial, but we do not really require it in making our case. As Frank Moore Cross has indicated, the idea that Elohim was a god of the sea actually traces to an ancient belief. An old tradition which he cited has the deity unequivocally stating: "I am El, in the seat of Elohim I am enthroned in the midst of the seas."⁵⁸

Elsewhere, however, the Egyptian Nu—this "primeval abyss of water"⁵⁹—is alluded to as *pautet* or *pautti*, which has been translated as "primeval matter." Thus Ra is made to state: "I produced myself from the primeval matter [which] I made." "I produced myself from primeval matter." "I came into being from the primeval matter..."⁶⁰

It is obvious from all the above that man did not know what he was looking at. If the circumstellar disk we have been postulating as having surrounded Saturn was a fact, we can understand man remembering it as a nebulosity, something indistinct. We can also understand his likening it to swirling fog, foam, or fluffy cotton, even a churning of mud or slime, a chaotic mess, primeval matter—but water? Why water?

THE WATERS OF CHAOS

Up until 1979, I had held the view that the waters of chaos had actually been terrestrial. In fact I had already earlier described these waters as having been piled up in a tidal heap due to the gravitational pull of Saturn which hovered overhead.⁶¹ Although I still hold to a collection of water piled up at Earth's north polar regions, a topic which will be explored in a future volume, I eventually came to realize, primarily on following the advice of Roger Ashton and David Lorton, to reconsider ancient testimony concerning the *celestial* nature of the waters of chaos spoken of in relation to Creation. The celestial nature of these waters is perhaps best indicated in Egyptian myth. Traditionally, the Egyptian waters of chaos which, as we have just seen, were collectively known as Nu, were unequivocally described as having been in the sky. Of that there was never any doubt. As Budge tells us, "the name Nu...is expressed by three vases of water which indicate the sound, and the outstretched heaven...and

⁵⁶ E. Katz & B. Margalit, "Was Elohim the God of the Sea?" *Biblical Archaeology Review* (March/April 1992), pp. 74, 76.

⁵⁷ *Ibid.*, p. 76.

⁵⁸ F. M. Cross, *Canaan Myth and Hebrew Epic* (London, 1973), p. 45.

⁵⁹ E. A. W. Budge, *op. cit.*, p. 309.

⁶⁰ *Ibid.*, pp. 314-315.

⁶¹ D. Cardona, "Let There Be Light, *KRONOS* III:3 (Spring 1978), p.39; *idem*, "The Mystery of the Pleiades," *KRONOS* III:4 (Summer 1978), p. 28.

the determinative for water...and the sign for 'god,' all of which show that this deity was the god of the watery mass in the sky."⁶² Moreover, in a hymn to Ra, we read: "Praise be to thee, O Ra...thou shining one who dost send forth light upon the waters of heaven."⁶³ Of Osiris, also, it was said that "[his] water is in heaven."⁶⁴

In the Egyptian *Book of the Dead*, Ra is also made to utter: "I am the Great God who created himself." It is then asked: "Who is he?" And the answer is given: "The Great God who created himself is the water—it is the Abyss, the Father of the Gods."⁶⁵ For that reason Ra was also known as Akeb-ur, the "god of the great celestial waters."⁶⁶

The Indic *Satapatha Brahmana* informs us that "in the beginning this (universe) was water, nothing but a sea of water,"⁶⁷ where "universe" is the translation of the Sanskrit *vishva* which actually means "all." And, during the time of being and not being, according to the *Rig Veda*, "all was a dark and watery chaos."⁶⁸ The same *Rig Veda* also tells us that this was a sea of "upper waters."⁶⁹ Thus Varuna, whom we have also seen identified as Saturn, was lauded as he who is "an ocean far removed" while worship was said to ascend to him *through heaven*.⁷⁰ Even more explicitly, the *Satapatha Brahmana* additionally informs us that "the seat of the waters is the sky, for in the sky the waters are seated."⁷¹

According to some accounts, these waters seem to have *preceded* Creation. Thus, for instance, Nahum Sarna noted that:

"[Genesis] shares with [the Babylonian] *Enuma Elish* the idea of the priority of water in time. Just as Apsu and Tiamat...exist before all things, so in Genesis the existence of water is taken for granted. The darkness is over the surface of the deep...Now this concept of the priority of water is fairly widespread among many unrelated mythologies."⁷²

Among these unrelated mythologies, one might again point to that of ancient Egypt. While all that was created was said to have been raised from the watery abyss of Nu, some of the Egyptian versions of Creation do not state that the waters themselves were created.⁷³ But, in a hymn to Ptah-Tenen, whom we have also seen identified as Saturn, mention is made of a time "when the waters had not [yet] come forth"⁷⁴ while, a little later, "the celestial water" is

⁶² E. A. W. Budge, *op. cit.*, p. 283.

⁶³ *Ibid.*, p. 341.

⁶⁴ *Idem*, *Osiris and the Egyptian Resurrection*, Vol. I (N. Y., 1911/1973), p. 142.

⁶⁵ A. Piankoff, *The Shrines of Tut-Ankh-Amon* (N. Y., 1955), p. 121.

⁶⁶ E. A. W. Budge, *op. cit.*, p. 131.

⁶⁷ *Satapatha Brahmana* 11:1:6:1.

⁶⁸ *Rig Veda* X:129.

⁶⁹ *Ibid.*, I:163:1.

⁷⁰ *Ibid.*, VIII:41:8.

⁷¹ *Satapatha Brahmana* VII:5:2:56.

⁷² N. M. Sarna, *Understanding Genesis* (N. Y., 1976), p. 13.

⁷³ E. A. W. Budge, *The Gods of the Egyptians*, Vol. I (N. Y., 1904/1969), p. 295.

⁷⁴ *Ibid.*, p. 510.

said to have come forth from the "mouth" of the same god.⁷⁵ Also, in a hymn to Ra, the creator is praised with the words: "Thou art the One God who came into being in the beginning of time...thou didst make the watery abyss of the sky..."⁷⁶ Budge could thus paraphrase the point we wish to stress through the following words:

"In what form [Atum-Ra] existed no one knows, but he created for himself, as a place wherein to dwell, the great mass of Celestial Waters to which the Egyptians gave the name of Nu. In these, for a time, he lived quite alone..."⁷⁷

So, similarly, in the *Laws of Manu* where the "Self-existent...first with a thought created the waters..."⁷⁸ Although described in a philosophical vein, the *Satapatha Brahmana* likewise discloses the creation of the waters:

"Verily, there was nothing here in the beginning: by Death this (universe) was covered...He [the creator] created for himself this mind, thinking 'May I have a soul.' He went on worshipping. Whilst he was worshipping the waters were produced..."⁷⁹

Of special interest here is that what is translated as "Death" is actually Yama whom we have also presented as one of the Sanskrit names for the planet Saturn. So that the line translated as "By Death this (universe) was covered" should actually read "by Saturn this All was covered."

Now whether the waters had always been there, whether Saturn was seen to emerge from them, or whether the waters were seen to issue out of the Saturnian globe, seems to have depended on who did the remembering. At this late date it is not easy, if even possible, to reach a definite conclusion. The more important question remains: What *were* these celestial waters?

THE WHIRL OF CREATION

All these, and other, myths of celestial waters led Roger Ashton to assume that there must have been some celestial phenomenon resembling shimmering waters, possibly an auroral effect, surrounding the primeval Saturnian orb.⁸⁰ As he also elsewhere stated, "part of that assemblage must have looked like waters, whose implicitly or explicitly celestial character has severally been noted" and that these "waters evidently appeared in a distinct image or pattern."⁸¹ But while an auroral effect might resemble shimmering water, and while this could also be called an indistinct entity, even a nebulosity, it is doubtful that it would also

⁷⁵ *Ibid.*, p. 511.

⁷⁶ *Idem*, *The Egyptian Book of the Dead* (N. Y., 1895/1967), p. 251.

⁷⁷ *Idem*, as cited by R. Van Over, *op. cit.*, p. 253.

⁷⁸ *Laws of Manu* I:6-8.

⁷⁹ *Satapatha Brahmana* X:6:5:1-7.

⁸⁰ R. Ashton, "The Age of Purple Darkness," *AEON* V:3 (December 1998), p. 98.

⁸¹ *Idem*, "Saturn: The First of the Gods," unpublished manuscript, p. 17.



The hieroglyphic characters which denote the primeval waters of Egyptian mythology.
(Rendering by Stéphane Rossini.)

have imparted an image of fog, or foam, or fluffy cotton, mud, slime, or primeval matter in chaos.

Is it then not more conceivable that the nebular cloud we have been pushing forward as a tentative explanation of the entity in question would have been seen by the majority of the ancients as a spinning whirlpool of chaotic water? If there is one thing that many an astronomical nebula resembles, it has to be a whirlpool. But should we let astronomical nebulae—that is circumstellar disks—which are not themselves planetary, dictate what Saturn's nebulosity would have looked like?

Let us then re-examine the record. What does the Yuki creation myth say about that fog or foam that was at the beginning of things? It "moved round and round continually," it is said. Nor was this foam known only to the Yuki. It also appears in Buddhist mythology where the surface of the celestial waters is said to have been stirred by "the dawn wind of creation."⁸² It is then said that the foam of the waters solidified to form the god's residence.⁸³ Here we have a direct connection between the nebulosity that was described as foam and the celestial waters; they were both part and parcel of the same entity.

But to continue—what about the myth of the Marquesas Islands? Is it not there stated that the "primeval void" started a whirling? Ovid also reminds us that Chaos "heaved and turned." So, also, with the entity called Tao which was said to have been "eternally revolving without fail."

Everywhere, then, we catch a glimpse of this indistinct entity as continually moving round and round, whirling, like a whirlwind in the sky. Why not then a whirlpool, many of

⁸² A. K. Coomaraswamy, *Elements of Buddhist Iconography* (New Delhi, 1972), p. 52.

⁸³ *Ibid.*

which, in the form of eddies, man would have been accustomed to seeing in terrestrial waters?

Here we have to exercise great caution because mythology speaks of diverse whirlpools—as also cyclones—not the least of which being the whirlpool of destruction into which Saturn was said to have ultimately sunk (yet one more topic which will have to be reserved for a future work). Even so, in describing the cosmology of the Phoenicians according to Sanchoniathon, Philo wrote that:

“The first principle of the universe he [Sanchoniathon] supposes to have been air dark with cloud and wind, or rather a blast of cloudy air, and a turbid chaos dark as Erebus; and these were boundless and for long ages had no limit.”⁸⁴

It was out of this dark and turbid chaos that Creation was said to have progressed, a description that has more in common with a dark whirlwind, if not whirlpool, than an auroral effect.

Something similar is recounted in the Japanese *Nihongi* as paraphrased by Raymond Van Over:

“Before Heaven and Earth were produced, there was something which might be compared to a cloud floating over the sea. It had no place of attachment for its root.”⁸⁵

And so, also, among the Chinese as we learn from the *Tao Teh Ching*:

“There is [or was] a thing confusedly formed, born before heaven and earth. Silent and void, it stands alone and does not change, goes round and does not weary.”⁸⁶

And did not Ovid tell us that this water “heaved and turned in darkness”?

At the other extreme of civilization, we encounter Amma, the Dogon creator, of whom it was said that, during the “original darkness,”⁸⁷ he *spun* and *danced* while creating the heavens;⁸⁸ he whirled round as he commenced to organize (or reorganize) the world out of chaos.⁸⁹

The Norse Aesir, according to the *Völuspa*, established their seat on Idavollr, i.e. the “whirl-field,” derived from *ida*, meaning “eddy.”⁹⁰ This led to a Teutonic legend concerning some Frisians who sailed on a voyage up to the Arctic Ocean where they encountered a dark-

⁸⁴ Eusebii Pamphili, *Evangelicae Praeparationis*, Book I, Chapter X.

⁸⁵ R. Van Over, *op. cit.*, p. 354.

⁸⁶ J. Purce, *The Mystic Spiral: Journey of the Soul* (N. Y., 1974), p. 20.

⁸⁷ M. Griaule & G. Dieterlen, “Un Système Soudanais de Sirius,” *Journal de la Société des Africanistes* XX:1 (1950), p. 274.

⁸⁸ *Idem*, *Le Renard Pâle* (Paris, 1965), p. 163.

⁸⁹ *Idem*, see reference #87, Note #14.

⁹⁰ G. de Santillana & H. von Dechend, *Hamlet's Mill: An Essay on Myth and the Frame of Time* (Boston, 1969), p. 154.

ness that could hardly be penetrated. They were then exposed to a maelstrom which threatened to drag them down into Chaos.⁹¹ While this legend cannot be used as evidence of anything, we notice how the various themes we have been considering are brought together in what appears to be a garbled version of the motifs of Creation. The northern region in which we have seen ancient man persistently place the primeval Saturn, and therefore the celestial waters associated with him, is here terrestrialized as the northern Arctic Ocean; the darkness in which the celestial waters were enshrouded is here remembered as having enveloped the same Arctic Ocean; the whirling nebulousity in the sky became a terrestrial maelstrom or whirlpool; and even Chaos shows up in connection with it all. Such is the nature of myths and legends.

Can we then be positively sure that the celestial waters of chaos owed their origin to Saturn's nebular cloud? Of course not. It would be arrogant of me to be adamant about this. What our ancient forebears saw in the sky during this period was too indistinct for them to describe in clear detail. That much is more than obvious. All that can safely be stated is that the few snippets from the mytho-historical record we have had a chance to examine *seem* to fit such a model.

⁹¹ V. Rydberg, *Teutonic Mythology* (N. Y., 1907), p. 320.

Chapter 13

The Age of Darkness

DARKNESS AND THE DEEP

Whether Saturn's nebulosity and/or celestial waters were or were not emitted by the planet itself, there is no doubt that the entity and the planetary deity embedded in it existed in darkness. As already stated, few motifs surface as often in the mytho-historical record of the entire world. Time and again, the Egyptian myths of Creation ascertain that, in the beginning, the creator was the only entity man remembered having seen in the sky hovering over the waters of the deep. "I am Atum," the god is made to utter, "who appeared alone...rising from the waters of chaos."¹

The identity of Atum as Saturn need not be repeated. Neither is that of Osiris. We are thus not surprised to discover that Neb-er-tcher/Khepera/Osiris was likewise made to state:

"I am the creator of what hath come into being...and I came into being in primeval time...I was alone, for they [the other deities] were not [yet] born..."²

Very much like those of *Genesis*, the Egyptian waters of chaos were said to have been enveloped in darkness. "Nothing existed," it is written, "except a boundless primeval mass of water which was shrouded in darkness."³ In the *Pert-em-hru* we even find Osiris/Saturn complaining about "his life alone in darkness."⁴

Ptah-Seker, another form of the Egyptian creator, was also lauded as "the great god, who came into being in the beginning, he who resteth upon the darkness." He was thus known *inter alia* as "the guardian of the darkness." Thus Wallis Budge saw Ptah-Seker as a "form of Osiris, that is to say, of the night sun" and that he "was originally a power of darkness, or of the night, which in later times was identified with forms of the night sun like Tem [i.e., Atum]."⁵

The *Qoran* also preaches that Allah was on the waters when he indulged in Creation. "Throned above the waters," it is there written, "He made the heavens and the earth..."⁶

¹ "The Book of the Overthrow of Apophis," as cited by F. G. Bratton, *Myths and Legends of the Ancient Near East* (N. Y., 1970) pp. 63-64.

² E. A. W. Budge, *The Gods of the Egyptians*, Vol. I (N. Y., 1904/1969), p. 300.

³ *Idem*, *The Egyptian Book of the Dead* (N. Y., 1895/1967), p. xcvi.

⁴ R. Anthes, "Mythology in Ancient Egypt," *Mythologies of the Ancient World* (N. Y., 1961), p. 50.

⁵ E. A. W. Budge, *The Gods of the Egyptians*, Vol. I (N. Y., 1895/1967), pp. 503-504.

⁶ *Qoran*, sura 11.

We move to India. We browse through a few more pages of ancient texts. In one Vedic hymn we find it stated that: "Darkness there was at first by darkness hidden; without distinctive marks, this all was water."⁷ Or, according to a different translation: "Darkness was there, all wrapped around by darkness, and all was water indiscriminate."⁸ Similarly, the *Laws of Manu* preach: "This world was darkness, unknowable, without form, beyond reason and perception, as if utterly asleep."⁹

Not only among the Hindus, but even among the lesser tribes of India, such as the Muria of the Bastar State in the Central Provinces, the same motif keeps repeating itself: "When this world was first made, there was neither sun nor moon...and everything was dark."¹⁰

From Japan comes a similar belief which Wheeler not only recognizes as being universal but also as a prototype of the Kronos/Saturn myth:

"In the earliest legend with which the recital [i.e., the *Kojiki*] opens, one recognizes the primal myth...the development from a primordial darkness and chaos...This is the Kronos legend, in its thousand forms, the father of all mythologies, upon which so many peoples have constructed their cosmogonies."¹¹

As we have already seen, among these "many peoples" were the Greeks among whom Hesiod tells us that night *preceded* day: "From chaos came black night...And night in turn gave birth to day..."¹²

Other philosophical myths from Greece, reversing the process described by Hesiod, imply that darkness was first, and from darkness sprang Chaos.¹³ Others claimed that Chaos and darkness coexisted—as, for instance, Aristophanes: "Chaos and Night and black Erebus and wide Tartarus first existed." And Orpheus is made to say: "From the beginning the gloomy night enveloped and obscured all things that were under the ether."¹⁴

From the cold spaces of Siberia comes a Creation myth that unfolds as a competition between Num, the demiurge, and Nga, his alter-ego. "Since you claim you are stronger than I am," Num said to Nga, "organize the earth." The sky, however, was already in existence and, as elsewhere, so was the primordial ocean.¹⁵

⁷ *Rig Veda* X:129:3, as translated by A. A. Macdonell in Swami Nikhilananda, *The Upanishads* (London, 1963).

⁸ *Rig Veda* X:129:3, as translated by R. Panikkar, *The Vedic Experience* (Berkeley, 1977).

⁹ *Laws of Manu* I:v:5.

¹⁰ R. Van Over, *Sun Songs: Creation Myths From Around the World* (N. Y., 1980), p. 299.

¹¹ P. Wheeler, *The Sacred Scriptures of the Japanese* (N. Y., 1952), p. 387.

¹² D. Wender, *Hesiod and Theognis* (Harmondsworth, 1976) p. 27.

¹³ R. Graves, *The Greek Myths*, Vol. I (Harmondsworth, 1964), p. 33.

¹⁴ I. Donnelly, *Ragnarok: The Age of Fire and Gravel*, reissued as *The Destruction of Atlantis* (N. Y., 1971), p. 208.

¹⁵ E. Lot-Falck, "Siberia: The Three Worlds," *Larousse World Mythology* (London, 1972), p. 433.

THE AMERIND TRADITIONS

As the ancestors of the North American Indians are said to have done, we cross the Bering Strait and, among the Inuit of Alaska, we also find a Creation myth that presupposes the pre-existence of a watery abyss.¹⁶

Further south, the Indians of British Columbia assert that: "Very dark, damp, and chaotic was the world in the beginning" and that they, i.e., the people, existed "while the world was still in darkness, and without sun, moon, or stars."¹⁷

The Yuki creation myth, which we have already quoted, is even more interesting when told in full:

"[In the beginning] there was only water, and over it a fog. On the water was foam. The foam moved round and round continually...After a time there issued from the foam a person in human form...This was Taikó-mol [Solitude Walker]. He floated on the water...He stood on the foam, which still revolved. *There was no light.*"¹⁸

The Algonquins believed in an "earth" that existed "anterior to this of ours, but one without light."¹⁹ The Zuni claim that:

"In the beginning of things Awonawilona was alone. There was nothing beside him in the whole space of time. Everything there was black darkness and void."²⁰

Awonawilona is described as "one who contains everything,"²¹ which reminds us of the Arabic Suhail (Suhayl and/or Sahel) which, as the *primordial star*, was "presented under the form of an egg that *contained all things* that were to be born."²² Awonawilona's attributes also brings to mind the Egyptian Atum, the root of whose name—*tm*—means "to be complete"²³ thus also connoting "one who contains everything."

There is hardly a North American tribe that does not have a Creation myth in which the primeval ocean and/or prolonged darkness was said to have existed before the demiurge commenced on his work of Creation.²⁴ Over and again, we hear that there was darkness—or a prolonged night—in which there was no Sun, no Moon, no stars. In the telling, of course, many of these myths acquired a fanciful cast and framework that sometimes borders on childish fable. But that, after all, is the nature of allegory and myth.

¹⁶ *Idem*, "Eskimo Lands: Man Against Nature," in *ibid.*, p. 441.

¹⁷ H. H. Bancroft, *The Native Races of the Pacific States*, Vol. III (1874-1876), p. 98.

¹⁸ J. Bierhorst, *The Red Swan: Myths and Tales of the American Indians* (N. Y., 1976), p. 39 (emphasis added).

¹⁹ I. Donnelly, *op. cit.*, p. 222.

²⁰ R. Van Over, *op. cit.*, p. 23.

²¹ C. Burland, "North American Indian Mythology," *Mythology of the Americas* (London, 1970), p. 120.

²² V. Paques, *L'Arbre Cosmique dans la Pensée Populaire et dans la Vie Quotidienne du Nord-Ouest Africain* (Paris, 1964), p. 47.

²³ E. A. W. Budge, *op. cit.*, Vol. II (N. Y., 1904/1969), p. 87.

²⁴ For further examples, see R. Van Over, *op. cit.*, pp. 35, 36, 37, 48, 61, 63, 67, 85, 86, 88, 89, 90.



Village of the Algonquins who believed in an "earth" that existed "anterior to this of ours, but one without light."
(Illustration by John Green.)

Traveling further south to Central America, we come across a Cholula myth which states that: "In the beginning, before the light of the sun had been created, this land was in obscurity and darkness and void of any created thing."²⁵ Likewise, the Mixtec account of origins speaks of the beginning when "all was chaos and confusion" and "the earth was covered with water."²⁶ In a Nahua myth of Creation, the primordial substance also seems to have been water,²⁷ while the Chibcha Indians of Columbia tell that, "in the beginning," everything was dark.²⁸

²⁵ I. Donnelly, *op. cit.*, p. 215.

²⁶ M. Léon-Portilla, *Pre-Columbian Literatures of Mexico* (Norman, 1969), pp. 56-57.

²⁷ I. Nicholson, *Mexican and Central American Mythology* (London, 1967), p. 26.

²⁸ A. Metraux, "South America: Creation and Destruction," *Larousse World Mythology* (London, 1972), p. 483.

KON TIKI VIRACOCHA

In South America, myths of the primeval darkness are quite widespread. As H. Osborne noted:

"Some mythological cycles feature a primitive age of darkness *before the existence of the sun*, when human beings lived in a state of anarchy without the techniques of civilized life."²⁹

In a similar vein, Juan de Betanzos narrates the following:

"They say that in ancient times the land of Peru was dark and there was no light nor day in it. In those times there dwelt there a certain people who owed allegiance to an overlord whose name they no longer remember. And they say that in those times when all was night in the land there came forth from a lake in the district called Collasuyu, a Lord named Con Ticci Viracocha...And while he was there...he suddenly made the sun and the day and commanded the sun to follow the course which it does follow...They say that this Con Ticci Viracocha had emerged on an earlier occasion and that on this first appearance he made the heaven and the earth and left everything dark."³⁰

Similarly, an account by Sarmiento de Gamboa states that:

"The natives of this country [i.e., Peru] say that in the beginning, before the world was created, there was one whom they called Viracocha. And he created the world dark and without the Sun, nor Moon, nor stars."³¹

"The Sun, according to Sarmiento's narrative," Jan Sammer informs us, "emerged only after the Deluge."³²

It seems, then, that even the famous Kon Tiki (Con Ticci) was none other than a Saturnian figure, and the "lake" from which it was said he emerged nothing but the dim memory of the ancient waters of chaos. The description of this god as a fair-skinned, red-bearded man has captured the imagination of western chroniclers but, among the original natives, this belief was not unanimous. Besides, that Viracocha was a celestial deity is ascertained by his having been lauded as "Thou who art in the high heavens..."³³

Also:

²⁹ H. Osborne, "South American Mythology," *Mythology of the Americas* (London, 1970), p. 294 (emphasis added).

³⁰ J. de Betanzos, *Suma y Narracion de los Incas*, as cited by H. Osborne in *ibid.*, p. 332.

³¹ J. N. Sammer, "The Cosmology of Tawantinsuyu," *KRONOS* IX:2 (Winter 1984), p. 22.

³² *Ibid.*

³³ R. Van Over, *op. cit.*, p. 114.

"The oral traditions, which are confusing, diverge on numerous points: some describe his [that is Con Ticci Viracocha's] physique, while others maintain that he had neither bones, nor limbs, nor body."³⁴

Once again we are reminded of the Roman Janus, the Eskimo deity Ataksak, and the creator told of in Nias—all of whom were described as beings without arms or legs and, in some cases, having the form of a sphere. As we have seen, it was only through creation that Janus "assumed the face and members of a god." Similarly, the Egyptian creator was "a *formless* god [who] stood alone in the 'waters' of the sky...a *sphere* without external 'attributes' or 'limbs'."³⁵

Returning to Kon Tiki Viracocha, we learn that:

"In *all the accounts*, whatever the regional variations, this hero *always appeared as a god-creator* who intervened in a world which was already created...but unorganized...Viracocha's role was therefore to transform chaos into cosmos..."³⁶

Moreover, this myth of the Collao seems to imply that the "earth" which existed *prior* to the creation, or appearance, of light was also considered a creation of Kon Tiki. This belief is not to be wondered at for it seems doubtful that man remembers a god older than the Saturnian figure. But it does seem that he remembers a time when the Sun was not yet apparent in the sky. Thus, another myth from the same region explicitly states: "In the most ancient times the earth was covered in darkness *and there was no sun*."³⁷ The *Popul Vuh* also relates that before the "earth" was created, "there was only motionless sea" and "it was night; silence stood in the dark."³⁸ And again, from a Xingu myth we learn that:

"In the beginning it was all dark. It was always night. There was no day."³⁹

THE ENDLESS SEA

We cross the Pacific to the archipelagos of Micronesia where we find that a pre-existing "rock" was believed to have been the matrix of the "universe." But even this "rock of ages" is "associated with an endless stretch of original sea" from which the first gods were produced.⁴⁰ The Polynesians also state that, "in the beginning" there was no light. "A brood-

³⁴ J-C Valla, *The Civilization of the Incas* (Geneva, 1978), p. 66.

³⁵ D. Talbott, "Mother Goddess and Warrior Hero," *AEON* 1:5 (September 1988), p. 42 (first emphasis as given, second emphasis added).

³⁶ J-C Valla, *loc. cit.* (emphasis added).

³⁷ H. Osborne, *op. cit.*, p. 338 (emphasis added).

³⁸ R. Nelson, *Popul Vuh* (Boston, 1976), p. 33.

³⁹ R. Van Over, *op. cit.*, p. 108.

⁴⁰ A. M. Panoff, "Oceania: Society and Tradition," *Larousse World Mythology* (London, 1972), p. 507.

ing night called Po enveloped all..."⁴¹ The primeval sea, from which the "earth" was created, is also encountered in the beliefs of the natives of Borneo.⁴² In fact, "most of the legends [from Oceania] dealing with the origin of the earth make it come out of the sea..."⁴³

There may be those who will argue that to the natives of Oceania, surrounded as they are by the vast stretches of the Pacific, the creation of the world from an endless sea would appear to be a logical genesis. But we have seen that such an origin is, or was, believed in by tribes in the heartland of India, by the peoples of the Fertile Crescent, by those whose world is enclosed by the sandy wastes of the Egyptian desert, in fact by the peoples of the entire world regardless of their geographical environment. Even among the Aranda aborigines of Australia, living in one of the world's most arid regions, far from sea or lake, we find the belief that the "earth" emerged from an endless ocean.⁴⁴

But our journey is not yet over. Among the Kenta pygmies of Malaya, tradition states that, "in the beginning," the "world" was all water—and in the firmament above dwelt the great god Kaei.⁴⁵ And from the Nias of Sumatra we learn that "the world was dark, for as yet there was neither sun nor moon."⁴⁶

SOMETHING CALLED NOTHING

We cross the Indian Ocean, travel around the Cape of Good Hope, and up the west coast of Africa. We land among the Yoruba of what was once Nigeria and discover that they, also, believe that, "in the beginning," the "world" was all a watery marsh.⁴⁷ The Bushongo relate that "In the beginning there was nothing but darkness...there was nothing but water; in this chaos Bumba, the Chembe [i.e. god], reigned alone."⁴⁸

The Dogon of the Sudan whom we have now met more than once, also believe that their creator, whom they call Amma, resided in the "egg of the world," and that this egg existed "in the original darkness."⁴⁹ And, from South Africa, we have the following:

"No stars were there—no sun. Neither moon nor earth—Nothing existed but darkness itself—A darkness everywhere. Nothing existed but nothingness..."⁵⁰

⁴¹ L. Graham, *Deceptions and Myths of the Bible* (N. Y., 1979), p. 15.

⁴² G. H. Luquet, "Oceanic Mythology," *New Larousse Encyclopedia of Mythology* (London, 1972), pp. 457, 466.

⁴³ *Ibid.*

⁴⁴ A. M. Panoff, *op. cit.*, p. 511.

⁴⁵ P. Schebesta, *Among Forest Dwarfs in Malaya*, as cited by M. K. Jessup, *The Expanding Case for the UFO* (N. Y., 1957), p. 231.

⁴⁶ R. Van Over, *op. cit.*, p. 392.

⁴⁷ G. Parrinder, *African Mythology* (London, 1967), p. 20.

⁴⁸ E. A. W. Budge, *Osiris and the Egyptian resurrection*, Vol. II (N. Y., 1911/1973), p. 364.

⁴⁹ M. Griaule & G. Dieterlen, "Un Système Soudanais de Sirius," *Journal de la Société des Africanistes* XX:1 (1950), p. 274.

⁵⁰ V. C. Mutwa, *Indaba, My Children* (Johannesburg, 1965), p. 3.



Yoruba woman whose ancient tribe believed the "world" to have
originally been all a watery marsh.
(From a wood-block print by Omotayo Aiyegbusi.)

But even this "nothingness" seems to have been but a memory of "something," for it is additionally stated that "[this] Nothingness had been floating, for no one knows how long, upon the invisible waters of Time..."⁵¹

THE LONG NIGHT OF RUMIA

This primeval night of nights must have impressed the ancestors of the Tahitians deeply for in the mythology of no other race does the topic surface as often and with such descriptive clarity. "All was darkness," a Tahitian Creation chant intones, "it was continuous, thick darkness."⁵² In this darkness existed Ta'aroa (The-unique-one) who, like the Saturnian deity of other races, was said to have "developed himself in solitude." He was the ancestor of all the gods who "made everything." "From time immemorial was the great Ta'aroa, Tahitumu (The-origin)." He was said to have been his own parent, having had neither father nor mother.⁵³ There was only Ta'aroa, "and he alone."⁵⁴

The Darkness in which Ta'aroa existed was remembered as the night of Rumia.

"The night of Rumia was a long night to name; it was thick darkness, the long night to name. The nights would be millions in the long night to name; it was the long, wearisome night, the night of Rumia!"⁵⁵

While this darkness was described as having been primarily in the sky, in which the creator was seen to hover, it does not seem to have restricted itself to the celestial waters. Since this darkness was said to have preceded the appearance of the Sun, as is also implied in *Genesis*, it would necessarily mean that the *entire* sky was immersed in it. Needless to say, such a darkness could not but have touched Earth and, in fact, many of the myths we have already enumerated more than intimate this. In some instances, the myths themselves actually state as much.

It therefore becomes obvious that the age of darkness preceded the time when Saturn shone as a true sun. As we have seen, time and again we are told that, during this age of darkness, no Sun, no Moon, no stars were seen. It therefore seems that we are still missing something crucial. What was it that hid the Sun, the Moon, and the stars from view?

Another problem that arises at this point, of course, has to do with life itself. Could life, let alone man, have existed during a protracted period during which Earth would have been immersed in darkness?

⁵¹ *Ibid.*

⁵² T. Henry, *Ancient Tahiti* (Honolulu, 1928), p. 336.

⁵³ *Ibid.*

⁵⁴ *Ibid.*, p. 337.

⁵⁵ *Ibid.*, p. 404.

Chapter 14

The Dawn of Creation

THE PRIMORDIAL GLOW

The description of this “thick darkness” might have left the reader with the impression that, during the period in question, there was absolutely no light. A moment’s reflection, however, should tell one that, for anything to have been visible, there must at least have been a modest amount of illumination. Even though not yet glorious as a sun, Saturn must have still shed *some* light. And, to be sure, the mytho-historical record is not exactly silent on this.

The Book of the *Secrets of Enoch* describes the *beginning* of Creation in a somewhat fuller manner than does the Book of *Genesis*. It is from its pages that we learn of the uncoiling of Adoil as the very genesis of this process. In the quote that follows, God is describing to Enoch the manner in which he created the cosmos:

“I commanded in the very lowest parts that visible things should come down from invisible, and Adoil came down very great, and I beheld him, and lo! *he had a belly of great light*.

“And I said to him: ‘Become undone, Adoil, and let the visible come out of thee.’

“And he became undone...”¹

The name “Adoil,” also “Idoil,” probably derives from the Hebrew *id El*, that is “hand of God” or, more appropriately, “hand of El,”² that is Saturn. The coming undone of Adoil, meanwhile, presupposes that the planetary deity had originally been tightly coiled, which is not at odds with our hypothesized nebular cloud. Note, however, that Adoil is claimed to have had “a belly of great light” even *before* he became undone to *release* that light.

The Eskimo entity known as Raven, whom we have already identified through the rules of comparative mythology as a representation of the Saturnian creator, was also said to have first existed in darkness. But there is something else of interest that is contained in this myth as paraphrased by Marion Wood:

¹ *Secrets of Enoch* XXV:1-4 (emphasis added).

² R. H. Charles, *The Apocrypha and Pseudopigrapha of the Old Testament*, Vol. II (Oxford, 1913), p. 445.

"In the beginning there was only darkness. Yet, in that darkness, there was already Raven. He was *still small and weak* and his special powers had not fully developed."³

Granted that nothing is here said about Raven having contained, or emitted, any light, the fact that he was described as having still been "small and weak" hints at the *apparent* ineffectuality of the entity involved; as so, incidentally, does the disclosure that his "special powers had not [yet] fully developed." What this tells us is that Raven/Saturn had not yet evolved into the glorious sun of night described by other races.

A tale similar to that of Adoil comes to us from South America. A. Metraux relates it in the following words:

"Here is the tale of creation as told by the Chibcha Indians of Colombia. When it was dark, before anything in the world existed, light was enclosed in something big, which the Muiscas called 'Chiminagua'."⁴

That this light of Chiminagua, like that of Adoil, was later released presupposes its pre-existence. Something similar is unequivocally stated in the *Linga Purana* where we read:

"When the night of Brahma born of the unmanifest reached the stage of dawn, this visible universe was one that had not been analyzed. It was still enveloped in the nocturnal darkness...[but] the self-born lord, he who achieves all the affairs of the worlds, *moved about like a glow-worm*, with a desire to manifest."⁵

What we are here told, then, is that not only was the universe—i.e. this "All"—originally in darkness, but Brahma, whom we have already identified as Saturn, radiated but only feebly, "like a glow-worm." This is like saying that Saturn's glow was not enough to dissipate the darkness.

According to the Mbayá:

"...the First Being [whom they called Ñamanduí and/or the Ñamandu Father]...made darkness. He made the cradle of darkness...[but] he did not see [this] darkness, *though the sun did not yet exist*. He was *lit by the reflection of his own inner self*."⁶

³ M. Wood, *Spirits, Heroes & Hunters from North American Indian Mythology* (N. Y., 1982), p. 17 (emphasis added); see also, R. Van Over, *Sun Songs: Creation Myths from Around the World* (N. Y., 1980), pp. 88-89.

⁴ A. Metraux, "South America: Creation and Destruction," *Larousse World Mythology* (London, 1972), p. 483.

⁵ *Linga Purana* 1:59:6-9 (emphasis added).

⁶ J. Bierhorst, *The Red Swan: Myths and Tales of the American Indians* (N. Y., 1976), p. 38 (paragraphing altered and emphasis added).

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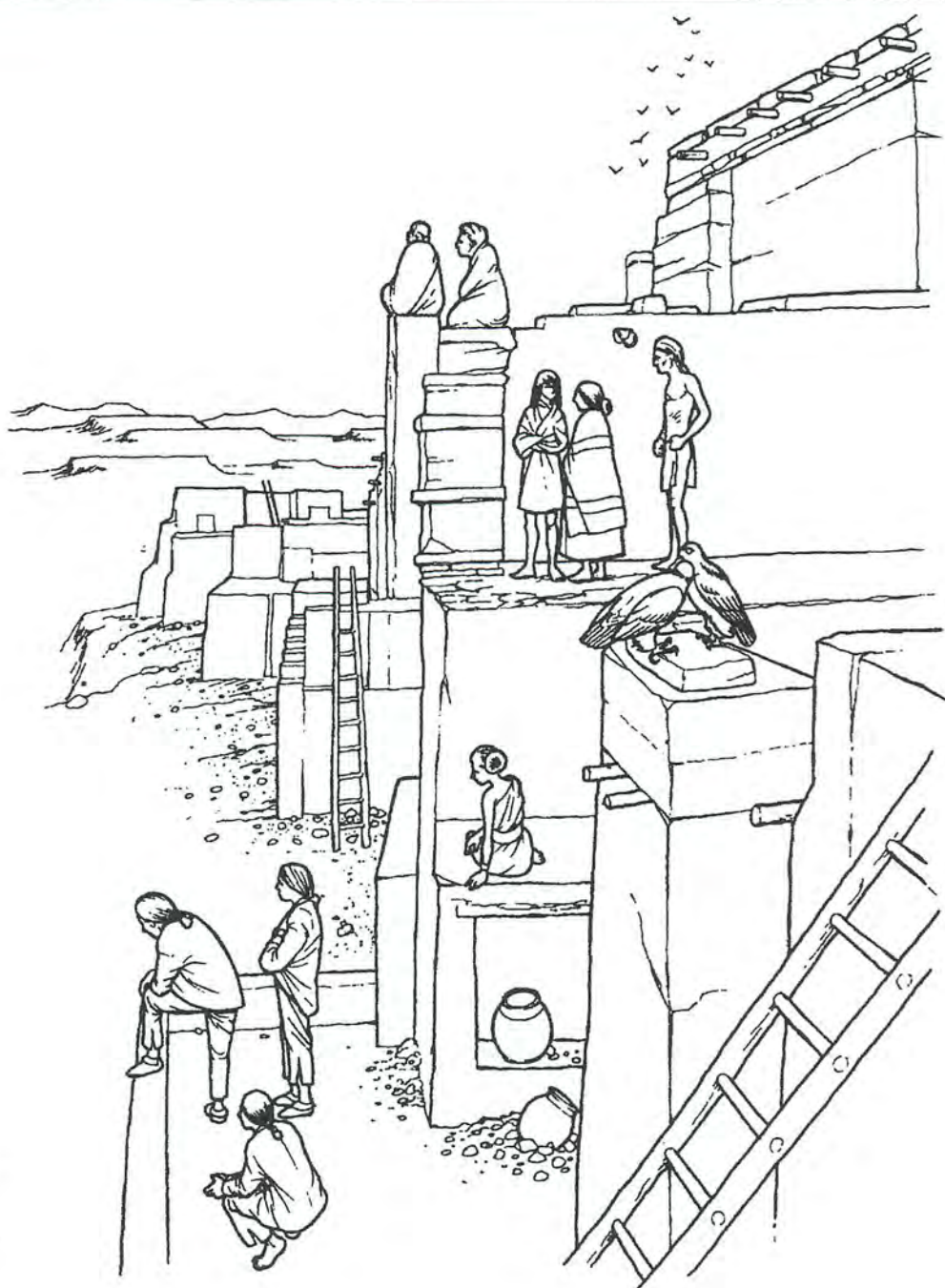
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Hopi pueblo, the inhabitants of which still remember the dark purple light of the first phase of the dawn of creation.
(Illustration by Peter F. Copeland.)

These fragments make us assume that, even during the age of darkness, Saturn was not entirely dark. The luminary radiated a diffused glow that was, however, too dim to dispel the surrounding darkness.

According to Hopi legend, there definitely *was* light in the sky during that early age; but it was a *dark* light. "This," the Hopi say, "was at the time of the *dark purple light*, Qoyangnuptu, the first phase of the dawn of creation..."⁷

A darkness that was not total is something that we continue to experience to this day. After all, our nights are dark but, except under the most adverse conditions, never totally so. Even when the full Moon sheds its light on Earth, the night remains dark despite its silvery gleam. The Saturnian milieu we have been examining need not have been that much different.

Even so, the problem remains: After all, at present, night gives way to day. But could life have survived in a dark environment that lasted for ages without the light of day?

CREATURES OF THE DARK

Sunlight is not essential to life *per se*.⁸

Microscopic bacteria are known to live in the ground, entirely bereft of light, enduring extreme temperatures, and thriving on a diet of metals and sulfur. Some of these microbes get their energy "by digesting compounds containing copper, arsenic, bismuth, molybdenum, nickel, antimony, uranium, vanadium and zinc." As they digest this hellish banquet, the microbes excrete pools of sulfuric acid. Ever since the 1970s, this knowledge has been successfully utilized in the mining of metals by introducing such bacterial organisms which extract metals from ores by simply digesting them.⁹

Methane-producing microbes known as *Archaea* live at great marine depths in a sunless world close to abysmal hydrothermal vents. Nor are microbes the only forms of life that cluster around these orifices. In the 1970s, scientists discovered that flues near the Galápagos Islands support a thriving community of bacteria, tube worms, and even clams "*whose primary source of energy is not light but sulfur compounds emitted by the vents.*"¹⁰

Two large communities thriving in similar sites were discovered in the eastern Pacific, a few hundred miles from Easter Island, in May 1981 by members of the Woods Hole Oceanographic Institution and the Scripps Institution of Oceanography. Apart from bacteria, worms, and clams, these communities also contained mussels, starfish and actual fish which were photographed at depths reaching 9,000 feet. Like the communities discovered earlier, these organisms thrive on chemical energy "*independent of the heat and light from the sun that sustains most life on earth.*"¹¹

⁷ F. Waters (with O. White Bear Fredericks), *Book of the Hopi* (N. Y., 1963), p. 6 (emphasis added).

⁸ See here, for instance, the speculative short essay by M. Grant, "A New Energy of Life?" *Science Digest* (November 1983), p. 22.

⁹ Anonymous, "Marvelous Microbes Mine Metals," *Science Digest* (Special Winter 1979 Edition), p. 28.

¹⁰ J. Horgan, "In the Beginning...", *Scientific American* (February 1991), p. 121 (italics added); see also, L. Thomas, "On Life in a Hell of a Place," *Discover* (October 1983), pp. 42-45.

¹¹ Anonymous, "Oases Under the Sea," *Discover* (July 1981), p. 12 (emphasis added).

Since then, many such community-bearing deep-sea apertures have been discovered.¹² As Robert Ballard reported:

"We've now found this kind of community life from twenty degrees north to twenty degrees south of the equator. It's obvious to us that there must be many, many more communities in between to make it possible for these animals to migrate along the ridge."¹³

In fact, it is now being theorized, but by no means universally accepted, that life itself might very well have originated at such vents,¹⁴ while it is giving hope to others that life might yet be discovered in the seemingly inhospitable environments known to exist on other bodies, both planets and satellites, of our Solar System.¹⁵ As Barry Came noted, judging by the evidence of Earth's ocean bottoms, sunlight does not appear to be a prerequisite.¹⁶

In 1998, the submerged Axial Volcano rumbled into renewed life with an outpouring of lava that rose to fill an old scar a mile beneath the surface, while Axial's crater sank by an added 10 feet. Scientists working at the New Millennium Observatory, which monitors the ocean bottom some 290 miles off the Oregon coast, were offered the chance to study the drifting of continents at first hand. Submersibles, robots, and remote-controlled cameras joined forces in collecting information. Apart from the geologic implications of the undersea eruption, it also gave scientists a chance to study the ecological changes that ensued.¹⁷ As reported by Jessica Gorman:

"Even as lava overran old life at the bottom, jets of water squeezed out by the volcano disgorged bacteria that thrive at 220 degrees Fahrenheit—hotter than household boiling water—from even more searing environments below. *Despite the complete lack of sunlight*, bacterial colonies bloomed around Axial, feeding on volcanic chemicals like hydrogen sulfide, and tube worms arrived seemingly from nowhere. Such scenes of rebirth are probably common along the 40 thousand miles of mid-ocean ridges, where the Earth's crust is torn apart."¹⁸

Deep sea life in sunless waters, but away from deep sea vents, has actually been known to exist from much earlier than the 1970s. As Lincoln Barnett describes, in "the zone of utter blackness, animals display the brown and black shades of *Melanocetus* and *Photostomias*, though a few, such as the scarlet deep-sea prawns, astonishingly wear bright col-

¹² See for instance, R. D. Ballard, *Exploring Our Living Planet* (Washington, D.C., 1983), pp. 123-131.

¹³ *Ibid.*

¹⁴ B. Came, "Mysterious Moon," *Maclean's* (April 21, 1997), p. 43; J. Horgan, *loc. cit.*

¹⁵ See for instance, E. Ferington, *Voyage Through the Universe: Life Search* (Alexandria, Virginia, 1988), p. 70.

¹⁶ B. Came, *loc. cit.*

¹⁷ J. Gorman, "Bubbling Under," *Discover* (March 2000), p. 12.

¹⁸ *Ibid.* (emphasis added); see also, R. Gore, "Our Restless Planet Earth," *National Geographic* (August 1985), pp. 164-165.

ors for reasons no one can guess.”¹⁹ “But the fact that most deep-sea fish are also equipped with enormous gaping mouths and long, needlelike teeth,” Barnett continues, “is suggestive of the bitter struggle to survive in the blind depths where food is located by chance.”²⁰

These creatures, nightmarish monsters from a sunless depth, live in such total darkness that some of them grow and carry their own light. To quote Rachel Carson:

“For the darkness of the lower depths has forced many creatures to make their own light. Perhaps half of the fishes that live in dimly lit or darkened water, as well as many of the lower forms, are phosphorescent. Many fishes carry torches that can be turned on or off at will, presumably to help them find or pursue their prey. Others have rows of light over their bodies, in patterns that vary from species to species. This may be a sort of recognition mark or badge by which the fish can be known as friend or enemy.”²¹

Moreover:

“*Down beyond the reach of even the longest and strongest of the sun’s rays, the eyes of fishes are different. They become enlarged, as though to make the most of any chance light of whatever sort. Or they may be telescopic, large of lens, and protruding. Some fishes, on the other hand, have become blind, as has happened to certain cave animals that live in a world of darkness. To make up for their lack of eyes, the blind animals of the sea have marvelous feelers and long, slender fins. With these they grope their way like so many blind men with canes. They get their knowledge of enemies or food through the sense of touch.*”²²

Sea plants do not grow at these depths so that these “hungry flesh-eaters prey fiercely upon each other, yet the whole community depends in the end upon the slow rain of food particles descending from above.”²³ The fierceness of the death struggles that must go on in this Stygian gloom “is seen in the saber-toothed jaws of some of the small, dragonlike fishes of the deeper waters, in the immense mouths, and in the elastic bodies that make it possible for a fish to swallow another several times its size [where] *pressure and darkness are the conditions of life...*”²⁴

Sulfur-sustained life is found not only around deep sea vents, but also up on land, out of the sea, in caverns as dark as the oceans’ abysmal depths. Such a cavern, known as the Cave of the Lighted Town—a misnomer, if ever there was one—is located about forty miles south of Villahermosa in the Mexican state of Tabasco. Every April, Soque Indians gather at

¹⁹ L. Barnett, *The World We Live In* (N. Y., 1955), p. 130.

²⁰ *Ibid.*

²¹ R. Carson, *The Sea Around Us* (N. Y., 1958), p. 44.

²² *Ibid.* (emphasis added).

²³ *Ibid.*, pp. 44-45.

²⁴ *Ibid.*, p. 45 (paragraphing altered & emphasis added).

the cave for a ceremony in honor of their Mayan ancestors which includes the catching of mollies, a specie of cave fish which feed on midges and midge larvae which, in turn, feed on bacterial colonies that thrive on sulfur and excrete sulfuric acid.²⁵ As Louise Hose, who has studied the ecosystem in this cave, reported:

"There aren't many places in the world where we can see complex ecosystems *that are independent of sunlight*. We see it at the midocean ridges, and there are some hot springs. But this is an almost unique opportunity to study a complex ecosystem in a readily available site—*where there's no light coming in and yet we have a complex menagerie of organisms*."²⁶

Actually, the propensity of varied organisms that live entombed within Earth's caverns has been known and studied for far longer than Hose inadvertently intimates. Blind cave fish have been known since 1938;²⁷ cave-dwelling salamanders since 1689.²⁸ Not only do such creatures live in total darkness, light itself becomes a hazard—as proven by eye-less millipedes which curl up in frantic efforts to avoid artificially introduced beams of light.²⁹ As Donald Jackson could already write in 1982:

"Beneath the shroud of eternal darkness [that exists 'deep within the underworld'], no green plants—the basis of the food chain for most creatures—can grow. The environment could hardly seem less hospitable to life. And yet, astonishingly, animals can thrive in the caverns of the earth. Unseen, unheard, they creep and crawl, slither and scuttle, swim and fly, endlessly questing for the means of survival. In their marvelous physical adaptations, in the senses they use to navigate the perpetual night of a rockbound realm, in their extraordinary behavior and reproductive patterns, they offer a microscopic study of evolution."³⁰

None of these creatures of darkness are mammals, the class of animals to which man belongs. But consider the bat, many species of which spend their daylight hours hanging together upside down in the recesses of darkened caves. When they venture outside, it is at night—from total darkness to a lesser gloom. Their sonic ability allows them to navigate the caliginous corridors, often sinuous, as well as they do outside at night. Had they been blind, they would have been able to maneuver just as well. For all they require, the world outside could just as well be totally dark. They would survive.

Without relying on their sonic abilities, which they do not possess, various mammals, as well as some birds, have adapted so well to thriving at night that we now class them as

²⁵ Anonymous, "Cave Creatures," *Discover* (April 1998), pp. 18, 20.

²⁶ *Ibid.*, p. 20 (emphasis added).

²⁷ D. D. Jackson, *Underground Worlds* (Alexandria, Virginia, 1982), p. 119 ff..

²⁸ *Ibid.*, p. 130

²⁹ *Ibid.*, p. 131

³⁰ *Ibid.*, p. 119.



For all that bats require, the world outside could just as well be totally dark.
Shown above: Leaf Nosed bat.

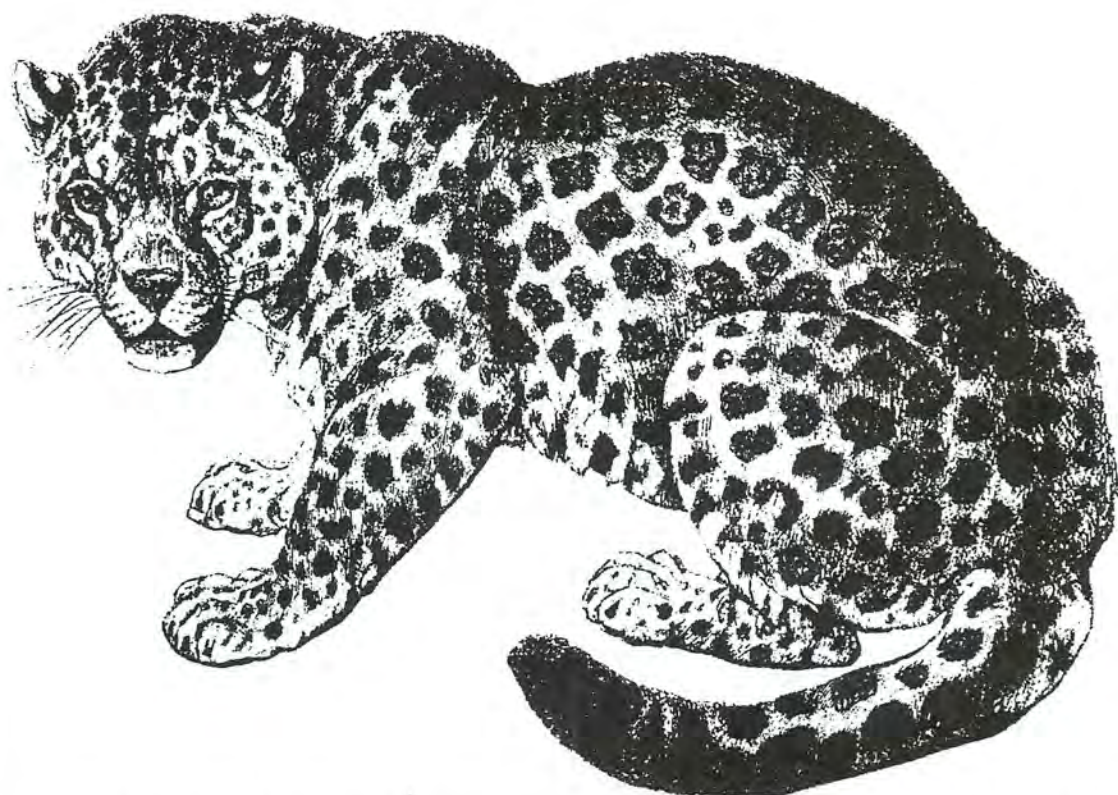
nocturnal animals. Not only do such creatures *thrive* at night, they have become better suited to it.

But man?

Man, too, is an adaptable animal, and there is no way anyone can tell whether he would have been able to adapt to an environment of total darkness. But this, after all, is merely academic, since it has not been proposed, let alone claimed, that the Saturnian age of darkness was one of totality. All that the above implies is that sunshine is not, and never has been, a prerequisite for life.

At present, man survives in an environment bathed in sunshine. But sunshine, in the end, is only starlight. And the brown dwarf star that once was Saturn would have bathed man in a similar, even if dimmer, light.

Unlike the blind creatures of dark caves and abysmal depths, man cannot survive on a diet of sulfur or metallic ingredients. Besides, as we have seen, some of the oceanic denizens we have just scrutinized depend on a rain of organic particles falling from above. Man had no such manna to nourish him. It is doubtful that, at this early stage of his career as a human he could have sustained himself solely on the flesh of other animals. And, in any



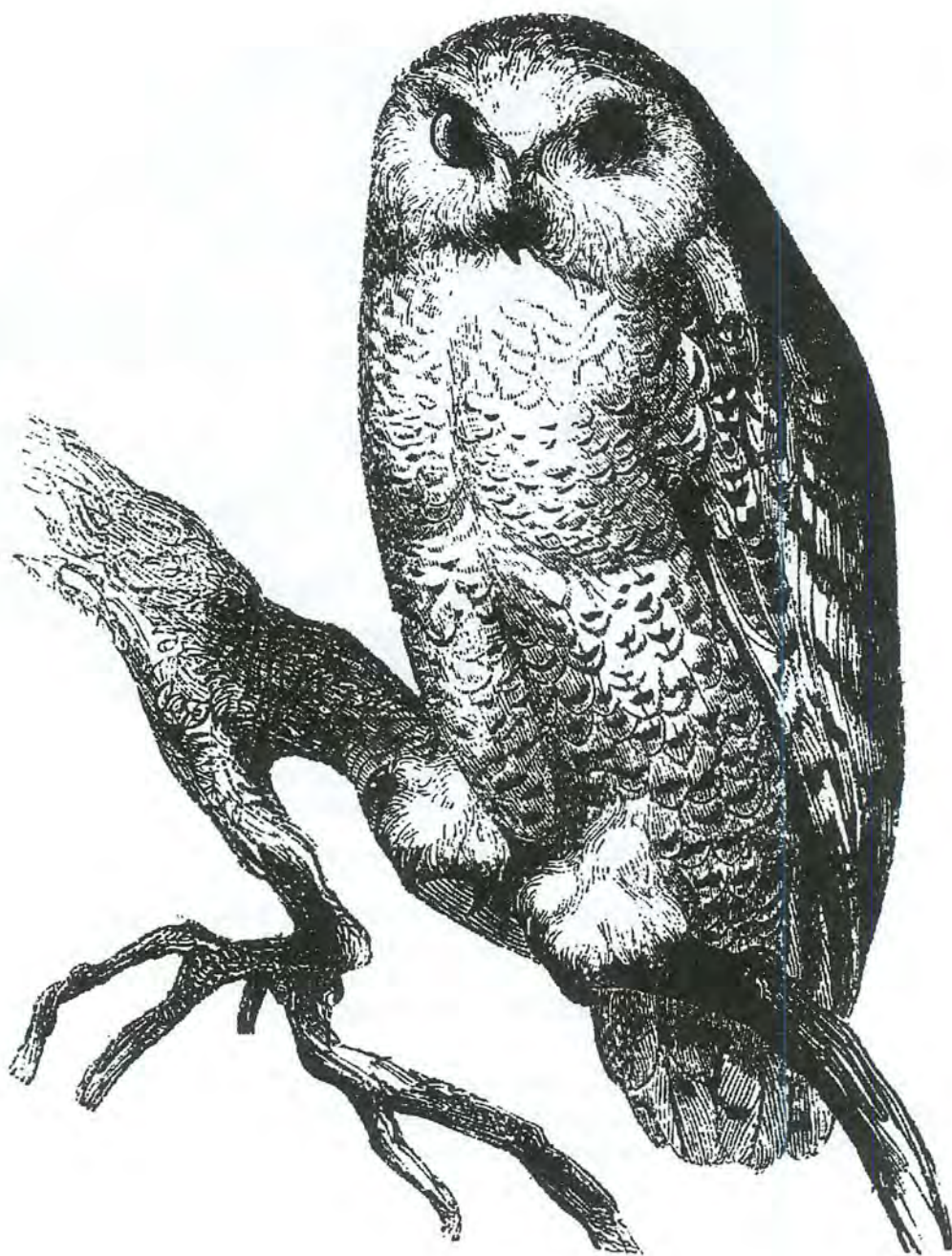
The jaguar, a nocturnal animal , so well suited to preying at night that it has become the terror of the South American forest denizens.

case, some of these other animals would have surely required a vegetal subsistence. And it is more than probable that so did man. The problem then becomes one of photosynthesis

PHOTOSYNTHESIS

The intricacies of the photosynthetic conversion is too complex to be reviewed in any detail here. Suffice it to say that photosynthesis is the process by which plants harness the energy of sunlight which is absorbed by the chlorophyll contained in their make-up. It has often been stated that, directly or indirectly, the entire organic food-chain required to sustain all plants and animals depends on the photosynthetic process. As we have already seen above, this does not hold for sulfur-ingesting bacterial organisms or those that survive by digesting metallic constituents. It does, however, seem to hold for all forms of higher life.

Because the primitive Earth—Saturn or no Saturn—would necessarily have been entirely different from the way it is at present, biologists had come to the conclusion that the photosynthetic process, whose sole support is chlorophyll, could not itself have been primeval. They therefore theorized that life must have originated through the aid of some unknown



Snowy Owl, one of many such birds who have perfectly adapted to a nocturnal life.

organic substances which were either produced by ultraviolet radiation or by electrical discharges in the form of lightning from Earth's primitive atmosphere.

As is well known, certain plants can grow in extreme environments, as in the Arctic regions, while others have adapted themselves to grow only in the tropics. And yet, the chemistry of photosynthesis is identical in all these plants. What actually transpires is that photosynthesis proceeds at a rate that is directly proportional to the incident radiation in which the light energy is utilized with the greatest efficiency. Moreover, it has been calculated that only about one to three percent of the light falling on any plant is actually transformed into chemical energy. Most of the Sun's radiation falling on a plant is lost through reflection and ineffective absorption by pigments other than chlorophyll (or, at least, other than those pigments in the chloroplasts).

How does all this affect our progressing theoretical construct?

Well, for one thing, Sunlight being starlight, photosynthesis would have been able to occur just as well under the light shed by the brown dwarf star that once was Saturn. Its dimmer light would have been compensated for by the plants' ability to control absorption in proportion to the incident radiation falling upon them.

Equally significant to our study is the fact that red light is the most important spectrum necessary for the growing of plants.³¹ Brown dwarf stars are known to radiate a propensity of red light. Thus, the spectrum of received light on Earth during the Saturnian period would have been much redder than at present³² and, therefore, more conducive to plant growth.

The brown dwarf star that was Saturn would have also radiated ultraviolet light.³³ But then so does the Sun. Ultraviolet rays are normally considered relatively harmless and even beneficial. Long-term exposure to high concentrations of these rays can, however, also prove harmful. We have no way of knowing how highly concentrated the ultraviolet rays from Saturn would have been. Since, even at its best, the Saturnian sun was feebler than the Sun, it is quite possible that its ultraviolet radiation would also have been feebler. During the age of semi-darkness with which we are presently concerned, when Saturn had not yet flared up as a true sun, its entire radiation might have been feebler still. In the meantime, it has been found that mosses in the Antarctic region are able to produce certain compounds which act to protect them against excessive ultraviolet radiation.³⁴ Who is to say that other plants might not have derived the same ability during the Saturnian era of semi-darkness had our brown dwarf primary radiated excessive ultraviolet rays?

THE REQUIRED TEMPERATURE

Light and photosynthesis, however, are not the only requirements for the subsistence of plants and animals. Life also requires heat, at least warmth—or so we used to think. As it

³¹ H. Gaffron, "Photosynthesis," *Encyclopaedia Britannica* (1959 edition), Vol. 17, p. 849.

³² W. Thornhill, "Stars in an Electric Universe," *AEON* V:5 (January 2000), p. 48.

³³ *Ibid.*

³⁴ *New Scientist* (November 24, 1990), p. 24.

turns out, living organisms can, and do, manage to subsist in temperatures well below zero. In 1989, Michael Tennesen could report that:

"In the 1960s the interior of Antarctica was declared a lifeless zone. But scientists have since discovered a rich array of organisms tucked away in isolated habitats. Robert Wharton, a biologist at the Desert Research Institute in Reno, has found life at the bottom of perpetually frozen lakes in an area of wind-swept, snowless valleys."³⁵

Lake Hoare, situated in a mountainous region 800 miles from the South Pole, is covered by a 20-foot thick sheet of ice, the mean *surface* temperature of which reaches 4° below zero. And yet, colorful algae-like organisms manage to survive underneath the lake's icy crust. As Wharton himself declared:

"[These algae-like organisms are] a fairly advanced form of life. You've got a cell wall, and you've got DNA inside the cell that is able to reproduce and pass on information to its offspring. It's not elephants, but it's a big step in the evolution of biology."³⁶

Or, as Chris McKay succinctly phrased it, even in permanent subfreezing conditions, "life can persist much longer than we'd thought."³⁷

True, as Wharton admitted, these algae-like organisms are not elephants—and a far cry from land plants and animals, to say nothing about humans. But, as in the case of those creatures that are able to exist in total darkness, the above serves to illustrate that generalities can often be deceiving.

An adaptation to cold is not called for in the primeval Saturnian environment we are attempting to reconstruct. As we have already seen in Chapter 5, even at present, Saturn radiates more heat than it receives from the Sun. We saw there that, while Jupiter's excessive heat is accepted as a residue from the planet's formative period, most of Saturn's had been relegated to kinetic energy released by the circulation of dissolved helium. But when Voyager 1 flew past Saturn in late 1980, it failed to uncover such evidence. As reported by Dennis Overbye:

"Pioneer 11 had found that Saturn radiates almost three times as much energy as it receives from the sun. Some scientists had suggested that the helium might be settling deeper inside Saturn's atmosphere than the hydrogen, releasing gravitational energy in the form of 'helium rain.' But this would leave Saturn's outer layers relatively deficient in helium, and Voyager found that this was not the case."³⁸

³⁵ M. Tennesen, "Mars: Remembrance of Life Past," *Discover* (July 1989), p. 86.

³⁶ *Ibid.*, p. 87.

³⁷ *Ibid.*

³⁸ D. Overbye, "Lord of the Rings," *Discover* (January 1981), pp. 21-22.

Thus, the "source of the heat bubbling up through Saturn's clouds" remained "a mystery that Voyager could not solve."³⁹

Meanwhile, the atmospheric scientist James Lovelock has made a name for himself with his theory of Gaia in which Earth is treated as a living organism. While this work has nothing to say for or against this proposition, some of Lovelock's insights are germane to our subject.

"For example, [according to orthodoxy] we know that when the solar system was formed the sun was dim and that it has heated up ever since. Yet Earth wasn't too cold for life in the beginning, and it isn't too hot for life now."⁴⁰

While Lovelock gives his own reasons for this, the belief that the Sun was much weaker in Earth's dim past has now gained acceptance. In analyzing the problems of climate thought to be inherent during the Archaean era—3.8 to 2.5 billion years ago—Gregory Jenkins speaks of an environment that "was very warm with a sun that is much cooler than today's."⁴¹ Geological evidence indicates that this trend continued into the early Precambrian period during which "Earth was much warmer...than it is today, *despite a weaker sun*."⁴²

Billions and millions of years are far removed from the Saturnian era with which we are concerned. The point I wish to stress, however, is that even as per orthodox belief, life on Earth does not seem to have required abundant heat from the Sun. We notice, for instance, that the reconstructions of primeval plants by paleobotanists, who are guided in their reconstructions by fossils found in coal and other deposits, end up showing some rather tall specimens exhibiting sparse crowns of foliage. Such a study, for instance, was recently conducted on specimens recovered from the coal seams of the American Midwest and Ohio Valley, which are believed to have been laid down by vast swamps which once stretched from Missouri to Pennsylvania. The lycopods, forty-five to ninety feet tall,⁴³ that were reconstructed from these remains have all the appearance of trees which seem to be straining their trunks in order to reach a feeble light, just as some plants do when grown in a dimly-lit terrarium that is kept in a darkened room.⁴⁴ Thus, for instance, when the succulent popularly known as hens-and-chickens, which usually grows relatively flat to the ground, is grown in such a terrarium, it tends to stretch tall and spindly with its fleshy leaves growing in an open and loose spiral until it either reaches the light or bends and breaks under its own weight.⁴⁵

As paleobotanists from the University of Illinois who studied the remains of lycopods ascertained: "Plant life was quite different then; most plants had no seeds, and flowers had not yet made their appearance."⁴⁶ True, these trees are supposed to have thrived three

³⁹ *Ibid.*, p. 21.

⁴⁰ O. Morton, "Is the Earth Alive?" *Discover* (October 1999), p. 98.

⁴¹ G. S. Jenkins, "Did Cosmic Impact Change Earth's Tilt?" as quoted in *SIS Internet Digest* 2000:1, p. 13.

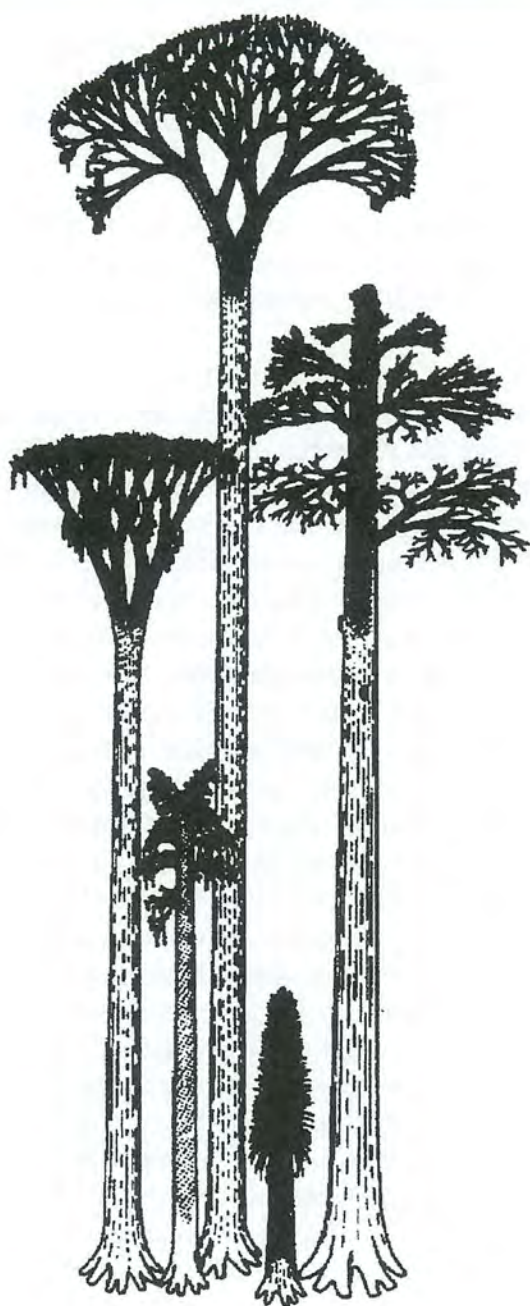
⁴² *Ibid.*, (emphasis added).

⁴³ J. Augusta, *Prehistoric Animals* (London, 1967), p. 21.

⁴⁴ Personal observation.

⁴⁵ Personal observation.

⁴⁶ University of Illinois, "Primeval Swamps," *Science Digest* (January 1990), p. 45.



Lycopod trees, up to 90 feet high, straining their trunks in order to reach a feeble light.

hundred million years before the present. (Photosynthesis manifested itself in blue-green algae at the end of the pre-Cambrian era some 200 million years ago⁴⁷—although this figure varies from one authority to another.)

The reconstruction of such trees, as also earlier and more primitive ones, together with vistas of the environmental terrain that sustained them, had been going on much earlier than the Illinois University experiment. Dated to the late Silurian and all through the Devonian periods (c. 325-280 million years ago), the first land-based plants all exhibited the same spindly character with sparse verdant crowns which, like the lycopod trees, give the impression that they all had to struggle for whatever available dim light there was to nourish them. And while plant life continued to evolve and spread from the Paleozoic to the Mesozoic eras, from the Devonian through the Jurassic and end of the Cretaceous periods, they were still spindly specimens struggling to reach the light.⁴⁸ It was not until the age of mammals, predominantly during the Paleocene period, that the land became engulfed in a verdant profusion of subtropical plants.

None of this is to say that the plants of the Quaternary era, which saw the advent of man, and which is, therefore, the era with which we are concerned, were anything like those of the pre-Cambrian down to the Cretaceous. But several things need to be pointed out here, not the least of which being the fact that photosynthesis works just as well under conditions other than those existing in the present world. (Of photoperiodicity we will speak in a following chapter.) Moreover, and what is more important to our study, is that if life could have originated under a dim cold Sun, to say nothing of the constant volcanic outpourings which are believed to have clouded the sky through most of Earth's primeval eras, it could certainly have originated and thrived under a dim, *but warmer*, brown dwarf star. Which brings me to ask: *Has it ever occurred to anyone that the sun which bathed Earth with its radiance during its past geologic eras might not have been our present one?*

THE PLASMASPHERE

The problem we now face is this: With Saturn stationed above Earth's north celestial pole, and the Sun still somehow absent, how could the world have received *uniform* radiation? How could Earth's southern hemisphere been bathed in light and heat when it would have been entirely shielded from the north-radiating brown dwarf star that was Saturn?

These are questions that have intrigued various other researchers. Prime among them, back in 1980, was Roger Ashton. What he finally settled upon was a shell of gas and dust, or bubble, within the hollow of which the Saturn-Earth system would have abided. The interior surface of this shell, according to Ashton, would have reflected back Saturn's radiation to-

⁴⁷ Z. V. Špinar, *Life Before Man* (London, 1972), p. 54.

⁴⁸ See here, for example, L. Barnett, *op. cit.*, pp. 96-103; see also the magnificent illustrations by Zdenek Burian in J. Augusta, *op. cit.*, plates 5, 6, 7, 9; other relevant illustrations by Burian can also be found in Z. V. Špinar, *op. cit.*, pp. 63-65, 70-74, 76-77, 80-81.

wards all terrestrial latitudes "such that all parts of the Earth would have had very much the same climate at sea level..."⁴⁹

A year later, Ashton was referring to this shell, or bubble, as a magnetosphere, the "distinctive layer" of which would have consisted "of a plasma opaque to visible light."⁵⁰ Being opaque, it would all the more have been able to reflect Saturn's radiation inward in all directions.⁵¹

What Ashton did not know was that, for different reasons, Ralph Juergens had already proposed such a plasma sheath four years earlier. "Presumably," Juergens had written, "both [Saturn and Earth] would be enveloped in a common magnetosphere which...I would equate with a sheath between the solar-wind plasma and any material body, or closely coupled systems of bodies, at non-plasma potential."⁵²

At this point, some of my lay readers may want to know: What is a plasma?

Common examples of plasma are what is created in neon tubes and in the brilliant arc of an arc-welder. At its simplest, to quote Wallace Thornhill, it "is an ionized gas in which the atoms or molecules have been stripped of their electrons, allowing both positive and negative charges to move independently."⁵³ There are those who deny that plasma is itself a gas, calling it instead a fourth state of matter which often *behaves* like a gas, but which conducts electricity and is affected by magnetic fields.

There was a time, not so long ago, when astrophysicists had close to no use for electricity, let alone plasmas, in astronomy. But by 1999, Dennis Gallagher, a plasma physicist at NASA's Marshall Space Flight Center, could claim that "99.9 percent of the Universe is made up of plasma."⁵⁴ All of a sudden, astronomers started talking about near-Earth plasma environment, plasmaspheres, plasma convections, and their associated Birkeland currents.⁵⁵

Plasma, however, is one thing; a plasma sheath or bubble is another. And yet, according to Thornhill, one characteristic of plasmas is that they tend to shield bodies embedded in them by creating what is known as a Langmuir sheath around them.⁵⁶

By 1997, even Talbott had jumped on this band-wagon, opting for a more extensive and encasing atmospheric shroud around the Saturnian system we have been reconstructing. As he explained: "There are many indications that the [Saturnian] planetary configuration initially moved through a gas cloud or envelope preventing any sharp contrast of light and

⁴⁹ R. Ashton, "Research Memorandum #3: Notes Relevant Mainly to Saturn Studies" (deposited with the author, dated January 1, 1980), p. 2.

⁵⁰ *Idem*, to C. J. Ransom, September 8, 1981 (private communiqué), cc. to D. Cardona

⁵¹ Similar ideas have also been proposed by R. Forshufvud, "Protosaturn and Velikovsky's Cosmogonical Reconstruction," *KRONOS* X:3 (Summer 1985), pp. 103 ff.; but see also D. Cardona, "The Road to Saturn," Part II, *AEON* I:3 (May 1988), pp. 134-136; R. B. Driscoll, "Magnetic Models of the Polar Configuration," *AEON* IV:2 (August 1995), p. 19

⁵² R. E. Juergens to D. Cardona, December 19, 1976, private communiqué.

⁵³ W. Thornhill, *The Electric Universe* (Beaverton, Oregon, 1997), p. 16; see also, *idem*, "New Physics Supports Planetary Catastrophism," *Chronology & Catastrophism Review* 1998:2, p. 11.

⁵⁴ NASA internet headline dated September 1999—see "Plasma, Plasma, Everywhere," *SIS Internet Digest* 1999:2, p. 5.

⁵⁵ ADS Abstract Service—see "ADS Abstracts," in *ibid.*, p. 16.

⁵⁶ E-mail message forwarded by David Talbott to the Kronia electronic discussion group, February 26, 1997.

shadow one might expect from illumination by the Sun.”⁵⁷ At the same time, Thornhill was suggesting something quite similar. As Talbott reported: “I should mention here that, according to Wal Thornhill, it is possible that in the more electrically active phases the entire configuration may have moved within a [plasma] discharge sheath—something that would not preclude general illumination by the Sun, but could have kept the illumination diffuse.”⁵⁸ In his own work, that same year, Thornhill described the “[Saturnian] planetary group” as having been “inside a gigantic cometary coma.”⁵⁹ Three years later, Thornhill restated his conviction when he wrote that, in his opinion, Earth orbited in the anode dark space beneath the chromosphere of the brown dwarf that was proto-Saturn.⁶⁰

“Earth situated inside the spherical envelope of such a star radiating according to the usual inverse square law, would find the energy influx almost equal over the entire planet. Such an arrangement is far more benign toward life than at present where the energy source, the Sun, subtends a small angle in the sky.”⁶¹

Brown dwarf stars, to which we had compared both Saturn and Jupiter in an earlier chapter, had by then been discovered in quantity. In our neighborhood alone, it has been stated, there may be more brown dwarfs than Sun-like stars.⁶² Some of these have been calculated to be one-tenth the size of the Sun with a temperature rising no more than 950° K.

In answer to the question whether living entities, including man, would have been able to breathe the constituents of Saturn’s brown dwarf atmosphere, Thornhill replied with the words:

“We are [presently] nestled in the Sun’s atmosphere without it causing us any problems. Proto-Saturn’s envelope would have been more dense but still a good approximate to a vacuum. The constituents of the atmosphere of brown dwarf stars, so far as they have been determined, seem to include water molecules and others helpful to life.”⁶³

What did Thornhill mean by stating that we are presently nestled within the Sun’s atmosphere. As Gary Zank plainly puts it: “We’re surrounded by hot gas.”⁶⁴ And whence this gas? Zank explains:

“As our sun moves through extremely ‘empty’ or low-density interstellar space, the solar wind produces a protective bubble—the heliosphere around our solar system, which allows life to flourish on Earth...Without the heliosphere, neutral hydrogen would interact with our atmosphere, possibly producing catastrophic climate changes,

⁵⁷ D. Talbott, *Symbols of an Alien Sky* (Beaverton, Oregon, 1997), p. 61.

⁵⁸ *Ibid.*

⁵⁹ W. Thornhill, *The Electric Universe* (see above), p. 95.

⁶⁰ *Idem*, “Stars in an Electric Universe,” *AEON* V:5 (January 2000), p. 48.

⁶¹ *Ibid.*

⁶² A. Burrows, “Extrasolar Giant Planets and Brown Dwarfs,” *Science* (August 6, 1999), pp. 847-848.

⁶³ W. Thornhill, “The Electric Saturnian System,” *AEON* VI:1 (February 2001), p. 33.

⁶⁴ A. Yee, “Sir Fred Hoyle Vindicated After 60 Years,” *SIS Internet Digest* 1998:2, p. 12.

while our exposure to deadly cosmic radiation in the form of very high-energy cosmic rays would increase.”⁶⁵

What, then, is the Sun’s heliosphere?

As already noted, astrophysicists now believe that 99.9 percent of the Universe is made up of plasma. Cometary tails are also now known to be composed of plasma.⁶⁶ But, more than that, the Solar System itself is encased in a magnetic bubble, known as the heliosphere, that contracts and expands “like a colossal jellyfish.”⁶⁷ Although the existence of the heliosphere had already been known, Pioneer 10 revealed that the bubble is much larger than it had been predicted. Its edge is now believed to lie somewhere between 5 and 10 *billion* miles from the Sun. It is this heliosphere—this “breathing bubble” as it is now being called—that acts as a “cocoon” which “allows life to flourish on earth.”

What all this amounts to is that Earth resides within the Sun’s heliosphere, just as Ashton and Thornhill suppose it once resided in proto-Saturn’s plasma sheath, a hypothesis that can no longer be dismissed as far-fetched.

As Thornhill explained further:

“The astronomer [William] Herschel believed that people inhabited the Sun beneath its shining clouds. We now know that is a crazy idea. But would it be so crazy if the Sun were a brown dwarf star? To a close observer, proto-Saturn would have looked like a dim red star. Red giants have immense, very low density envelopes. If Betelgeuse were to replace the Sun, it would encompass all of the planets out as far as Jupiter! Astronomers accept the idea that planets could orbit within the thin envelope of such stars.”⁶⁸

“Another interesting consequence is that all objects orbiting in that region *would receive the same energy per unit area of their surface*. The spectrum of the light would have been much redder than at present...”⁶⁹

True, as already noted, Earth’s primordial star would have been feebler than our present Sun, but this would have been compensated for by Earth’s proximity to proto-Saturn which would have involved a stretch that was much shorter than its present distance from the Sun, to say nothing of the redder spectrum of light in which it would have been bathed.

But could Saturn’s plasmasphere have existed within the Sun’s heliosphere which is itself nothing but a plasmasphere? Can a plasmasphere exist within another? As already noted, our world itself is now being spoken of as being in a “near-Earth plasma environment.”⁷⁰ What does this mean?

⁶⁵ *Ibid.*

⁶⁶ T. Dickinson, “The Seeds of Life,” *Equinox* (July 1997), pp. 65-66.

⁶⁷ T. Yulsman, “Pioneer 10 Maps Cosmic Bubble,” *Science Digest* (September 1982), p. 17.

⁶⁸ W. Thornhill, “Stars in an Electric Universe,” *AEON* V:5 (January 2000), pp. 47-48; see also, “The Last Supper,” *New Scientist* (November 13, 1999), p. 45.

⁶⁹ W. Thornhill, *op. cit.*, p. 48 (emphasis added).

⁷⁰ R. W. Schunk, *et al.*, “The Flow of Plasma in the Solar Terrestrial Environment,” *Final Technical Report*, Utah State University Logan Center for Atmospheric and Space Sciences (September 1990).



Wallace Thornhill
(Photograph—1995—by the author)

It was in 1962, due to Mariner 2, that the interplanetary medium was found not to be a near-vacuum as previously believed. Instead, this medium was found to consist of plasma. But, even then, the full implication of this discovery was not immediately understood. As Ralph Juergens, writing in 1972, noted:

"One of the primary characteristics of a plasma has up to now received little or no attention from astronomers. This is its ability to shield itself from the electric field of any body in contact with it, or contained within it, and charged to an electric potential different from that of the plasma itself. The mechanism by which such shielding is accomplished was named the space-charge sheath by those who first studied the phenomenon."⁷⁰

And:

"By the same sort of analysis, I would conclude that the earth has a potential not quite in keeping with its space environment, and that it therefore is surrounded by a space charge sheath. For the same reasons that a comet's sheath is elongated away from the sun, I would suppose that the earth's sheath has a tail; in other words, I would equate the terrestrial sheath with the earth's so-called magnetosphere."⁷¹

So, also, Wallace Thornhill who, during one of the question periods at the Society for Interdisciplinary Studies' Silver Jubilee in September 1999, made reference to "Earth's windsock-like envelope" usually referred to as its "magnetotail." As he there pointed out: "In Juergens' view it is a plasma sheath..."⁷²

By the turn of the century, astrophysicists themselves were speaking of plasmaspheres around the bodies of the Solar System as if they had always known about them. Venus, it was discovered, possessed a plasmasphere in the form of a cometary tail that spread close enough to "tickle the Earth when the two planets are in line with the Sun."⁷³ Jupiter, too, is now known to be surrounded by a plasma sheet which, like the Sun's electrical current sheet, lies along Jupiter's magnetic equator.⁷⁴ So, similarly, with Saturn. As Thornhill noted, had Saturn's plasma sheath been visible in the sky, it would make the planet appear as a distinct disc instead of the mere pin-point of light we see in the night sky.⁷⁵ Eventually, Earth's own plasmasphere, which has been calculated to extend at least 12,000 miles into space, was even "photographed."⁷⁶

⁷⁰ R. Juergens, "Reconciling Celestial Mechanics and Velikovskian Catastrophism," *Pensée* IVR II (Fall 1972), p. 7.

⁷¹ *Ibid.*, p. 12.

⁷² W. Thornhill, *Chronology & Catastrophism Review* 2000:1, p. 94.

⁷³ *Idem*, *The Electric Universe* (Beaverton, Oregon, 1997), p. 18.

⁷⁴ NASA release as reported by W. Thornhill, "Did They Really Say That?" *Thoth* (electronic newsletter) III:1 (January 24, 1999), p. 12; see also, *New York Times* (May 29, 1999); *New Scientist* (August 7, 1999), pp. 26-31.

⁷⁵ W. Thornhill, see reference # 72.

⁷⁶ K. A. Svitil, "Ring of Fire," *Discover* (September 2000), p. 26.

Like Juergens, astrophysicists originally expected Earth's plasmasphere to be elongated very much like that of Venus.⁷⁷ But when NASA's IMAGE satellite beamed back a picture of sunlight being scattered off the helium ions in the plasmasphere, it turned out to be circular in shape.⁷⁸ Whether this was due to a misunderstood vagary, imperfect instrumentation, faulty reasoning, or whether it is really so remains to be seen.

It is thus obvious that plasmaspheres *are* contained within larger plasmaspheres since the planetary plasmaspheres within our Solar System are all contained with that of the Sun.

There is therefore nothing unusual about our posited Saturnian system having been enclosed within a plasmasphere as hypothesized by Ashton in 1980. On the contrary, the theory not only fits current astrophysical reality, it is actually demanded by it.

All of the plasmaspheres within the Solar System, however, are transparent and, as such, are not able to reflect radiation back toward the primary around which they are wrapped. As already noted, Ashton had theorized that the plasmasphere surrounding our posited Saturnian system would have had to have been opaque. But can a plasmasphere be opaque? The answer is that it can. As Anthony Peratt, one of the foremost plasma physicists alive today, has stated, a "plasma cloud...indeed can vary between transparent and opaque at different wavelengths."⁷⁹ So in that, also, we seem to be on the right track.

SIXTH INTERLUDE

In the meantime, before moving to the next phase of our reconstruction, which will help us to unearth more of the evidence we are looking for, it behooves us to recapitulate what we have learned in these last three chapters. It also allows us to expand our list of theses which, in keeping with the chronological sequence of events, will now have to be reshuffled and re-numbered.

Hypothesis #1: That, from what can be deduced from ancient as well as primitive astronomical lore, Earth had once been a satellite of the planet Saturn, originally a brown dwarf star, which, because of its proximity, loomed large in the sky as a distinct disc larger than the apparent size of the full Moon.

Hypothesis #2: That, still according to ancient astronomical lore, during this indeterminate period, Saturn was the only visible celestial body in Earth's primordial sky.

Hypothesis #3: That, as seen from Earth, the Saturnian sun did not rise and/or set, but remained visibly immobile at all times.

Hypothesis #4: That Saturn's immobility was due to the fact that Earth was stationed directly "beneath" Saturn's south pole and that, from Earth, Saturn therefore appeared to be permanently fixed in the north celestial sphere, the very place now occupied by the Pole Star. What this also means is that Saturn and Earth were linearly aligned with the both of them sharing the same axis of rotation.

⁷⁷ *Ibid.*

⁷⁸ *Ibid.*

⁷⁹ A. L. Peratt, on the Intersect electronic discussion group sponsored by KRONIA Communications, April 26, 2002.

Hypothesis #5: That both Earth and Saturn were embedded in a plasmasphere centered on proto-Saturn, the opacity of which enabled proto-Saturn's radiation to be reflected toward all terrestrial latitudes.

Hypothesis #6: That, according to some of man's earliest memories, Earth was originally engulfed in what our ancestors persistently referred to as darkness. This was an age which, despite its remoteness in time, ended up etching itself indelibly in human consciousness. It was a time during which the Sun, the Moon, and the stars were not yet visible in the sky. Saturn ruled alone.

Hypothesis #7: This age, we have also found out, could not have been one of *total* darkness, and that, in fact, mankind itself remembers that the Saturnian deity actually shed a feeble light. The terrestrial environment during this age was bathed in a perpetual twilight or, rather, a protracted dawn, which man remembered as the dawn of Creation.

Hypothesis #8: That, during this period, a nebulous entity, which our ancestors had difficulty in describing clearly, surrounded the Saturnian primary. We have conjectured this entity to have been a placental cloud, or circumstellar disk, surrounding the Saturnian orb. This entity seems to have been that to which the ancients alluded to as Chaos.

Hypothesis #9: During this same unspecified period, the Saturnian orb was seen to float over an apparition which, to ancient man, looked like water, a cosmic ocean. This "water" was probably the same nebular disk which, spinning slowly, would have had the appearance of a celestial whirlpool.

Hypothesis #10: That, *at some later time*, Saturn shone much brighter than it had previously done, bright enough for ancient man to allude to it consistently as a sun.

Hypothesis #11: That this primordial Saturnian sun shone during that time we today call the night.

One thing to keep in mind is that ancient man could only describe what he had witnessed in the sky. Our ancient forefathers could not, however, tell what the cause of any of it was. It is even doubtful that they thought about it or even cared. To them, whatever it was they saw was simply there. Unlike our present Sun, proto-Saturn did not rise or set. It did not move. It just sat there, doing nothing. It offered them no harm. It had always been there. They had always remembered it. They would have taken it for granted.

There is, however, one discordant note concerning all this. As it is now becoming increasingly clear, there is "a dearth of brown dwarfs in close orbits around Sun-like stars"⁸⁰ —which means that the chances of our Sun having had a brown dwarf in orbit around it is pretty slim. It therefore seems we are not yet out of the woods.

⁸⁰ A. M. MacRobert, "The Closest Brown Dwarf to a Star," *Sky & Telescope* (August 2002), p. 20.

Chapter 15

The Timeless Era

THE FATHER OF YEARS

If what has so far been postulated actually transpired, it would logically follow that, during the age of darkness, or perpetual dawn, man would have had no means of telling time. With a dim Saturnian orb embedded within an indistinct nebulosity perpetually suspended overhead, and with the Sun, the Moon, and the stars still apparently absent from the sky—in other words, without the succession of day and night—there would have been nothing on which ancient man could have focused that would have enabled him to calculate the passage of time. This, then, presents us with yet another opportunity to test the internal consistency of the mytho-historical record because, if the above surmise is correct, our theory demands that the record should have something to say about the subject. If man could not tell time, he would have known nothing about it. The idea of a day, a month, or a year would have meant nothing to him. The concept of time would not even have occurred to him. But since, at some point, man was given the means by which he was able to calculate the passage of time, he would have remembered the previous timeless era. It is therefore inconceivable that he would not have left a record of this earlier situation. Does man's collective memory have anything to say about any of this? Can this demand be met?

In this connection, as in many others, ancient man did not mince words. Not only did he leave us records of a timeless era and of an age when time began, he inexorably tied it all with the Saturnian deity and his planet. The *Satapatha Brahmana*, for instance, unequivocally speaks of a time when the year "was not then in existence."¹ And that the year was connected with our Saturnian deity can be inferred from the Ugaritic pantheon where we find El, "the creator of created things," also alluded to as "the father of the years."² In Egypt, too, Ra was made to utter: "I am the maker of hours, the creator of days, I am the opener of the festivals of the year."³

Not only the year but, according to the ancients, time itself was not. As the *Malay Charmbook*, in its inimitable mixture of Muslim and pagan doctrines, has it stated:

¹ A. B. Cook, *Zeus: A Study in Ancient Religion*, Vol. II, Part II (N. Y., 1965), pp. 1035-1036.

² A. Murtonen, *A Philological and Literary Treatise on the Old Testament Divine Names* (Helsinki, 1952), p. 31; A. Caquot, "Western Semitic Lands: The Idea of the Supreme God," *Larousse World Mythology* (London, 1972), p. 87. (NOTE: Murtonen's belief that this particular epithet of El is due to "later theologumena" is contradicted by comparative mythology.)

³ E. A. W. Budge, *The Gods of the Egyptians*, Vol. I (N. Y., 1904/1969), p. 383.

"In the days when Haze bore Darkness, and Darkness Haze, when the Lord of the Outer Silence Himself was yet in the womb of Creation, before the existence of the names of Earth and Heaven, of God and Muhammad, of the Empyrean and Crystal-line spheres, or of Space and Void, the Creator of the entire Universe pre-existed by Himself, and He was the Eldest Magician...Now *from before the beginning of time* existed that Magician—that is, God."⁴

In the above, beyond the statement concerning the beginning of time, we again catch sight of that indistinct nebulosity surrounding the primordial Saturnian orb, here referred to as Haze, which is not far removed from that of the fog described in the Yuki and Oceanic myths we have previously encountered. Meanwhile, Macrobius also tells us that:

"...they [i.e., the ancients] conclude that, when there was chaos, *no time existed*, insofar as time is a fixed measure derived from the revolution of the sky. Time begins there; and of this is believed to have been born Kronos [i.e., Saturn] who is Chronos [i.e., Time]..."⁵

CHRONOS

The equation of Kronos/Saturn with Chronos/Time has long been contested by philologists. Arthur Cook, commenting on the Philadelphians' identification of Janus with Kronos/Saturnus, for instance, has it that: "The confusion of Ianus [the same as Janus] with Kronos no doubt presupposes the usual blunder Kronos = Chronos, which from the fifth century B.C. onwards queered the course of Greek theology."⁶ The identification of Janus as Kronos, however, is not due to confusion anymore than the equation of Kronos with Chronos is due to a blunder. As William Heidel had earlier noted:

"It is not for naught that Pherecydes identified Cronus [the same as Kronos] with Chronos (Time), whose cycle is defined by the year...The myths and festivals of Cronus-Saturn prove beyond a doubt that he was associated with the turn of the year...for the myth of the Golden Age, which coincided with the beginnings of mankind...is connected with the reign of Cronus-Saturn...In keeping with this fact is the recognized association of Saturn with Janus."⁷

This view has more recently been echoed by Livio Stecchini:

"It is true that for a person who consults a dictionary the name Kronos is different from the Greek term *chronos*, meaning 'time'; but there is no difference to a person

⁴ R. Van Over, *Sun Songs: Creation Myths From Around the World* (N. Y., 1980), pp. 386-387 (emphasis added).

⁵ Macrobius, *Saturnalia* I:22:8 (emphasis added).

⁶ A. B. Cook, *op. cit.*, p. 374.

⁷ W. A. Heidel, *The Day of Yahweh* (N. Y., 1929), pp. 468-469.

acquainted with classical literature. The association of Kronos...with *chronos* is well established in poets of the fifth century B.C. This association is as old as the first Greek speculations on the nature of time in the preceding early period of Greek culture."⁸

So, similarly, with the Italic god Saturnus, as Cicero informs us:

"Saturnus was chosen as the one to have as his province the intervals and cycles of time. In Greek this god is called by the very word time, since Kronos is the same as *chronos*, that is, time. We call him Saturnus because he saturates himself with years."⁹

Stecchini goes on with:

"The etymological connection of the two words *Kronos* and *chronos* has been positively affirmed by some linguists and strongly denied by others, because, on the one hand, the semantic similarity of the two words is evident and, on the other, from a technical linguistic point of view, the difference between K and *ch* is most significant."¹⁰

AION

As for Janus himself, Lydus informs us that he was by some considered the father of Aion and, by others, Aion's very self.¹¹ But Aion, who was the god of time which gave us the English word "eon," was that "unlimited order" held as an "indestructible bond" by Kronos, who was Saturn.¹² More than that, Aion has been directly identified as Saturn.¹³ As the god of time, Janus was made to preside over the first day of the month, and the first month of the year, which month, in fact, was named after him—*Januarius*, i.e., January.¹⁴ In time, and for reasons we shall soon see, he even became the god of the seasons.¹⁵

The association of Saturn with time, meanwhile, does not rest on the fallacious etymological equation of Kronos with Chronos, as Giorgio de Santillana and Hertha von Dechend eventually pointed out when they stated that:

"It is not hidden from us that the indestructible laws of philology do not allow for the identification of Kronos and Chronos, although in Greece to do so 'was customary at

⁸ L. C. Stecchini, "Chronos and Kronos," *KRONOS* VII:2 (Winter 1982), p. 41.

⁹ Cicero, *De Deorum Natura* II:25.

¹⁰ L. C. Stecchini, *loc. cit.*

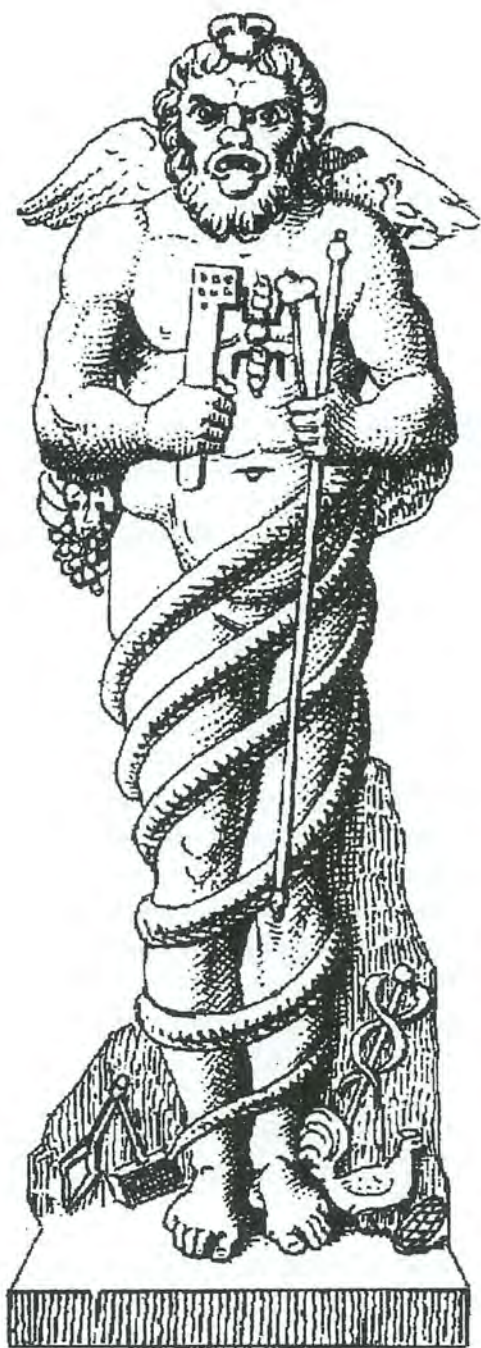
¹¹ A. B. Cook, *op. cit.*, pp. 336-337.

¹² *Orphic Hymn*, #13.

¹³ F. Cumont, *The Mysteries of Mithras* (N. Y., 1956), pp. 105-107; D. Ulansey, *The Origin of the Mithraic Mysteries* (N. Y., 1989), pp. 120 ff.; R. Van der Broek, *The Myth of the Phoenix* (Leiden, 1972), p. 300.

¹⁴ P. Grimal, "Rome: Gods by Conquest," *Larousse World Mythology* (London, 1972), p. 178.

¹⁵ Ovid, *Fasti* I:125.



Aion — who gave us the English word “eon” — Saturnian Time personified.

all times'...yet it seems advisable to emphasize, on the one hand, that technical terminology has its own laws and is not subject to the jurisdiction of linguists, and to point, on the other hand, to one of the Sanskrit names of Saturn, i.e., 'Kala,' meaning 'time'..."¹⁶

Thus, in Sanskrit, one of the names for the planet Saturn and the word for "time" are one and the same, both rendered "Kala." But also:

"It should be stressed that the disinclination of philologists to allow for the 'essential' connection of Chronos and Kronos rests upon the stern belief that the 'god' Saturn has nothing to do with the planet Saturn, and upon the supposition that an expert in classical philology has nothing whatever to learn from Indian texts. Were it not so, they might have stumbled over Kala, i.e., Chronos, as a name of Yama, i.e., Kronos, alias the planet Saturn."¹⁷

That Time (Kala) was a name of Yama can also be learned from E. Burgess;¹⁸ that the Hindu Yama, the same as the Persian Yima, was Saturn can be learned from Hermann Collitz.¹⁹ So that this, also, is the same as saying that Time was another name for Saturn.

Besides, leaving Chronos aside, Kronos was himself lauded as "the originator of times."²⁰

KALA

To the Hindus, the "Wheel of Time" is known as the Kala-cakra (or "chakra").²¹ Of importance to our thesis is the fact that it was Brahma, i.e. Saturn, who is said to turn this wheel of time.²² In the *Svetasvatara Upanishad*, it is stated that: "Some wise men, deluded, speak of Nature, and others of Time as the cause of everything, but it is the greatness of God by which this Brahma-wheel is made to turn."²³ Thus the same source alludes to Brahma as "the time of time."²⁴ The *Mundaka Upanishad* proclaims that the year, indeed, came from Brahma.²⁵ What has also significant meaning is the added fact that the waters of chaos, which we have previously had reason to connect with Saturn, were said to have arisen from Kala.²⁶

¹⁶ G. de Santillana & H. von Dechend, *Hamlet's Mill: An Essay on Myth and the Frame of Time* (Boston, 1969), p. 135.

¹⁷ *Ibid.*, p. 373.

¹⁸ E. Burgess, *Surya Siddhanta* (Calcutta, 1860/1935), p. 5.

¹⁹ H. Collitz, "Konig Yima und Saturn," *Festschrift Pavry* (1993), pp. 86-108; see also, *Linga Purana* 1:60:2-5.

²⁰ G. de Santillana & H. von Dechend, *op. cit.*, p. 133.

²¹ W. E. Begley, *Visnu's Flaming Wheel: The Iconography of the Sudarsana-Cakra* (N. Y., 1973), p. 96.

²² F. O. Schrader, *Introduction to the Pancaratra and the Ahirbudhnya-Samhita* (Madras, 1916), pp. 106, 132.

²³ R. Van Over, *op. cit.*, p. 308.

²⁴ *Ibid.*

²⁵ *Ibid.*, p. 311.

²⁶ *Atharva Veda* XIX:54.

In the *Atharva Veda* it is stated that: "Time is the lord of all, who was the father of Prajapati" but also that "time in the beginning [is or was] Prajapati."²⁷ That Prajapati is to be identified as Saturn need not be repeated. The *Satapatha Brahmana* tells us that "Vaishvānara...truly is the year, and Prajapati is the year."²⁸ In fact, Prajapati is alluded to as "the year" in numerous passages of the same work. There, Varuna, whom we have also identified as Saturn, is also referred to as "the year."²⁹ Meanwhile, we have already seen Vishnu, whom we have also equated with Saturn, being lauded as Mahakala, which name we have translated as "Great Saturn." But, seeing as Kala also means Time, the same epithet can be translated as "Great Time."³⁰ The result is the same because, as all the above should have indicated by now, as far as the ancients were concerned, the god and planet Saturn was synonymous with time. Thus Iranian Time was also personified as Zurvan,³¹ whose Saturnian identity, as we have already seen, is well attested.³²

According to the *Atharva Veda*, Kala, who was both Time and the planet Saturn, was considered the very first god,³³ which is in keeping with our thesis. As we had also seen in an earlier chapter, Dhruva, the Pole star, had also been an earlier name of Saturn and, as such, the word *dhruva* came to have the meanings of "time," "epoch," and/or "era."³⁴

THE SLOW-MOVING PLANET

The association of time with the planet Saturn could not, of course, have eluded mythologists and, in seeking an explanation, they naturally appealed to logic. Back in 1875, Gustave Schlegel, citing Dupuis, justified the phenomenon by referring to the planet's present lagging orbital pace:

"The planet, with its slow and heavy walk, imitating age, drags itself along its path, in a manner of speaking; before finishing its revolution, it would have seen a great number of men die whom it had seen born, so slow was its pace...He [i.e., Saturn] was the father of the years and the centuries...his was the longest measure of time which nature seemed to give for a single revolution of one of the celestial bodies or one of the moving stars. Is it not, therefore, natural to believe that the Ancients, who had attributed to each star its domain and its function in Nature, should have given to the planet Saturn the supervision of the celestial movements which regulate the length of the years and the centuries?"³⁵

²⁷ *Ibid.*, XIX:53:8-10 (emphasis added).

²⁸ *Satapatha Brahmana* V:2:5:14.

²⁹ *Ibid.*, IV:1:4:10.

³⁰ V. S. Apte, *The Practical Sanskrit-English Dictionary* (Delhi, 1965), p. 749.

³¹ S. G. F. Brandon, *Creation Legends of the Ancient Near East* (1963), p. 203.

³² J. O'Neill, *The Night of the Gods* (London, 1893), pp. 778-779.

³³ *Atharva Veda* XIX:53:2.

³⁴ V. S. Apte, *op. cit.*, p. 531.

³⁵ G. Schlegel, *Uranographie Chinoise* (Leiden, 1875), p. 628 (as translated privately for the author by Birgit Liesching & Gayle Chin Anderson).

Stecchini, on the other hand, reversed the process by assuming that it was "because of Kronos's association with time that his name was given to the most distant of the seven heavenly bodies...because it concludes its orbit in 30 years, so that a day in its year corresponds to a month in the earth's year."³⁶

Saturn's slow motion along its orbit, however, does not explain why the planet was also chosen to represent the year. If any celestial body can presently claim the right to represent the year, it surely would have to be the Sun. As an indicator of the passage of time, it remains supreme. Even the Moon would have been a better indicator with which to gauge the progress of time. Moreover, our ancient forebears, living in this primeval era, would hardly have even noticed the planet Saturn if it then appeared, like now, as nothing but a pin-point of light in the night sky. More importantly, Dupuis', or Schlegel's, as also Stecchini's, expositions do not explain what Saturn, *even as Time personified*, had to do with Creation. Besides, why would the slowness of the planet Saturn have led ancient man to believe in an era when time was not?

As we have indicated in earlier pages, and as we shall show more fully in a sequel volume, it was the Saturnian deity who was held responsible for the Creation. But, in an Iranian *Rivayat*, this role is bestowed on Time. "Time is both Creator and the Lord of Creation which it created," it is there stated.³⁷ This is paralleled by the *Atharva Veda* which states that "Time created the earth..."³⁸ A curious passage concerning Creation in a Hindu *Brahmana* brings various elements together:

"Then the seed [of Creation] became a year. Before that time there was no year."³⁹

Thus, despite the fact that the waters of chaos were said to have been born of Time, as we have seen above, the reverse was just as true. As it was said, the waters of chaos themselves produced the year, "the ordainer of the days and nights."⁴⁰ We also have it from the *Maitri Upanishad* that "the year, verily, is Prajapati [that is Saturn, who] is Time."⁴¹

What all this intimates is that what Hindu sources term as "the year" is a synonym for "time." This synonymy is also apparent in Hebrew where *yom* (or *yowm*), which is normally taken to mean "day," has the additional meaning of "year" but also "time."⁴² So, similarly, in Egypt. The word *thera*, which means "year," also means "time."⁴³ Thus Ptah, whom we have already seen identified as Saturn, was called "the Lord of the Year,"⁴⁴ whereas Atum, his alter-ego, was called "the Lord of Time."⁴⁵ The two epithets are synonymous.

³⁶ L. C. Stecchini, *loc. cit.*, (emphasis added).

³⁷ S. G. F. Brandon, *op. cit.*, p. 204.

³⁸ *Atharva Veda* XIX:53:6-10.

³⁹ R. Van Over, *op. cit.*, p. 318.

⁴⁰ *Rig Veda* X:190:2.

⁴¹ *Maitri Upanishad* VI:15.

⁴² J. Strong, *Hebrew and Chaldee Dictionary* (Madison, 1890), p. 48.

⁴³ E. A. W. Budge, *An Egyptian Hieroglyphic Dictionary*, Vol. II (N. Y., 1920/1978), p. 857.

⁴⁴ M. S. Holmberg, *The God Ptah* (Lund, 1946), pp. 22, 64, 77, 178-180.

⁴⁵ R. T. R. Clark, *Myth and Symbolism in Ancient Egypt* (N. Y., 1959), p. 56.

DIONYSUS

In our first chapter we saw Dionysus as the original impetus behind Greek drama. But who was this god?

The mythology of Dionysus presents him as a rambunctious conqueror who spread terror, as well as civilization, to the (known) world. Wherever he went, he introduced the grape vine and, with it, the fermentation of wine. In this respect he was similar to the Egyptian Osiris/Saturn who also traveled the (known) world, bringing civilization to the countries he visited, as so did other Saturnian deities.

Eusebius Pamphili (c. 260-340 A. D.) already knew that the Greek Dionysus was the equivalent of the Egyptian Osiris.⁴⁶ He knew about this equation from Plutarch (c. 46-120 A. D.)⁴⁷ and the even earlier Herodotus who lived in the 5th century B.C.⁴⁸ The similarity between Dionysus and Osiris, moreover, did not merely concern their histories as civilizers, but even their rites. This was so much so that Herodotus was driven to claim that the rites of Dionysus could only have been borrowed by the Greeks from the Egyptians.⁴⁹ These similarities, however, are not restricted to Dionysus and Osiris, but are common to various other Saturnian deities. (There is also some indication that, in some quarters, Dionysus was identified as an alter-ego of Helios⁵⁰ who, as we have already seen, was the original Greek name of the planet Saturn.)

The association of time with Saturn explains why the much later festivals of the New Year, touched upon briefly in preceding pages, were devoted to Saturn in his many guises. We should therefore not be surprised to find that among these festivals were those held in honor of Dionysus, who is not only identifiable as the Saturnalian king,⁵¹ but also directly as the Saturnian deity.⁵² It was not, therefore, spurious of William Heidel to note the obvious connection of Dionysus with Aion.⁵³ As Marija Gimbutas informed her readers: "In these festivals, which have assimilated elements of deep antiquity, Dionysus appears as a year-god."⁵⁴

QUETZALCOATL UNVEILED

The Aztec deity Quetzalcoatl, known to the previous Maya as Kukulcan, has been identified by various authorities as different celestial, and non-celestial, entities: as the Sun;⁵⁵

⁴⁶ Eusebius Pamphili, *Evangelicae Praeparationis* II:1:45d.

⁴⁷ Plutarch, *De Iside et Osiride* 35.

⁴⁸ Herodotus, *Historiae* II:42.

⁴⁹ *Ibid.* II:49.

⁵⁰ W. A. Heidel, *op. cit.*, p. 481.

⁵¹ *Ibid.*, p. 489.

⁵² W. F. Otto, *Dionysus: Myth and Cult* (Bloomington, 1965), pp. 195-201.

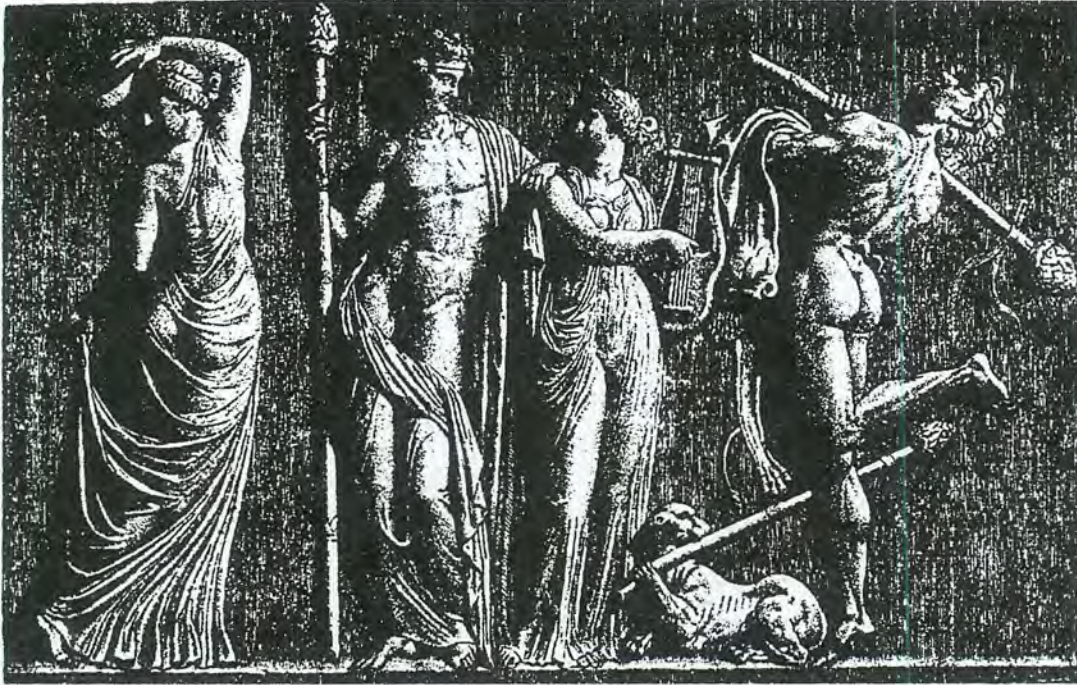
⁵³ W. A. Heidel, *op. cit.*, p. 490.

⁵⁴ M. Gimbutas, *The Goddesses and Gods of Old Europe* (London, 1982), pp. 227-228.

⁵⁵ M. Simoni, "Central America: Gods of Sacrifice," *Larousse World Mythology* (London, 1972), p. 461; D. Gifford, *Warriors, Gods & Spirits from Central & South American Mythology* (N. Y., 1983), p. 21; M. Oldfield Howie, *The Encircled Serpent* (N. Y., 1955), p. 302.



Dionysus.
Civilizer and Saturnalian king.



Mythological scene representing the New Year rite of Dionysus—the year-god.

as the Greek Hermes⁵⁶ and, therefore, Mercury; directly as the planet Mercury;⁵⁷ a comet;⁵⁸ as the Milky Way;⁵⁹ as the amorphous sky;⁶⁰ and even as a tenth century A.D. ruler of the Toltecs named Topiltzin⁶¹—although this latter actually refers to a “king” of the Toltecs who *took on* the name of Quetzalcoatl,⁶² very much like the Roman Emperor Marcus Aurelius Antoninus, born Varius Avitus, who *took on* the name of his preferred deity Elagabalus. As Ev Cochrane commented: “The celestial identification of Quetzalcoatl, quite clearly, is not a simple question, and it is further complicated by the fact that the Mesoamericans themselves apparently wavered with regard to the original celestial identity.”⁶³ It can safely be stated, however, that most scholars of Mesoamerican lore have accepted Quetzalcoatl as a personifi-

⁵⁶ H. Fox, *Gods of the Cataclysm* (N. Y., 1976), pp. 211, 217.

⁵⁷ D. Kelley, “Astronomical Identities of Mesoamerican Gods,” *Archaeoastronomy 2—Journal for the History of Astronomy* (1980), p. 16.

⁵⁸ P. Brown, *Comets, Meteorites and Men* (N. Y., 1973), p. 18.

⁵⁹ B. C. Brundage, *The Phoenix of the Western World* (Norman, 1981), pp. 112-113.

⁶⁰ *Idem*, *The Fifth Sun* (Austin, 1979), p. 105.

⁶¹ H. W. Goodkind, “Lord Kingsborough Lost His Fortune Trying to Prove the Maya Were Descendants of the Ten Lost Tribes,” *Biblical Archaeology Review* (September/October 1985), p. 65.

⁶² N. Baldwin, *Legends of the Plumed Serpent* (N. Y., 1998), p. 36.

⁶³ E. Cochrane, “On Comets and Kings,” *AEON* II:1 (June 1989), p. 65.

cation of the planet Venus since the time of the Spanish conquest of the Americas.⁶⁴ (Thus one should not castigate Immanuel Velikovsky who, on the testimony of Eduard Seler, adhered to this identification,⁶⁵ as so have many of his followers.) Jill Aberly, on the other hand, was not quite happy with this identification or with any of the others mentioned above—and rightly so. As she opined:

“Quetzalcoatl is a very ancient god with a multiple of aspects. As the feathered serpent, readers of Velikovsky will have no difficulty in identifying him as Venus in cometary garb. But beyond this he is the Lord of healing, learning, beauty, creativity and vegetation. He was a benefactor who brought to men the use of metals and the arts of government; who ruled in an age of perfumed, melodious plenty which can be regarded as the Golden Age of Mesoamerica...It would [therefore] appear that Quetzalcoatl was originally the Mesoamerican equivalent of Osiris or Saturn.”⁶⁶

Would that mainstream mythologists had been as astute. Aberly, of course, was not the first to ferret out the true identity of Quetzalcoatl,⁶⁷ but I mention her especially because her intuition exemplifies what can be gleaned by a mind which is not constrained by orthodox views.

What has confused the issue, and many a mythologist, is the Mesoamerican belief that when Quetzalcoatl died, his heart flew up and turned into the Morning Star,⁶⁸ which star has been usually understood as Venus when it appears in the morning⁶⁹—an event that, as we have seen on an earlier page, is duplicated in the mythology of the Egyptian Osiris/Saturn. What mythologists and archaeoastronomers seem to forget is that it was the *heart* of Quetzalcoatl, and not *Quetzalcoatl himself*, which turned into the Morning Star. Quetzalcoatl and the Morning Star were thus two entirely different entities.

Let me now state that nowhere in Mesoamerican lore is Quetzalcoatl identified as Saturn. If this identification is to hold, it must do so on the evidence offered by comparative mythology.

Like the Saturnian deity of other nations, Quetzalcoatl was considered as the creator.⁷⁰ Like the Saturnian deity of other nations, as Aberly indicated, Quetzalcoatl was also a civilizer.⁷¹ As in the Saturnian myths of other nations, Quetzalcoatl was the original one and only god. Thus, according to a Toltec hymn:

⁶⁴ See here, for example, E. C. Krupp, *Beyond the Blue Horizon* (N. Y., 1991), p. 199.

⁶⁵ I. Velikovsky, *Worlds in Collision* (N. Y., 1950), p. 157.

⁶⁶ J. Aberly, “Problems With the Morning Star,” *Chronology & Catastrophism Workshop* 1987:1, p. 9.

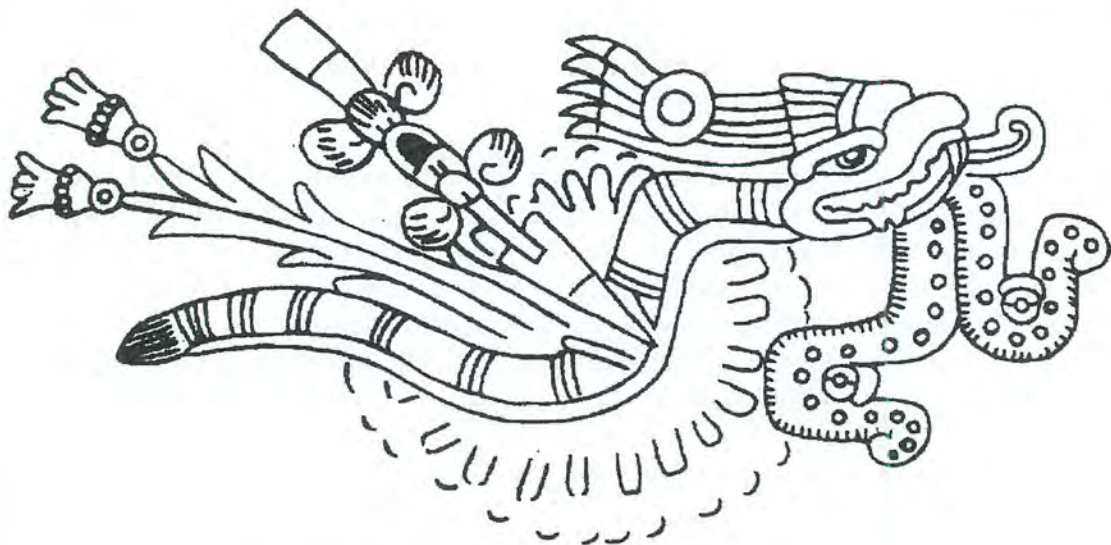
⁶⁷ While never explicitly stated, the identification of Quetzalcoatl as Saturn is more than intimated in G. de Santillana & H. von Dechend, *op. cit.*, pp. 42, 77, 78, 213, 247, 360; the identification is more apparent through the evidence presented by D. N. Talbott, *The Saturn Myth* (N. Y., 1980), pp. 13, 17-18, 57, 88, 163, 199.

⁶⁸ E. C. Krupp, *op. cit.*, pp. 200-201.

⁶⁹ But see here, D. Cardona, “Morning Star,” *AEON* V:1 (April 1995), pp. 11 ff.

⁷⁰ H. B. Alexander, *Latin American Mythology*—Vol. 11 of *Mythology of All Races* (1920/1964), p. 94; see also M. Simoni, *op. cit.*, p. 461.

⁷¹ N. Baldwin, *op. cit.*, pp. 34, 63, 79.



Quetzalcoatl as the Feathered (or Plumed) Serpent.

"Only one god did they [the ancestors] have,
and they held him as the only god,
they invoked him, they supplicated him;
his name was Quetzalcoatl."⁷²

According to M. Simoni: "All the great gods of the Aztec pantheon, both the tribal gods and those they won over [from preceding or neighboring civilizations], have a solar aspect and *are* the Sun in one of its attributes."⁷³ It may thus *seem* understandable when Quetzalcoatl himself is identified as an aspect of the Sun, not only by Simoni,⁷⁴ but by others as well.⁷⁵ The *Codex Borgia* actually reinforces this belief when it depicts Quetzalcoatl with the sign of Tonatiuh on the back of his head, since Tonatiuh had always been understood to be the Sun. And yet, the depiction in question incorporates the sign for "night" with that of Tonatiuh,⁷⁶ thus intimating that Tonatiuh and, by inference, also Quetzalcoatl, was a sun of night. That the sun of night was an aspect of the primeval Saturnian sun we have already seen.

⁷² J. W. Perry, *Lord of the Four Quarters* (N. Y., 1970), p. 196.

⁷³ M. Simoni, *loc. cit.* (emphasis as given).

⁷⁴ *Ibid.*

⁷⁵ D. Giffors, *loc. cit.*; M. Oldfield Howie, *loc. cit.*

⁷⁶ A. Vollemaere, "Venus—Geboorte en Leven," *Oud-America* 08 (August-October 1981), p. 122.

Additional to this, the Mayan sacred book known as the *Popul Vuh* informs us that the Plumed Serpent, that is Kukulcan/Quetzalcoatl, lived in an ocean—here understood as the celestial waters—in an era of primordial darkness.⁷⁷

“Whatever might be is simply not there:
only murmurs, ripples, in the dark, in the night.
Only the Maker, Modeler alone,
Sovereign Plumed Serpent...a glittering light.”⁷⁸

Moreover, in keeping with the topic of the present chapter, Quetzalcoatl was said by the Aztecs to have existed in the “Time Before Time”⁷⁹—that is, in a timeless era. The same belief is shared by the Mixtec who even claim they were the “direct descendants” of Plumed Serpent, and that they were “rooted” to their land “through him” since “the time before time.”⁸⁰

TIME ZERO

On an earlier page, we met with another Aztec god named Xiuhtecuhtli and although, like Quetzalcoatl, this deity is nowhere directly identified with Saturn, we there enumerated certain aspects of his which accord well with the Saturnian deities of other nations. Among these aspects is the deity’s other name of Huehueteotl, which means “the old god” and/or “the old god of the centre”; his being revered as “the sun of the centre” and “the central fire”; his being described as the pivot of the turning heavens; and his identification with the celestial pole. We can now add one more Saturnian characteristic of this god: Like the Greek Dionysus, he was also lauded as the year-lord.⁸¹

Leaving Central America, we travel briefly to China where we learn that the chaos out of which Creation progressed was equivalent to Huang-Ti, the Yellow Emperor, whom we have already encountered as a personification of the planet Saturn.⁸² Others, however, maintain that from chaos was born P’an-ku, the entity responsible for Creation.⁸³ The *Compendium of Wong-shi-Shing* recounts how “P’an-ku came forth in the midst of the great chaotic world,” having “existed before the shining of the light.” We are further told that: “After the chaos cleared away”—or after “the chaotic state passed away”—“heaven appeared first in order, then earth.” Parallel statements inform us that “the atmosphere had changed in character”—or “the atmosphere gradually cleared”—which seems to be the same as saying that the chaotic state had cleared. We can perhaps also understand this as meaning

⁷⁷ N. Baldwin, *op. cit.*, p. 29.

⁷⁸ *Ibid.*, p. 54.

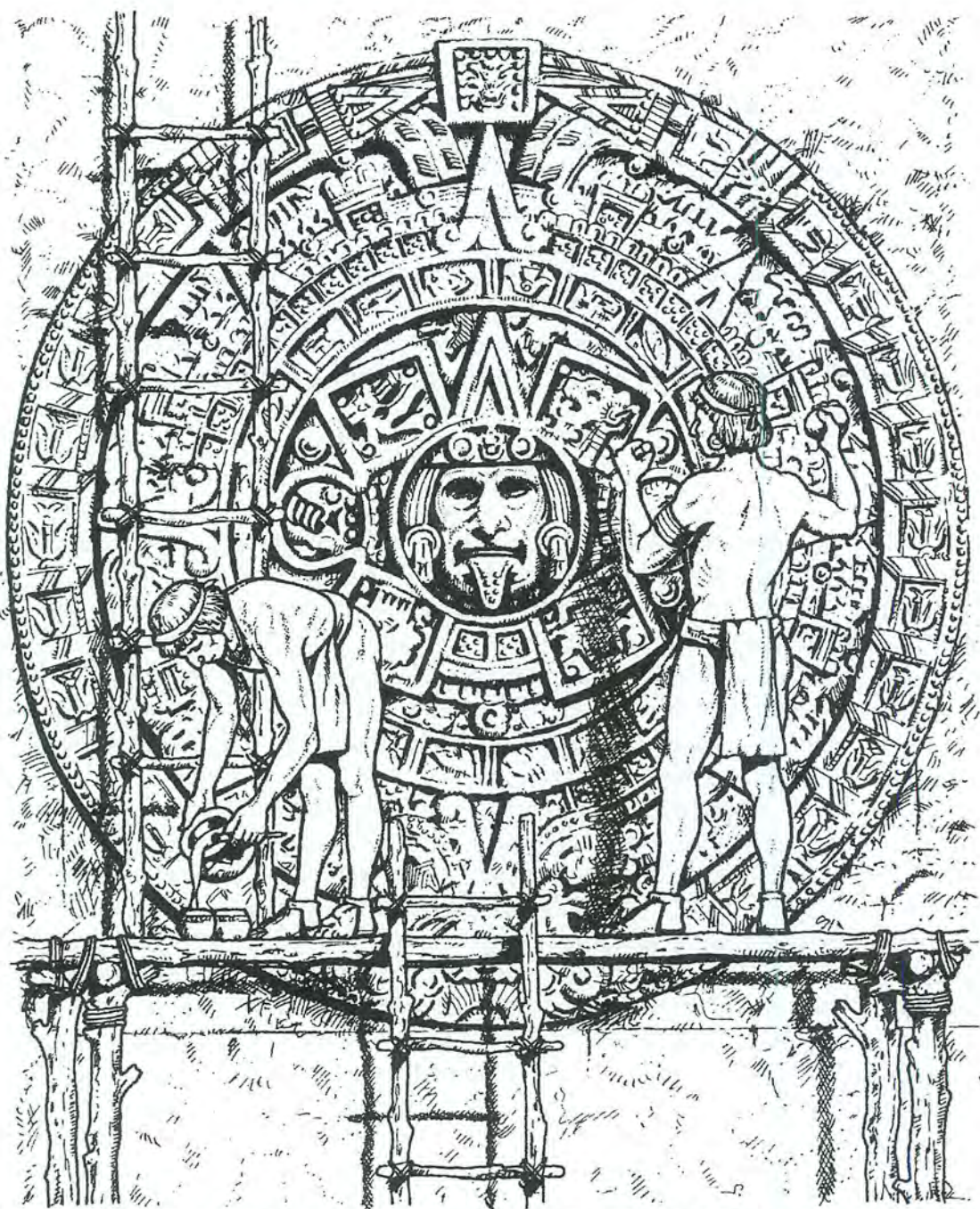
⁷⁹ *Ibid.*, p. 8.

⁸⁰ *Ibid.*, p. 47.

⁸¹ D. H. Kelley, “The Nine Lords of the Night,” *Contributions of the University of California—Archaeological Research Facility*, No. 16 (Berkeley, October 1972), p. 63.

⁸² M. Soyumié, “China: The Struggle for Power,” *Larousse World Mythology* (London, 1972), p. 274.

⁸³ *Ibid.*, p. 275.



Aztec sculptors carving out the great Sun Stone, also known as the Calendar Stone, which depicts Tonatiuh, identified in the *Codex Borgia* as the sun of night, in the centre. The Stone, 12 feet in diameter, and weighing 24 tons, is now housed in the National Museum of Anthropology in Mexico City. (Illustration by John Green.)



P'an-ku, born out of chaos, holding the Yin-Yang symbol , indicative of whirling motion.
(From a nineteenth century lithograph.)

that that indistinct nebulosity, spoken of in the mythologies of other nations, had dispersed. It was then that “the order of time was gradually settled” for, before then, “the day and night had not yet been divided” but that, eventually, “day and night were distinguished from each other.”⁸⁴

Thus while the Egyptian Ammon-Ra was lauded as “the god who was from the earliest times,” he was also remembered as “*the beginning which abides in all things.*”⁸⁵

Even though they were following a cosmic scenario entirely different from—and one can say in opposition to—the one proposed in this work, de Santillana and von Dechend could not help but realize that mythic themes pertained to a “Great Game played over the aeons, a never ending tale of positions and relations, *starting from an assigned Time Zero...*”⁸⁶

⁸⁴ As quoted by I. Donnelly, *Ragnarok: The Age of Fire and Gravel*, republished as *The Destruction of Atlantis* (N. Y., 1971), pp. 210–211.

⁸⁵ R. Petazzoni, “Aion-(Kronos) Chronos in Egypt,” *Essays on the History of Religions* (Leiden, 1954), pp. 174–175 (emphasis added).

⁸⁶ G. de Santillana & H. von Dechend, *op. cit.*, p. 177 (emphasis added).

Chapter 16

The Interloping System

OUT IN SPACE

One question that still needs to be answered is: What hid the Sun, the Moon, and the stars from view? One could conjecture that the stars might have been rendered invisible by the radiance, no matter how dim, emanating from the Saturnian sun. But, while true, we do not need to rely solely on that. If, as hypothesized, the Saturnian plasmasphere was really opaque, it would have been enough to shield the stars from view. The Moon, I simply claim, was not yet in orbit around Earth.¹ As for the Sun, there is no way that Saturn's dim light could have blotted out its radiance. The question then revolves on the claimed opacity of the plasmasphere. Was the plasmasphere opaque enough to blot out the Sun's illumination?

Unfortunately, as of this writing, not enough is known about planetary plasmaspheres to readily answer that question. As the plasma physicist Anthony Peratt informed me, "this is not a back of the envelope calculation," which would probably "give you the wrong answer anyway." What is required is a "full magnetohydrodynamic simulation with radiation transport," which would take "several weeks *once* the problem was set up." Despite all that, Peratt was kind enough to supply me with a "top-of-the-head-opinion." While the scientific verdict is not yet in, Peratt's scholarly intuition is that "it would be extremely difficult for a planetary plasmasphere to become opaque enough to *entirely* blot out the sun."²

Thus, together with other evidence which I shall soon be supplying, the conclusion has been reached that, during the Saturnian age of darkness, the Sun was not merely hidden, that is obscured. Like the Moon, it was actually absent. Which raises the question: Where could it have been?

To be sure, the Sun was always here. Only *we* were not.

As far fetched as it might at first appear, what I am about to propose is that the Saturnian system, *including Earth and its inhabitants*, was originally exterior to the Solar family of planets and that, having spent long ages traveling alone in the darkness of space, it eventually invaded the Sun's domain to become a permanent member of the present planetary order. I realize that, by now, I have taken the reader with me into water that reaches well above our heads. We had better then start swimming—but let us take it one stroke at a time.

The concept that Earth had originally been exterior to the Solar System can be traced to the Cartesian naturalist Benoît de Maillet (1656-1738). Basing his belief on ancient traditions, including the Book of *Genesis*, de Maillet reasoned that the primordial Earth had revolved around a sun that was much smaller than the present one up until the time of the Biblical Deluge. In his scheme, Earth then left its original sun and invaded the Solar System as a

¹ In order not to burden our unfolding scenario with events out of chronological sequence, the subject of Earth without the Moon is reserved for a future sequel to this work.

² A. L. Peratt, on the Intersect electronic discussion group sponsored by KRONIA Communications, July 10, 2002 (all emphases as given).

But then, returning to the topic with Samuel Windsor in 1988, the original proposal was expanded to cover more than just Earth and the Moon. According to these two writers, the entire planets of the present solar family had once belonged to an extraneous system governed by a dark star, the binary partner of the Sun, which they referred to as Planet X.⁸ In this scenario, the Planet X system would, from time to time, have approached closer to the Sun where, with each close approach, the latter slowly stripped Planet X of its brood of planets, a few at a time.

Patten and Windsor did not have the mytho-historical record in mind when they constructed their scenario. Theirs was actually an attempt to disprove the nebular hypothesis usually attributed to Immanuel Kant and supplant it with what Patten and Windsor believed to be a more viable history of the formation of the Solar System.⁹ They did not even seem to realize that Kant's nebular hypothesis had already been discarded at the time they proposed their theory. Thus, their various objections to Kant's nebular hypothesis are entirely superfluous. Besides, it did not even dawn on them that their version of the formation of the Solar System begged the question of how the Planet X system itself originated. On that score, if on no other, their scenario is as redundant as their objections.

Worst of all, the detailed step by step description of the manner in which this planetary transfer took place, with precise orbital and rotational periods, values of eccentricity, closeness of approach, etcetera and so forth, both before and after capture, often given to many places of decimal, makes one think that the authors had actually been there at the time with a load of scientific instruments to record it all for posterity.¹⁰ Theirs is not a methodology that inspires confidence, let alone credence.

Actually, it was Ralph Juergens who set us on the right path. Back in 1977, basing his scenario on what little Velikovsky had yet published about the subject of Saturn, he was bold enough to climb out on what was then still considered something of a slim limb. As he wrote:

"...some points of...discussion may emerge from a consideration of Velikovsky's as yet unpublished evidence that Saturn was once a star and in all likelihood the Earth's 'Sun' at one time..."

"Velikovsky has stated that Saturn was disrupted in a near-collision with Jupiter. Knowing little or nothing of the details, I can most easily imagine such an encounter in terms of a Saturnian planetary system, which included the Earth, being invaded, dismembered, and captured by an interloping system of relative giants consisting essentially of the present Sun and Jupiter..."¹¹

Out in space, this would be the same as having the *Saturnian* system invading the Solar one, as per our present supposition. On the other hand, in this work, I have nothing to offer concerning the disruption of Saturn through a collision with Jupiter. Nevertheless, the hypothesis that Saturn and Earth had once constituted a planetary system that was exterior to ours fits our unfolding scenario to the proverbial Tee.

⁸ D. Patten & S. Windsor, "The Organization of the Solar System—Part II: A Galactic Capture Hypothesis," *AEON* I:5 (September 1988), pp. 97 ff.

⁹ Thus see, *idem*, "The Organization of the Solar System," *AEON* I:4 (July 1988), pp. 77 ff.

¹⁰ See here especially *idem*, *The Recent Organization of the Solar System* (Seattle, 1995), *in toto*, but also its review by W. Thornhill in *AEON* IV:4 (April 1996), pp. 113-115.

¹¹ R. E. Juergens, "Juergens Replies," to "The Critics and Stellar Energy," *SIS Review* II:2 (December 1977), p.49.

Following Juergens, Frederick Hall disclosed similar ideas of his own:

"Most stars are paired in binary systems. A few are trinities or orbit each other in groups of four or more. Still fewer go it alone. The Sun appears to be a loner. In recent years it has been postulated that the Sun, after all, may have its partner too, which would necessarily be a very small star, not seen as yet by astronomers. Nemesis [as this solar companion has been dubbed] is posited to be in an extremely elliptical orbit, approaching the Sun every 26 million years...

"A stronger likelihood, perhaps, is that Nemesis does not exist and will not be found. Nemesis would now be near its aphelion and, over an incredibly long moment arm, should exert a *detectable* tug on the Sun. No news is no news. But another possibility is also worth considering. If in the past there *was* a Nemesis and it is no longer out there, it may actually be *here*. Two stars in a binary system each may have a quota of terrestrial bodies and gas giant planets. If their orbital relationship is highly elliptical, both systems could suffer drastic changes at each close approach. The much smaller star would be subject to close encounters with gas giant satellites of the much larger star, involving a possible loss of considerable angular momentum and mass. Hence, **it is possible that a former Nemesis is now part of our Solar System.**

"In the event of such a catastrophic event such a 'star' could also lose its ability to generate stellar amounts of heat and light and could be captured as a close-in gas giant satellite of the larger star...If it is ultimately decided that Earth did arrive into the Solar System as a satellite of a Nemesis-like sun/planet—perhaps Jupiter or Saturn—then numerous geological mysteries would be cleared up and man's early pre-occupation with planetary worship would be much easier to understand."¹²

Even more recently, the invasion of the Solar system by the Saturnian one, including Earth, has been taken up and expounded further by Wallace Thornhill.¹³

Astronomers have not yet postulated that Earth may have originated outside our Sun's domain. But, in view of their recently revised history of the Solar Systems, as will be outlined below, *even they are now asking whether Earth has always been where it is now.*¹⁴

So where could it have been?

EXTRA-SOLAR PLANETS

When, in the 1980s, Carl Sagan aired his belief, earlier adhered to by Giordano Bruno, that the universe is filled with planets orbiting stars other than our own Sun, he was laughed out of court. As Kathy Svitil reported, unlike Bruno, Sagan "was spared the stake, but not the smug laughter of some of his fellow astronomers" who were quick to point out that "no planet had yet been found in any galaxy beyond our own solar system."¹⁵

¹²F. F. Hall, "Solar System Studies," *AEON* I:1 (January 1988), p.105 (emphasis & bold lettering as given); see also, *idem*, "Solar System Studies," Part 2, *AEON* I:4 (July 1988), p. 27.

¹³W. Thornhill, *The Electric Universe* (Beaverton, Oregon, 1997), p. 92; *idem*, "Saturn's Revolving Crescent," *THOTH* (electronic newsletter), I:25 (November 3, 1997), pp. 7, 8; *idem*, "Speculations on Polar Configuration," in *ibid.*, I:27 (December 10, 1997), p. 10; *idem*, "Ionizing the Galaxy," in *ibid.*, II:1 (January 15, 1998), p. 7; *idem*, "Stars in an Electric Universe," *AEON* V:5 (January 2000), pp. 48, 49.

¹⁴BBC Online News, December 8, 1999, as quoted in "Did Jupiter Give Birth to Uranus & Neptune," *SIS Internet Digest* 2000:1, p. 11.

¹⁵K. A. Svitil, "Field Guide to New Planets," *Discover* (March 2000), p. 49.

Maybe not in a different galaxy but, as early as 1967, Axel Firsoff had already been writing about the discovery of extra-solar planets as if they were in the realm of general knowledge. Thus, in explaining what he termed "the general plan of planetary systems," he already could refer to "super [J]ovian planets, which are known to accompany some stars."¹⁶

Despite more recent reports to the contrary, the first of these extra-solar planets was discovered by D. Reuyl in 1936. With an estimated mass of 0.04 M, and an orbital period of 15 years, it was detected near the star known as Ross 614.¹⁷

Another planet already known to Firsoff is one "a little less than twice as massive as Jupiter," which orbits Proxima Centauri, 4.3 light years away.¹⁸

These planets, it should be pointed out, are *detected* rather than observed. Stars which are accompanied by planets go through periodic wobbles which are ascertained through the Doppler shifts in their spectral lines, due to the attraction of their invisible attendants. The amount of wobble allows the accompanying planet's mass and orbit to be calculated.

As Firsoff reported:

"Several other stars are known to have dark companions, but these are rather more massive than Proxima's big planet. Such superplanets may be partly degenerate, with interiors in superdense conditions encountered in White Dwarfs, and so could be quite small, despite their great masses."¹⁹

Another body, which Firsoff referred to as "a dark companion of about 10 times the mass of Jupiter," was also detected orbiting the red dwarf star Lalande 21185, which is calculated to be 8.1 (or 8.25 as newer sources have it) light years away and said to have a mass of 0.4 M. As Firsoff adds: "This discovery was due to the exceptionally large proper motion of the star, which changes its position in the sky by 4.8" a year and, for this reason, was being closely followed."²⁰

Firsoff did not enumerate the discoveries and identities of the extra-solar planets known in 1967 one by one, but he did state that "nearly 10 superplanets are now known to be attached to the nearest stars."²¹ Thus, even then, Firsoff could claim that:

"Far from being exceptional, the Solar System is rather a humdrum example of planetary configurations. There are multiple stars, each with an array of planets of its own; close binaries sharing one or more planets; superplanets that may have planetary satellites, which may in turn be accompanied by moons."²²

Astronomers are not always honest. Take, for instance, the planet supposedly discovered by Michel Mayor and Didier Queloz in orbit around the star 51 Pegasi at a distance of 50 light years. More recently touted as the first such planet detected, Sam Flamsteed even spoke

¹⁶ V. A. Firsoff, *Life, Mind and Galaxies* (London, 1967), p. 90 (emphasis added). NOTE: I must here thank Roger Ashton who, having read a previous article of mine in which I had written about the discovery of extra-solar planets—"Antiquated Textbooks: Redesigning the Solar System," *AEON* V:6 (August 2000), pp. 41-44—brought Firsoff's above cited work to my attention. See also D. Cardona, "Extra-Solar Planets: An Update," *AEON* VI:1 (February 2001), pp. 29 ff.

¹⁷ V. A. Firsoff, *op. cit.*, p. 93.

¹⁸ *Ibid.*, p. 92.

¹⁹ *Ibid.*, p. 93.

²⁰ *Ibid.*

²¹ *Ibid.*

²² *Ibid.*, p. 95.

of the surprise this caused when first announced in 1995.²³ What, then, of the 10 extra-solar planets that were already known by 1967, the first of which was discovered in 1936?

So, similarly, with the planet—or, at least, a brown dwarf star—said to orbit Proxima Centauri, which has recently been said to have first been discovered in 1998 through the Hubble Space Telescope.²⁴ How, then, could Firsoff have written about it in 1967?

But then, David Golimowski and Dan Schroeder nixed the whole thing. More sensitive observations led these two observers to conclude that no evidence really existed for such “a brown dwarf or planet companion.” As Golimowski stated:

“We have images of Proxima that definitely should have revealed something. They did not.”²⁵

Even so, as of this writing, planets in extra-solar systems are being detected almost every month. These assemblages, however, bear little resemblance to our own Solar System. Calculated to be half the mass of Jupiter, the 51 Pegasi planet orbits its primary at a mere distance of 5 million miles, *which is seven times closer than tiny Mercury orbits our Sun*. The planet completes its orbit in a mere 4.2 days.²⁶

“To appreciate how bizarre this behavior is,” writes Flamsteed, “it helps to consider the bigger planets in our solar system—Jupiter, Saturn, Uranus, and Neptune. They are all at least a hundred times farther from the sun than 51 Peg[asi]’s planet appears to be. And it takes them years—a full dozen years, in the case of Jupiter—to make a single orbit.”²⁷

What, then, of the belief that giant gas planets can only form somewhere in the middle of the revolving cloud of collapsing interstellar gas and dust that goes into forming a solar system? By the 1990s, astronomers had to ask: “How could a giant planet form so close to a star without being sucked in by gravity?”²⁸

Actually Doug Lin had already suggested that planets like Jupiter could migrate from an outer system in toward their parent star. Lin’s hypothesis, however, did not envisage such giant planets ever coming to a halt close to their primary. His theory demanded that such planets would eventually be swallowed up by their sun. But, in view of newer discoveries, Lin and fellow astronomers were soon writing in *Nature* with two different scenarios aimed at getting a Jupiter-sized planet to stop short of being swallowed up.²⁹

And then—the see-saw of scientific opinion—David Gray announced that the posited planet around 51 Pegasi was not really there at all.³⁰ Most astronomers, however, have disregarded his conclusion, and the posited planet has now become fact.

In the twelve months following this discovery and its attempted debunking, six other extra-solar planets were announced as having been detected. Three of them were said to be Jupiter-sized bodies orbiting “absurdly close” to their primaries. Two others were found to orbit

²³ S. Flamsteed, “Impossible Planets,” *Discover* (September 1997), pp. 79-80.

²⁴ Anonymous, “No Proxima Planet, Probably,” *Astronomy* (July 1998), p. 30.

²⁵ *Ibid.*

²⁶ S. Flamsteed, *loc. cit.*

²⁷ *Ibid.*, p. 80.

²⁸ *Ibid.*, p. 81.

²⁹ *Ibid.*

³⁰ *Ibid.*, p. 82.

their stars "at a slightly more conventional distance" but in "highly eccentric" orbits.³¹ As Fred Rasio had to admit, "you get the impression that most solar systems are not like ours."³²

Another planet was discovered orbiting the star Tau Bootis, which is slightly larger and hotter than our Sun, at a distance of sixty light-years. This planet has been calculated to have a mass equivalent to 3.87 that of Jupiter. It orbits its primary in a circular path in 3.3 days. It is 6.9 million kilometers (0.046 astronomical units) from its sun.³³ This places it closer to its primary than Earth is to our Sun.

The planet orbiting Lalande 21185, concerning which Firsoff had written in 1967, is even closer to us—now calculated as 8.25 light-years away. It is now believed that this star is orbited by *at least two planets*. One of these is said to be the size of Jupiter at a distance equivalent to Saturn's distance from our Sun. The other planet, only slightly less massive than Jupiter, is believed to orbit Lalande at about the distance of the asteroid belt.³⁴

The binary star system CM Draconis, 50 light-years away, is also believed to be orbited by a planet with a diameter equal to 85 percent that of Jupiter. The stars themselves orbit each other around a common center of gravity once every day. The purported planet would then orbit both stars in a circuit completed in "several months." This is the first planet detected in orbit around "a tightly separated binary star."³⁵

Meanwhile, Doppler shifts are not the only means by which extra-solar planets can be detected. In 1996, through the use of the Hubble Space Telescope, astronomers noticed that the disk of dust around the star Beta Pictoris seemed to be tilted. They could only think of two possible ways in which this stellar disk could have been unbalanced: it was either due to radiation from the star itself or the existence of a large planet which would have tugged at the debris in the disk. Two years later, Sally Heap, then of NASA's Goddard Space Flight Center, trained Hubble's Imaging Spectrograph on Beta Pictoris to obtain closer views of the star and its disk. Her verdict was that the images she was able to resolve strongly suggested a planet or planets.³⁶ She did, however, warn that: "Because the star is shrouded in dust, it will be impossible to ever see any planets around Beta Pic., so I don't know how we will get a direct confirmation."³⁷

Another extra-solar planet, calculated to be 6.84 times the mass of Jupiter, has been detected orbiting the star 70 Virginis at a mere distance of 0.47 astronomical units in an orbital period of 116.7 days.³⁸ It was unmasked by the team of Geoffrey Marcy and Paul Butler,³⁹ who have found "more planets than anyone else in history."⁴⁰ Six of these planets, brought to light by 1998, were featured in *Astronomy*,⁴¹ five others were reported by early 1999, two of which have been calculated to be 5 times the mass of Jupiter.⁴²

In the year 2000 came news of the *possible* discovery of extra-solar planets which appeared to measure a mere 2.5 Earth radii. Or, at least, their *possible* shadows have been de-

³¹ *Ibid.*

³² *Ibid.*

³³ Anonymous, "A New Planet in Bootes," *Astronomy* (September 1996), p. 25.

³⁴ Anonymous, "Extrasolar Planet Update," in *ibid.*, p. 26.

³⁵ *Ibid.*, pp. 26, 28.

³⁶ Anonymous, "A Planet in the Dust," *Discover* (April 1998), p. 25.

³⁷ *Ibid.*

³⁸ S. Stephens, "Planet Hunters," *Astronomy* (July 1998), p. 63.

³⁹ *Ibid.*

⁴⁰ *Ibid.*, p. 59.

⁴¹ *Ibid.*, p. 63.

⁴² Anonymous, "Yet More Extrasolar planets," *Sky & Telescope* (February 1999), p. 22.

tected, like the one passing in front of the binary star system known as CM Draconis. Until then, as we have seen, only Jupiter-sized, and larger, planets had been located.⁴³

William Cochran and his collaborators from the University of Texas announced a planet “that closely resembles Jupiter” around Epsilon Eridani, which is the closest star that is similar to our own Sun. Orbiting at 300 million miles from the star, it takes close to seven years to complete one circuit.⁴⁴

Other extra-solar planets imbedded within the disks surrounding youthful stars, detected through means other than Doppler shifts, have been announced by Nick Gorkavyi at NASA’s Goddard Space Flight Center. Gorkavyi’s method involves a search for “whorls and clumps produced by a planet’s gravitational meddling.” This method rewarded him with three new planets, including one that is said to be only 0.2 times the mass of Jupiter, revolving around Epsilon Eridani, 5.5 billion miles away, which would make it about twice the distance our own Neptune orbits from the Sun.⁴⁵

An even smaller planet, weighing in at about 0.15 Jupiter’s mass—which makes it about half Saturn’s mass—has been detected circling the star HD 83443. This one has a second Saturn-sized planet which, as Svitil reported, “bolsters the view that groupings like our solar system are not uncommon.”⁴⁶

In January of 2001, the extra-solar planet-hunting team lead by Geoffrey Marcy announced the detection of “a pair of planets, each about the mass of Jupiter, that whirl around their home star [Gliese 876], 15 light-years from Earth in perfect lock-step.” One of these planets takes 30 days to complete its orbit, the other “exactly” twice as long—that is in a two-to-one ratio.⁴⁷

Also announced by Marcy and his team is a solar system, dominated by the star HD 168443, at a distance of 123 light-years in the constellation Serpens. This system harbors a 7.7 to 15 Jupiter-mass planet accompanied by another body that has been calculated to be from 17 to 40 times as massive as Jupiter. A body that massive had astronomers scratching their heads since they could not “quite figure what it can be.” As Marcy himself noted: “It’s a bit frightening.”⁴⁸

“What’s frightening,” reports Michael Lemonick, “is that these discoveries make it clear how little astronomers know about planets...”⁴⁹ Or, as Princeton astronomer Scott Tremaine put it: “Not a single prediction for what we’d find in other systems has turned out to be correct.”⁵⁰

As of this writing, the number of extra-solar planets that have been detected orbiting other stars had risen to 55.⁵¹ The problem caused by all these discoveries was succinctly stated by Flamsteed when he wrote that:

“After decades of searching, we’ve finally found other planets orbiting other stars, and found them in abundance. Now the only problem is figuring out how on Earth to explain them.”⁵²

⁴³ L. R. Doyle, *et al.*, “Searching for Shadows of Other Earths,” *Scientific American* (September 2000), pp. 58 ff.; *idem*, “Discovering Worlds in transit,” *Astronomy* (March 2001), pp. 38-43.

⁴⁴ K. S. Svitil, “Wonder Worlds,” *Discover* (December 2000), p. 19.

⁴⁵ *Ibid.*

⁴⁶ *Ibid.*

⁴⁷ M. D. Lemonick, “New Planetary Puzzlers,” *TIME* (January 22, 2001), p. 43.

⁴⁸ *Ibid.*

⁴⁹ *Ibid.*

⁵⁰ *Ibid.*; see also, R. Naeye, “Odd New Planets Discovered,” *Astronomy* (April 2001), p. 18.

⁵¹ R. Naeye, *loc. cit.*

⁵² S. Flamsteed, *op. cit.*, p. 79.

THE REVISED HISTORY OF THE SOLAR SYSTEM

The discovery of dominant massive planets in extra-solar systems forced astronomers to revise their theories concerning the formation of solar systems in general. Assigning the problem to computers, simulations conducted by Frederic Rasio and Eric Ford resulted in models that were catastrophic enough to warm the hearts of Velikovskians.

"In a system containing two Jupiter-like planets, the possibility exists that a dynamical instability will develop. Computer simulations suggest that in many cases this instability leads to the ejection of one planet while the other is left in a smaller, eccentric, orbit. In extreme cases, the eccentric orbit has a small enough periastron distance that it may circularize at an orbital period as short as a few days through tidal dissipation. This may explain the recently detected Jupiter-mass planets in very tight circular orbits and wider eccentric orbits around nearby stars."⁵³

In turn, this led to new theories concerning the formation of *our own Solar System*. As Josie Glausiusz commented:

"...the detection of extra-solar planets has forced astronomers to re-examine [the theory concerning the formation of our Solar System] because [these planets] present us with a paradox. Many are so monstrous in size, and hug their stars so closely, that they could not have formed in their present positions. The searingly hot stars around which they circle would have melted their rocky cores before they got started. Instead, it's assumed that they coalesced some distance away, then barreled inward over millions of years. And if such chaos characterizes the birth of extra-solar planets, could not similar disorder have reigned closer to home?

"That's exactly what astronomers are proposing. Instead of staid and steady motion from the start, *they see turmoil*. During the early years of our solar system, they say, giant planets were born, *bounced about, swung past one another, and were flung apart* before settling into their present orbits. [It is now suggested] that the massive icy planets Uranus and Neptune formed in close proximity to gassy Jupiter and Saturn, *then barged past the behemoths* into the far reaches of the solar system...

"[It is now suggested] that the emergence of a Jupiter-sized planet during the early years of a solar system can trigger chaos, *birthing punier planets, then ejecting them in all directions*."⁵⁴

Even newer theories suggest that an alien star could easily pass by the Solar System and that this could alter Jupiter's orbit which could then pass so close to Earth that our world could easily be ejected into space or crash into the Sun.⁵⁵

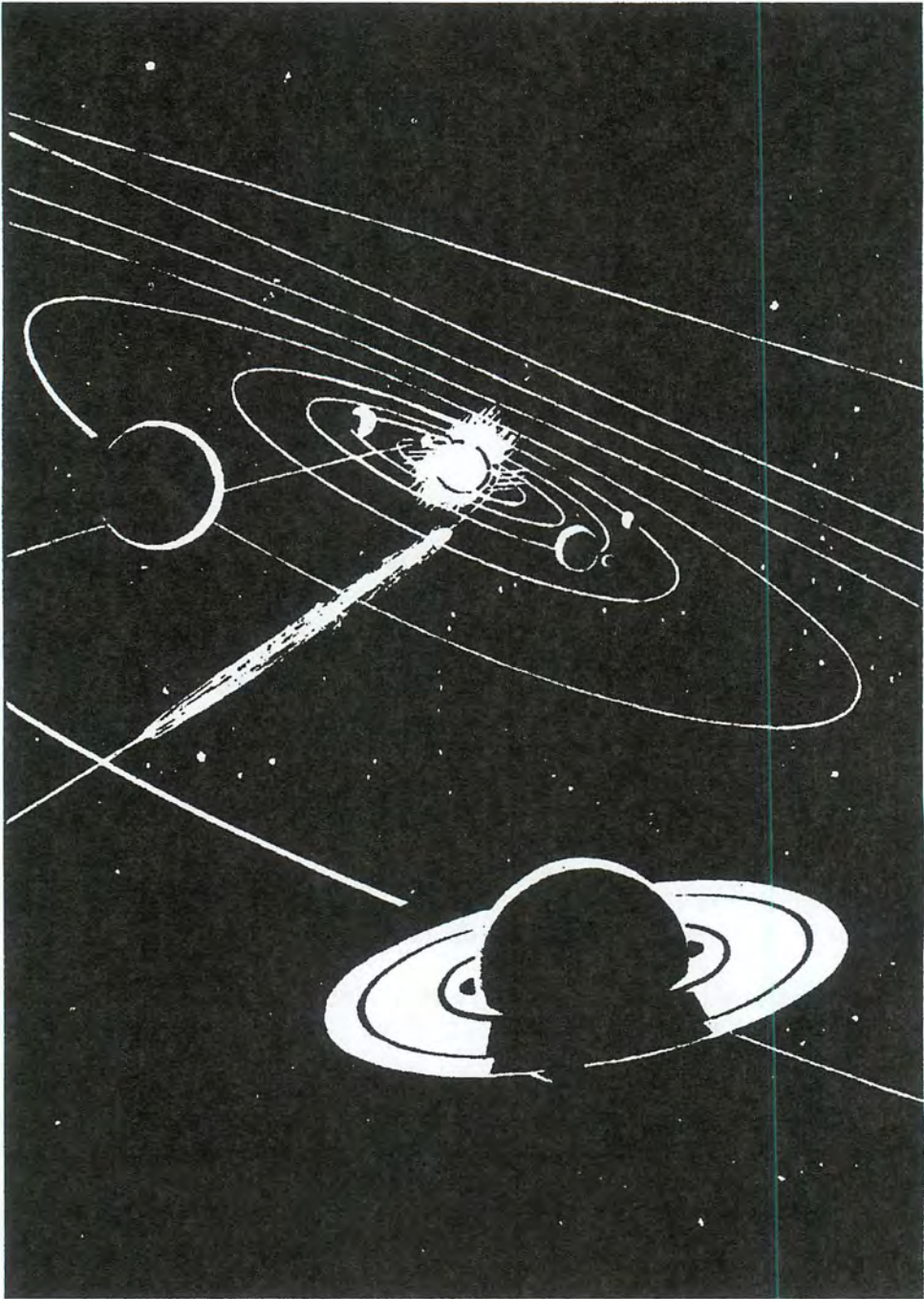
In fact, other theorists are now proposing that the early Solar System might have contained up to twenty planets in irregular orbits "where they were eventually bound to collide."⁵⁶

⁵³ F. A. Rasio & E. B. Ford, "Dynamical Instabilities and the Formation of Extrasolar Planetary Systems," *Science* (November 8, 1998), pp. 954-956.

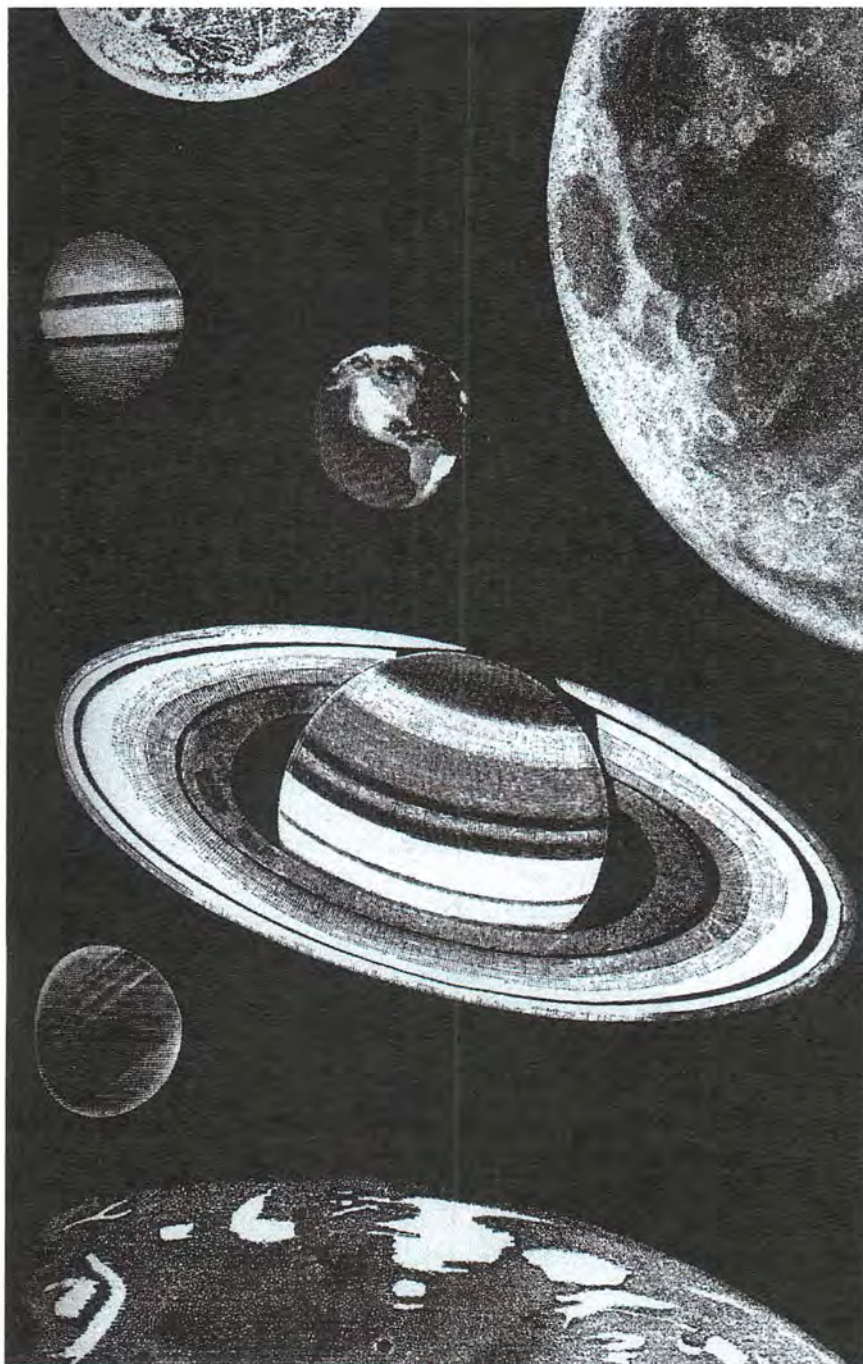
⁵⁴ J. Glausiusz, "Solar Revisionism," *Discover* (March 2000), p. 54 (emphasis added).

⁵⁵ *New Scientist* (June 12, 1999), p. 17.

⁵⁶ *Sunday Times* (July 25, 1999).



"Once unheard of, it is no longer possible to maintain that our Solar System has remained unchanged since its formation."



The Solar System is now believed to be the result of a chaotic past in which giant planets spiraled inward, brushing past other planets, perhaps ejecting them out of the System, even birthing other planets, before the winners settled in the sheltered orbits they occupy at present.

Dr. Renu Malhotra of the Lunar and Planetary Institute, Houston, has also argued that the orbits of the Solar System planets have undergone substantial alterations. "One thing is certain," he has been reported as saying, "the idea that planets can change their orbits dramatically is here to stay."⁵⁷

Even this was something of a revival of the theory propounded by J. G. Hills in 1969 in which it was "suggested that the three outermost planets, Uranus, Neptune and Pluto, were displaced into their present orbit by encounters with other planets." Described by C. J. Ransom as a consequence of Hill's analysis of the solar nebula, this theory concluded that "Saturn was initially the outermost planet to form in the nebula."⁵⁸

Once unheard of, it is no longer possible to maintain that our Solar System has remained unchanged since its formation. Granted that astronomers are still keeping such events at arm's length by insisting that orbital changes within our System could only have transpired millions of years ago, we have reason to believe that some of these changes took place during the era of mankind. And, as we shall soon see, we are not alone in this belief.

A MATTER OF NOMENCLATURE

Beginning around October 2000, news began circulating that more than half of the so-called extra-solar planets that had been discovered up to then were not planets at all but, rather, brown dwarf stars, double stars, or low-mass stars.⁵⁹ The reasons for this change of mind were variously given by various authorities. It was, for instance, reported that the radial velocity techniques behind the discoveries were inadequate to determine the angle of observation which would affect the results concerning the masses involved. As announced by the University of Pittsburgh's Allegheny Observatory: "Radial velocity observations cannot distinguish between a planet in an orbit that is viewed nearly edge on from a brown dwarf or stellar companion in an orbit that is nearly in the plane of the sky."⁶⁰

Using astrometric data from the European Space Agency, as well as astral velocity data, astrophysicists from the United States and Korea have determined that the orbital inclinations of the objects in question are extremely low. In other words, "the orbital planes of these companions appear to be oriented nearly face on to the observer."⁶¹ According to David Black of the Lunar and Planetary Institute: "This contradicts the assumption that the line-of-sight angle is random in the radial velocity studies."⁶² Putting it plainly, randomness dictates that some of these objects should be seen edge-on, while others face-on as viewed from our angle here on Earth.

According to George Gatewood of the Allegheny Observatory:

"Part of the problem arises because masses smaller than that of Jupiter are very difficult to detect [outside the Solar System], thus most of the objects that have been detected and are suspected to be planets have masses greater than that of Jupiter, the most massive planet in our solar system. Until very recently, there were few known objects between one Jupiter in mass and 80 times as much, and those are all small stars."⁶³

⁵⁷ *Sunday telegraph* (October 10, 1999), p. 19.

⁵⁸ *Ibid.*

⁵⁹ University of Pittsburgh News Release, October 28, 2000, as reported in "Planets Might Be Stars," *SIS Internet Digest* 2000:2, p. 15.

⁶⁰ *Ibid.*

⁶¹ *Ibid.*

⁶² *Ibid.*

⁶³ *Ibid.*

But not everyone agreed with Black. As Geoffrey Marcy has been reported to have stated: "The claim by David Black is completely incorrect."⁶⁴ Having risen to fame as one of the most successful of extra-solar planet-hunters, Marcy had something to lose if Black was correct. On the other hand, Marcy had a good argument. As he and others have pointed out, four of the companions which Black and his team had investigated are said to orbit their primaries "within one degree of perfect alignment with the line of sight."⁶⁵

"Yet the chance of any single partner of a given mass having that orientation is about 1 in 5,000. Conversely, for every partner with that orientation, there should be 5,000 or so with less extreme orientation. No such bodies are seen. Marcy is so convinced that he says *Scientific American* 'will be doing science a bum steer' simply by mentioning Black's work."⁶⁶

But then, Tsevi Mazeh and Shay Zucker weighed in from Tel Aviv University with the suggestion that "the truth lies somewhere in the middle." Concerning the four companions investigated by Black, they claim that two of them do indeed "have the heft of a star." The other two, according to them, do not.⁶⁷

Others suspect that the analyses "have fallen prey to subtle computational biases," and that "it is quite plausible that searchers have unwittingly skewed their sample," and that higher precision astrometry as well as other methods are needed to resolve the debate.⁶⁸

Eventually, even Marcy was forced to give an inch when the then newly discovered outer companion to yet another star was estimated to be "between 17 and 40 times" the mass of Jupiter. As Marcy was reported to have admitted, "[this one] seems too large for a conventional planet."⁶⁹

"We frankly don't know what name to give it!" Marcy said. "Is it a planet or brown dwarf...? We simply don't know."⁷⁰

As Lemonick phrased it:

"...maybe astronomers will have to rethink their definition of 'planet.' Just because we put heavenly objects into categories doesn't mean the distinctions are necessarily valid."⁷¹

Eventually some astronomers decided to refer to objects less than 10 Jupiters in mass as planets. Anything over that is to be termed a brown dwarf star.⁷² Others decided that objects less than 13 times the mass of Jupiter should be classified as planets, while those between 13 and 75 Jupiter masses should be termed brown dwarf stars.⁷³ In other words, the dilemma was temporarily, and arbitrarily, alleviated by invoking nomenclature.

⁶⁴ G. Musser, "Lost Worlds," *Scientific American* (January 2001), p. 22.

⁶⁵ *Ibid.*

⁶⁶ *Ibid.*

⁶⁷ *Ibid.*

⁶⁸ *Ibid.*

⁶⁹ Reuters, "Astronomers Find Two New Planetary Systems" (January 10, 2001).

⁷⁰ *Ibid.*

⁷¹ M. D. Lemonick, *loc. cit.*

⁷² University of Pittsburgh News Release, *loc. cit.*

⁷³ "18 Possible Planets Lacking a Star," *SIS Internet Digest* 2000:2, p. 13; R. Naeye, *loc. cit.*

By 2002, astrophysicists were again up in arms concerning the definition of celestial objects. By then, they were not even sure what a planet really was, let alone red and brown dwarf stars. Alan Stern and Harold Levison attempted to come up with a new criteria, but this did not help much since it was still reliant on mass. Thus, according to them, a planet has to be a body "low enough in mass that *at no time*, past or present, can it generate energy in its interior due to any self-sustaining fusion reaction."⁷⁴ But, as Adam Burrows pointed out: "There is an *unfounded* prejudice that a planet should not have a thermonuclear phase," and that this was merely a preconception that might not be verified by observable facts.⁷⁵

As far as our thesis is concerned, it does not much matter whether these so-called extra-solar planets are really planets, brown dwarf stars, or some of each, since our scenario accounts for both a planet (Earth) and a brown dwarf star (Saturn) as having been partners outside the Solar System.

THE RUNAWAY PLANET

Extra-solar planets were not only found orbiting stars, but even escaping from them. At least one such planet was said to have been discovered streaming away from the double star system known as TMR-1, 450 light-years from Earth, with a separation between them of 3.7 billion miles. Moreover, this one was actually *visible* through the Hubble Space telescope and has been photographed. Discovered by Susan Terebey, the planet was calculated to be "two to three times Jupiter's mass, flung off in a gravitational tug-of-war between the [two] stars." The planet was said to be racing away at a speed of 20,000 miles an hour.⁷⁶

Unfortunately, this discovery was eventually questioned. The pertinent planet was later explained as nothing more than a background star. This was "deduced" from the spectrum of the object in question which (a) showed no signs of water vapor, and (b) appears to be too hot, at 2,700° Kelvin (4,400° F), to be a protoplanet⁷⁷—even though, personally, I am not quite sure why these parameters should rule out a protoplanet.

Even so, Terebey herself has not entirely ruled out her original assumption. As a report by her reads: "At this time *there is no strong evidence* that TMR-1C itself is a protoplanet."⁷⁸ But she added:

"The models are not yet reliable at such young ages, so this test by itself is not conclusive. The idea remains alive and well that there may be runaway planets and brown dwarfs...which formed via ejection from multiple star systems."⁷⁹

Eight months later, *Scientific American* republished the photograph of TMR-1C with a caption referring to it as a "possible" protoplanet "hanging on" to the star.⁸⁰ And there, at the time of this writing, the matter rested.

Again, to us, it does not matter whether TMR-1C is truly an escaped planet. What concerns us is that it was originally *accepted* as such, which means that planets escaping from their systems are in the realm of possibility. Even Phil Lucas, as we shall soon see, would not

⁷⁴ S. A. Stern & H. F. Levison, "Toward a Planet Paradigm," *Sky & Telescope* (August 2002), p. 45 (emphasis as given).

⁷⁵ D. Kaisler, "The Puzzles of Planethood," in *ibid.*, p. 35 (emphasis added).

⁷⁶ Anonymous, "Planet Poseur?" *Discover* (August 1998), p. 24; see also, anonymous, "Runaway Planet," *Astronomy* (September 1998), p. 22.

⁷⁷ "Ejected Protoplanet Most Likely a star," *Space Views* (electronic newsletter, April 6, 2000.) NOTE: I thank my good friend Ken Moss for bringing this item to my attention.

⁷⁸ *Ibid.* (emphasis added).

⁷⁹ *Ibid.*

⁸⁰ G. Musser, *op. cit.*, p. 42.

rule out such a possibility. If, then, planets can escape out of their systems, why cannot some of them *invade* solar systems, as we are positing Saturn and Earth to have done?

LONE TRAVELERS THROUGH SPACE

There were other surprises in store. By July of 2000, thirteen extra-solar planets *traveling alone through the coldness of space* without an accompanying primary—that is without a sun to sustain them—had been spotted by Phil Lucas and Patrick Roche. Their masses have been estimated to be eight times that of Jupiter. Lucas and Roche suspected that “these planets grew directly out of a cloud of cold gas and dust—not from a disk surrounding an infant star, the way normal planets do.”⁸¹ As Lucas himself stated: “We can’t rule out the possibility that some might have been flung out of a solar system, but it looks like they have always been free-floating.”⁸²

As it happens, the existence of such bodies traveling alone through space had also been predicted by Firsoff thirty-three years earlier when he wrote that: “Although proof is lacking, it seems virtually certain that sunless planets, unattached to stars, do exist.”⁸³

Proof, it seems, is no longer lacking.

In December of 2000, it was reported that Maria Zapatero-Osorio and her colleagues from the California Institute of Technology had spotted 18 solitary planets, “inexplicably not circling any stars, in a young stellar cluster in Orion.”⁸⁴ As Svitil reported:

“These gaseous giants are doomed to a life of eternal darkness. Scientists are not sure why they exist; according to the prevailing models, planets can form only around stars.”⁸⁵

Actually, these objects seem to be more than just planets. What Zapatero-Osorio claims to have discovered is a conglomeration that consists of “stars, brown dwarfs and large, gassy planet-sized objects” all existing “without the discipline of a solar system.”⁸⁶ As her team reported: “Instead of orbiting neatly around a central star, they drift along in a loose collaboration.”⁸⁷ In a telephone interview, she continued by stating that:

“The formation of young, free-floating, planetary-mass objects like these is difficult to explain by our current models of how planets form... We think they originated in a similar way to stars and brown dwarfs—a big cloud broke down into small pieces. Some were large enough to produce stars, while other fragments were very small and they yielded the objects we discovered in the cluster... [These bodies are to be found in] an area that has a high concentration of stars, and they are homogeneously distributed within the cluster—one star, one brown dwarf, one planetary mass body, one star, one brown dwarf, one planetary mass body and so on.”⁸⁸

⁸¹ K. S. Svitil, “Lonely Planets,” *Discover* (July 2000), p. 22.

⁸² *Ibid.*

⁸³ V. A. Firsoff, *op. cit.*, p. 91.

⁸⁴ K. S. Svitil, “Wonder Worlds,” *Discover* (December 2000), p. 19.

⁸⁵ *Ibid.*

⁸⁶ M. Fox, “Rogue ‘Gas Balls’ in Space Break Rules of Solar System, Astronomers Find,” *The Vancouver Sun* (October 6, 2000), p. A13.

⁸⁷ *Ibid.*

⁸⁸ *Ibid.*

While these bodies are not linked together in an orbital sense, they *do* move concurrently as a cluster. Moreover, Zapatero-Orsorio is of the belief that there might be *hundreds* of these planet-like bodies. The team she leads has only discovered eighteen of them simply because they had concentrated on a single small area in Orion. Nor were these bodies detected by their Doppler shifts. Using spectrometers, which measure visible and invisible energy alike, Zapatero-Orsorio's team "actually saw the objects they describe."⁸⁹

As with Phil Lucas, and despite her belief that these bodies would have had to have been formed independently, Zapatero-Orsorio did not rule out the possibility that they may have been ejected from other systems containing stars around which they would have originally orbited.⁹⁰

The eighteen lone travelers through space soon rose to twenty five; and the theorized existence of hundreds of others soon rose to *hundreds of millions* of footloose planets wandering through the Milky Way.⁹¹

What is perhaps more important to our own study, however, is Firsoff's conclusion in relation to these lonesome planets. "In the absence of the ionising radiation of the star," he wrote, "[such planets] should be able to retain more extensive atmospheres, and, while terrestrial planets of this kind would be very cold, large [J]ovian or sub-[J]ovian masses may have enough internal heat to allow any type of life, even based on our carbohydrate chemistry, to develop on their surfaces."⁹²

Although we shall probably never know whether Saturn and Earth are bodies that escaped from another solar system, we have seen that such liberated planets are considered to be within the realm of possibility. Planets traveling alone through space have now become quite common. There is, therefore, nothing impossible about Earth having traveled together with Saturn through the cold realms of space before they came within the grips of our present Sun.

As Firsoff admitted, Jovian and even sub-Jovian masses may retain enough internal heat to allow life to develop and sustain itself. Our own hypothesis differs only slightly from this in that it was Saturn's heat which allowed the existence of life on Earth. True, Saturn is less massive than Jupiter and, at its present mass, falls short of the requirements for it to be considered a brown dwarf star since, as we have seen, such stars have masses ranging from about 15 to 80 times that of Jupiter.⁹³ However, it has been ascertained that "brown dwarfs bridge the entire gap between stars and planets," with low-mass candidates being more numerous than high-mass ones, "and this trend continues down *nearly to planetary masses*."⁹⁴ It has even been conjectured that "the masses of brown dwarfs and planets can actually overlap each other!"⁹⁵ Besides, as I intend to show in the proposed sequel to this volume, there is reason to believe that, as a brown dwarf star, proto-Saturn was once more massive.

It is now believed that there are twice as many brown dwarfs as there are "real" stars.⁹⁶ Moreover, it has been found out that "far more brown dwarfs float freely than orbit stars."⁹⁷ It has additionally been conjectured that one of them "might even be stirring up the Oort

⁸⁹ *Ibid.*

⁹⁰ *Ibid.*

⁹¹ H. Muir, "The Drifters," *New Scientist* (April 1, 2000), p. 14.

⁹² K. S. Svitil, *loc. cit.*

⁹³ See here also R. Talcott, "Census Shows Brown Dwarfs Numerous," *Astronomy* (December 2000), p. 24.

⁹⁴ *Ibid.*

⁹⁵ J. B. Kaler, "Stars in the Cellar: Classes Lost and Found," *Sky & Telescope* (September 200), p. 44.

⁹⁶ *Ibid.*

⁹⁷ R. Talcott, *loc. cit.*

comet cloud [at the edge of the Solar System] and sending a rain of deadly comets Earthward."⁹⁸

If, then, an alien star could easily pass by our Sun's domain close enough to disrupt Jupiter, if brown dwarf stars can be believed to come close enough to our System to cause havoc in the Oort cloud, what could prevent stars, brown dwarf stars, and/or any planets that might accompany them from *invading* our system?

THE ABSENT SUN

The myths we have so far enumerated may therefore be seen as constituting man's collective memory of that ancient time when Earth, in the company of its celestial primary, was traveling through the blackness of outer space, far from the Sun, illuminated feebly by Saturn's meager glow, but basking in the warmth of that primeval giant which was, from time immemorial, the first—and for a while the only—god man knew.

Can the mytho-historical record further support this wild contention?

Primitive man would not have known that he was living outside our Solar System. Of solar systems and brown dwarf stars—even of planets, *per se*—he knew nothing. All that he could *later* recollect was that the Sun had been absent during the earliest times he could remember. I believe we have supplied enough of man's ancient memory concerning that period in previous pages. Here I will merely add two snippets concerning Raven, Raven Boy, and Wanadi, simply because we had already had something different to relate concerning these mythological entities.

Thus, among the Eskimos it is told how Raven Boy absconded with the sun but that, at his father Raven's behest, he "set the sun back in its old place so that light once more returned to the earth."⁹⁹

"But it was not the unrelenting light of former days, for Raven Boy feared that if the people forgot the terrors of darkness, they would forget also Raven's teaching. With a sweep of a wing, he sent the sky spinning round the earth, *carrying the sun with it* and in this way day and night were created."¹⁰⁰

What this tells us is that the sun which Raven Boy absconded with was one that shed an "unrelenting light," which hints at a sun that neither rose nor set. This, then, would have alluded to the immobile *Saturnian* sun. The sun he set back in place, on the other hand, was one that went "round the earth"—in other words, our *present* Sun.

The Makiritare of Venezuela, whom we have also met on a previous page, revered Wanadi as he "who shines in the highest heaven."¹⁰¹ But since, as we have already seen, this Wanadi was said to have been "like a sun that never sets,"¹⁰² we have every reason to believe that the reference is to the once immobile Saturnian sun. The light from this Wanadi was said to have eventually failed from coming down anymore. And that is why, the Makiritare say, "the new Wanadi made this sun for us, to make it light for us during the day." And: "When the new Wanadi came, it dawned again."¹⁰³

⁹⁸ J. B. Kaler, *loc. cit.*

⁹⁹ M. Wood, *Spirits, Heroes & Hunters from North American Indian Mythology* (N. Y., 1982), p. 20.

¹⁰⁰ *Ibid.* (Emphasis added.)

¹⁰¹ M. de Civrieux, *Watunna: An Orinoco Creation Cycle* (Berkeley, California, 1980), p. 28.

¹⁰² *Ibid.*, p. 21.

¹⁰³ *Ibid.*, p. 28.



The mythological Raven as envisaged and stylized by the Haida Indians of British Columbia, Canada

I can relegate the reader with various other accounts concerning the first appearance of our present Sun as it was remembered by the ancient races of the world, but that would be placing the event out of sequence. We must, therefore, reserve such records for their proper place in the chronology of Saturnian events we are here attempting to reconstruct. What is of additional interest is that, in a strange sort of way, the absence of the Sun, and its eventual "birth," continues to be commemorated to the present day in an ancient Peruvian ritual which, in time, gained Catholic overtones.

The ritual in question takes place in June high in the Andes where thousands of celebrants congregate from highland villages and towns to participate. What these people gather to observe is the feast of Qoyllur Rit'i which, in Quechua, means the "Star of the Snow,"¹⁰⁴ an annual festival rooted deep in Inca heritage. Wending their way in a long procession to a holy site three miles above the sea, the pilgrims cross gorges and mountain slopes by moonlight to hold a festival commemorating the miraculous appearance of the child Jesus to a young herdsman named Mariano in these mountains two centuries ago.¹⁰⁵ Today, the shrine of the Star of the Snow contains a rock bearing the image of the Christian Jesus. The pre-Columbian roots of the ritual are however acknowledged by many anthropologists and, in

¹⁰⁴The connection of the Star of the Snow with Saturn will have to await a future work.

¹⁰⁵R. Randall, "Peru's Pilgrimage to the Sky," *National Geographic* (July 1982), pp.60-69.

fact, the original ritual was conducted in honor of the *naupa runa*, the old ones of legend, who, it was said, lived before the Sun was born.¹⁰⁶

THE DISTANT SUN

In the slow approach of the Saturnian system toward our *present* System, the Sun should, at some point, have become visible as a star which would then have been seen to slowly grow in size. Does primitive man remember anything of the sort?

Records of the slowly approaching Sun are somewhat rare. But then there is another point to consider. In view of the immobile Saturnian sun which shone perpetually above him, would prehistoric man have really paid much attention to a slowly growing pin-point of light in the sky? And, of those that did, how many might have forgotten what to them would have seemed an unobtrusive circumstance? As Thornhill rightly claimed, "the [Saturnian] celestial effects as viewed from Earth would have been so dramatic that it seems to have completely overshadowed even the growing appearance of the Sun as this loomed closer."¹⁰⁷

And yet, the Okanagan Indians seem to have retained just such a memory when they speak of that time, "long, long ago, when the sun was young and no bigger than a star..."¹⁰⁸

For the first time in the history of mankind, a light other than Saturn's managed to shine through the night of nights.

The Ipurinas of the Upper Amazon not only preserved a similar record of the Sun's original small size but also of its growing larger as Earth drew nearer.

"The 'sun' they tell...was originally very small, hardly 'a nail's breadth' across. But one day it suddenly began to grow till it was 'a span' across. Then the waters began to rise and overflowed the world."¹⁰⁹

A similar belief concerning the subject at hand is also to be found among the Sia of New Mexico which, like that of the Ipurinas, also adds some interesting aspects of its own. As it is related by these people:

"When the sun was far off, his face was blue; as he came nearer, the face grew brighter. Yet they did not see the sun himself, but only a large mask which covered his whole body."¹¹⁰

The main interesting point behind this ancient conviction is that the Sun was not merely remembered as having been smaller in size, or that it grew in size, but that it had actually once been "far off." It also correctly presents the view that the Sun "grew brighter" as it came nearer which, logical as this would be, is not mentioned in the other records we have examined. The other additional point it mentions is that, when the Sun was still much farther away, its face was blue. What this might relate to will be explained in the proposed sequel to this work.

In the meantime, and in order to forestall an objection, let us again look at our hypothesis from an astronomical point of view. When, in 1978, I had sent rough drafts of the above

¹⁰⁶L. McIntyre, "Believers in the Mountain Gods," in R.S. Bennett, *Lost Empires—Living Tribes* (Washington, D.C., 1982), pp.261-265.

¹⁰⁷W. Thornhill, "The Electric Saturnian System," *AEON* VI:1 (February 2001), p. 40.

¹⁰⁸H. H. Bancroft, *The Native Races of the Pacific States*, Vol. III (London), p. 149; see also H. S. Bellamy, *Moons, Myths and Man* (London, 1936/1949), p. 244.

¹⁰⁹H. S. Bellamy, *In the Beginning God* (London, 1945), p. 120.

¹¹⁰R. Van Over, *Sun Songs: Creation Myths From Around the World* (N. Y., 1980), p.36.

proposition to various reviewers, some of them objected with the following. It was reasoned that, if the Sun had first appeared "no bigger than a star," it would have taken more than the entire length of man's sojourn on Earth for it to come close enough to appear of the size of the present Sun. As the late David Griffard pointed out:

"As point sources...apparent differences in the size of stars are only differences in brightness. To appear literally as an ordinary star (about 3rd or 4th magnitude) as seen on a clear night, the present Sun would have to be removed about 10 light-years. Even if much closer and really, say, at zero magnitude...it would still have been four or five light-years away.

"With present rates of relative stellar motion as guidelines, the growth from star to Sun would have taken many tens of thousands of years even if the fastest observed closing speed (about 60 mi/sec) is chosen; if at slower, more common speeds, (e.g. 12 mi/sec), many eons longer."¹¹¹

It is, then, the words "no bigger than a star" that seems to have led to the objection. "No bigger than" should not, however, be construed to mean "no closer than." In any case, who ever said anything about the size of the approaching Sun having been of 3rd or 4th magnitude? Obviously, the Okanagan Indians, who were not astronomers, were not using this term in a strictly astronomical sense. They were merely reporting what their ancestors had claimed to have seen.

Besides, as Griffard himself pointed out, "if first seen, say from the distance of Pluto (taken as an arbitrary estimate of the limits of the Sun's domain) the Sun conceivably could have appeared star-like and the time-line be reduced."¹¹² And, true enough, as seen from the vicinity of Pluto, the Sun is still no bigger than "a bright star,"¹¹³ described as a "pinpoint Sun" even though "intensely bright."¹¹⁴ At Pluto's mean distance from the Sun, taken at 3,656 million miles, and traveling at 12 mi/sec, Earth would have reached its present position in the Solar System in a mere ten years—but only if it had invaded the System in a direct vector. The probability, however, is that, once captured within the Sun's attractive force, the Saturnian system would have slowly spiraled in, much in the manner hypothesized by astrophysicists in relation to their revised history of the Solar System as outlined above. Such an entry could have taken any number of years in excess of ten. Astronomers are fond of describing such events as having taken millions of years. Will they here allow me at least a few thousand?

But then the reader might have—should have, really—noticed a discrepancy in our thinking at this point. How could the Sun, appearing no bigger than a star, have been visible through our plasmasphere when that same plasmasphere has been theorized to have been opaque enough to blot out the stars? Can we have our cake and eat it too? Of course not. And here a confession is in order.

I have presented these mytho-historical snippets concerning the approaching Sun as if the event took place during the age of darkness when, in truth, the event took place later. In other words, I have presented these data out of chronological sequence merely to make my point. The approaching Sun, appearing no bigger than a star, became visible to Earth's inhabitants at that time when the plasmasphere came in contact with that of the Sun itself. As Thornhill

¹¹¹ D. Griffard to D. Cardona, March 9, 1980, private communiqué.

¹¹² *Ibid.*

¹¹³ E. Ferington, *The Far Planets* (Richmond, Virginia, 1990), p.132.

¹¹⁴ R.A. Gallant, *Our Universe* (Washington, D.C., 1980), p.200.

explained: "The size, shape and colour of the envelope of proto-Saturn would have been disturbed as soon as the plasmaspheres of the Sun and proto-Saturn collided."¹¹⁵ Thus, on contact, the wavelength of the proto-Saturnian plasmasphere changed, resulting in the loss of its opacity. To be sure, much more than that ensued but that is left to the planned sequel to this work.

SEVENTH INTERLUDE

We can now add to our set of theses which will read as follows:

Hypothesis #1: That, from what can be deduced from ancient as well as primitive astronomical lore, Earth had once been a satellite of the planet Saturn, originally a brown dwarf star, which, because of its proximity, loomed large in the sky as a distinct disc larger than the apparent size of the full Moon.

Hypothesis #2: That, still according to ancient astronomical lore, during this indeterminate period, Saturn was the only visible celestial body in Earth's primordial sky.

Hypothesis #3: That, as seen from Earth, the Saturnian primary did not rise and/or set, but remained visibly immobile at all times.

Hypothesis #4: That Saturn's immobility was due to the fact that Earth was stationed directly "beneath" Saturn's south pole and that, from Earth, Saturn therefore appeared to be permanently fixed in the north celestial sphere, the very place now occupied by the Pole Star. What this also means is that Saturn and Earth were linearly aligned with both of them sharing the same axis of rotation.

Hypothesis #5: That both Earth and Saturn were embedded in a plasmasphere centered on proto-Saturn, the opacity of which enabled proto-Saturn's radiation to be reflected toward all terrestrial latitudes.

Hypothesis #6: That, according to some of man's earliest memories, Earth was originally engulfed in what our ancestors persistently referred to as darkness. This was an age which, despite its remoteness in time, ended up etching itself indelibly in human consciousness. It was a time during which the Sun, the Moon, and the stars were not yet visible in the sky. Saturn ruled alone.

Hypothesis #7: This age, we have also found out, could not have been one of *total* darkness, and that, in fact, mankind itself remembers that the Saturnian deity actually shed a feeble light. The terrestrial environment during this age was bathed in a perpetual twilight or, rather, a protracted dawn, which man remembered as the dawn of Creation.

Hypothesis #8: Proto-Saturn's illumination, feeble as it might have been, together with the plasmasphere's opacity are recognized as the means by which the stars were kept from visibility. The plasmasphere's opacity, however, would probably not have been enough to blot out the Sun..

Hypothesis #9: That, during this period, a nebulous entity, which our ancestors had difficulty in describing clearly, surrounded the Saturnian primary. We have conjectured this entity to have been a placental cloud, or circumstellar disk, surrounding the Saturnian orb. This entity seems to have been that to which the ancients alluded to as Chaos.

Hypothesis #10: During this same unspecified period, the Saturnian orb was seen to float over an apparition which, to ancient man, looked like water, a cosmic ocean. This "water" was probably the same nebular disk which, spinning slowly, would have had the appearance of a celestial whirlpool.

Hypothesis # 11: That, due to Saturn's immobility, and the absence of the Sun, ancient man had nothing at his disposal by which he could calculate the passage of time.

¹¹⁵ W. Thornhill, "Stars in an Electric Universe," *AEON* V:5 (January 2000), p. 48.

Hypothesis #12: That, judging by the totality of parameters inherent in all the above, the Saturnian system, that is including Earth, was at this time exterior to the Solar System, travelling as a unit through the blackness of space. This would then explain the oft repeated absence of the Sun during the time in question.

Hypothesis #13: That, at a later time, Saturn shone much brighter than it had previously done, bright enough for ancient man to allude to it consistently as a sun.

Hypothesis #14: That this primordial Saturnian sun shone during that time we today call the night.

Hypothesis #15: That, at some point in time, as the Saturnian system drew closer to the Sun, the Saturnian plasmasphere changed its wavelength, thus robbing it of its former near-opacity. It was at this time that ancient man was able to catch a glimpse of the slowly approaching Sun, at first appearing no bigger than a star, but growing ever larger and brighter.

Chapter 17

Life Beneath a Brown Dwarf Star

TIGHT ORBIT

Would mankind have survived had Earth and its Saturnian sun not been captured by our present Solar System?

Why not? In fact, as Wallace Thornhill has correctly speculated, life might have been much better suited to Earth as a satellite of the brown dwarf star that was proto-Saturn out in the far reaches of space.¹ Nor is this merely Thornhill's conjecture. Astronomers are now voicing similar propositions.

There was a time, not so long ago, when the idea of life surviving on a planet heated by a dwarf star in the coldness of space outside our Solar System would have been deemed bizarre in the extreme. Newer studies and discoveries, however, have tended to make such a scenario quite palatable. Thus, those who have sought signs of habitable worlds other than our own are now looking to dwarf stars to furnish such evidence. Ken Croswell put it in a nutshell when he stated that: "Far from being desolate backwaters, red dwarfs may harbour an abundance of alien life."²

"It was always thought that any planet orbiting a red dwarf would be an extremely unlikely place to find life. But it now looks as though these dim red suns could harbour most of the Galaxy's life-bearing worlds."³

For one thing, as Croswell notes, stars like our present Sun are relatively rare while four out of every five stars in our Galaxy happen to be red dwarfs. These stars have a somewhat cool core and the nuclear reactions which are believed to fuel them take place at a slow rate. "The nearest red dwarf—Proxima Centauri, which is 4 light years from Earth," notes Croswell, "emits less visible light in a century than the Sun does in a week."⁴ It is no wonder, then, that dwarf stars had earlier been ruled out as sustainers of habitable planets.

This problem has now been overcome by positing planets "huddled close enough" to such stars, which contiguity would ensure "a balmy climate." As Croswell explains: "For a red dwarf with one-hundredth of the Sun's brightness, for instance, a planet would be at a suitable temperature if it circled ten times closer to its parent star than the Earth does to the Sun."⁵

"If you'd asked me a few years ago," David Soderblom has been reported to have stated, "I would have said that red dwarfs have a very low probability of having life-bearing plan-

¹ W. Thornhill, "Stars in an Electric Universe," *AEON* V:5 (January 2000), p. 48.

² K. Croswell, "Red, Willing and Able," *New Scientist* (January 27, 2001), p. 29.

³ *Ibid.*

⁴ *Ibid.*

⁵ *Ibid.*

Despite the mytho-historical evidence, Earth's axis-sharing lock with Saturn had always been the most difficult aspect of the Saturn thesis to reconcile with celestial mechanics—which is why Rose could never accept the concept. Hall attempted to resolve the difficulty by claiming that Earth was originally phase-locked with proto-Saturn *before* it was torn away from its primary during the system's entry into the Sun's domain. According to Hall, the "polar alignment occurred due to a massive gravitational pull on Saturn" which would have left Earth "trailing after it."¹³ As of this writing, Thornhill, too, is of similar belief. The "spectacular Saturnian polar configuration," according to him, came into being "when [proto-Saturn's] planetary system was disrupted by the Sun in a manner similar to that when Jupiter disrupted comet Shoemaker-Levy 9 into a 'string of pearls'."¹⁴ Thus, according to him, the Saturnian "collinear equilibrium...could not have been primordial."¹⁵

To be sure, this is not necessarily a fallacious interpretation and it should not be dismissed out of hand. One thing to keep in mind, however, is that as far back as man's memory can reach, the Saturnian sun had *always* occupied the north celestial pole. What the situation might have been *prior* to that will be discussed in a later chapter of this work.

ATMOSPHERIC AMPLITUDE

One problem inherent in the phase-lock theory involves the amount of heat shed by the dwarf star on the orbiting planet's hemisphere facing it. As Croswell pointed out, "the day side of a red dwarf planet would fry."¹⁶ What is perhaps worse is that "the night side would be so frigid" that the atmosphere itself would be expected to freeze.¹⁷ How could life have survived such conditions.

One way out of this dilemma, according to Croswell, would be to postulate that such a planet's atmosphere would be "sufficiently thick."¹⁸

"Researchers [have] calculated that gases circulating in the atmosphere would then be able to transport heat from the planet's day side to its night side, warming the night air so that it wouldn't freeze out."¹⁹

Such transportation of heat from one hemisphere to the other would not only warm the planet's night side, it would also cool its day side resulting in a balanced heat regime.

What is interesting in this is that the same situation had also been proposed in relation to Earth itself. It was in the mid-19th century that the British anatomist, Richard Owen, demanded a denser terrestrial atmosphere, containing elevated concentrations of carbon dioxide and reduced oxygen, in order for prehistoric pterodactyls to have been able to fly and navigate.²⁰ Much later, Frederic Jueneman had much to say concerning the inability of pterodactyls, known to have had wingspans of up to 36 feet, to fly and navigate in Earth's present sky, and why a denser atmospheric envelope would have been required for such flight in prehistoric times.²¹

¹³ *Ibid.*, p. 28.

¹⁴ W. Thornhill, *op. cit.*, p. 49.

¹⁵ *Idem*, "The Electric Saturnian System," *AEON* VI:1 (February 2001), p. 36.

¹⁶ K. Croswell, *op. cit.*, p. 30.

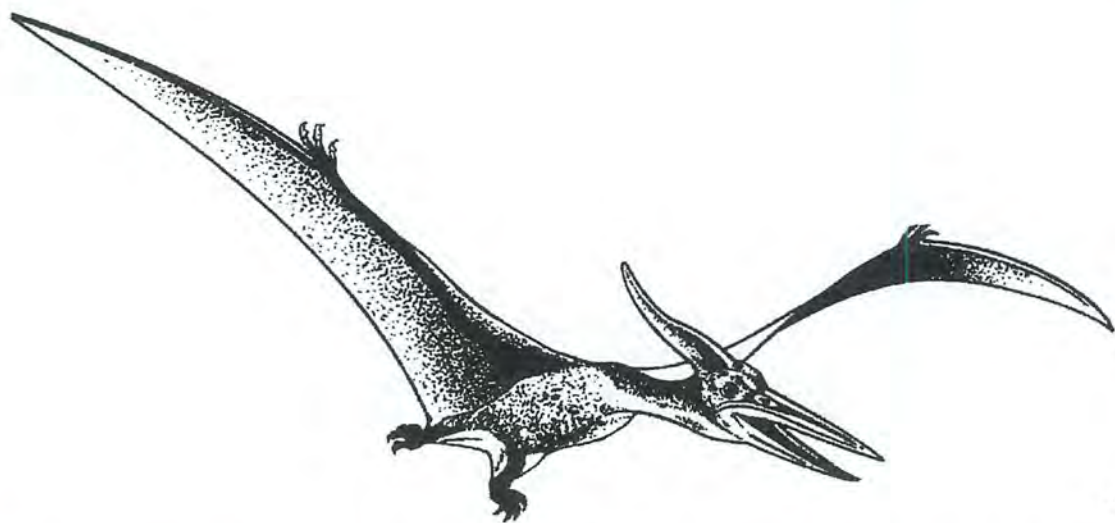
¹⁷ *Ibid.*

¹⁸ *Ibid.*

¹⁹ *Ibid.*

²⁰ D. Norman, *Dinosaur!* (N. Y., 1991), pp. 74, 218.

²¹ F. B. Jueneman, "Pleiongaea: A Myth For All Seasons," *AEON* II:3 (January 1991), pp. 21 ff.



Pteranodon.

Could such creatures, some of which are known to have had wingspans reaching up to 36 feet, have been able to fly in Earth's present atmosphere?

(Illustration by Bob Giuliani.)

As Jueneman explains, "*Pleiongaea* (plee-'on-jee-uh) is a neologism, which comes from Greek roots meaning literally 'more earth'."²² It is the term he coined to define his hypothesis that Earth was once cocooned in a more massive atmospheric envelope. Having introduced this idea in various entries in his running column—"Innovative Notebook"—which appeared in *Industrial Research & Development* during 1985, he collated most of that material into a single article which was published in *AEON* in 1991.²³

"Were our planet to have had such an atmospheric envelope approaching some 20,000 km (12,000 mi) in depth with solid earth at its core, the total diameter would be approximately 52,000 km (32,000 mi), and would be in the Neptune class of the smaller giants. This would be merely some 15 times our present mass and only about four times the diameter."²⁴

This idea was also picked up by Roger Wescott as a possibility to account for his Saturn-like Asterian scenario,²⁵ as also by Robert Driscoll in his tentative account re the disruption of the primeval Saturnian system.²⁶ Again, even were we to ignore the earlier demand of Richard Owen, the hypothesis is not, of itself, foreign to orthodox astronomy. Armand Delsemme had also proposed a terrestrial envelope, composed mainly of carbon dioxide, "100 times denser than the present atmosphere."²⁷

²² *Ibid.*, p. 45.

²³ *Ibid.*, pp. 45 ff.

²⁴ *Ibid.*, p. 47.

²⁵ R. W. Wescott, "Puzzles of Prehistory," *The Velikovskian* 1:3 (1993), pp. 20-21.

²⁶ R. B. Driscoll, "Magnetic Models of the Polar Configuration," *AEON* IV:2 (August 1995), p. 22.

²⁷ T. Dickinson, "The Seeds of Life," *Equinox* (July 1997), p. 74.



Visualized scene during the Carboniferous Period during which the atmosphere has been theorized to have been more oxygen-rich, and therefore denser, than the present.

(Illustration by J. F. Horrabin.)

The idea, of course, did not go unchallenged,²⁸ but other voices were soon to be added to the *pro*-list. Thus, the problem did not only touch pterodactyls, but also the prehistoric insects of the Carboniferous Period. These included dragonflies with two-and-a-half-foot wingspans and mayflies as big as canaries. These, too, were believed to have been impossible to fly in our present atmosphere.²⁹ As Jeffrey Graham recalls: "I remember seeing models of giant dragonflies as a child and wondering how they could fly."³⁰ But in the mid 1990s, a solution was offered by Graham and his colleagues who now believe that the entire Carboniferous insect population may have been enabled to fly in an oxygen-rich atmosphere. This hypothesis was proposed by Robert Berner who claimed that "the atmosphere in the Carboniferous was more oxygen rich than at any time before or since—it was 35 percent

²⁸ See here, for instance, the debate between M. Twose & F. Jueneman, "Gravity and Pterodactyls," *AEON* V:4 (July 1999), pp. 11-13, and "Gravity and Pterodactyls: More Points to Consider," *AEON* V:6 (July 2000), pp. 7-11.

²⁹ S. Menon, "Insects of the Oxygeniferous," *Discover* (September 1995), p. 32.

³⁰ *Ibid.*

oxygen...compared with 21 percent today.”³¹ According to Berner, this was due to “the rise of land plants in general and in particular to the vast and verdant swamps that characterized the Carboniferous.”³²

“All those swamp plants spit oxygen into the atmosphere, and when they died, they escaped the open-air decomposition by bacteria that would have drawn oxygen back out of the atmosphere. Instead they sank into the swamps, ultimately forming coal deposits that gave the Carboniferous its name.”³³

Never mind that there is no *direct* evidence of higher atmospheric oxygen levels during the Carboniferous. After all, Berner’s hypothesis is simply based on a computer model. Even so, as Shanti Menon explained, the oxygen-rich atmosphere hypothesized by Berner would have made for “a denser atmosphere that provided more lift and thus made it easier for [Carboniferous insects] to fly.”³⁴ While this is in keeping with Jueneman’s Pleiongaea, it should be kept in mind that, as Menon was forced to admit, the whole idea is “a hypothesis based on a hypothesis.”³⁵ But then, around 1985, Dale Russell and Parvez Kumar also came to the conclusion that Earth’s atmosphere had to have been much denser than at present.

But is a denser atmospheric envelope really required for the sustenance of life on a planet reliant for its heat on a dwarf star? Until recently, such a dense atmosphere around a dwarf star planet had been thought to be detrimental to life since it would prevent the star’s rays from reaching the planet’s surface and thus inhibiting photosynthesis, “a serious blow for the development of life as we know it.”³⁶ But then, simulation of a red dwarf planet’s atmosphere conducted by Robert Haberle and Manoj Joshi in the 1990s showed that a thick envelope would not really be required. As they stated, “even a thin atmosphere would do the trick.”³⁷

“If the planet had only 15 per cent as much air as the Earth...that would still ferry enough heat around to the dark side to keep the atmosphere from freezing out.”³⁸

The density, or otherwise, of a planet’s atmosphere, however, is relative. Even an atmosphere as dense as that of Venus, which has been blamed for its infernal heat, much denser than that proposed for Earth by the above proponents, is not enough to obstruct the Sun’s rays. And if pterodactyls and giant insects really required a denser atmosphere in order to fly and navigate, we will accept that. After all, the view that Earth was nestled within proto-Saturn’s envelope is not incompatible with a denser terrestrial atmosphere.

THE CRADLE OF LIFE

Keeping the atmosphere from freezing on the night side of such a planet is one thing, keeping the water, still believed to be the cradle of life, in the same hemisphere from suffering the same fate is quite another. “Even in some of Joshi and Haberle’s models, there remained freezing conditions on the planet’s dark side.” At first, this led to something of an

³¹ *Ibid.*

³² *Ibid.*

³³ *Ibid.*

³⁴ *Ibid.*

³⁵ *Ibid.*

³⁶ K. Croswell, *loc. cit.*

³⁷ *Ibid.*

³⁸ *Ibid.*; see also, *idem*, “The Brightest Red Dwarf,” *Sky & Telescope* (July 2002), p. 41.

academic uneasiness in that "the planet's water might still migrate from the day side to the night side, killing off any prospects of life."³⁹

Further studies conducted in 1997 by Martin Heath then came up with a solution based on the depth of ocean basins. Even if the oceans' surface were to freeze on the dark side, reasoned Heath, there might still be liquid layers deep underneath which would be kept from freezing by the planet's own geothermal heat. "This would allow liquid water to flow back to the day side."⁴⁰

In the proto-Saturnian model, such a transference of liquid water from one hemisphere to the other would not even be required. As we have seen, according to more than one researcher, Earth would have been located within proto-Saturn's plasma sheath. To repeat, as both Ashton and Thornhill claimed, the heat and light of proto-Saturn would have been "radiated both outwards and inwards from the photosphere"; that "Earth, situated inside the spherical envelope of such a star...would find the energy flux almost equal over the entire planet"; and that "all objects orbiting in that region would receive the same energy per unit area of their surface."⁴¹

No freezing of oceanic surfaces would then enter the picture.

STATIONARY STAR

On such a planet in phase-lock as envisioned by Croswell, the red dwarf sun would never set. "Instead," he tells us, this sun "would hover perpetually at the same place in the sky."⁴²

As we have seen, this would also have been the case in our axial alignment model except that, in our case, the proto-Saturnian sun would have hovered in Earth's north celestial pole. In this instance, the model proposed by Croswell runs into certain difficulties which the Saturnian exemplar overcomes.

As Croswell pointed out:

"Plants and trees might orient themselves toward [the hovering red dwarf star] as they grew. But because the sun is stationary some regions would never see direct sunlight. A region in the shadow of a mountain, for example, would be forever in shade, preventing photosynthesis there."⁴³

The situation would be even worse in the total darkness of the opposing hemisphere. This predicament, however, would not affect the proto-Saturnian model since, as already noted, the light from the hovering proto-Saturnian sun, no matter how feeble, would have been reflected back from the enveloping plasma to all those areas devoid of direct sunlight.

LONG-LIVED SUN

How long could such a situation have endured?

Croswell tells us that red dwarf stars actually have an advantage over sun-like ones. This is because their lesser mass allows them to "burn" their reduced fuel "so frugally that some will survive for more than 1000 billion years," whereas the Sun, it is claimed, "will die within a mere 8 billion years."⁴⁴

³⁹ K. Croswell, see Reference #2, p. 30

⁴⁰ *Ibid.*

⁴¹ W. Thornhill, see reference #1, *loc. cit.*

⁴² K. Croswell, *loc. cit.*

⁴³ *Ibid.*

⁴⁴ *Ibid.*

"It has taken terrestrial intelligence 4.6 billion years to evolve since the Solar System formed, but life on Earth may be atypical. If intelligence generally requires more time to emerge, then planets orbiting red dwarfs may be ideal."⁴⁵

It therefore seems that, by entering the Solar System, Earth actually moved into a more hostile, rather than a more benign, environment.

THE SEARCH FOR DWARF STAR PLANETS

All this might be interesting but, the reader may ask, is it *known* that dwarf stars are accompanied by planets?

Actually, planets in company of red dwarf stars have already been detected. These planets, however, are "more akin to Jupiter" than they are to Earth. Two Jupiter-sized planets, for instance, have been detected circling the red dwarf known as Gliese 876 which is said to lie a mere 15 light years from us. "These particular planets are unlikely to harbour life...since Jupiter-sized planets—at least in our Solar System—consist mostly of hydrogen and helium."⁴⁶

Laurance Doyle, on the other hand, believes that his team may have detected an Earth-sized world around CM Draconis, a binary red dwarf system. Because of the difficulty of detecting such small bodies, Doyle could only supply a "50-50" chance of this being correct. In the meantime, however, he and his team have other candidates which, as of this writing, they were still investigating.⁴⁷

There are other details brought out by Croswell in relation to dwarf star planets, but these, too, must be reserved for a future volume. There is, however, one other element of such a system that I wish to touch upon because it serves to introduce the subject of the next chapter which, in turn, will allow us to investigate further whether an axial alignment of Earth with its proto-Saturnian sun was ever the case. As Croswell informed his readers, a red dwarf planet would be bereft of seasons since "the tidal pull of the star would prevent its spin axis from tilting." In the model he espouses, needless to say, only one side would be basked in perpetual light, with the other hemisphere being in perpetual darkness. In this model, the hottest place on the planet would be one spot on the equator, with temperatures falling in a radiating path, "falling toward freezing near the dividing line between the day and night sides." Moreover, an ice cap would form in the very centre of the night side.⁴⁸ As Heath phrased it:

"The daylight hemisphere is going to be where the action is. For one thing, it's going to be pretty cold on the dark side. We know that there are organisms that can sit in water pockets in the ice and carry out photosynthesis, but they can't do that if there's no light getting there."⁴⁹

There is no need here to repeat that this is not the condition expected in an axial aligned system encased in a plasma sheath. And, as we have also noted, life can, and *does*, maintain and propagate itself in total darkness right here on Earth. So why do I even bring this up? I do so because a world with no seasons, or with but *one* season, is precisely what ancient man proclaimed to have been the case "in the beginning." More than that, it is precisely what we find encoded in Earth's palaeontological remains.

⁴⁵ *Ibid.*

⁴⁶ *Ibid.*

⁴⁷ *Ibid.*

⁴⁸ *Ibid.*

⁴⁹ *Ibid.*

Chapter 18

A World With One Season

THE NATURE OF SEASONS

Seasons are caused by the inclination of Earth's axis to the plane of the ecliptic. This means that not all of Earth's latitudes receive the same amount of *direct* radiation from the Sun *at all times*. Summer arrives in the northern hemisphere because Earth's axis during that time tilts the north pole toward the Sun (closest during summer solstice). In winter, it is the south pole that is tilted toward the Sun (closest during winter solstice). In between, during the equinoxes, both hemispheres receive the same amount of solar radiation because Earth's axis points neither toward nor away from the Sun. This also means that, in the southern hemisphere, the seasons are reversed, with summer coming in winter, autumn coming in spring, winter in summer, and spring in autumn. But, while all this is astronomically true, it is not necessarily always apparent down here on Earth. Thus, the fourfold seasonal division of the year can seldom be recognized in the annual cycle itself.

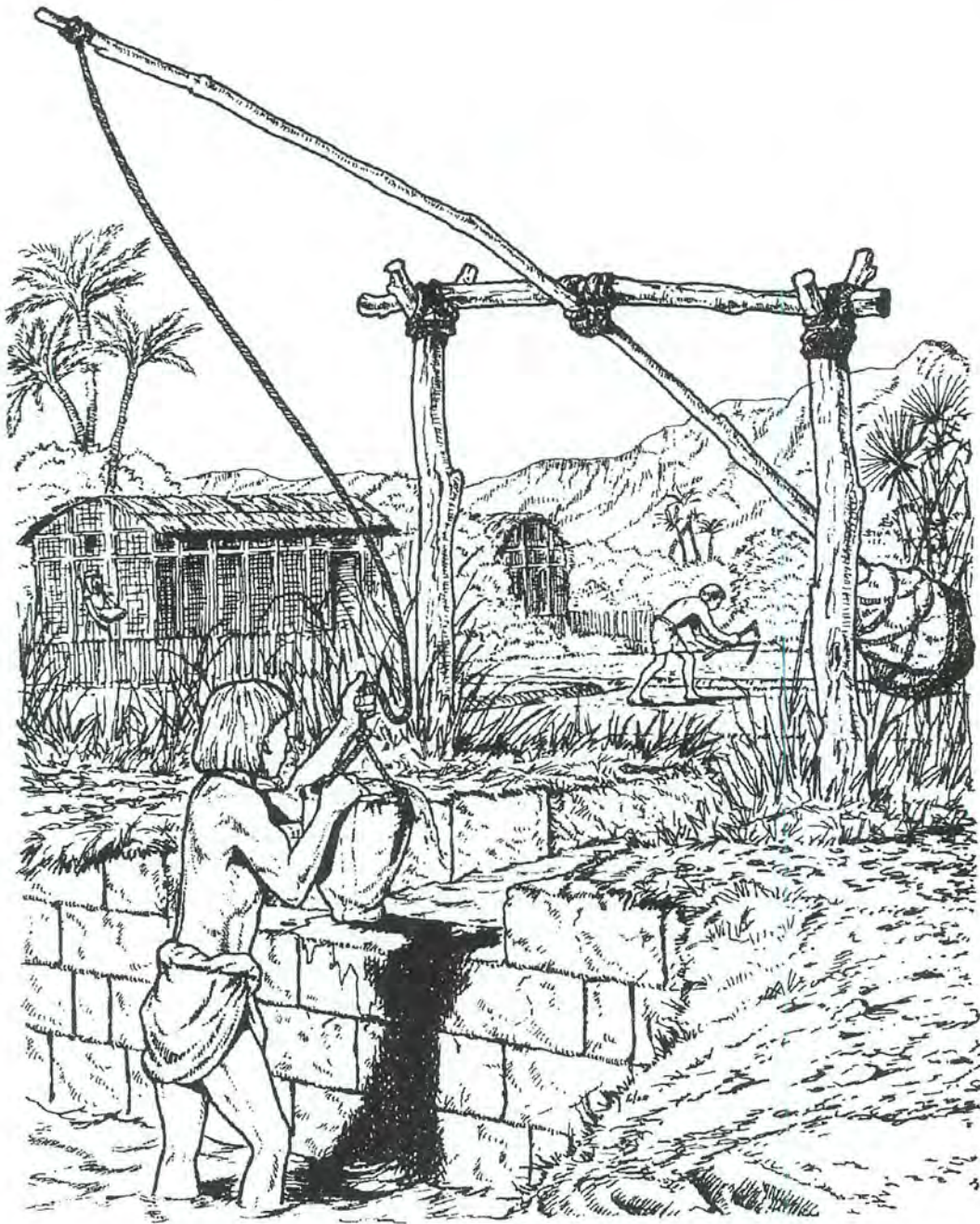
In the Western World, the seasons have been calculated in accordance with the yearly cycle of cultivated plants: Winter as the season of dormancy, spring as that of sowing, summer as that of growth, and fall, or autumn, as that of harvest. However, as we all know, spring and fall are merely transitional periods. Winter and summer are the only two seasons that have a distinctly extreme difference. Beyond that, seasonal temperatures pay no attention to the inclination of Earth's axis. Parts of spring can be as cold or as warm as winter or summer, as so, also, can parts of autumn. Climate depends on shifting winds, themselves reliant on the evaporation of water, and also on the particular topography of the land. Thus, for instance, because Egyptian harvest was totally reliant on the inundation of the Nile, the ancient Egyptian year was divided into only three seasons—*akhet* (inundation), *peret* (emergence), and *shemu* (aridity). The Hindus, on the other hand, reckon a six-fold division—*rtus*: *vasantika* (spring), *grashma* (summer), *varshika* (rainy season), *sarad* (autumn), *hima* (early winter), and *sishira* (late winter),¹ all of which, it is stressed, “overlap one another.”²

Seasons do not mean the same thing to everyone. The ancient Celts divided the year by religious festivals into four quarterly divisions without any concern for the solstices or equinoxes—in other words without any recognition of the shortest or longest days.³ These

¹ *Linga Purana* 1:55:24.

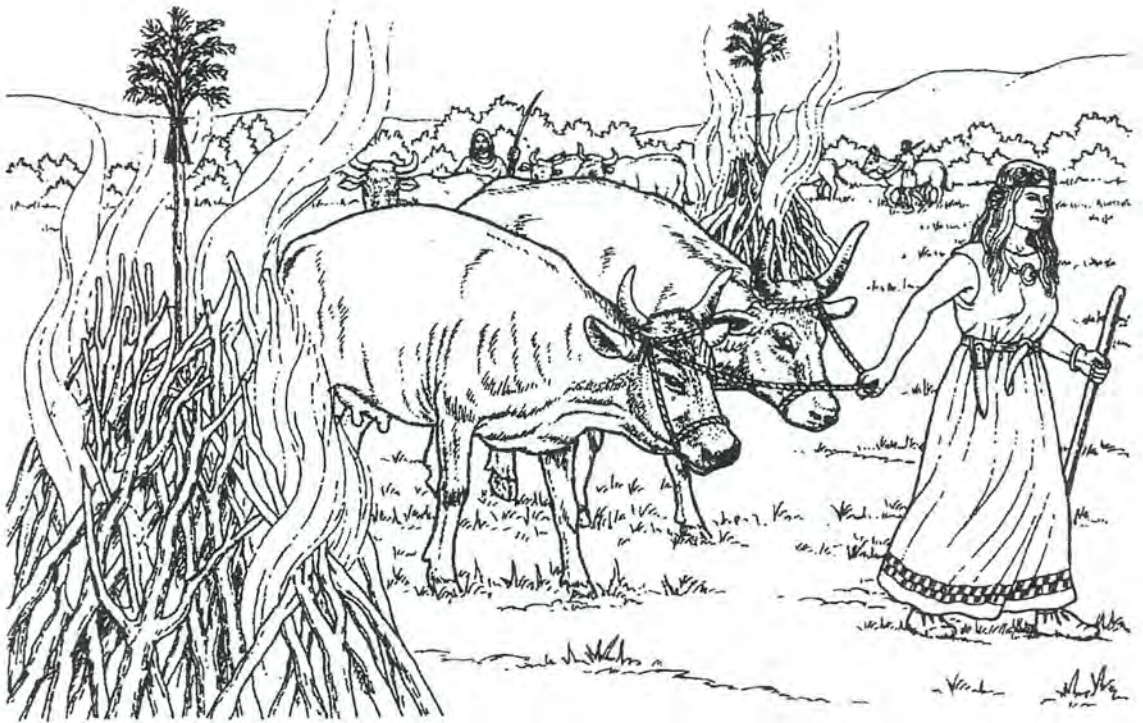
² *Ibid.*, 1:57:32-39.

³ J. M. Williams, “A New Theory of Celtic Festivals,” *Chronology & Catastrophism Workshop* 1995: 1, p. 6.



Egyptian farming restricted to the arable land that was just a narrow strip on either side of the Nile. Reliant as it was on the annual rise and fall of the river, the year was divided into only three seasons—Inundation, Emergence, and Aridity.

(Illustration by John Green.)



The Celts divided the year into four quarterly divisions punctuated by religious festivals with no concern for the astronomical seasons. Shown above is the passing of cattle between two bonfires, a ritual that was celebrated during the May Day festival of Beltane.

(Illustration by A. G. Smith.)

religious festivals, known by the names of Samhain, Imbolg, Beltane, and Lughnasad, have been said to mark the beginning of the seasons,⁴ but in actuality they do not. Samhain, said to mean “summer,” fell on November 1, which is the *end* of summer; Imbolg, said to mark the start of spring, fell on February 1; Beltane, which does not mean “summer,” but which is said to “herald the onset of summer,” fell on May 1; and Lughnasad, fell on August 1.⁵ And yet, Julius Caesar told us that the Celtic Druids possessed “much knowledge of the stars and their motion, of the size of the world, and the movement of heaven and the stars.” They even devised “a sophisticated lunar calendar with months of twenty-nine or thirty days, with each month divided into two half-months...and had intercalary periods to keep it in line with the solar year.”⁶ Even though they calculated the passage of time by the number of nights rather than days,⁷ this knowledge should have enabled them to calculate the times of the longest and shortest day.

⁴ F. Fleming, *et al*, *Heroes of the Dawn* (London, 1996), p. 36.

⁵ *Ibid.*, pp. 36-37.

⁶ *Ibid.*, p. 40.

⁷ *Ibid.*



The Celtic festival of Lughnasad, held in honor of the god Lugh, fell on August 1. The celebrations, which included the gathering of the harvest, however, commenced as early as July 15 and continued for a full month until August 15.
(Illustration by A. G. Smith.)

The North Pole, meanwhile, is not always as cold as one generally supposes. Arctic temperatures in summer usually reach 80° F in the shade. Temperatures as high as 85° F have been regularly reported with a record high of 100° F in the shade at Fort Yukon in Alaska. The most intense cold is not to be found at the North Pole or the centre of the Arctic Ocean known as the Pole of Inaccessibility. The coldest place in the Arctic is in the Yukon basin, shared by Alaska and the Yukon Territory, and the province of Yakutsk in Siberia where temperatures colder than 90° F *below zero* "have been reliably recorded." And yet, wheat, barley, oats and rye are cultivated "if not at the very cold pole of the Northern Hemisphere, at least within a comparatively short distance from it, where the temperature frequently drops lower than 80° below zero."⁸

Antarctica, at the other "end" of the world, is entirely different. The mean monthly summer temperature at the South Pole is minus 28° F. Rarely does the temperature rise above freezing and "only here and there on the Antarctic coastline." In winter it can range anywhere

⁸ V. Stefansson, "Arctic Regions," *Encyclopaedia Britannica* (1959 edition), Vol. 2, p. 308.



Pacific islands close to the equator exhibit no seasonal change. Up until recently, the natives of such islands calculated their "year" without any consideration of seasons.

between minus 80° F to minus 127° F,⁹ with a record temperature of minus 129° F.¹⁰ No possible growing of wheat and barley here.

In tropical latitudes, seasonal differences in weather depend on the shifting wind belts where the alteration of rainy and dry days is more important than temperature. Nor do these rainy and dry seasons necessarily correspond with winter and summer. In fact, places close to the equator can experience two rainy seasons and two dry seasons per year. The length and intensity of these rainy and dry seasons also depends on the relief of the land and exposure to winds from different directions. And yet, regardless of the time of the year, tropical rainy seasons are almost without exception cooler than the dry seasons.

In most of India, the rainy season occurs in summer, the dry one in winter. Despite the Hindu calculation of the seasons, as mentioned above, India, like ancient Egypt, is con-

⁹ R. H. Bailey, *Glacier* (Alexandria, Virginia, 1982), p. 115.

¹⁰ M. W. Browne, "Antarctica: Life's Tenuous Toehold," *Discover* (March 1984), p. 49.

sidered to have only *three* seasons—and these are of unequal length: A cool season from December to February, a hot season from March to mid-June, and a rainy season from mid-June to November.

The Rotumans, living on a small island near the equator, reckon the passage of time in periods of six months, or moons. Changes of temperature there are but slight, with the difference of seasons barely perceptible. Not only can the natives observe no change of season, the vegetation itself is not materially affected throughout the year. So, likewise, in the Kingsmill Islands, also known as the Gilbert Islands, situated directly beneath the equator, where the natives reckon their “year” as a period of *ten* months without any reference to seasons.¹¹

It can thus be seen that, while the *official* seasons are tied to the astronomical calendar, *actual* seasonal variations, climates, and temperatures are not entirely dependent on Earth’s axial tilt. All of which raises the question: Are seasons necessary for the propagation and sustenance of life?

THE GOD OF SEASONS

On an Earth engulfed in the semi-darkness of a perpetual dawn, bereft of the succession of day and night, with a radiating warmth reflecting uniformly, or quasi-uniformly, on all parts of our globe, our world could only have experienced a single season. The evidence for whether this was ever so can only be found here on Earth. But, before delving into that, because seasons would eventually have come about, our reconstruction of these primeval events demands that the mytho-historical record should connect the arrival of the *four* seasons with the Saturnian deity man had been wont to venerate. Can this demand also be met?

We note, for starters, that the association of the word “season” with Saturn is discernible in Latin. In fact, the English word “season” is itself ultimately derived, through a meandering route of associated European words, from the Latin *sationem*, accusative *satio*, “sowing.”¹² According to the ancients themselves, it was this word, *satio*, and or *satus*, that is “seed,” from which the name of Saturn—i.e., Saturnus—was derived.¹³ And it is this, among other matters, which ended up casting Saturn as a god of agriculture.

Hermann Collitz, on the other hand, traced the derivation of the name Saturnus to the Persian (that is Old Iranian) word *xsaeta*, with the dual meaning of “bright” and “king” or “ruler,”¹⁴ which appears as an epithet of Yima/Saturn.¹⁵ As he indicated, an older form of Saturnus, which was sometimes written Saeturnus, was Saetus. He was therefore convinced that the name Saeturnus derived from Saetus through the Avestic *xsaeto/xsaeta*—which he

¹¹ H. Hale, *Ethnography and Philology: U. S. Exploring Expedition, 1838-42*, Vol. VI (1846), pp. 105-106, 169-170.

¹² N. Webster, *Webster's Twentieth-Century Dictionary of the English Language* (N. Y., 1939), p. 1498.

¹³ See here, for instance, H. Collitz, “Konig Yima und Saturn,” *Oriental Studies in Honour of Cursetji Erashji Pavry* (Oxford, 1933), p. 102.

¹⁴ *Ibid.*, pp. 95 ff.

¹⁵ *Ibid.*

preferred to see as meaning “ruler”—and that only later was the Italic form *Saetus* associated with *satio*.¹⁶

But even if Collitz is correct concerning the derivation of the name Saturnus, there is still no doubt that, in the minds of the Romans who venerated him, the *four* seasons were absent during the god’s reign, at which time the world basked in the glory of but *one* season. Thus, in describing Saturn’s Golden Age, Ovid spoke of mankind as having been “content with foods that grew without cultivation” in “a season of everlasting spring.”¹⁷ It was only after Saturn’s reign had come to an end that the springtime “which had prevailed of old” was shortened while “a cycle of four seasons in the year, winter, summer, changeable autumn, and a brief spring” was instituted.¹⁸ And was it not because of this that Janus, whom we have already seen identified by the ancients themselves as Saturnus, was deified *inter alia* as the god of the seasons?¹⁹

It was no different in the New World where we have already met the Peruvian Kon Tiki Viracocha. Having previously identified him as a Saturnian deity, it is not surprising to discover that he was believed to have been the “guiding power in regulating the seasons” which seasons were actually ordained by him.²⁰

Further north in Arizona, the Indians of Oraibi venerated a god called Machito who, like the Saturnian deity of other races, existed in darkness at a time when “there was no sun, no moon, and no stars.”²¹ It is said that the people complained “because of the darkness and the cold.”²² While the cold mentioned here might seem to contradict our thesis, it should be understood that the record in question involves a *protracted* series of events covering a period which goes beyond what is encompassed in this work. This cold, of which the mytho-historical record has much to say, descended upon the world at the end of Saturn’s Golden Age²³ *but before the appearance of the seasons*. In fact, it was after Machito had produced the Sun, which dissolved the cold, together with the Moon and the stars, that he “appointed times and seasons.”²⁴

Much more can be said but, at this point, I must stop because we are now encroaching on the era of Saturn’s Golden Age which actually came later and which topic must be reserved for its proper chronological place in the planned sequel to this volume. Even so, it behooves us to remember the words of Frederick Hall who considered the era with which we are presently concerned as having been “the *primitive* phase of Saturn’s Golden Age.”²⁵ As he wrote:

¹⁶ *Ibid.*, p. 105.

¹⁷ Ovid, *Metamorphoses*, I:103-107.

¹⁸ *Ibid.*, I: 113-118.

¹⁹ *Idem*, *Fasti*, I:125.

²⁰ C. R. Markham, *The Incas of Peru* (1910), pp. 97-98.

²¹ As quoted by I. Donnelly, *Ragnarok: The Age of Fire and Gravel*, republished as *The Destruction of Atlantis* (N. Y., 1971), p. 212.

²² *Ibid.*

²³ D. Cardona, “The Demands of the Saturnian Configuration Theory,” *AEON* VI:1 (February 2001), pp. 66 ff.

²⁴ I. Donnelly, *op. cit.*, pp. 212-213.

²⁵ F. F. Hall, “Solar System Studies,” Part 2, *AEON* I:4 (July 1988), p. 27 (emphasis added).



Janus—God of seasons.

"It [was] gloomy in the sense that Earth [did] not experience the sharp contrasts of the modern day and night; but the climate [was] uniformly moist and warm. Vegetation [was] lush, animals [were] plentiful and life easy for herbivores, carnivores and omnivore-scavengers, such as man, alike."²⁶

PHOTOPERIODISM

Photoperiodism, not to be confused with photosynthesis, is the response of organisms to the duration of light and darkness generated by the succession of day and night. It should however be noted right from the start that temperature, nutrition, and environmental factors can greatly modify this response. Also, closely related varieties of species can, and do, respond differently to identical photoperiodic conditions due to inherited differences in their make-up.

When it comes to fauna, the most conspicuous activities correlated to photoperiodism consist of changes in pelage and/or plumage, the migratory instincts of birds, and the reproductive process, each of which occurs with marked regularity at a particular time each year. When animals held in captivity are subjected to artificial lighting conditions which mimic a day-night succession that is different from the natural one, reproduction, bird migration, and other activities can be induced out of season. This seems to prove that such activities are regulated by the changing daily periods of light and darkness—in other words by the succession of the seasons.

In artificial situations, as little as nine hours of light per day was sufficient for stimulating the physiological changes responsible for these activities. The response, it has been found, becomes rapid under long days, and sluggish under short ones. Thus, changes in physiological responses, such as change in breeding season, occurs in certain birds and mammals when transported from a southern to a northern latitude and/or vice versa. And yet, in equatorial regions, where day lengths are constant, mammals and birds continue to breed, change their plumage, and migrate as if the day lengths actually varied. Do they then keep count of the days? Can they keep time? Or is it that they have adapted so well to their environment that their physiology changes without response to photoperiodism? To be sure, studies of certain species of birds failed to show any influence of light on their reproductive cycle.²⁷ Would animals not breed had there been no succession of day and night? Would they stop breeding in an environment of perpetual dawn and an everlasting spring? Or would they adapt?

The flowering of plants, the formation of roots, runners, tubers, and bulbs are also controlled by photoperiodism. The photoperiodic reaction of plants takes place in the leaves, but the response occurs elsewhere. Not all plants, however, react the same way. Short-day plants, for instance, fail to flower when days exceed a certain duration; long-day plants fail to flower *unless* days exceed a certain duration. The critical day lengths for these plants, moreover, differ widely not only from species to species but also among varieties of the same

²⁶ *Ibid.*

²⁷ A. Wolfson, "Photoperiodism," *Encyclopaedia Britannica*, Vol. 17 (1959 edition), p. 848.



Birds in equatorial regions, where day lengths are constant, continue to change their plumage, reproduce, and migrate on time as if day lengths actually varied.

Shown above: The African Crane.

(Photograph by the author.)

species. Other plants, meanwhile, flower regardless of day lengths.

What was not understood at the time the phenomenon of photoperiodism was named was that the response of plants is controlled by the duration of darkness and not of light—that is by the length of the night as opposed to the length of the day.²⁸ May we be bold enough to suggest that this *might* be a residue from an earlier environment in which the world was cast in perpetual semi-darkness?

Red light can prevent the flowering of short-day plants while promoting that of long-day ones. However, the inhibition of flowering by short-day plants through red light can be prevented by the inclusion of red light of greater wave length (or what is known as far-red).²⁹ Since Saturn is here posited to have been a brown dwarf star, its propensity of red light, mainly in the far-red, would therefore have been conducive to plant growth.

On the other hand, as every gardener knows, some flowers close up at night and re-open when the Sun comes up. What, then, would have happened to such plants attempting to thrive in a world where the succession of day and night was replaced by a perpetual dawn-like murkiness? The answer is actually simple: Had such plants existed at the time, they would have had to adapt to their environment as others have done, and continue to do, in the present world.

THE SUB-TROPICAL ARCTIC

As early as the nineteenth century it was “admitted by all scientific authorities that at one time the regions within the Arctic Circle enjoyed a tropical or nearly tropical climate.” These words were written in 1885 by William Warren in his attempt to prove that man’s original Paradise had been located at Earth’s north polar region.³⁰ He did not assert this as merely his say-so; he named authorities and quoted from them.

“The Arctic regions, probably up to the North Pole, were not only free from ice, but were covered with a rich and luxuriant vegetation.”³¹

“One of the most startling and important of the scientific discoveries of the last twenty years has been that of the relics of a luxuriant Miocene flora in various parts of the Arctic regions. It is a discovery which was totally unexpected, and is even now considered by many men of science to be completely unintelligible...”³²

“In the early Tertiary period the climate of the northern hemisphere, as shown by the Eocene animals and plants, was very much hotter than it is at present; partaking, indeed, of a sub-tropical character. In the Middle Tertiary or Miocene epoch the temperature, though not high, was still much warmer than that now enjoyed by the

²⁸ H. A. Borthwick. “Photoperiodism,” in *ibid.*, p. 847F.

²⁹ *Ibid.*

³⁰ W. F. Warren, *Paradise Found* (Boston, 1885), p. 84.

³¹ Croll, *Climate and Time* (American edition, 1875), p. 7 as quoted in *ibid.*, p. 85.

³² A. R. Wallace as quoted in *ibid.*, p. 83.

ERA	PERIOD	EPOCH	M/Yrs Ago
CENOZOIC	Quaternary	Pleistocene	c. 1
	Tertiary	Pliocene Miocene Oligocene Eocene Paleocene	c. 13 c. 25 c. 36 c. 58 c. 63
MESOZOIC	Cretaceous	Upper Lower	c. 110 c. 135
	Jurassic	Upper Middle Lower	c. 165 c. 180
	Triassic	Upper Middle Lower	c. 200 c. 230
PALAEOZOIC	Permian	Upper Middle Lower	c. 260 c. 280
	Carboniferous	Pennsylvanian Mississippian	c. 320 c. 345
	Devonian	Upper Middle Lower	c. 365 c. 390 c. 405
	Silurian		c. 425
	Ordovician	Upper Middle Lower	c. 445 c. 500
	Cambrian	Upper Middle Lower	c. 530 c. 570

Simplified table of the geologic succession

northern hemisphere; and we know that the plants of the temperate regions at that time flourished within the Arctic Circle."³³

"One thing at least is certain, that till a very recent period, geologically speaking, our earth enjoyed a warm and genial climate up to the actual poles themselves, and that all its vegetation was everywhere evergreen, of much the same type as that which now prevails in the modern tropics."³⁴

Even Charles Lyell, the very proponent of the uniformitarian principle, was compelled to write:

"The result...of our examination...of the organic and inorganic evidence as to the state of the climate of former geological periods is in favor of the opinion that the heat was generally in excess of what it now is. In the greater part of the Miocene and preceding Eocene epochs the fauna and flora of Central Europe were sub-tropical, and a vegetation resembling that now seen in Northern Europe extended into the Arctic regions as far as they have yet been explored, and probably reached the Pole itself. In the Mesozoic ages the predominance of reptile life and the general character of the fossil types of that great class of vertebrata indicate a warm climate and an absence of frost between the 40th parallel of latitude and the Pole..."³⁵

And yet, seeing as so much has been discovered since the nineteenth century, can we still adhere to these conclusions?

More so than ever.

THE CANADIAN HIGH ARCTIC

The Canadian island of Axel Heiberg, in Nunavut, well above the Arctic Circle, well beyond the present tree line, is littered with the remains of ancient forests—stumps, logs, and remnants of leaves and even fruit. Although the relics of such forests are known from other parts of the world, those on Axel Heiberg are exceptional because, unlike other remains, they have not been petrified. On the contrary, the remains have maintained their original form and even tissue. The retrieved wood still splits and splinters and can be carved with a sharp knife. It burns as good as modern wood. It has even retained the hue of soft lumber. Not only trees have been preserved, but also leaf mats the likes of which one finds on the ground in modern forests. Barren, gaunt, and forbidding as the island now is, its rolling hills bear the traces of more than twenty separate forest layers, *stacked on top of each other*, all of which are found *in situ*, testifying to growth on the spot rather than transmission by the forces of nature. The age between each individual forest layer, which consist of sediment a few meters

³³ Nicholson, *The Life History of the Globe*, p. 335 as quoted in *ibid.*, p. 85.

³⁴ G. Allen, *Knowledge* (November 30, 1883, p. 327 as quoted in *ibid.*

³⁵ C. Lyell, *Principles of Geology*, Vol. I (1830-1876, 11th edition), p. 231 as quoted in *ibid.*, p. 86.



Even Charles Lyell—shown above—the proponent of the uniformitarian principle was compelled to admit that the Arctic regions had once basked in a sub-tropical climate. (From a portrait at the British Museum.)

in thickness, has been calculated to be anything from a few hundred to thousands of years.

As James Basinger noted, these vestiges point to “a lengthy warm spell during the Eocene epoch...when mean annual polar temperatures ranged from seven to 15° C.”³⁶

“Tall trees not unlike the towering redwoods of the Pacific Northwest—and genetically similar to birch, alder and swamp cypress—grew beside a meandering river delta hundreds of kilometers wide. Some of these giants were 35 m high, with stumps 2.5 m around, and appear to have lived for as long as 1,000 years.”³⁷

The problem that has been facing paleobotanists is how such forests could have thrived in a latitude which at present would have forced them to “sleep” through the long

³⁶ J. George, “The Forest of the Past,” *Maclean's's* (September 6, 1999), pp. 16-17.

³⁷ *Ibid.*, p. 17.

polar night. As Art Johnson who, independent of Basinger, have been studying these remains, noted: "We have no forests on Earth where the trees are so big and have to sit in the dark for three months."³⁸

Axel Heiberg Island is not the only area in Canada's High Arctic where the remains of ancient forests have been found. The coal-bearing sediments of the Eureka Sound Group scattered throughout most of the Arctic Archipelago also contain such remains. Plants dated to the Paleocene from the Fosheim Peninsula of Ellesmere Island resemble similar Paleocene flora from Western Canada's interior, indication of a cosmopolitan temperate zone.³⁹ Some of the plants from these Tertiary forests have been described as being akin to those growing in the present cypress swamps of Florida.⁴⁰ Others, like oak, do not grow in swamps. Trees from the middle Eocene in the same area reached up to 50 meters high.

The fossils of animals found buried amid the remains of these forests—ancestors of the horse and rhinoceros, giant lizards, land tortoises, salamanders, snakes, alligators, crocodiles, flying lemurs⁴¹—all testify to the warmth of the climate at that time, as so does the discovery of fossil palm trees and huge exotic ferns by Soviet paleobotanists in the islands of Spitsbergen in the Svalbard archipelago far within the Arctic Circle.⁴² Even fossil tapirs, the descendants of which now live in the equatorial Amazon forest, were found on Ellesmere Island.⁴³ As Ian Johnson (not to be confused with Art Johnson, cited above) noted, finding the tropics in such high latitudes raises serious implications for paleontologists:

"This far from the equator means 4 months of polar darkness...If the night temperature was always 10 degrees Celsius, in conjunction with 4 months of darkness, plants would die. Mammals found to date are likely middle Eocene creatures. Crocodiles, lizards and turtles are well adapted to forest life but some of the discovered species [the crocodilians] cannot tolerate near freezing temperatures for very long. This implies that there had to be considerable warmth in the Eocene High Arctic *all throughout the year*."⁴⁴

And:

"Crocodilians are a test of the reconstructed polar forest community because they have changed little since the end of the Triassic...the crocodilians have been consistent throughout their long evolutionary history in their limited tolerance of the cold.

³⁸ *Ibid.*

³⁹ I. C. Johnson, "Basinger's Lecture on the Eocene Forests of the Canadian High Arctic," *Chronology & Catastrophism Workshop* 1989:2, p. 17.

⁴⁰ *Ibid.*

⁴¹ "The Eocene Climate Puzzle," *Chronology & Catastrophism Workshop* 1989:1, p. 27; I. C. Johnson, "Anomalous Occurrence of Crocodilia in Eocene Polar Forests," *Chronology and Catastrophism Review* XIV (1992), p. 7.

⁴² "Fossils Date the Tilt of Earth's Axis," *Globe & Mail* (June 8, 1984). NOTE: For even earlier Triassic remains, which also point to "a warm and humid climate," see *Soviet Weekly* (July 21, 1984).

⁴³ I. C. Johnson, *op. cit.*, p. 11.

⁴⁴ I. C. Johnson, "Basinger's Lecture on the Eocene Forests of the Canadian High Arctic," *Chronology & Catastrophism Workshop* 1989:2, p. 17 (emphasis added).

Crocodylia have never occupied ecological niches where near-freezing cold persists continuously for months."⁴⁵

Alligators are more adapted to cold weather than crocodiles. Crocodiles require shallow water, but crocodiles in water that is colder than 65° F tend to sink to the bottom in lassitude and drown as they do in places even like Florida during severe cold weather.

The scientific establishment, meanwhile, has not been entirely silent when it comes to propositions concerning the solution of the puzzle which the one-time existence of these Arctic forests raise. Thus, for instance, writers in *New Scientist* proposed that the Arctic Eocene's subtropical climate can be explained if the oceans transported far more heat to the poles than they do at present.⁴⁶ But evidence of the atmospheric circulation required for this, which depends on temperature differential, is lacking. Moreover, the small size of particles retrieved from Eocene deep-sea sediments confirm the lack of wind speeds at that time.⁴⁷

Continental drift must also be ruled out because Axel Heiberg Island is "only a few hundred kilometres closer to the North Pole than it was when the forests flourished"⁴⁸—which is definitely not enough for it to have been located outside the Arctic Circle at that time. As Johnson noted: "Modern geological field work has confirmed that the northern lands of the globe have been located in polar latitudes for at least the last 100 million years, despite ongoing continental drift."⁴⁹

Leo Hickey's "observation" that "fossil leaf fragments indicate that the deciduous leaves were enormous"⁵⁰ has remained somewhat controversial.⁵¹ He, however, claims to have returned from his 1979 field season with fossil leaf fragments, one of which measured two feet in width.⁵² Gigantic leaves are known to develop when plants are grown *under constant lighting conditions*. Thus, his conclusion was that these forests "grew under conditions of continuous light."⁵³ Hickey then proposed that a bank of thick fog could have hung over the forests during the Arctic winter, which fog would have retained enough heat to cause a greenhouse effect.⁵⁴ What would have caused the fog, or why such a fog is not at present evident in the polar regions, he left unexplained.

Curt Teichert was honest enough to admit that "attempts to explain rapid climatic changes throughout the Tertiary have been 'especially vexing and unsatisfactory'."⁵⁵ As D. H. Campbell wrote: "It is difficult to imagine any possible conditions of climate in which

⁴⁵ *Idem*, "Anomalous Occurrence of Crocodylia in Eocene Polar Forests," *Chronology and Catastrophism Review* XIV (1992), p. 7; see also *ibid.*, Part Two, *Chronology & Catastrophism Review* XV (1993), pp. 23-26.

⁴⁶ *New Scientist* (December 10, 1987), p. 28.

⁴⁷ "Eocene Climate Puzzle," *Chronology & Catastrophism Workshop* 1988:1, p. 28.

⁴⁸ "The Eocene Climate Puzzle," *Chronology & Catastrophism Workshop* 1989:1, p. 27.

⁴⁹ I. C. Johnson, *op. cit.*, (Part One), p. 8.

⁵⁰ H. Thurston, "Icebound Eden," *Equinox* (May/June 1986), p. 74.

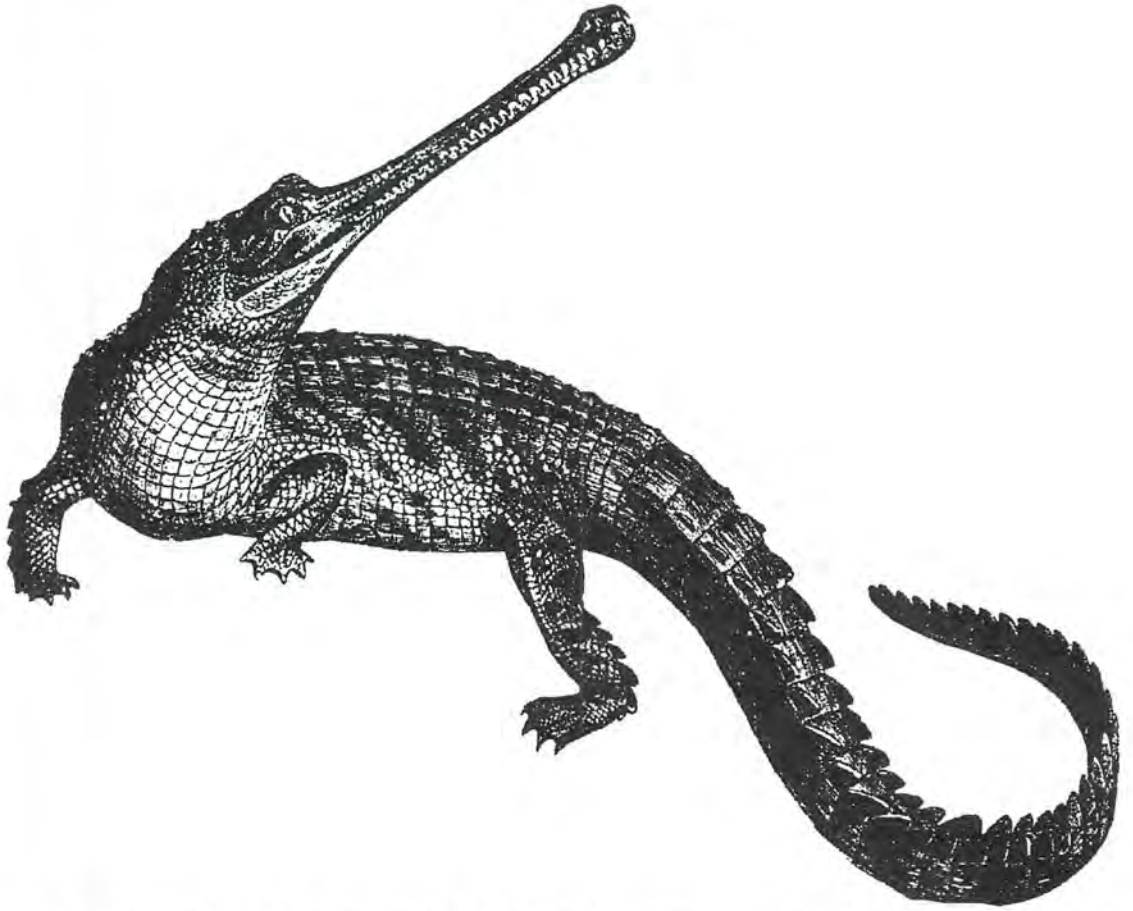
⁵¹ I. C. Johnson, *op. cit.*, p. 13.

⁵² H. Thurston, *op. cit.*, p. 81.

⁵³ "The Eocene Climate Puzzle," *Chronology & Catastrophism Workshop* 1989:1, p. 28.

⁵⁴ *Ibid.*

⁵⁵ I. C. Johnson, *op. cit.*, p. 8.



Indian gavial, remains of the ancestors of which have been recovered from the Canadian High Arctic.
How did these warm-loving animals survive within the Arctic Circle?

these plants could grow so near the pole, deprived of sunlight for many months of the year.”⁵⁶ Or, as David Mech was forced to conclude, the causes behind such a radical different climate “remain a mystery.”⁵⁷

But consider now: If Earth had basked beneath Saturn’s constant radiation rather than that emitted by our present rising and setting Sun, these forests would not have had to “sit in the dark for three [or four] months” of the year; they would not have had to “sleep” through the long polar night. As we have seen, the duskiness which ancient man relatively described as darkness was never one of totality. Saturn would have shed enough light, feeble as it might have been, to dispel the gloom *and would have done so continuously*. It would also have supplied the required heat.

⁵⁶ D. H. Campbell, “Continental Drift and Plant Distribution,” *Science* (January 16, 1942), as quoted by I. Velikovsky, *Earth in Upheaval* (N. Y., 1955), p. 45

⁵⁷ L. D. Mech, “Life in the High Arctic,” *National Geographic* (June 1988), p. 757.

Of course, the Tertiary period to which these forests have been dated has been calculated to have spanned Earth's environment some 40 to 50 million years ago, which is hardly the age of man. But one has to keep in mind that if Saturn acted as the sun during mankind's primitive past, *it must also have been Earth's sun during ages long before*. Moreover, since Saturn's present illumination and heat are nowhere close to what we have postulated them to have been during man's early career on this planet, it stands to reason that its radiant energy dissipated relatively fast. This would also make us assume that, in ages prior to the advent of mankind, Saturn's radiant energy, and in fact even its mass, must have been greater still. It is even possible that its illumination, at close quarters to Earth, would have been bright enough to bathe the world in perpetual daylight rather than the constant dusk that primitive man later experienced. As we have seen, scientific consensus favors a dimmer sun during Earth's past geologic ages. Could not this dimmer sun have been the Saturnian sun which later greeted man's appearance on Earth?

(What should also be kept in mind is that if our hypothesis is anywhere close to being correct, the dating of Earth's past geologic ages would be based on fallacious evidence.)

FROM POLE TO POLE AND IN BETWEEN

I have been stressing the discoveries in the Canadian High Arctic but, if the truth is to be known, similar evidence is available from other parts of the northern hemisphere. Oswald Heer described 2,632 Arctic plant species, 1,627 of which were actually discovered by him. In his seven-volume epic on the subject, published between the years 1868 and 1883, Heer stressed the luxuriant plant life that thrived during the Tertiary in northern polar regions. Among those that grew in Greenland, he noted magnolias and fig trees.⁵⁸ Similarly in Spitsbergen where he noted the Tertiary thriving of such trees as pines, firs, spruces, cypresses, elms, hazels, and even water lilies.⁵⁹ Forests which once flourished in Spitsbergen have left seams of coal from twenty-five to thirty feet thick. Fossil specimens of fig palms and the giant Redwood (*Sequoia gigantea*), which now grow in California, have been retrieved from an area stretching from the Bering Strait to north of Labrador. As D. H. Campbell admitted: "It is difficult to imagine any possible conditions of climate in which these plants could grow so near the pole, deprived of sunlight for many months of the year."⁶⁰ Fossil corals, which can only grow in tropical waters, were also discovered there in large formations. Corals, in fact, grew all over polar North America—in Alaska, Canada, and even in Greenland.⁶¹

The same situation is evident at the opposite end of the world in the freezing regions of Antarctica. The biggest problem here is that, in past ages, Antarctica was warmer than the tropics and equatorial regions themselves by about 90° Fahrenheit.⁶² Early in the twentieth

⁵⁸ O. Heer, *Flora Arctica Fossilis: Die Fossile Flora der Polarländer* (1868) as cited by I. Velikovsky, *Earth in Upheaval* (N. Y., 1955), p. 44.

⁵⁹ *Ibid.*

⁶⁰ D. H. Campbell, "Continental Drift and Plant distribution," *Science* (January 16, 1942).

⁶¹ C. O. Dunbar, *Historical Geology* (1949), pp. 162, 194.

⁶² I. C. Johnson, "Long term Violation of Uniformitarianism Demonstrated by Fossil Discoveries in Polar regions," *Chronology & Catastrophism Workshop* (1991) 2, pp. 19-20.

century, E. H. Shackleton discovered seven seams of coal at about latitude 85°, each of which was between three and seven feet thick, testimonials to ancient forests which once grew where now not a single tree, not even a blade of grass, can grow.⁶³ The coal seams that run through the Transantarctic Mountains are some of the most extensive on Earth.⁶⁴ Sandstone, associated with this coal, was found to contain petrified coniferous wood.⁶⁵ Fossils from the Pliocene include well-preserved wood in the form of tree stems as well as roots together with the remains of marine life.⁶⁶ (And this is to say nothing about fossil forests from even earlier eras found near the South Pole, when the climate believed to have prevailed at the time should not have allowed such growth.⁶⁷) In 1935, Admiral Byrd could write that: "Here at the southernmost known mountain in the world, scarcely two hundred miles from the South Pole, was found conclusive evidence that the climate of Antarctica was once temperate or even sub-tropical."⁶⁸

The Eocene evidence of vast forests in the Antarctic has been attributed to a paleolatitude which was close to that of present Madagascar, while Antarctica is supposed to have still been drifting toward the pole.⁶⁹ Continental drift can therefore be used to solve the mystery by those who adhere to this belief. Melvin Cook, however, is of a different opinion. According to his findings, Antarctica "appears not to have moved appreciably in continental shift" since the continents which were once in contact with it "left Antarctica in radial directions,"⁷⁰ thus leaving it more or less in the same locality. Besides, as we have seen, the problem also involves the Arctic regions where, even according to orthodoxy, continental drift cannot save the day. But the enigma entails more than just Earth's polar regions; it also embraces the latitudes in between. Thus, from early in the twentieth century, many paleobotanists were convinced that "during by far the greater portion of time since the Azoic era, mild, benign climatic conditions have existed."⁷¹ According to Dolph Hooker:

"It is also the concensus [sic.] that, astonishingly and inexplicably, such conditions were comparatively uniform over most of Earth's surface; that temperate climate extended both north and south to within the polar circles. It is also believed that, amazingly, *seasonal effects during most of geological time have been much less pronounced than they are now.*"⁷²

Writing in 1912, F. H. Knowlton stated that:

⁶³ E. H. Shackleton, *The Heart of the Antarctic*, II (1909), pp. 314, 316, 319, 323.

⁶⁴ S. W. Matthews, "Ice on the World," *National Geographic* (January 1987), p. 94.

⁶⁵ E. H. Shackleton, *loc. cit.*

⁶⁶ S. W. Matthews, *op. cit.*, pp. 94-95; see also, T. R. Henry, *The White Continent* (N. Y., 1950), p. 9.

⁶⁷ See, for instance, *New Scientist* (October 10, 1992), p. 17.

⁶⁸ R. E. Byrd, "Exploring the Ice Age in Antarctica," *The National Geographic Magazine* (October 1935).

⁶⁹ I. C. Johnson, *op. cit.*, p. 20.

⁷⁰ M. A. Cook, "Earth Tectonics Viewed from Rock Mechanics," *Chronology & Catastrophism Review* XIII (1991), p. 15.

⁷¹ D. E. Hooker, *Those Astounding Ice Ages* (N. Y., 1958), p. 42.

⁷² *Ibid.* (Emphasis added.)



The coral reef at Puunoa Beach, off Lahaina, Maui.
Coral reefs of this nature once grew all across the polar regions of North America.
(Photograph by the author.)

"Relative uniformity, mildness and comparative equability of climate, accompanied by high humidity, have prevailed over the greater part of the Earth, extending to or into polar circles, during the greater part of geologic time since at least the Middle Paleozoic. *This is the regular, the ordinary, the normal condition.*"⁷³

By 1953, this belief was still in vogue as exemplified by a paper published by Edwin Colbert in which he wrote:

"So far as past climates can be interpreted from the record of fossil vertebrates, it would appear that during much of Earth history the world has enjoyed uniformly

⁷³ F. H. Knowlton, "Relations of Paleobotany to Geology," *Smithsonian Institute Annual Report* (1912), as quoted in *ibid.*, p. 43 (emphasis added).

warm, equable climate over most of its surface...the general picture of past vertebrate life is that of warmth-loving animals living over wide ranges of latitude, from the southern tips of the continental land masses through the middle latitudes to regions as far north as the Arctic Circle."⁷⁴

According to Colbert, "the definitely zoned climatic belts, so familiar to us at the present time, *apparently did not exist*."⁷⁵ Moreover, this situation prevailed from long before the Tertiary period as Elso Barghoorn indicated: "From the paleontological evidence available, it would appear that there was very slight climatic zonation between high and low latitudes during the major part of the Carboniferous."⁷⁶

There was thus an added problem that confronted paleobotanists. How could Earth's polar regions been blessed with a sub-tropical climate while the rest of the world remained little, if at all, warmer than it is at present? As Barbara Bell admitted: "It is by no means clear that solar radiation *sufficiently intense to keep the poles as warm as they appear to have been at times* would not heat the tropics more than observations indicate."⁷⁷

THE CRETACEOUS CLIMATE

Continental drift, through sea-floor spreading, is an ongoing process. Christopher Scotese, a geologist, now predicts that, in another 250 million years, Great Britain will have been pushed to a near-Arctic locale, with the Atlantic Ocean having become nothing but a distant memory. Just as all land masses are believed to have been joined together, 250 million years ago, in a super-continent which geologists have named Pangaea, a new mega-continent, already dubbed Pangaea Ultima, will by then have formed. Africa would have rammed Europe, uplifting the colliding edges in a Himalaya-like mountain range while erasing the Mediterranean in the process. The Atlantic Ocean would first widen, then reverse its course and finally close up completely.⁷⁸

It is not, therefore, surprising that geologists and paleoclimatologists have tended to rely on this process to account for the moving of once-tropical areas into what are now the Arctic and Antarctic regions. As noted in the above report, Great Britain seems destined to do exactly that. As we have seen, however, continental drift cannot be made to account for the sub-tropical fauna and flora of the Tertiary period, the remains of which are now found within the Arctic Circle, for the simple reason that the Arctic regions were already close to their present location at the time. But what of earlier eras?

⁷⁴ E. H. Colbert, "The Record of Climatic Changes as Revealed by Vertebrate Paleontology," in H. Shapley, *Climatic Change* (Cambridge, 1953), p. 269, as quoted in D. E. Hooker, *loc. cit.*

⁷⁵ *Ibid.*, p. 44 (emphasis added).

⁷⁶ E. S. Barghoorn, "Evidence of Climatic Change in the Geologic Record of Plant Life," in H. Shapley, *op. cit.*, p. 241, as quoted by D. E. Hooker, *op. cit.*, p. 89.

⁷⁷ B. Bell, "Solar Variation as an Explanation of Climate Change," in H. Shapley, *op. cit.*, p. 132, as quoted by D. E. Hooker, *op. cit.*, p. 89 (emphasis added).

⁷⁸ "Experts Predict One Continent Without Atlantic," *The Province* (Vancouver, October 10, 2000), p. A17.

While the flora and fauna of the Cretaceous period, calculated to have prevailed 140 to 100 million years ago, was not exactly the same as that of the following Tertiary period, the climate does not seem to have been that much different. As Richard Kerr noted:

"The earth of the Cretaceous Period 100 million years ago was *unaccountably* warm, as it generally had been since the end of the last great ice age 140 million years earlier..."⁷⁹

"Explaining Cretaceous climate has been difficult because it differed so from today's. Coral reefs for which warm water is essential ranged as much as 1500 kilometers closer to the poles than they do today, as did *nonseasonal* land plants. Deep ocean water that now hovers near freezing was 15° (Celsius) warmer...Alligators and crocodiles seem to have thrived at latitudes as far north as that of present-day Labrador. *And there is no evidence of any permanent ice like that which today deeply buries Antarctica and Greenland.*"⁸⁰

"Not only was it generally warmer during the Cretaceous, but it was *particularly warmer in the polar regions.*"⁸¹

Because the position of the continents during the Cretaceous would have been different from the locales they would have occupied later during the Tertiary, scientists continued to seek an answer to the riddle of the earlier climate via continental drift. This was not only because the lands within the present Arctic Circle would have been farther removed from polar regions than they would have been during the following Tertiary, but also because the different continental configuration would have led to the development of an entirely different climatic regime. It was thus reasoned that:

"Continents bunched in low latitudes near the equator, as Cretaceous continents tended to be, would allow warm ocean currents to carry heat poleward. High-latitude polar oceans, being less reflective than land, would also absorb more heat and further moderate climate."⁸²

Eric Barron and Warren Washington therefore decided to test this hypothesis by recreating the Cretaceous climate through the use of a computer model.⁸³ Others followed suit.⁸⁴ There is no point in tracing the ups and downs of these various attempts and the disagreements between them. Suffice it to say that, in 1984, Kerr could safely state that

⁷⁹ R. A. Kerr, "How to Make a Warm Cretaceous Climate," *Science* (February 17, 1984), p. 677 (emphasis added).

⁸⁰ *Ibid.* (emphasis added).

⁸¹ *Ibid.* (emphasis added).

⁸² *Ibid.*

⁸³ *Ibid.*

⁸⁴ *Ibid.*, p. 678.



Pangaea

The continental configuration prior to drift through sea-floor spreading
c.250 million years ago.

"there must be more to the long slide from the balmy Cretaceous period into the ice ages than the drifting of continents."⁸⁵ Turning to the contradictory results of these studies, he came to the conclusion that, so far, "computer models have failed to warm Earth as much as it was warmed in the Cretaceous, suggesting that a single geographic factor or perhaps even a combination of them cannot totally explain long-term climate change."⁸⁶

TREE RINGS

One of the main reasons why paleoclimatologists have been reluctant to accept a former universal spring-like environment to account for the previous existence of Arctic and Antarctic sub-tropical flora and fauna is that evidence exists which *does* seem to point to past seasonal stability. This evidence comes from tree rings. As every Boy Scout knows, tree trunks are marked out in transverse section into concentric rings, one ring for each "season" of growth. In order to tell the age of a felled tree, Boy Scouts are taught to count the number of rings laid out in its trunk. Known as annular rings, these growth marks owe their emergence to differences in the elements at the beginning and end of each growing period.

Fossilized trees from various past ages show distinct annular rings. Others do not. Wood retrieved from late Paleozoic deposits in the southern hemisphere has been said to show pronounced ring growths. So, also, fossils of deciduous trees from the Cretaceous. In fact, fossilized wood samples ranging all the way from the Devonian to the Eocene have been claimed to show well marked annular rings. The scientific literature on this subject, however, is very ambiguous. More recent work has tended to show that rings are either lacking or very weak in all known specimens from the Devonian period which seems to indicate a non-seasonal environment. Most fossil trees from the Carboniferous period, which followed the Devonian, also lack rings. As Elso Barghoorn noted:

"One impressive indicator of uniform climate over great areas of the Carboniferous continents is the great absence of annual growth rings in coal-swamp trees. The entire question of ring development in woody plants is one fraught with botanical variables as well as climatic variables. However, the consistent absence of any index of seasonal growth seems difficult to explain except on the assumption that winter cold and seasonality of rainfall were absent or at a minimum."⁸⁷

By the time we come to the late Permian period, still within the Paleozoic era, we end up with a mixed bag. Fossil woods from Canada, Europe, and Asia have weak or non-existent rings, while those from South America, Africa, and Antarctica show prominent and wide growth rings. A mixed bag from trees growing in different areas may be expected. But what about a similar mixed bag from trees known to have grown in the same locality? Thus, moving slightly closer to our time, we come to the Triassic period of the Mesozoic era. Few fossil

⁸⁵ *Ibid.*, p. 677.

⁸⁶ *Ibid.*

⁸⁷ E. S. Barghoorn, "Evidence of Climatic Change in the Geological Record of Plant Life," P. Cloud (Ed.), *Adventures in Earth History* (San Francisco, 1970), p. 737.

trees are known from this period and, up till now, all of them come from Arizona's petrified forest. One specimen from this collection lacks annular markings, but others display very wide prominent rings. In samples from the Jurassic and Cretaceous periods of the same Mesozoic era, as well as from the Early Tertiary period, tree rings range from prominent to non-existent, depending on the paleolatitude in which they are claimed to have thrived.⁸⁸

When it comes to *polar* fossil plants, as Edward Berry noted: "Detailed comparisons of these Arctic floras with contemporary floras from lower latitudes...show unmistakable evidence for the existence of climatic zones..."⁸⁹ C. P. Brooks reached the same opinion, claiming that climatic zones existed in the Eocene,⁹⁰ as so did Ralph Chaney, who pushed the margin up to the Pliocene.⁹¹ As Jane Francis noted, samples of wood collected by her on Axel Heiberg Island showed clear annular rings over a quarter of an inch wide. And, because the darker latewood added at the end of the growing season featured very narrow bands, the conclusion has been drawn that the trees grew rapidly during the twenty-four hour sunshine period of the Arctic summer and then closed up shop during the winter hours of darkness.⁹²

The problem with this, however, is that trees would not have survived such prolonged periods of darkness. And then there is the fauna to consider. What—did tapirs and crocodiles sleep through these darkened months? Could land tortoises have migrated to warmer climes? Besides, where did the warmth that would have been needed to thaw the Arctic ice cap come from? The present Sun is not capable of accomplishing that feat. And if the Sun, as accepted by orthodoxy, had been dimmer in those eras, it would have been able to accomplish it even less. Or are we to believe that sub-tropical flora and fauna existed in an ice-bound region, and for millions of years at that? But how, then, do we get out of this dilemma? Johnson, who grappled with this problem until the time of his untimely death in 1995, noted that "[I]t is not

⁸⁸ See here, for instance, H. Shapley, *op. cit.*, pp. 242, 265; but see also, H. C. Fritts, *Tree Rings and Climate* (N. Y., 1966); G. T. Creber, "Tree Rings: A Natural Data-Storage System," *Biological Review*, 52 (1977), pp. 349-383; G. T. Creber & W. G. Chaloner, "Growth Rings in Fossil Woods as Evidence of Past Climates," in D. H. Tarling & S. K. Runcorn (Eds.), *Implications of Continental Drift in the Earth Sciences*, Vol. 1 (N. Y., 1973), pp. 425-437; *idem*, "Climatic Indications From Growth Rings in Fossil Woods," in P. Brenchley (Ed.), *Fossils and Climate* (N. Y., 1984), pp. 49-74; *idem*, "Tree Growth in the Mesozoic and Early Tertiary and the Reconstruction of Paleoclimates," *Palaeogeography, Palaeoclimatology, and Palaeoecology*, 52 (1985), pp. 35-60; *idem*, "The Contribution of Growth Ring Studies to the Reconstruction of Past Climates," in R. G. W. Ward (Ed.), *Applications of tree-Ring Studies: Current Research in Dendrochronology and Related Subjects* (Oxford, 1987), pp. 37-67; J. J. Parrish & R. A. Spicer, "Middle Cretaceous Wood From the Nanushuk Gr., Central North Slope, Alaska," *Palaeontology*, 31:1 (1988), pp. 19-34; J. E. Francis, "The Seasonal Environment of the Purbeck (Upper Jurassic) Fossil Forests," *Palaeogeography, Palaeoclimatology, and Palaeoecology*, 48 (1984), pp. 285-307; *idem*, "The palaeoclimatic Significance of Growth Rings in Late Jurassic/Early Cretaceous Fossil Wood From Southern England," in R. G. W. Ward (Ed.), *Applications of Tree-Ring Studies: Current Research in Dendrochronology and Related Subjects* (Oxford, 1987), pp. 21-36; R. F. Dubiel, *et al.*, "The Pangaeian Megamonsoon—Evidence from the Upper Triassic Chinle Formation, Colorado Plateau," *Palaios*, 6:4 (1991), pp. 347-370.

⁸⁹ E. W. Berry as quoted by J. H. F. Umbgrove, *The Pulse of the Earth* (Hague, 1947), p. 266.

⁹⁰ C. E. P. Brooks, *Climate Through the Ages* (N. Y., 1949), p. 24.

⁹¹ R. W. Chaney, "Tertiary Forests and Continental History," *Bulletin of the Geological Society of America* V:51, No.3 (March 1, 1940), p. 475.

⁹² J. E. Francis, *op. cit.*, p. 61; see also "The Eocene Climate Puzzle," *Chronology & Catastrophism Workshop* (1989) 1, p. 28.

clear that the tree rings point to a polar seasonality as opposed to an ordinary seasonal growth cycle,"⁹³ but did not clarify what he meant by "ordinary seasonal growth cycle."

Needless to say, the evidence of the tree rings poses just as much of a problem to the Saturnian scenario we have been considering. All of which forces us to ask yet another question: Are annular rings *really* indicative of seasonality?

Actually, annular rings are only formed in those plants whose growth is interrupted by a regular winter or dry "season." The increment of new wood formed in these trees is marked by a distinct line which is produced by the contrast between the late summer of one year and the spring of the next. The lines of separation between successive rings marks the limit of a microscopically thin layer of cells, known as the cambium, which lies between the wood and the bark, at the end of each successive growth period. The bark then cracks and/or expands to allow for the new growth of wood, and the tree trunk is thus thickened. It should be noted, however, that the cambium responds mainly to conditions of temperature and rainfall rather than the incidence of light.

In temperate climates, the cambium produces new wood only during spring and early summer. It becomes inactive during autumn and winter. But what about trees growing in tropical and equatorial regions where seasonal differences disappear? Do they still grow rings? As it happens, many kinds of evergreen tropical trees do *not* grow rings.⁹⁴ But others do. As Barghoorn reported: "In *existing* woody plants, annual ring development may occur under nearly uniform climatic conditions, as in equatorial rainforests."⁹⁵ What, then, is it in this seasonless environment that tells these trees that a year has passed and that it is time to grow more wood and thus form a new ring?

That the growth of annular rings is not tied to *seasonal* change is evidenced by the fact that some trees have been known to grow as much as three or four rings in one year. Nor is this an uncommon situation, as Nelson Glueck noted, especially in trees which grow on sloping ground that turns wet and dry several times in one year because of rapid outflow of water.⁹⁶ According to an item in *Nature* magazine, multiple rings in larch trees were normal in 1919; in fact, larches seem to be *prone* to multiple ring growth.⁹⁷

Meanwhile, trees which miss growing a ring in certain years have also been known.⁹⁸ As Herbert Sorensen pointed out:

"In dry and climatically harsh years, no detectable growth may occur. In this case no ring is formed and the ring is missing for that season of the year."⁹⁹

⁹³ I. C. Johnson, "Anomalous Occurrence of Crocodilia in Eocene Polar Forests," *Chronology and Catastrophism Review* XIV (1992), p. 13.

⁹⁴ P. Groom & A. Koehler, "Timber," *Encyclopaedia Britannica* (1959 ed.), Vol. 22, p. 217.

⁹⁵ E. S. Barghoorn, *loc. cit.*

⁹⁶ N. Glueck *et al.*, *Botanical Review*, 7, pp. 649-713; *ibid.*, 21, pp. 245-365, as cited by I. Velikovsky, "The Pitfalls of Radiocarbon Dating," *Pensée* IVR IV (Spring-Summer 1973), p. 13; see also V. LaMarche, "Climatic Clues From Tree Rings," *New Scientist* (April 3, 1975), pp. 8-11.

⁹⁷ *Nature*, 150 (1942), p. 378.

⁹⁸ V. C. LaMarche, *loc. cit.*; V. C. LaMarche & T. P. Harlan, "Accuracy of Tree Ring Dating of Bristlecone Pine for Calibration of the Radiocarbon Time Scale," *Journal of Geophysical Research* 78 (1973), p. 8854.

⁹⁹ H. C. Sorensen, "The Ages of Bristlecone Pine," in *ibid.*, p. 16.

In some cases, as much as five percent of the rings may be missing.¹⁰⁰ In fact, growth rings are lacking in a majority of trees which thrive in subtropical and tropical climates while others fail to grow rings regardless of climate.

What all of this declares is that tree rings are poor indicators of seasonal change. In fact, let us be honest about it, they are *not* indicative of seasonal change at all. But if tree rings do not indicate seasonal change, what, then, *do* they indicate?

We have already noted above that the cambium responsible for the growth of trees responds mainly to conditions of temperature and rainfall rather than the incidence of light. And, in fact, when it comes to the growth rate of trees, water is the limiting factor. In other words, water is the one true constituent which limits the growth of cambium and thus the formation of growth rings. This is what tree rings, when they grow at all, truly indicate—a cycle dictated by the availability and cessation of an adequate water supply—which is probably what Ian Johnson meant by “ordinary seasonal growth cycle” as opposed to “a polar seasonality.” Only in the most indirect way can tree rings be said to indicate seasonal change *when they do so at all*.

That being the case, the lower incidence of light from the Saturnian sun, as compared to the higher incidence from our present Sun, would have posed no obstacle to the growth of trees. Temperature would also have posed no problem because, while the Saturnian sun would not have been as hot as our present Sun, its proximity to Earth would have compensated for its lower caloric output.

As we have seen, it is quite apparent that trees grow rings, or fail to grow rings, regardless of seasonal change or stability. More importantly, if trees can, as they do, grow rings in tropical and equatorial regions in which there is no appreciable seasonal change, what is so problematic with having trees growing rings in a sub-tropical Arctic which enjoyed but one spring-like season?

Paleobotanists remain hard-put to account for the growth of sub-tropical forests and the existence of sub-tropical animals within the Arctic Circle. Uniform heat and light, to say nothing of the absence of an ice cover, would have been required for the flourishing of such forests and the thriving of such animals.

THE AXIAL TILT HYPOTHESIS

Why not simply straighten Earth's axis?

This, too, would have ensured a world with one season, an eternal spring. And as difficult as it might be to later tilt Earth's axis to the angle it now holds, it seems more feasible than any of the hypotheses we have so far proposed. This, in fact, had been suggested by various authorities at the end of the nineteenth century as, for instance, by Julius Hann: “The simplest and most obvious explanation of great secular changes in climate, and of former prevalence of higher temperatures in northern circumpolar regions, would be found in the assumption that the earth's axis of rotation has not always had the same position, but that it may have

¹⁰⁰ *Ibid.*, p. 17.

changed its position as a result of geological processes, such as extended rearrangement of land and water.”¹⁰¹

By an “extended rearrangement of land and water,” Hann had in mind a redistribution of the weight brought upon the surface of Earth by the elevation of land in one place and the sinking of others in a different locale. But, as James Croll pointed out: “A continent ten times the size of Europe elevated two miles would do little more than bring London to the latitude of Edinburgh, or Edinburgh to the latitude of London.”¹⁰²

This debate involved some of the giants of science that lived at the time, including William Thomson (better known as Lord Kelvin), George Darwin, Simon Newcomb, and Giovanni Schiaparelli,¹⁰³ the latter of whom wrote:

“The permanence of the geographical poles in the very same regions of the earth cannot yet be considered as incontestably established by astronomical or mechanical arguments. Such permanence may be a fact today, but it remains a matter still to be proven for the preceding ages of the history of the globe.”¹⁰⁴

To which he added:

“The possibility of great shifting of the pole is an important element in the discussion of prehistoric climates and the distribution, geographic and chronologic, of ancient organisms. If this possibility is admitted, it will open new horizons for the study of great mechanical revolutions that the crust of the earth underwent in the past.”¹⁰⁵

And:

“Our problem, so important from the astronomical and mathematical standpoint, touches the foundations of geology and paleontology: its solution is tied to the most grandiose events in the history of the earth.”¹⁰⁶

“Thus, finally,” as Immanuel Velikovsky wrote in 1955, “an eminent astronomer, after a thorough examination of the problem, went over to the side of the geologists.”¹⁰⁷ But then, as Velikovsky also pointed out, Schiaparelli had only reasoned in a circle by claiming that “the geological changes would cause the terrestrial poles to move from their places, and the motion of the poles from their places would cause geological and climatal changes.”¹⁰⁸

¹⁰¹ As quoted by W. B. Wright, *The Quaternary Ice Age* (1937), p. 313.

¹⁰² J. Croll, *Discussions on Climate and Cosmology* (1886), p. 5.

¹⁰³ A concise, but detailed, report of this debate is given by I. Velikovsky, *Earth in Upheaval* (N. Y., 1955), pp. 111-117.

¹⁰⁴ G. V. Schiaparelli, *De la Rotation de la Terre sous l'Influence des Actions Géologiques* (1889), p. 31.

¹⁰⁵ *Ibid.*

¹⁰⁶ *Ibid.*

¹⁰⁷ I. Velikovsky, *op. cit.*, p. 116.

¹⁰⁸ *Ibid.*

The axial tilt debate then spilled into the early years of the twentieth century. Thus, in 1929, Harold Jeffreys could still ask: "Has the inclination of the earth's axis to the plane of its orbit varied during its history?"¹⁰⁹ As he himself confessed: "The answer to [this] question is a definite 'Yes!'"¹¹⁰ By 1937, W. B. Wright continued to maintain that "the earth's axis of rotation has not always had the same position" and that the "many changes of the position of the climatic zones on the surface of the earth" were "due to a displacement of the pole from its present position."¹¹¹

In 1950, Velikovsky himself provided an explanation for the tilting of Earth's axis as having been due to close terrestrial interactions with the planets Venus and Mars, at different epochs during historical times.¹¹² Forgetting that past giants of science had debated the possibility, his detractors, among them even some astronomers, maintained that terrestrial axial shifts had never been heard of and that the notion is not supported by scientific literature.¹¹³

Beyond stating my firm belief that the cosmic catastrophes described in *Worlds in Collision* were unfortunately displaced in time by Velikovsky, the present work has nothing to offer concerning the possibility of terrestrial axial shifts *during historical times*. My main interest, here, concerns the much earlier Tertiary period. In this respect it is noteworthy to note that when, in the 1980s, remains of sub-tropical flora and fauna were discovered by Soviet scientists in Spitsbergen, the axial tilt hypothesis was revived and, as of this writing, continues to be the standing Russian (previously Soviet) understanding of what had to have transpired in ages past.¹¹⁴

"In the early 1980s, scientists proved the far North had once been a tropical paradise. The tilt of the earth shifted and so did the weather."¹¹⁵

Most scientists on the American continent, however, were not convinced. As Johnson pointed out, Basinger, a Canadian, "would rather contemplate a plant/animal ecosystem *that has no uniformitarian counterpart on today's Earth*."¹¹⁶ But, as Johnson argued: How does one warm Earth's polar regions in the Pliocene by 90° Fahrenheit without raising tropical temperatures to those of present equatorial areas, while frying the equatorial areas and drying them out?¹¹⁷ "[I]t is not reasonable to postulate a polar heat build-up that somehow misses the torrid zones of the Earth."¹¹⁸

¹⁰⁹ H. Jeffreys, *The Earth, its Origin, History and Physical Constitution* (1929), p. 303.

¹¹⁰ *Ibid.*

¹¹¹ W. B. Wright, *loc. cit.*

¹¹² I. Velikovsky, *Worlds in Collision* (N. Y. 1950), pp. 312-317.

¹¹³ *Idem*, *Earth in Upheaval* (N. Y., 1955), p. 128.

¹¹⁴ "Arctic Warmth," *SIS Workshop* 6:2 (August 1985), p. 36.

¹¹⁵ S. Page, "One 'Kabloona' Who Cared," *Ottawa Citizen* (September 5, 1990). p. D2.

¹¹⁶ I. C. Johnson, "Antarctic Anomalies," *AEON* II:1 (June 1989), p. 127.

¹¹⁷ *Idem*, "Long Term Violation of Uniformitarianism Demonstrated by Fossil Discoveries in Polar Regions," *Chronology & Catastrophism Workshop* (1991) 2, p. 20.

¹¹⁸ *Ibid.*, pp. 20-21.

“High-temperature environments in the Pliocene Antarctic and the Eocene High Arctic are geophysically unreasonable. To conform with thermodynamics, and an Earth tilted 23 degrees to the plane of the ecliptic [as at present], these environments had to be considerably closer to the equator. If they were closer to the equator, then either continental drift occurred both much more rapidly and mysteriously than the geological record indicates, or else the Earth has tilted or experienced crustal slippage in some fashion that allowed warming of these lands without disrupting the continuity of equatorial rainforests. Another mechanism has the Earth with little or no tilt to its axis of rotation, which removes seasonality and ensures light each day on each point of the globe, coupled with a dense canopy that allows much more even temperatures despite variation in latitude.”¹¹⁹

According to Bernard Delair, theoretically, Earth *ought* to rotate on a vertical axis “and may actually have done so in the geologically recent past.”¹²⁰ And: “There ought to be no reason why any Earth-like planet undisturbed for untold ages should not have a vertically-positioned axis.”¹²¹

Unfortunately, there are various problems with the axial tilt hypothesis. To begin with, Delair’s declaration did not go unchallenged. As Michael Reade pointed out, “a spinning ball forced to traverse an elliptical orbit around a primary would adopt a tilted attitude.” As he, in turn, assured *his* readers, “it is never possible to get a free-spinning ball to spin with its axis either vertical or horizontal: the principal axis of the ball always settles to a well-defined and seemingly invariable angle of tilt.” This, as Reade pointed out, “has long been known to engineers: spinning bodies, such as turbines or speed governors, impose asymmetric stresses on their shaft bearings.”¹²²

True, as Jane Francis noted, had Earth’s axis been perpendicular to the plane of the ecliptic, the Sun *would* have bathed the polar regions with twelve hours of light every day. *At the poles, however, the Sun’s rays would have been weak and low-angled, similar to those experienced just before sunset.* And this would have been insufficient for the growth of plants such as the remains of which have been discovered in polar regions.¹²³

Why not then propose a model which would combine both theories? Would not a perpendicular Earth orbiting around the Sun with Saturn stationed at Earth’s north celestial sphere fill the bill? Not really because, for one thing, this would be contrary to what the mytho-historical record has to tell us. We have seen that, time and again, the record states that, during the age of semi-darkness, the Sun was not yet visible. And there is no point in appealing to the Pleiongaea hypothesis to account for this invisibility. Had sunlight managed to

¹¹⁹ *Ibid.*, p. 21.

¹²⁰ J. B. Delair, “Planet in Crisis: The Earth’s Last 12,000 Years,” *Chronology & Catastrophism Review* (1997) 2, p. 5.

¹²¹ *Ibid.*; see also J. Harris, *Celestial Sphere and Doctrine of the Earth’s Perpendicular Axis* (Montreal, 1876), *in toto*.

¹²² M. G. Reade, “The Spin of the Earth—Is it Driven or Inertial?” *Chronology & Catastrophism Review* (1998) 1, p. 56.

¹²³ J. E. Francis, “Arctic Eden,” *Natural History* (January 1991), p. 61.

filter at all through a heavier atmospheric envelope, as it must do on Venus, it would still have entailed a day-night succession which, as we have seen, is also disallowed by the record. And in order for the Sun to have been *entirely* shielded by an impenetrable terrestrial atmosphere, its substantiality would have had to have been denser than that of Venus. Ven-erian-like pressures at Earth's surface, let alone an even greater burden, would not have allowed the survival of terrestrial mammals including the human race.

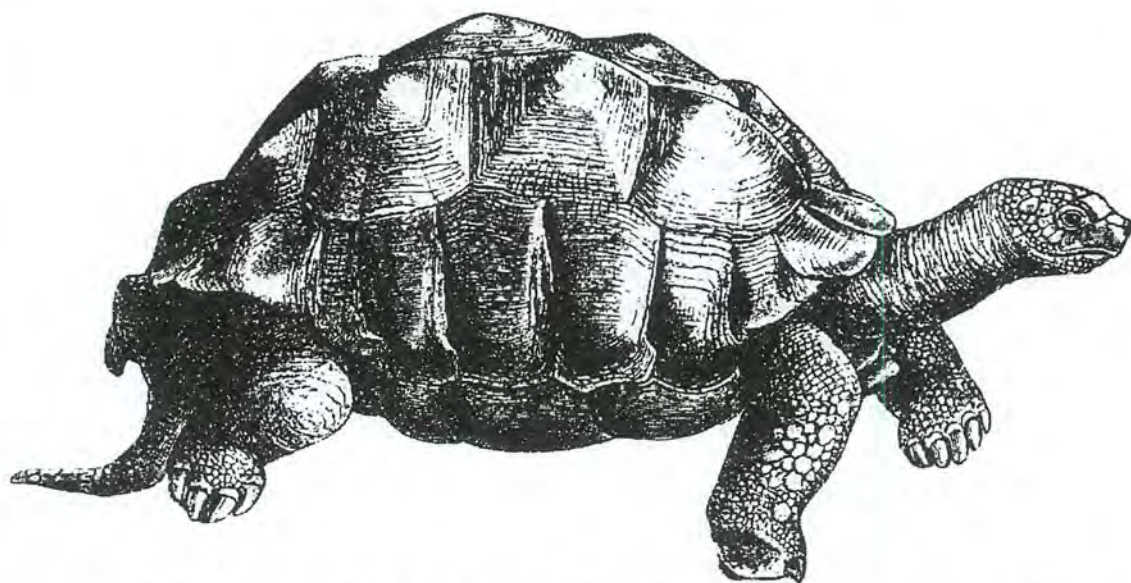
At bottom lies this additional fact: While the axes of the Solar System planets point in different directions, those of Saturn and Earth come close to coinciding. Saturn is tilted at 26.7 degrees while Earth's tilt is at 23.45 degrees.¹²⁴ Both axes point to about the same spot in space. Saturn's present north star is the same as Earth's—Polaris. This is a situation that *would* be expected had Saturn and Earth once shared the same axis of rotation as our main thesis demands. What this *seems* to indicate is that, despite Delair's assurance to the contrary, Earth's present axial tilt is the most natural one for it to possess, and that it has not changed since at least the Tertiary period.

What then of a perpendicular axis with an Earth in phase-lock outside the Solar System as posited by Ken Croswell for red dwarf planets? This, too, fails to fill the bill because, as we have already noted, while Croswell's theoretical system would entail a world without variable seasons, it does not occasion one universal spring-like climate. True enough, the climate would not have been variable, but tropical and equatorial regions would still have been much warmer than the poles. The poles, in fact, would have been the recipients of low slanting rays and if such slanting rays from our own Sun would have been inadequate to allow the thriving of sub-tropical flora and fauna at the poles, neither would the slanting rays from a red or brown dwarf star.

What if we were to *adapt* Croswell's phase-locked system by having it encased within the totally warm plasma sheath we have already postulated for the proto-Saturnian system? Light and warmth would then have reached all latitudes in equal proportion without having to rely on an axial alignment, already posited as the most difficult mechanical configuration to maintain. In other words, why not adopt Wallace Thornhill's scenario wherewith Earth was in just such a positional situation and that it only "broke" into polar alignment when it entered the Sun's influence? This, then, would make the Saturnian system's axial alignment a mere transitional event, which would be more amenable to celestial mechanics.

As already claimed, the encasing of the proto-Saturnian system in a plasmasphere is our accepted tenet. In the end, however, it may even be found that both postulates—a denser atmospheric envelope and a plasma sheath—are quite compatible with each other since a denser terrestrial atmospheric envelope might have existed *within* the Saturnian plasma sheath. We would thus have a situation in which the light and heat from the proto-Saturnian sun would have been reflected back, or otherwise radiated outward and inward, from the plasma sheath and dissipated evenly through the greenhouse property of Earth's denser atmosphere.

¹²⁴ Actually, the tilt of Mars, at 25.2 degrees, is even closer to Saturn's—but of Mars we will speak in a separate volume.



Ancestors of the land tortoise, pictured above, as well as other sub-tropical species, appeared in polar regions long before they did in more southerly latitudes.

What is not acceptable is that the axial alignment came into being upon the Saturnian system's entry into our present Sun's domain.

CLUES FROM OTHER PLANETS

Is evidence concerning any of the above at least available from other planets of the Solar system? Only to an extent because, after all, *as far as the Solar System is concerned*, the case for Saturn presented above is unique—which is not to say that similar systems might not yet be discovered out in space. Meanwhile, the extent to which other planets can provide *some* evidence, no matter how slim, is exemplified by Uranus. Lyle Broadfoot, for instance, was surprised to discover what he termed an electroglow bathing the sunlit side of Uranus. Its energy source still remains unknown.¹²⁵ As we have posited for proto-Saturn, Philip Nicholson has also posited the one time existence of a nebular cloud, or circumstellar disk, around Uranus.¹²⁶ As we have already seen, very much like the Saturnian system we have been describing, the temperature of Uranus is globally uniform,¹²⁷ even though, again like proto-Saturn, its north pole was found to be warmer than the rest of the planet. Of added interest here is that when Voyager 2 made this discovery, the north pole had been in darkness for

¹²⁵ J. Schefter, "Uranus!" *Popular Science* (May 1986), p. 120.

¹²⁶ Cornell University News Service for May 5, 1998, published as "Caliban & Sycorax: Names for Icy Moons of Uranus," *SIS Internet Digest* (1998) 2, p. 10.

¹²⁷ D. Overbye, "Voyager Was On Target Again," *Discover* (April 1986), p. 79.



The ancestor of the tapir, the Malaysian variety of which is shown above, also appeared in Arctic regions long before it did in Asia.

forty years.¹²⁸ As Thornhill indicated: "This offers a clue as to how the Earth might have had a uniform global climate during the Saturnian era..."¹²⁹

Even more recently, it has been discovered that Jupiter's satellite, Io, also has its poles as warm as its equator. "Aside from hot spots at volcanic sites, night temperatures on Io appear to be about the same near the equator as near the poles even though, as on earth, the equator gets more direct sunshine to heat its surface."¹³⁰

True, Uranus and Io do not have a north polar sun to heat their northern regions, and I only include these data to show that such a state of affairs—global uniform temperature with a slightly warmer north pole—is not of itself a bizarre situation.

That being the case, what need have we of an axial alignment between proto-Saturn and Earth? Why do we need to have the proto-Saturnian sun stationed in Earth's north celestial pole to account for the single spring-like season in which Earth basked in past geologic eras. But consider now the following:

¹²⁸ J. Schefter, *op. cit.*, p. 121.

¹²⁹ W. Thornhill, "Galactic Currents and the Outer Planets," *Thoth* (electronic newsletter) III:5 (March 20, 1999), p. 6.

¹³⁰ Media Relations Office, Jet Propulsion Laboratory, California Institute of Technology (June 22, 2001).

THE BOREAL CRADLE

Heer's study of fossil Arctic flora led him to postulate that the Arctic had served as the centre of new generations of plants which then radiated south to America, Europe, and Asia.¹³¹

"These migrations of new plant species and groups, which originated in the Arctic and then became closely related 'vicarious' species through simultaneous differentiation, elegantly account for the mysterious similarity of tree and shrub vegetation in such scattered locations as eastern Asia and Atlantic North America. This theory also explained the resemblance noted by Heer of the Tertiary flora of Europe and the Recent flora of eastern Asia and Atlantic North America."¹³²

As Johnson noted, while Heer's theory dates to the late 19th century, his "notion of an Arctic evolutionary cradle is startlingly modern, in line with the work of Dawson and Hickey"¹³³ to which we shall come anon.

E. C. Pielou, on the other hand, reminded her readers of photoperiodism which presents an "apparent obstacle to long, northward and southward migration of plants" since such migrations would have moved said plants out of their physiological niche.¹³⁴ Long-day plants, for instance, cannot survive in the tropics, while short-day plants cannot thrive in more northern latitudes. This is because the photoperiodic length varies from latitude to latitude and from season to season. Because day and night lengths in the tropics approximate twelve hours each all year round, photoperiodic variations are small to non-existent. In the mid-temperate regions, photoperiodic spans can vary from up to nine hours in December to up to sixteen hours in June. In the present Arctic regions, photoperiodicity drops to zero in December, rising as high as twenty-four hours in June.

All this, however, would have been of very little, if any, importance during the Tertiary if Earth had basked under a continuous and universal sub-tropical climate and light regime as seems to be indicated by the evidence presented above. In the case at hand, the climatic requirements would have been close to identical the world over. Migrating plants would not have had to vacate any physiological niches; they would merely have radiated into new areas the climatic properties of which would have been near identical to the ones of their origin.

In the end, it is the available evidence that counts. Does the evidence support the theory of a Tertiary plant migration from the Arctic into more southerly latitudes? We have seen above that Johnson claimed that Heer's nineteenth century theory of just such a migration is in line with the modern work of Dawson and Hickey. What have these two authorities to show us?

¹³¹ I. C. Johnson, "Anomalous Occurrence of Crocodilia in Eocene Polar Forests," *Chronology & Catastrophism Review* XIV (1992), p. 8.

¹³² *Ibid.*

¹³³ *Ibid.*

¹³⁴ E. C. Pielou, *After the Ice Age* (Chicago, 1991), p. 10.

In the Canadian Arctic, Mary Dawson discovered tapirs and flying lemurs which were closely associated in geologic context. But, further south, the tapir was found in a Middle Eocene context, while the flying lemur appeared in an Early Eocene stratum.¹³⁵ Meanwhile, Leo Hickey, who had already spent twenty years studying Eocene flora, came to the conclusion that plants, together with marine invertebrates, had risen earlier in the Arctic than in the mid-latitudes. Ancestors of the horse, camel, rhinoceros, land tortoises, together with the flying lemur, and such trees as the Mexican elm, walnut, and the redwood, originated millions of years earlier in the polar regions.¹³⁶

"Dawson and Hickey in the early 1980s co-authored a paper in *Science* where they argued that certain plants show up in the fossil record 18 million years earlier in the Arctic than elsewhere while some animals evolved 2 to 4 million years ahead of their time north of the Arctic Circle."¹³⁷

An alternative way in which the theory of Pleiongaea could be brought in line with the Saturnian model is if Earth's dense atmospheric envelope exhibited a north polar clearing—a hole if you wish. This would bring our thesis perilously close to that advocated in 1886 by Isaac Newton Vail,¹³⁸ propounded further by his modern defender, Donald Cyr¹³⁹ and, in a different but slightly similar vein, by Dolph Earl Hooker¹⁴⁰ plus, to a certain extent, even by Milton Zysman.¹⁴¹ All of these authors—from whom the present writer disassociates himself—have proposed a terrestrial canopy of sorts, although not all of them have included the polar opening. Meanwhile, such a polar opening in a planet's atmosphere is not all that foreign in the Solar System. Venus has such a polar opening—a "huge hollow" 1,000 kilometers wide—in its own dense atmosphere right over its north pole, through which the Sun might possibly be shining.¹⁴² If such was the case, the Saturnian sun, complete with its nebular disk, would have been clearly seen through the opening. More than that, it would have warmed Earth's Arctic regions even more effectively. Unfortunately, a lamentable objection has to be raised against this hypothesis since, as we have already seen, the proximity of the proto-Saturnian sun would have raised Earth's atmosphere in a tide *precisely* above Earth's north polar region. Thus, if a Pleiongaea-like atmosphere did prevail, it would have lacked a polar opening.

In the meantime, what Hickey and Dawson's discoveries seem to demand is a north polar sun emplacement exactly as hypothesized in this volume. Thus, in addition to a universal climatic regime which would have warmed Earth throughout all its latitudes, a *direct* radiant

¹³⁵ H. Thurston, "Icebound Eden," *Equinox* (May-June 1986), p. 80.

¹³⁶ *Ibid.*, pp. 74, 81.

¹³⁷ I. C. Johnson, *op. cit.*, p. 11.

¹³⁸ I. N. Vail, *The Waters Above the Firmament* (1886), *in toto*.

¹³⁹ D. L. Cyr, *The Ice Crystal Veil* (Santa Barbara, California, 1995), *in toto*.

¹⁴⁰ D. E. Hooker, *op. cit.*, *in toto*.

¹⁴¹ M. Zysman, "Let There Be Lights," *Catastrophism 2000* (Toronto, 1990), pp. 143 ff.; but also, D. Cardona, "The Reflective Canopy Model and the Mytho-Historical Record," *AEON* IV:4 (April 1996), pp. 13 ff.

¹⁴² R. A. Gallant, *loc. cit.*



Homo Sapiens

A world with but one season was the state of affairs long before the advent of man...

(Illustration by R. C. Dingli.)

source at the very top of the world would have ensured that Earth's Arctic regions would have been slightly warmer *earlier* than the rest of the globe. In other words, Earth's sub-tropical climate would have itself advanced slowly from the polar regions to the more southerly latitudes, with flora and fauna advancing along with the climate—just as the geological and palaeontological evidence seems to call for.

It thus seems that the Saturnian sun was already stationed above Earth's north pole from *at least* as far back as the Eocene Epoch of the Tertiary Period of the Cenozoic Era which is dated by geologists to c. 58 million years ago. And even if this time span would have to be drastically shortened, as it probably will have to be, sometime in the future, it remains evident that the situation we have described would have to have prevailed from *long before the advent of man*.

THE CARETAKER OF THE WORLD

It must, however, also be stressed that, when man finally arrived on the *terrestrial* scene, the situation remained much the same, as mythic themes unambiguously maintain.

Thus, much later in time, the Papago Indians of North America who, together with the rest of humanity, were not yet on Earth during the ages we have been discussing, continued



...but, when man finally arrived on the terrestrial scene, the situation remained much the same—a world with but one spring-like season.

to believe in a time when the “sun” was closer to Earth. As recorded in one of their tales, told in 1883: “The sun was much nearer the earth then, so that it was always pleasantly warm.”¹⁴³ Of seasons there were none. “There was no winter and no freezing cold.”¹⁴⁴ It was only later, say these Indians, that the “sun” was pushed “farther away from the earth” and then winter, snow, ice, and hail appeared.¹⁴⁵

In a “sun” that was “nearer the earth” we again recognize the Saturnian brown dwarf star which shed its light and warmth from Earth’s north celestial pole.

So, likewise, with the Zuni who maintain that winter came much later when the “sun” escaped, rose into the sky, and drifted away.¹⁴⁶ Had this been our *present* sun, where could it have been before that? Where could it have drifted to? Can we not see that the Zuni have retained a memory of that time when Earth had basked beneath the light and warmth

¹⁴³ R. Erdoes & A. Ortiz (eds.), *American Indian Myths and Legends* (N. Y., 1984), p. 487.

¹⁴⁴ *Ibid.*

¹⁴⁵ *Ibid.*, p. 489.

¹⁴⁶ *Ibid.*, p. 142.



“The sun was much nearer the earth, so that it was always pleasantly warm,” so the Papago Indians maintain. “There was no winter and no freezing cold.”
Shown above: The Tcirkwena—an archaic ritual dance of the Papago.
(Illustration by Peter F. Copeland.)



Winter came, the Zuni say, when the "sun" escaped, rose into the sky, and drifted far away.
Shown above: A Zuni man of wealth.
(Illustration by Peter F. Copeland.)

delivered by a *different* sun than our present one? Does this not tally with our conviction that winter came upon the world when our previous Saturnian sun “drifted away” as the *present* Sun pulled Earth away from its former primary?

It was no different among the Sioux who, as recently as 1981, were still preaching that the four seasons had not pre-existed but were bestowed as a boon at a later time.¹⁴⁷

What is also instructive is that man continued to hold the north responsible for the eventual arrival of the seasons. The “sun” of Creation, so claim the Sioux, appointed *the north* to be “the caretaker of this earth.”¹⁴⁸ More than that, at a time when “the sun did not move yet, did not rise and did not go down,” when it “just stood in one place,” the Creator “made the four seasons *for the north to take care of*...”¹⁴⁹

¹⁴⁷ *Ibid.*, p. 135.

¹⁴⁸ *Ibid.*, p. 130.

¹⁴⁹ *Ibid.*, p. 131 (emphasis added).

Chapter 19

Polar Wandering

THE CORAL DATA

Tedious as it may be to some, this chapter is included in order to forestall the objections that might be raised by those who see polar wandering through the wholesale shifting of Earth's crust as a possible mechanism by which non-polar latitudes could have been driven into the Arctic regions. From the 1940s to the mid-1950s, for instance, Ting Ying Ma was involved in the study of corals which led him to declare that the position of the equator (and, therefore, also of the poles) had shifted from one geologic age to another.¹ What did these studies involve?

Very much like trees, corals grow rings which are believed to indicate a cycle of seasonal growth; in winter, coral cells grow small and dense, whereas in summer they grow larger and more porous. Ma noticed that the rates of total annual growth in corals in identical, or similar, species increased with proximity to the equator, while seasonal variation in growth rates increased with distances from the equator. This enabled him to correlate coral growth with latitude, which furnished him with a technique for investigating Earth's ancient climates. It also led Ma to two related conclusions: (1) That seasonal change was clearly indicated in the oldest geologic periods, and (2) that the latitudinal temperatures of the past had been about the same as at present. If this is correct, a world without seasons, as proffered in the preceding chapter, could not have existed.

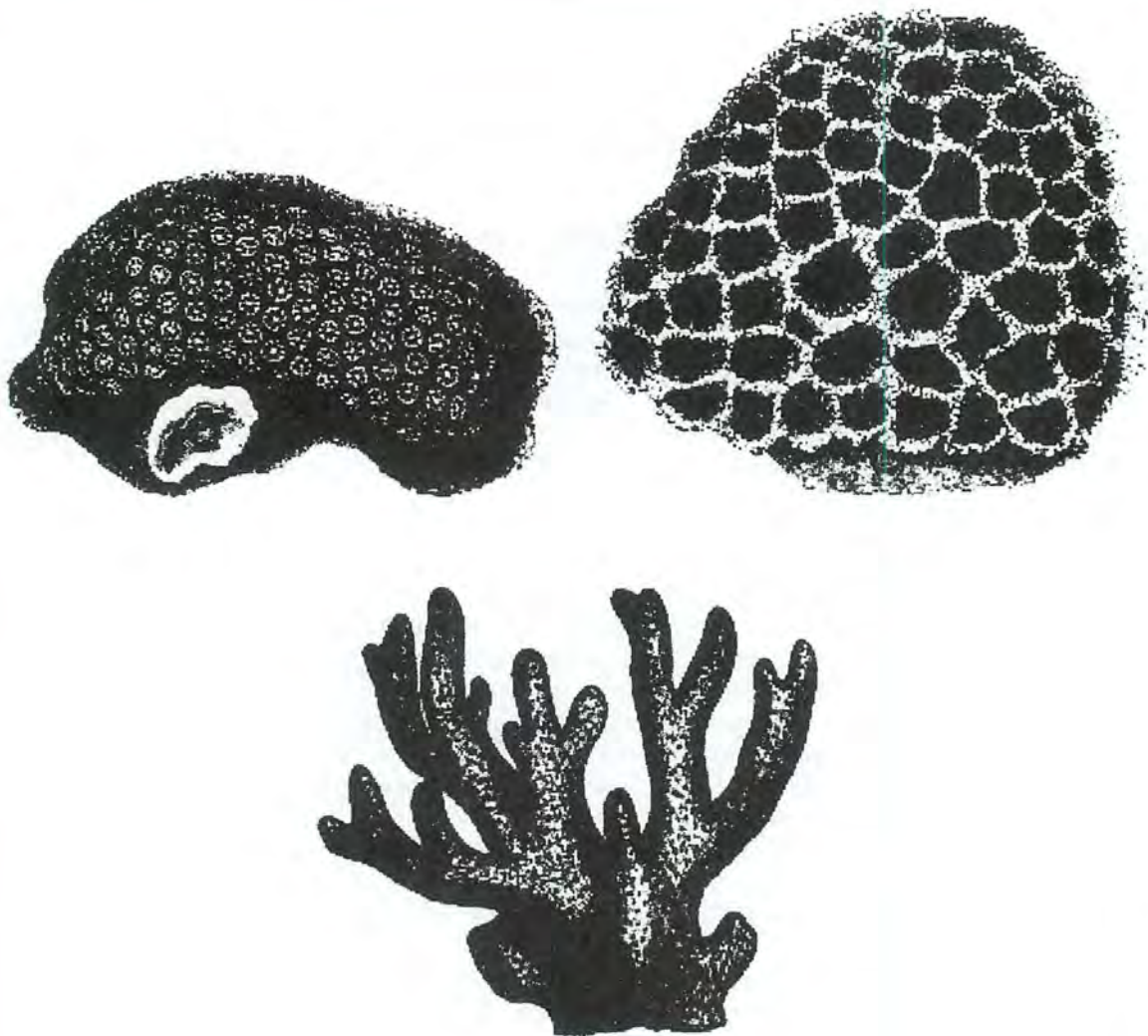
What all of this conveyed to Ma was that, in the past, the position of the equator had changed from one geologic period to another and that none of these coincided with the present equatorial position of land. One of these earlier equators was even found to have bisected the Arctic Ocean.

The mechanism for this displacement was then attributed to a sliding of the lithospheric shell over Earth's liquid core, like the loose skin of an orange sliding around its fruit. Ma, however, could not match earlier equators in one hemisphere with corresponding ones for the same period on the opposite hemisphere in order to derive a complete circle. He therefore had to assume that continental drift was also involved and that it was this *independent* shifting of the continents which had thrown the ancient equators out of line.

These combined displacements, of which Ma could deduce four separate events, were, according to him, sudden in execution and all in the same direction. He calculated them to have taken place during the last million years with the last readjustment having been completed 65,000 to 2,800 years ago.

Ma was as courageous in advocating continental drift as much as he was in proposing a wholesale shift of the lithosphere. Beginning as early as 1861, the theory of continental drift

¹ Most of Ting Ying Ma's works were published by him in Fukien, China, and are very difficult to obtain although they are available from the Schermerhorn Library at Columbia University. The information concerning Ma's work in the present chapter has been gleaned from C. H. Hapgood, *The Path of the Pole* (N. Y., 1970), pp. 26, 79-87, 161, as also from Ma's paper "Alteration of Sedimentary Facies on the Ocean Bottom and Shortness of the Period of Diastrophism After a Sudden Total Displacement of the Solid Earth Shell," *Oceanographica Sinica* II:1 (September 1955), *in toto*.



Corals.

Above: Star corals of the genus *Astraea*.

Below: Stag coral.

was proffered by various authorities, including M. A. Snyder, D. Kreichgauer, Frank B. Taylor, R. A. Daly, and A. L. duToit, but Alfred Wegener eventually received the fame for its proposal. The theory was, however, disqualified in August of 1950 by the British Association for the Advancement of Science for the simple reason that no mechanism could be found to account for the movements of the continents. It was then revived, thanks primarily to S. W. Carey, in March of 1958, at a symposium on the subject that was held at the University of Tasmania. In the early 1960s, a cause was eventually tendered by Harry Hess who submitted that the upwelling of magma through immense rifts, or faults, in ocean bottoms was capable of carrying the "floating" continental plates with them as the magma spread to both sides of the rifts. The actual mechanism was to be found in the convection currents in-

herent in Earth's mantle. Where the spreading ocean bottom meets the edge of another continental plate, it is subducted back into the interior, wrinkling the continental edge and uplifting it into mountain ranges in the process. The theory has now become dogma, proving sound Ma's utilization of it at a time when it was still anathema to do so. On the other hand, the second half of Ma's theory, concerning the *wholesale* shifting of earth's lithosphere which, in any case, was the brainchild of Hugh Auchincloss Brown,² remained in dispute. Ma's theory is thus left reliant on his coral evidence. How valid is this?

First of all, as Thomas Stephenson warned in 1959, long after Ma had conducted his studies of corals, older accounts concerning the process of coral formation "should be read with reserve, since the ideas in vogue on this subject have until recently been largely speculative" and "too much based on the study of the skeleton."³

"It is obvious that the skeleton is merely an imperfect if permanent record of the activities of the polyps, and study of the latter reveals the fact that in some cases at least conclusions as to the manner of growth, drawn from the skeleton, may be entirely erroneous."⁴

Granted that Stephenson was mainly concerned with the growth of coral reefs, the same can be said of older accounts pertaining to the growth of the polyps themselves, as indeed Stephenson makes clear when he refers to more recent studies by Matthai in relation to the formation of coral polyps.⁵

Now it has long been known that corals are restricted to tropical and sub-tropical zones despite the fact that, in "certain past epochs," coral reefs "had a far wider distribution than is now the case, their remains being plentiful in latitudes at which they cannot now maintain themselves."⁶ Thus, while Ma's shifting latitudes could explain coral remains out of present tropical and sub-tropical climes, it has nothing to offer regarding their overall much wider distribution.

The growth of corals requires an average annual water temperature of no less than 70° F. The polyps themselves, however, are insensitive to light. But "their endodermal tissues contain myriads of microscopic one-celled algae" which thrive "only in the presence of strong light." This makes for a highly successful symbiotic relationship since "the corals rely on the algae to absorb their waste products."⁷ Thus, both warmth and strong light are necessary for the successful growth of corals and coral reefs.

The biggest problem with Ma's evidence, however, concerns the period of time represented by a single coral reef which, at most, can be said to bridge a few thousand years, hardly enough to embrace a single geological period. Thus, for instance, as reported by Charles Hapgood:

"At Pago Pago harbor borings were made down to the basalt underlying the reef, and after estimates of the growth rate were arrived at, the age of the reef (Utelei) was estimated at 5,000 years. When these spans are compared with those of entire geological periods of the order of 20,000,000 or 30,000,000 years, it is clear how fragile must

² H. A. Brown, *Popular Awakening Concerning the Impending Flood* (lithographed MS, 1948); *idem*, *Cataclysms of the Earth* (N. Y., 1967).

³ T. A. Stephenson, "Anthozoa," *Encyclopaedia Britannica* (1959 edition), Vol. 2, p. 35.

⁴ *Ibid.*

⁵ *Ibid.*

⁶ *Ibid.*

⁷ J. W. Wells, "Pacific Islands," in *ibid.*, Vol. 17, p. 7.

be any conclusions based on the assumption that a given coral reef in Europe was contemporary with another one in North America.”⁸

Coupled with Ma's reliance on continental drift, which we now know could not have been responsible for the climatic variations we have been examining, his coral evidence remained inconclusive. What was worse for Ma, however, was the fact that he was not able to offer a cause for these wholesale movements of the crust.

THE ICE CAP MODEL

In the late 1950s, Hapgood picked up the topic of polar wandering due to Earth's sliding crust and made a reputation for himself as the theory's foremost advocate.⁹ Hapgood was able to trace the pole's shift from the Yukon to the Greenland Sea around 80,000-75,000 BP; from the Greenland Sea to Hudson Bay around 55,000-50,000 BP; and from Hudson Bay to its present location around 17,000-12,000 BP.¹⁰ (Three concurrent paths and positions were also given for the south pole.)¹¹

Needless to say, these polar shifts cannot account for the sub-tropical flora and fauna that thrived within the Arctic Circle during the Tertiary and preceding eras which have been dated to millions, rather than Hapgood's few thousand, years. Besides, the shifts proposed above would not have brought sub-tropical regions into the Arctic Circle; they would merely have shifted latitudes by about 30° which, today, would be like moving Winnipeg and Vancouver to the latitude of Ellesmere Island.

Hapgood was of course aware of this but, as he had to admit, it would be “futile to try to determine the location of the poles in the more remote cases” since with “every step backward in time the evidence naturally becomes thinner.”¹² Even so, despite the scarcity of evidence, what the *totality* of Hapgood's theory proposed is that the region which is now within the Arctic Circle would have earlier been closer to the equator, which would account for its sub-tropical flora and fauna, before it shifted to its present location. A neat package, as Albert Einstein himself had to admit.¹³

Originally, Hapgood had contended that the cause for this crustal slippage would have come about because the accumulation of polar ice is not symmetrically distributed about the poles. This maladjusted dispersion was thus believed capable of producing a centrifugal momentum which was then transmitted to the rigid crust. As this centrifugal force increased, Earth's crust tended to slide over the viscous layers underneath. (This theory, the brainchild of Hugh Auchincloss Brown,¹⁴ has also been maintained by others including Edward Weyer.¹⁵) But, although Einstein himself was at first receptive to this idea,¹⁶ he later expressed strong doubts about it, as so did Kirtley Mather.¹⁷ The biggest problem here is that masses situated at, or very close to, the poles produce minimal centrifugal effect. As Hap-

⁸ C. H. Hapgood, *Earth's Shifting Crust* (N. Y., 1958), revised and re-published as *The Path of the Pole* (N. Y., 1970), p. 87.

⁹ *Ibid.*, in toto.

¹⁰ *Ibid.*, pp. 1-184 and see, especially, the end papers inside the cover.

¹¹ *Ibid.*, p. 107.

¹² *Ibid.*, p. 185.

¹³ A. Einstein, “Foreword” to *ibid.*, pp. xiv-xv.

¹⁴ H. A. Brown, see reference #2.

¹⁵ E. M. Weyer, “Pole Movements and Sea Levels,” *Nature*. 273 (1978), pp. 18-21; but see also the critique in P. Warlow, *The Reversing Earth* (London, 1982), pp. 115-117.

¹⁶ A. Einstein, *loc. cit.*

¹⁷ C. H. Hapgood, *op. cit.*, p. xi.

good himself was eventually bound to conclude: "Advancing knowledge of conditions of the earth's crust now suggests that the forces responsible for shifts of the crust lie at some depth within the earth rather than on its surface."¹⁸ Even so, like Ma before him, and despite the set of "requirements" which he proposed, Hapgood was eventually forced to admit that the cause behind the shifting crust remains bereft of a "satisfactory explanation."¹⁹

What is even worse, as Leroy Ellenberger pointed out:

"Tracing the paths of crustal displacements...does not appear to yield unequivocal results. Without necessarily discrediting Ma's deductions, Hapgood's results are not concurrent. Within the past 80,000 years, Hapgood believes that the location of the north pole has changed three times in shifts lasting 5,000 years [as compared to Ma's four displacements in the last million years]. The north pole, according to Hapgood, has been in its present location for 12,000 years [as compared to Ma's 65,000 to 2,600 years ago]."²⁰

(Compare these figures to those deduced by Auchincloss Brown: 41,800 years ago; 18,400 years ago; 11,400 years ago; with the last shift occurring 7000 years ago.²¹) Nor, incidentally, do Hapgood's shifts all occur in the same direction as Ma's. "Thus," as Ellenberger had to conclude, "Earth's shifting crust, *if such it is*, appears to leave contradictory clues."²²

Hapgood's theory was kept alive by his followers, who often disregarded his retraction concerning the "ice-cap mechanism,"²³ as also by those who found it useful for their own special brand of hypotheses concerning Earth's ancient past.²⁴ (Even some of his detractors seem to have been unaware of Hapgood's retraction.²⁵)

But can poles really shift?

THE TOPPLING GLOBE

Thomas Gold certainly thought so. He was not, however, concerned with the wholesale shifting of Earth's crust as much as he was by the actual toppling of the globe. Writing in 1958,²⁶ Gold stressed the fact that "there is no general physical law that prevents a body from turning over with the aid of *internal forces only*."²⁷

"The general law of the conservation of angular momentum merely prohibits a change of the value and direction in space of the body's angular momentum unless

¹⁸ *Ibid.*

¹⁹ *Ibid.*, pp. 40-44.

²⁰ C. L. Ellenberger, "Senmut's Ceiling and the Earth as Tippe Top," *KRONOS* VII:2 (Winter 1982), p. 91.

²¹ R. Schadewald, "Earth's Poles Don't Shift," *FATE* (October 1981), p. 116.

²² C. L. Ellenberger, *loc. cit.* (emphasis added).

²³ See here, for instance, R. W. Noone, "Pole-Shift," *Catastrophism and Ancient History* VIII:1 (January 1986), pp. 41 ff., which is a synopsis of his book *5/5/2000 ICE: The Ultimate Disaster* (N. Y., 1986).

²⁴ See as but one example, G. Hancock, "Fingerprints of the Gods: Do Ancient Relicts Point to an Advanced Civilization 15,000 Years Ago?" *Chronology and Catastrophism Review* XVII (1995 Special Issue), pp. 59-60, which paper constitutes a synopsis of Hancock's best-selling book *Fingerprints of the Gods* (London, 1995).

²⁵ Sean Mewhinney, for instance, needlessly took Hapgood to task on this very point in "On 'The Year -687': A Postscript," *KRONOS* VII:3 (Spring 1982), p. 87.

²⁶ T. Gold, "Irregularities in the Earth's Rotation—II," *Sky & Telescope* (April 1958), pp. 284-286.

²⁷ *Ibid.* (emphasis as given).

acted upon by an external force; but it has nothing to say about the orientation of the body relative to that direction.”²⁸

Earth’s stability in space is assured because of the oblate shape lent to it by the equatorial bulge. Had it been a perfect sphere, it would tend to topple over, time and again, allowing it to tumble all over the place. Earth’s spin, together with its equatorial bulge, turns our world into a gyroscope. A shift in mass would therefore alter its orientation. The amount of adjustment, however, is dictated by the globe’s capacity to deform. Without such distortion, Earth’s axis would at best have been capable of shifting by less than one degree throughout all past geologic ages. Thus Gold was forced to ask: “But is it reasonable to assume the earth is stiff enough to maintain its shape over long periods?”²⁹

As Gold points out: “The present shape of the earth would not be the right one for a different speed of rotation.”³⁰ And yet it has been assumed that Earth’s rotation “may have altered drastically in the past.”³¹ This would mean that Earth would have had to readjust to the correct shape in order to maintain its equilibrium in space. In turn, this would also mean that Earth “must be capable of a certain amount of plastic deformation.”³²

If, then, a large mass was to develop at some intermediate latitude between the pole and the equator (as opposed to one at the pole as originally proposed by Hapgood), Earth’s natural balance would change, its axis would shift, and the world would have “to adjust its shape accordingly” until the extra mass finds its way to the equator.³³

For one thing, however, masses cannot develop out of nothing. And, even if they could, as Gold himself admitted, the very plasticity that would allow Earth to topple “would actually let the extra mass sink in, and the unbalance would therefore disappear.”³⁴ How, then, did Gold get out of this situation?

He did so by proposing that existing land masses like mountain chains, even though partially sunken, or floating, at different depths in the plastic material below, could change their height, and so also their center of gravity, through erosion or diastrophism. This, too, according to him, would produce an imbalance which would have to be corrected by an adjustment of earth’s shape. Earth would then topple over gradually until it achieves a new stable rotational axis.³⁵

Gold also believed that it is possible for Earth to have experienced polar shifts without having undergone continental drift; but continental drift could not have occurred without polar wandering.

Basing his assumptions on Walter Munk’s calculations, Gold came to the conclusion that a period between 10 and 100 million years would be required for Earth to turn over by about 90°. ³⁶ The time involved would be well within the span of Earth’s geologic past.

Gold also considered the *wholesale* shifting of Earth’s crust, in lieu of axial toppling, as it had been considered by others before him. But while Gold believed this to be dynamically possible, he argued that such mechanism would still require “a degree of interior plasticity that would itself allow a yet more rapid turning over of the entire earth” since an “interior so

²⁸ *Ibid.*

²⁹ *Ibid.*

³⁰ *Ibid.*

³¹ *Ibid.*

³² *Ibid.*

³³ *Ibid.*

³⁴ *Ibid.*

³⁵ *Ibid.*

³⁶ *Ibid.*

plastic that it would allow its skin to slip would itself have too little stability to resist turning over."³⁷

Did Gold's theory pass the test?

GEOID HIGHS

Writing many years later, and basing his conclusions on a model of Earth's interior that was itself at odds with the received opinion of his time, Don Anderson did not quite agree with Gold's objections as they relate to a wholesale slipping of Earth's crust. While received opinion held that Earth's crust was homogeneously undifferentiated, Anderson claimed that Earth is really "compositionally stratified, with the crust, mantle, and core being the most obviously chemically distinct shells."³⁸

"A chemically layered, gravitationally stable mantle would be the natural end state of the earth's evolution. The presence of a crust and a core...indicate that differentiation or separation is the dominant large-scale process, whereas convection can be expected to homogenize the layers between chemical discontinuities."³⁹

This led him to conclude that the convection of Earth's mantle, rather than being steady as believed in by orthodoxy, is episodic and driven by "lateral temperature gradients caused by continental insulation."⁴⁰ Thus, in his opinion: "Active subduction and stagnant continents generate geoid highs [that is an area of higher density causing imbalance], which reorient the mantle relative to the spin axis."⁴¹ As he pointed out: "If the earth is deformable, the whole mantle should wander relative to the axis of rotation, but the implications of this are seldom discussed."⁴² And: "Curiously, earth scientists have been more reluctant to accept the inevitability of true polar wandering than to accept continental drift, *even though the physics of the former is better understood*."⁴³

"Continents move away from thermal highs [or hot-spots] and come to rest over cold parts of the mantle; sea-floor spreading and subduction slow down or cease until the subcontinental mantle warms up. *The whole mantle shifts relative to the axis of rotation to accommodate the changing geode*."⁴⁴

Needless to say, in such a scenario, Earth's outer shell would be stressed by its migration over the equatorial bulge (and/or the migration of the equatorial bulge itself).

"The outer layers of the mantle, including the brittle lithosphere, do not fit properly on a reoriented earth. Membrane stresses generated as the rotational bulge shifts may be responsible for the breakup and dispersal of Pangaea as it moves toward the equa-

³⁷ *Ibid.*

³⁸ D. L. Anderson, "The Earth as a Planet: Paradigms and Paradoxes," *Science* (January 22, 1984), p. 352.

³⁹ *Ibid.*

⁴⁰ *Ibid.*, p. 347.

⁴¹ *Ibid.*

⁴² *Ibid.*

⁴³ *Ibid.*, p. 349 (emphasis added).

⁴⁴ *Ibid.*, p. 347 (emphasis added).

tor. In this scenario, true polar wandering and continental drift are intimately related...A shift of the axis of rotation causes [continental] plates to split..."⁴⁵

Thus, "periods of rapid polar wandering" would be followed by episodes of "rifting, continental drift, and subduction,"⁴⁶ which is to say that continental drift arises *because* of the wholesale shifting of Earth's mantle. To use Anderson's own words: "Global reorientation may be responsible for initiating rifting [of continents] and subduction and periods of rapid apparent polar wandering."⁴⁷

"The rotation axis [i.e. the pole] has apparently wandered about 8° in the past 60 million years and 20° in the past 200 million years. During these periods there have been major changes in the configurations of continents and subduction zones. These apparently had minor effects on the principal moments of inertia, suggesting a relatively stable and slowly evolving geoid. Even a slowly changing geoid, however, can cause a rapid shift in the whole mantle relative to the spin axis if the moment of inertia along this axis becomes less than some other axis of inertia. This may have happened sometime between 450 and 200 million years ago..."⁴⁸

According to Anderson, large-scale 90° shifts can however also occur. As he continues to tell us, at present, the rate of polar wandering "is much greater than the average rate of relative [continental] plate motion," and it would have been "faster still" in ages past.⁴⁹ What is more important to our study: "Whenever there was a major continental assemblage in the polar region surrounded by subduction as was the case during the Devonian through the Carboniferous, the stage was set for a major episode of true polar wandering."⁵⁰ The southern continents, according to him, "all underwent a large northward displacement beginning sometime in the Permian or Carboniferous (280 million years ago) and continuing to the Triassic (190 million years ago)."⁵¹

If this was so, areas which were once south of Earth's polar regions, together with their fauna and flora, would have moved *toward* the polar regions. But, limiting ourselves to the last 60 million years (which would bring us to the Tertiary), a shift of 8°, as expressed by Anderson, would not have been enough to shift sub-tropical areas *into* the polar circles, and the sub-tropical faunal and floral remains of the high Arctic would remain unsolved.

THE PALEOMAGNETIC EVIDENCE

It is well known that Earth's magnetic pole and its geographic pole, that is its axis of rotation, do not coincide; at present they vary by 11°. More than that, Earth's magnetic field, and therefore its magnetic pole, is known to wander, having moved several hundred miles to the north in the twentieth century alone. It has however been posited that, over a period of a few thousand years, the field returns to its original position "and that the average position of the magnetic pole over the whole period will coincide with the earth's axis of rotation."⁵² It

⁴⁵ *Ibid.*, p. 353.

⁴⁶ *Ibid.*, p. 347.

⁴⁷ *Ibid.*, p. 349.

⁴⁸ *Ibid.*, p. 353.

⁴⁹ *Ibid.*, p. 354.

⁵⁰ *Ibid.*, p. 353.

⁵¹ *Ibid.*, p. 354.

⁵² C. H. Hapgood, *op. cit.*, p. 7.

has thus been assumed that the geomagnetic poles are inexorably linked to the geographical ones, and thus to the rotational axis, despite the slight disparity between their present locations.⁵³

Geomagnetism can be, and has been, "fossilized" in rocks. This "fossilized" magnetism occurs when iron-bearing rocks are molten and then quickly cool, thus trapping the orientation of Earth's field at the time of cooling. Known as paleomagnetism, the orientation of the field can be deduced if and when the original position of such rocks can be determined. If, then, the age of such rocks can also be deduced, the orientation of the field, and so the locality of the old geomagnetic poles, can also be dated. When this was accomplished, it became evident that the geomagnetic poles must have wandered over the terrestrial surface. More importantly, the parameters enumerated above allows the path of the magnetic pole to be traced through the ages and plotted on a map. Jean Andrews, among others, was able to trace this path for the past 180 million years which she dutifully plotted on just such a map.⁵⁴

Andrews' research led her to the conclusion that "the whole earth (or at least the mantle and the overlying lithospheric plates)" has (or have) tumbled.⁵⁵ The cause for this, according to her, is the same geoid highs offered earlier by Anderson which cause an imbalance due to mass redistribution on Earth's surface.⁵⁶ This mechanism, which had been offered by others before her,⁵⁷ is explained by Andrews through the following analogy:

"Imagine a homogeneous plastically deformable sphere rotating in space. A dot is painted at the rotation axis, the sphere's north pole. If a bug placed on the equator crawls sufficiently slowly (with respect to the time scale of plastic deformation) toward the dot at the pole, it will in fact never leave the equator defined by the spin axis. Rather, the sphere will tumble, with the dot moving toward the bug, while the rotation axis remains fixed in space."⁵⁸

Of course, following Anderson, Andrews was sure to note that Earth is *not* a homogeneous sphere while the equatorial bulge would tend to stabilize Earth and keep it from tumbling. As she herself, however, retorts: "Nevertheless, the pole can shift through a large angle, even with only a small mass redistribution, as long as the bulge is 'plastic' and not 'frozen'."⁵⁹

Andrews' findings delivered such an impact that the editors of *Scientific American* presented her hypothesis as fact.⁶⁰ Even so, the question has to be asked: What is the cause of geoid highs and mass redistribution? What causes these areas of higher density? Together with his colleagues, R. Sabadini is of the opinion that mass redistribution is the result of mantle flow instabilities,⁶¹ which is not really saying much.

Of more importance to our own hypothesis, however, is the actual path of the magnetic pole traced by Andrews for the last 180 million years. The three localities of the former

⁵³ "Landslide," *Scientific American* (January 1986), p. 64.

⁵⁴ J. A. Andrews, "True Polar Wander: An Analysis of Cenozoic and Mesozoic Paleomagnetic Poles," *Journal of Geophysical Research*, Vol. 90, No. B9 (August 10, 1985), pp. 7737 ff.

⁵⁵ *Ibid.*, pp. 7743-7745, 7746.

⁵⁶ *Ibid.*, p. 7745.

⁵⁷ T. Gold, "Instability of the Earth's Axis of Rotation," *Nature*, 175 (1955), pp. 526-529; P. Goldreich & A. Toomre, "Some Remarks on Polar Wandering," *Journal of Geophysical Research*, 74 (1969), pp. 2555-2567.

⁵⁸ J. A. Andrews, *loc. cit.*

⁵⁹ *Ibid.* (emphasis added).

⁶⁰ "Landslide," *Scientific American* (January 1986), pp. 64, 68.

⁶¹ R. Sabadini, *et al.*, "Polar Wandering and the Forced Responses of a Rotating, Multilayered, Viscoelastic Planet," *Journal of Geophysical Research*, 87 (1982), pp. 2885-2903.

magnetic poles which are the furthest south are those for 180 and 160 million years ago, both of which land us in the Jurassic period of the Mesozoic era, and the one for 115 million years ago, which moves us up to the Cretaceous period of the same era. All three of them, as well as the rest, are within the Arctic Circle—that is these ancient magnetic poles were *already* within the Arctic Circle at the times supplied by Andrews. So that, even if her plotting is correct, all this pole-wandering would still not resolve the problem concerning the existence of sub-tropical faunal and floral remains within the High Arctic regions. As with Hapgood's earlier paths, the most extensive of these polar wanderings would merely have shifted the latitude of Winnipeg close to that of Ellesmere Island. Somehow, I cannot see crocodiles, lemurs, and palm trees thriving in the present latitude of Winnipeg. Thus, as with other theories of polar wandering, these pole shifts would *still* have fallen short of moving sub-tropical areas *into* the Arctic Circle.

And then, how valid is a theory based on the hypothesized link between Earth's geomagnetic pole and its axis of rotation? As already noted, Earth's geomagnetic pole is separated from its axis of rotation by 11° . Nor is it even fixed—it wanders around. In Jupiter's case, the tilt of its south pole does coincide with its geomagnetic one; but at the north pole, the geomagnetic and spin axes vary by 10° . That of Uranus is tilted a whopping 59° from the planet's axis of rotation.⁶² This was at first thought to be due to the fact that Uranus is tilted on its side. Neptune, however, is not lying on its side and yet its magnetic field is also tilted a whopping 47° from its axis of rotation.⁶³ It cannot therefore be an inviolable law that geomagnetic poles should coincide with, or otherwise be linked to, geographic ones, that is axes of rotation. True, Saturn's magnetic field *is* closely aligned with its spin axis—being separated by less than 1° —but this seems to be unique among the planets of the Solar System. Moreover, Saturn's magnetic field is stronger at the north pole than at the south (0.69 gauss as opposed to 0.53 gauss), which is equivalent to the centre of the field being displaced 2400 km north along the planet's axis. (Whether the anomaly of this magnetic field has meaning for the thesis proposed in this work remains to be seen.)

Earth's magnetic field is said to be produced by a dynamo effect involving its molten core within the rapidly spinning planet. This mechanism, however, only seems to work in Earth's case. The core of a small planet like Mercury, for instance, would have cooled off long ago; its spin is nearly 60 times slower than Earth's. For these reasons, Mercury was believed not to have a magnetic field. And yet, as it was ultimately discovered, it does. As Clark Chapman was forced to state: "In the case of Mercury, more than a decade of subsequent thinking about Mariner 10's discoveries has still not yielded a clear understanding of what's going on inside the planet."⁶⁴

Only in the case of Mercury?—one might ask. Take the case of Venus, for instance: If a slow spinning planet with a cold core, like Mercury, can generate a magnetic field, then Venus, much larger and with molten iron in its core, should, despite its slow spin, also generate a magnetic field. How is it then that its magnetic field is close to being non-existent?⁶⁵

Mars does not only have a *weak* magnetic field, it is said to be fading. At first, this magnetic field was thought to swing wildly from one spot to another so that future "Boy Scouts on Mars won't be able to use compasses to get around..." But it was later discovered that the pattern of the detected magnetism, imbedded in surface rocks, is not so jumbled after all. More than that, the magnetism in these rocks is said to be "40 times stronger than similar ar-

⁶² P. Moore, *The Planet Neptune* (N. Y., 1988), p. 62.

⁶³ E. Burgess, *Farther Encounter: The Neptune System* (N. Y., 1991), p. 79.

⁶⁴ C. R. Chapman, "Mercury: The Sun's Closest Companion," in B. Preiss (ed.), *The Planets* (N. Y., 1985), p. 254.

⁶⁵ See here, for instance, M. Zeilik, *Astronomy: The Evolving Universe* (N. Y., 1985), p. 160.

eas on Earth"⁶⁶ which led to the belief that, *at one time*, the magnetic field of Mars was "more than ten times" the strength of Earth's.⁶⁷ Mars, however, rotates about as fast as Earth and has also a molten iron-bearing, if somewhat smaller, core. Why then is its *present planet-wide* magnetic field 1/500th the size of Earth's?⁶⁸

These anomalies have led Michael Zeilik to state that the entire concept is "a magnetic mess."⁶⁹ Or, as David Stevenson was honest enough to confess: "planetary dynamo theorists have yet to be able to predict anything about planetary magnetism..."⁷⁰ Up until the early 1980s, the verdict of NASA authorities was that the "nature of the source of planetary magnetic fields still remains one of the principal unsolved problems of geophysics."⁷¹ To date, nothing new has emerged to invalidate this verdict.

The problem here is that if planets follow the same law, why such a potpourri of magnetic fields? If the dynamo theory cannot account for the magnetic field of all the planets, on what grounds can it be theorized that it accounts for that of Earth?

In the end it can safely be said that what Andrews really plotted was the positions of past *geomagnetic* poles. Can it positively be surmised that these past positions ever coincided with Earth's axis of rotation?

Besides, as is well known, and as noted above, Earth's present magnetic pole is even now wandering on its own. So what need have we of crustal slippage to account for *past* magnetic polar wandering?

THE MARTIAN ARCHETYPE

In presenting his own version of polar wandering, Don Anderson had also drawn attention to the other planets of the Solar System⁷² and zeroed in on Mars. He discussed what he termed the "largest known positive gravity anomaly on any planet" which is associated with the Tharsis volcanic area on Mars. According to received opinion, this mass anomaly has served to reorient the planet with respect to its spin axis.⁷³ Almost two years later, Peter Schultz took up the topic in the pages of *Scientific American*.

Among other matters, Schultz pointed to ancient networks on the Martian surface which are believed by some to have been cut by running water and flowing mud, which suggests a warm climate. And yet these areas are found within 10° of the southern polar ice cap. This paradox, says Schultz, "can be resolved by one simplifying hypothesis, namely that the orientation in space of the Martian crust has not always remained the same throughout geologic time—that the crust has shifted with respect to the planet's axis of spin."⁷⁴

"If such is the case, the north and south poles (the points where the spin axis intersects the surface) would appear to have wandered over the planet's crust; certain regions of the crust that are now far from the poles would at some time in the past have been within the polar regions...[Thus] the Martian equivalent of plate tectonics might

⁶⁶ K. C. Cole, "Spacecraft Finds a Magnetic Patchwork on Mars," Global Surveyor data as reported in *THOTH*, electronic newsletter, 1:27 (December 16, 1997), pp. 7-9.

⁶⁷ See reports from *Scientific American*, *New Scientist*, and the *New York Times* in *Chronology & Catastrophism Review* 1999:2, p. 37.

⁶⁸ M. Zeilik, *op. cit.*, p. 166.

⁶⁹ *Ibid.*, p. 160.

⁷⁰ R. O. Fimmel, *et al.* (eds.), *Pioneer Venus*, NASA SP461 (Washington, D. C., 1983), p. 154.

⁷¹ *Ibid.*

⁷² D. L. Anderson, *op. cit.*, pp. 348 ff.

⁷³ *Ibid.*, p. 349.

⁷⁴ P. H. Schultz, "Polar Wandering on Mars," *Scientific American* (December 1985), p. 94.

simply be the movement of the entire lithosphere, the solid outer portion of the planet, as one plate.”⁷⁵

He then continues:

“If there has been polar wandering on Mars, the polar regions should contain the traces of processes that normally take place in warmer, nonpolar regions. Features that are normally characteristic of the poles should also be visible outside the polar regions.”⁷⁶

The polar networks said to have been eroded by running water and/or mud, indicative of a warmer climate, as mentioned above, constitute such traces. But there is more:

“If the Martian pole has wandered, there should be evidence elsewhere on the planet of deposits similar to those at the present poles. Such evidence does indeed exist. Thick deposits of dusty material, and relics of such deposits, can be found in two broad zones outside the polar regions. These zones are antipodal: they are on opposite faces of the planet. The deposits show many of the processes and characteristics of today’s poles, *but they lie near the present-day equator.*”⁷⁷

Additional support was discovered by both Schultz and Anne Lutz from an “unexpected source.” Images of the Martian surface relayed by the Viking Orbiter in 1976 “showed an unexpectedly large number of elliptical craters with distinctive blankets of ejected debris.”⁷⁸ Experiments have since indicated that, “because of the high velocity with which objects strike Mars...such craters form only when the angle of impact is very low...”⁷⁹ While such grazing impacts are known on other bodies of the Solar System, the number of such impressions on Mars “is from five to 10 times greater than what has been predicted on the basis of theory and what is observed on the moon.”⁸⁰ What this additionally indicates, at least in the opinion of Schultz and Lutz, is that these grazing impacts could not have been caused “by randomly arriving objects that had been in orbit around the sun.”⁸¹

“The observations can be understood, however, if one assumes the orbits of ancient Martian satellites decayed gradually until the satellites struck the planet’s surface. If these satellites had orbited Mars in the equatorial plane, as the satellites Phobos and Deimos do today, the geographic location and direction of impact of a crater should establish the location of the poles at the time the satellite struck...

“The polar points that can be inferred from the youngest grazing-impact craters do indeed match the locations of the present-day poles. Older impacts indicate polar points that cluster far away from the present poles and quite close to the ancient layered deposits found near the equator.

⁷⁵ *Ibid.*

⁷⁶ *Ibid.*

⁷⁷ *Ibid.*, p. 97 (emphasis added).

⁷⁸ *Ibid.*

⁷⁹ *Ibid.*

⁸⁰ *Ibid.*, pp. 97-98.

⁸¹ *Ibid.*, p. 98.

"...The grazing-impact craters, then, provide an independent piece of evidence that the poles of Mars have shifted, much as frozen magnetic field directions in terrestrial rocks provide evidence for the movement of tectonic plates on the earth."⁸²

Other evidences are cited by Schultz,⁸³ but it is not necessary in this short excursion to describe, or even enumerate, all of them. Suffice it to say that Schultz, as also Lutz, were satisfied that polar wandering had indeed taken place on Mars.⁸⁴ As Schultz stated in conclusion: "The hypothesis that the Martian poles have wandered is supported by a good deal of evidence, and it offers new explanations for many of the planet's enigmatic features."⁸⁵

What was the mechanism offered by Schultz to account for this Martian polar wandering? The mechanism he offered was a reversion to Anderson's proposed method concerning "the redistribution of mass within a planet or on its surface."⁸⁶ His supposition is that: "The stablest alignment for a spinning object is the one in which the most massive parts of the object are farthest from its axis of rotation."⁸⁷

"When geologic forces place a large mass at or near a planet's surface at a point far from the equator, the spinning motion of the planet becomes unstable, like the unstable motion of an improperly balanced bearing or top. If the planet is not entirely rigid, the crust shifts to move the anomalous mass toward the equator. As the crust of the planet shifts, the spin axis retains its alignment in space and the poles wander over the planet's surface."⁸⁸

Even so, Schultz was astute enough to submit a caveat:

"If the lithosphere of the planet is very flexible, polar wandering does not take place, because any excess mass sinks into the surface before the crust has had time to realign itself. There can be no polar wandering on a completely rigid planet either, because the lithosphere cannot realign itself at all."⁸⁹

This, then, would seem to invalidate Anderson's theory re the cause behind *terrestrial* wandering as discussed above and with which we are actually concerned. The case of Mars is somewhat different in that the planet's lithosphere displays both rigid and flexible features. There are ancient lava-filled basins that have been partly isostatically compensated together with volcanic and tectonic regions which have not been compensated at all. Schultz's own conclusion, *as it applies to Mars*, is that the "change in mass distribution that is necessary to produce polar wandering could have been provided by convection in the mantle (the rising of hot sections and the sinking of colder ones), by a redistribution of mass due to the impact of large objects or by the filling with lava of the resulting impact basins."⁹⁰

"Convection in the mantle" would not, however, induce polar wandering on Earth for the simple reason that, as Schultz himself warned, "any excess mass" thus produced would tend

⁸² *Ibid.*, pp. 98-99.

⁸³ *Ibid.*, pp. 99-102.

⁸⁴ See here also, B. C. Murray, "Polar Wandering on Mars?" *Science* (March 9, 1973), pp. 997-1000.

⁸⁵ P. H. Schultz, *op. cit.*, pp. 101-102.

⁸⁶ *Ibid.*, p. 94.

⁸⁷ *Ibid.*

⁸⁸ *Ibid.*

⁸⁹ *Ibid.*

⁹⁰ *Ibid.*

to sink into our planet's flexible surface before the crust would have time to realign itself. "A redistribution of mass" due to meteoric or asteroidal impact would probably suffer a similar fate, as so, likewise, would any "filling with lava of the resulting impact basins." Schultz's mechanism *might* work for Mars and other Mars-like bodies, but it leaves Earth's theorized wandering poles still without a water-tight explanation.⁹¹

LAST INTERLUDE

A study of paleoclimates conducted in 1959 by J. Wyatt Durham zeroed in on what has now become something of a litany to the readers of this work:

"The occurrence of palms and other types of tropical vegetation in northern latitudes where temperate or frigid climates now hold sway; the finding of elephants and rhinoceroses frozen in the ice of Siberia; and the occurrence of tropical types of shells and corals in Europe: these were the kinds of fossils that caused speculation as to the conditions under which they had lived and that usually led to the conclusion that a tropical or 'warmer' climate had existed where they were found."⁹²

Yet, having reviewed the evidence he had at hand at the time, Durham could only conclude his study with the following confession:

"There seems to be no general agreement as to the causes of climate variation. Alternating intervals of high and low topographic relief of the earth's surface, variation in heat due to internal radioactivity of the earth, changes in the composition of the atmosphere, variation in radiation from the sun, astronomical and cosmical changes, presence of large amounts of volcanic dust in the earth's atmosphere and variations in circulation patterns are some of the causes that have been evoked to explain the changes."⁹³

Durham could have added the theories of polar wandering and the shifting crust, to say nothing of axial tilts, to his list; his conclusion would not have been affected. More than four decades later, paleoclimatologists and paleontologists remain in a quandary as to the actual mechanism that would have caused tropical and sub-tropical flora and fauna to thrive in what are now the two coldest areas on Earth.

Does not our own hypothesis which posits the Saturnian sun, a former brown dwarf star, to have been permanently stationed in Earth's north celestial pole, bathing the northern regions, especially the Arctic circle, with constant light and heat, more readily fill the bill? Would not such a milieu account for the sub-tropical plants in the Arctic which, in turn, fed the sub-tropical animals that thrived within the same region? Would not such a system, encased in a plasma sheath, with perhaps an Earth possessing a denser atmosphere than at present, have also ensured a sub-tropical climate in all latitudes, including Earth's south pole? Would not this also account for the growing consensus among paleontologists that such sub-tropical flora and fauna originated in the Arctic from where they extended themselves farther south? Wandering poles would not then be called for; neither would a shifting crust or a tilting of the axis.

⁹¹ For a detailed history concerning theories of polar wandering, the reader is referred to J. White, *Pole Shift* (N. Y., 1980).

⁹² J. W. Durham, "Paleoclimates," in P. Cloud (Ed.), *Adventures in Earth History* (San Francisco, 1970), p. 809.

⁹³ *Ibid.*, pp. 820-821.

Chapter 20

The Axial Coupling

THE PROBLEM

When I first introduced the Saturnian system to the general public in 1978, I myself described it as one which “inspires disbelief and contradicts every known tenet of celestial mechanics *as we believe in them today*.”¹ To which I added:

“This unique positioning of Saturn [i.e., its axial coupling with Earth] has been the greatest stumbling block in the unraveling of the Saturnian mystery. We are also aware that this supposition is open to the greatest criticism.”²

Since then, I have continued to refer to the Saturnian system, model, and scenario as being bizarre in the extreme.

The problem did not merely consist of the fact that there were no such coupled bodies known from anywhere in the Universe, let alone in the Solar System; it also consisted of the supposition that celestial mechanics, as then known, would not allow for such a coupling. An added problem was the fact that, in the 1970s, neither of the two main proponents of the Saturn theory, David Talbott and myself, were experts in celestial mechanics. Thus, when John Gibson asked Talbott in an interview whether he thought that any astrophysicist could possibly accept the Saturn theory, Talbott replied with the words:

“As a matter of fact, I’m going to go ahead...and not even worry about the physics of it all. Let’s face it: within any established frame of thought the whole thing is hilarious. How could two planets rotate on the same axis in any stable configuration...Does that sound like something one could defend in any terms acceptable to modern astronomy?”³

And, when Gibson came close to insisting that Talbott “*should* suggest some physical principle which might account for the planetary configuration” he was describing, Talbott emphatically replied with: “No, absolutely not.” And added: “That would only make things worse. I’m not a physicist.”⁴

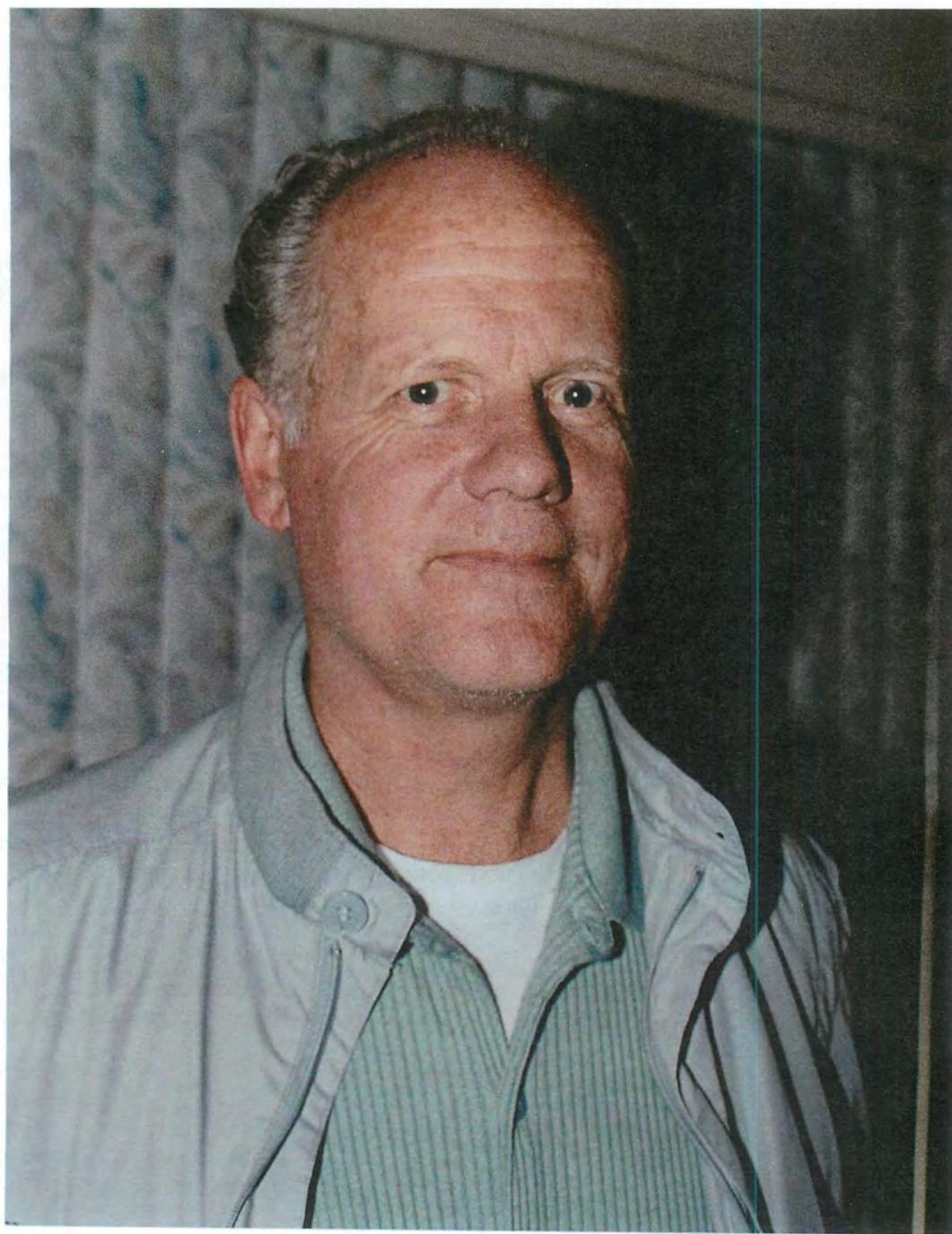
Not happy with Talbott’s decision to avoid any attempt to solve the problem, I decided to accost some orthodox authorities with this mechanical conundrum. Five of them promised to look into the matter despite their obvious disbelief, although they all compelled me to keep their names out of the literature, at least until such time as their endeavors showed any

¹ D. Cardona, “The Mystery of the Pleiades,” *KRONOS* III:4 (Summer 1978), p. 38 (emphasis in original).

² *Ibid.*

³ D. N. Talbott, in J. Gibson, “Saturn’s Age,” *Research Communications NETWORK*, Newsletter #3 (October 15, 1977), p. 4.

⁴ *Ibid.* (emphasis added).



David Talbott
(Photograph—2000—by the author.)

results. Their fear of being ridiculed by their peers for even considering such an outrageous astronomical system was spelled out in no uncertain terms. Since I have never been released from this pledge, I remain unconditionally bound to safeguard their identity and reputation to this day even though, as of this writing, they have all passed away but one.

Over the years some calculations petered in but, without exception, they all involved some amendment of the model they were meant to quantify. This was not much help since no problem can be solved through its own modification. The answer to a question is unacceptable if the question itself is altered. When I pointed this out, I was lectured on the scientific method and told I was being stubborn. In the end, the verdict was that my model was physically impossible. The argument that Wegener's model of shifting continents was also once thought to be impossible went unheeded. My five staunch mechanists deserted me, leaving me with a pile of impressive calculations that explained everything except what I had wanted them to explain.

BOLD ENDEAVORS

Throughout the years there were various bold endeavors, and even a few competing theories, all vying to resolve the axial and other dilemmas of the Saturnian, or Saturnian-like, configuration. There would be no point, however, in detailing these efforts although fairness demands that they should at least be mentioned.

Among those with a competing theory was the analytical chemist, Frederic Jueneman, whom we have met on several occasions in the past pages of this work. Contrary to the thesis being presented here, Jueneman opted for the planet Mars as having been the immobile boreal sun of which the mytho-historical record speaks.⁵

There was also Earl Milton, a spectroscopist working out of the department of Physics at the University of Lethbridge, Alberta, Canada. Having already questioned the presently accepted tenets of astrophysics, he did not see the axial coupling of Earth with proto-Saturn as an insoluble problem but simply as one concerning a scheme with which he did not entirely agree.⁶ This was not to be wondered at because he, also, had been working on a model of his own. This was based on a scenario reconstructed by his colleague, Alfred de Grazia. Unfortunately, while de Grazia acknowledged the universality of the mytho-historical record, he showed a distinct penchant for using Greek sources as the yard-stick against which to measure his cosmic scheme. Thus, de Grazia saw it as imperative to accommodate the Greek generation of gods in which each deity was considered to have been the offspring of the preceding one. In following Immanuel Velikovsky, who had interpreted the birth of Athena from the head of Zeus as the actual ejection of the planet Venus from the planet Jupiter, de Grazia deceived himself into believing that, similarly, the ejection of one planet from another has to be implied by all such divine births.⁷ And Milton, unfortunately, followed suit. This resulted in a hypothesized sequence of planetary fissionings and ejections—Uranus and Saturn from what Milton and de Grazia termed super-Uranus, Jupiter from Saturn and, finally, still following Velikovsky, Venus from Jupiter.⁸

⁵ F. B. Jueneman, *Limits of Uncertainty* (Chicago, 1975), pp. 83 ff.

⁶ E. R. Milton to D. Cardona, June 16, 1978, private communiqué.

⁷ A. de Grazia, *Chaos and Creation* (Princeton, 1981), *in toto*.

⁸ *Ibid.*; A. de Grazia and E. R. Milton, *Solaria Binaria* (Princeton, 1982), *in toto*; for further objections to Milton & de Grazia's model and scenario, see D. Cardona, "The Road to Saturn," Part II, *AEON* 1:3 (May 1988), pp. 115-119.



The birth of Athena from the head of Zeus—the myth that deceived Immanuel Velikovsky into believing that the planet Venus had been ejected from the planet Jupiter.
(Illustration from the back of an Etruscan mirror.)

Together with that of Lynn Rose, which has already been treated of in past pages of this work, there were other competing models based on the Saturnian phenomena which appeared throughout the years.⁹ Although still purportedly based on the content of the mytho-historical record, some of them did not even involve planets!¹⁰ None of these had any light to shed on the problem of Earth's axial coupling with Saturn.

Meanwhile, from the very inception of his model, Talbott had opted for the planet Jupiter having attained a position "above" Saturn, in line with Saturn and Earth, but not in axial alignment with them. According to this scheme, Saturn and Earth would have rotated on their single axis "extending out from Jupiter." This would have meant that, from the vantage point of Earth, Jupiter would have been hidden behind Saturn and thus not visible to Earth-bound observers.¹¹

Right from the start, the above scheme did not sit well with me because I had not come across anything in the mythic record that could be made to account for this hidden aspect of the planet Jupiter or any god identifiable as such. And, as of this writing, Talbott has yet to present the evidence on which he continues to base this particular hypothesis.

I, on the other hand, had toyed with the idea of placing Jupiter at the other end of the configuration with Earth stationed in between the two giant planets. Thus Jupiter would have appeared stationary in Earth's *south* polar sky. Such a configuration, or so I reasoned at the time, would have lessened the instability problem since Earth would have been gravitationally attracted to both giants without succumbing to either.¹² This idea had been fed fuel by a few mythological tidbits which name the planet Jupiter as the Star of the South.

Thus, in the Persian *Bundahish* it is stated how the "seven chieftains of the planets have come unto the seven chieftains of the constellations" where the planet Jupiter is matched with the constellation which the ancient Persians called Vanand.¹³ Elsewhere in the same work, Vanand is described as "the chieftain of the south,"¹⁴ which would make Jupiter the planet of the south.

In Hindu astro-mythology, Brihaspati, which is the Sanskrit name for the planet Jupiter,¹⁵ is also linked "with the fire of the south."¹⁶

In Egyptian astronomy of the Ptolemaic period, the southern stars were held sacred to Horus¹⁷ who, as Heru-Up-Shetau¹⁸ and/or Heru-pe-sheta (Heru-ap-sheta and/or Heru-ap-sheta-tai), was one of the names of the planet Jupiter.¹⁹ In fact, among other things, Horus

⁹ See here, for instance, F. Wallace, "Jupiter—Mars—Saturn: The trinity," *Canadian Society for Interdisciplinary Studies Newsletter* 1:2 (March 1982), pp. 20 ff.; but see also, D. Cardona, "Trilogies, Trinities, and Triads," in *ibid.* 2:1 (August 1983), pp. 2 ff.

¹⁰ See here, R. Ashton, "The Bedrock of Myth," (1987), unpublished; but see also, D. Cardona, "Ashton's Bedrock of Myth," *AEON* VI:2 (December 2001), pp. 30-33; M. Zysman, "Let There Be Lights," in M. Zysman & C. Whelton (Eds.), *Catastrophism 2000* (Toronto, 1990), pp. 143 ff.; but see also, D. Cardona, "The Reflective Canopy Model and the Mytho-Historical Record," *AEON* IV:4 (April 1996), pp. 13 ff.

¹¹ D. N. Talbott, *loc. cit.*; *idem*, "Saturn: Universal Monarch and Dying God," *Research Communications NETWORK* (special publication, 1977), p. 9.

¹² D. Cardona, "Required Research for a Viable Saturnian Scenario," read on September 4, 1983, at the Haliburton, Ontario, seminar sponsored by the Canadian Society for Interdisciplinary Studies.

¹³ *Bundahish* 5:1.

¹⁴ *Ibid* 2:7.

¹⁵ W. D. O'Flaherty, *Hindu Myths* (Harmondsworth, 1976), p. 341.

¹⁶ P. Masson-Oursel & L. Morin, "Indian Mythology," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 333.

¹⁷ R. H. Allen, *Star Names and their Meanings* (N. Y., 1936), p. 20.

¹⁸ W. M. Müller, *Egyptian Mythology* (1918), pp. 54-55.

¹⁹ E. A. W. Budge, *The Gods of the Egyptians*, Vol. II (N. Y., 1904/1969), p. 302.

was known as the "southern sun god."²⁰ Better still, the planet Jupiter itself was known simply as the "Southern Star"²¹ and/or the "Star of the South."²²

There are various other mentions of southerly deities and south stars in the mythologies of various races but most of these are left unidentified by the races concerned.

I was therefore elated when, in January of 1980, the electrical engineer and mathematical statistician, Chris Sherrerd, sent a most surprising paper to *KRONOS*, on the staff of which I was then serving as a senior editor. The title of the paper itself—"The Plausibility of the Polar Saturn"—was such a positive statement that it made me devour its contents with childlike eagerness.

Sherrerd had no apprehension about stating that such a planetary system was "not only plausible but likely." He considered that a linear configuration, with Jupiter and Saturn at one end and Earth in the middle, "is a feasible and stable arrangement according to well-known principles of modern physics."²³

Further research on my part, however, indicated that deities other than those identified as the planet Jupiter were also associated with the south. For instance, the Mexican gods Tezcatlipoca and Huitzilopochtli are both designated as rulers of the south.²⁴ These two deities, however, fit the role of Mars better than they do that of Jupiter,²⁵ very much as Velikovsky had earlier surmised.²⁶ Worse still, in Roman mythology, Jupiter, like Saturn, was associated with the north rather than the south.²⁷ It thus became apparent that Jupiter's claim to the south, as also, incidentally, his claim to the north, had to do with something entirely different (concerning which, in order to keep events in a chronological order, I will have to write in a subsequent volume). I was therefore left with no recourse but to abandon this line of investigation.

Due to lack of editorial concurrence, Sherrerd's paper was never published. Nevertheless, the barbell formation theory refused to go away. So much so that, in 1988, Talbott, too, thought it prudent to pay it some notice. As he wrote:

"More than one physical model, in order to preserve stability (or at least a semblance thereof), would suggest a line up of planets in the fashion of a tumbling barbell, with the larger orbs balancing the two ends of the planetary assembly and the Earth locked in polar alignment between them. On this theoretical principle I can express no opinion, though applying the principle to the mythically-supported planetary line-up does yield some interesting results."²⁸

But since Talbott had already opted for Jupiter's locality *behind* Saturn, he ended up by suggesting the introduction of yet one more planet. Thus:

²⁰ R. H. Allen, *loc. cit.*

²¹ W. M. Müller, *loc. cit.*

²² E. A. W. Budge, *loc. cit.*

²³ C. Sherrerd, "The Plausibility of the Polar Saturn," unpublished.

²⁴ H. B. Alexander, *Latin-American Mythology* (N. Y., 1964), pp. 61-62; M. Fauconnet, "Mythology of the Two Americas," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 436.

²⁵ E. Cochrane, "Indra's Theft of the Sun-God's Wheel," *AEON* III:3 (October 1993), p. 78; *idem*, "Mars Gods of the New World," *AEON* IV:1 (April 1995), pp. 49 ff.

²⁶ I. Velikovsky, *Worlds in Collision* (N. Y., 1950), p. 253.

²⁷ A. B. Cook, *Zeus: A Study in Ancient Religion*, Vol. I (N. Y., 1914/1964), p. 759.

²⁸ D. Talbott, "On Models and Scenarios," *AEON* I:4 (July 1988), p. 14.

"My proposed sequence of northern planets, of course, was never influenced by this balancing mechanism. It may be significant, however, that the concept would seem to support the suggested relative positions of the planets...While this does not answer the question as to what large planets might have balanced the other end of the barbell (*for which question myth offers no help*), the logical candidates would surely be first Neptune and then Uranus."²⁹

This, in turn, was picked up by Frederick Hall, a retired engineer from the Stanford Linear Accelerator Laboratory:

"Proto-Saturn [he wrote] is not alone. In the fashion of a binary system, it is accompanied by the smaller Neptune, except Neptune is not stellar."³⁰

Robert Driscoll, a physicist from Caltech, did not seem to give Neptune's participation in the Saturnian configuration any thought. Whether he already knew of Sherrerd's theory which had suggested Jupiter as the other member of the barbell formation, or whether he came to this tentative conclusion on his own, I have no way of knowing. But it is the Saturn-Jupiter barbell formation that he saw fit to analyze through a series of mathematical-physical equations.³¹ This was encouraging, to say the least, because, for the very first time since those physicists I had accosted earlier, someone had attempted to quantify the solution to the co-axial quandary inherent in the proposed Saturnian system.

But even here, there were still some problems.

According to Driscoll, the Saturnian system came into being within the Solar System itself when an unnamed gaseous super-giant went through nuclear fissioning, thus instigating a series of minor calamities resulting in aerodynamic drags, shrinking and rounding of orbits, electric charges, cancellation of gravitational attractions, centrifugal forces, the combined influence of which resulted in Earth being captured between Jupiter and Saturn.³²

That, in brief, was Driscoll's theory. There would be no point here in presenting it in more detail and/or reproducing its attendant equations since these would be beyond the comprehension of most of my readers.³³

Seven years later, Driscoll returned to the topic in a longer paper in which he not only considered the barbell model with Earth captured between Jupiter and Saturn, but also, *and mainly*, Talbott's original, and still adhered-to, prototype in which Jupiter is placed behind Saturn. In this attempt, the aerodynamic forces relied on previously were eliminated, with the stability of the system now more heavily dependent upon the Sun's gravitational attraction.³⁴

While I welcomed its greater detail and additional equations, I was less happy with this version than I was with Driscoll's earlier attempt. Nor did it still further, but much shorter, paper by him, with yet more equations, add anything substantially new to his theory.³⁵

Talbott's model, in which the co-axial Saturnian system is made to orbit Jupiter equatorially as a rigid rod, received something of a dubious boost from the structural dynamicist, Robert Grubaugh, who specialized in placing satellites into orbit.³⁶ In this scheme, the two

²⁹ *Ibid.* (emphasis added.)

³⁰ F. F. Hall, "Solar System studies," Part 2, in *ibid.*, p. 27.

³¹ R. Driscoll, "The Saturn Myth: A Tentative Physical Model," in *ibid.*, pp. 50-59.

³² *Ibid.*, pp. 50-51.

³³ Those who are interested can refer to Driscoll's original paper cited above.

³⁴ *Idem*, "Magnetic Models of the Polar Configuration," *AEON* IV:2 (August 1995), pp. 5-27.

³⁵ *Idem*, "Stability and Dimensions of the Polar Configuration," *AEON* IV:5 (November 1996), pp. 11-15.

³⁶ R. Grubaugh, "A Proposed Model for the Polar Configuration," *AEON* III:3 (October 1993), pp. 39-48.

co-axial planets, that is Saturn and Earth, are made to revolve about Jupiter "in a line synchronous with Jupiter's orbit around the sun."³⁷ Needless to say, Saturn would have faced Jupiter, thus shielding Jupiter from terrestrial eyes. Several calculations were performed by Grubaugh to "demonstrate that the alignment is feasible according to the laws of Newtonian gravitation, and that the magnitude of torque necessary to produce the required precession is within the realm of possibility."³⁸ Once again, it is not necessary to reproduce these calculations here and interested parties are asked to consult the original documents cited.

While no other physical model of the Saturnian configuration had until then received as much attention as Grubaugh's proposed model did, it had its ups and downs.³⁹ In the end, even Talbott, at whose instigation Grubaugh had patterned his hypothesis, discovered a flaw in Grubaugh's model, although it was not one affecting his calculations. What Talbott realized is that, *physically verifiable as it may be*, Grubaugh's model did not conform to his own scenario as he had constructed it on the basis of the mytho-historical model.⁴⁰ This problem was also picked up by Wallace Thornhill.⁴¹ Worse than that, Thornhill also found fault with Grubaugh's system, and therefore, to an extent, also Talbott's, as a whole.⁴²

In 1999, Emilio Spedicato, physicist and head of Mathematics at the University of Bergamo, Italy, next applied his hand to the problem.⁴³ Like others before him, he, too, produced an impressive array of equations which, at least numerically, were found to be in agreement with the Saturnian polar model. But, like others before him, he also envisioned the system as having resided within the Sun's sphere of influence.

Nevertheless, Spedicato did manage to show that, at least mathematically, the co-axial system would have been stable even under Newtonian constraints. He could not, however, vouch for the length of time the stability of the system could have prevailed.

A year later, Spedicato teamed up with Antonio Del Popolo, an astrophysicist who was then also at the University of Bergamo, in a further attempt to quantify the inherent stability of the proposed Saturnian co-axial system and, more importantly, to see how long the system would have remained stable.⁴⁴

To the chagrin of some, the obtained results from the equations involved did not confirm the required *sustained* dynamical stability of the model.⁴⁵ On the contrary, it was found that the stability of such an axially aligned system would be lost "rather fast, with its maximum duration corresponding to *only about 3 months*" when its "expected stability should extend at least over several thousand years."⁴⁶ Spedicato and Del Popolo did, however, concede that:

³⁷ *Ibid.*

³⁸ *Ibid.*, p. 40.

³⁹ See here, V. J. Slabinski, "A Dynamical Objection to Grubaugh's Polar Configuration," *AEON* III:6 (December 1994), pp. 1-10; R. Grubaugh, "Response to Slabinski," in *ibid.*, pp. 11-14; "Letters to the Editor," by R. M. Smith, L. G. Collins, F. Jueneman, and R. B. Driscoll, in *AEON* III:6 (December 1994), pp. 87-90, 92-95; D. Talbott, "Visualizing Collinear Systems," *Thoth* (electronic newsletter) II:19 (December 8, 1998), pp. 2-6; *idem*, "More Parallax from Leroy," electronic message to Kronia Communications Newsgroup, March 30, 1997.

⁴⁰ D. Talbott, "Visualizing Collinear Systems" (see above), p. 6.

⁴¹ W. Thornhill, "Friday Evening Discussion [at the Proceedings of the SIS Silver Jubilee Event]," *Chronology and Catastrophism Review* 2000:1, p. 7.

⁴² *Ibid.*, p. 6.

⁴³ E. Spedicato, "Numerical Analysis of Planetary Distances in a Polar Model," *AEON* V:4 (July 1999), pp. 23-28.

⁴⁴ E. Spedicato & A. Del Popolo, "Dynamical Evolution of a Collinear Planetary System," *AEON* V:6 (August 2000), pp. 14-20.

⁴⁵ *Ibid.*, p. 14.

⁴⁶ *Ibid.*, p. 19 (emphasis added).

"In order to conceivably re-establish the dynamical feasibility of the polar model, one would have to introduce parameters in the physical model" which were not then considered, such as "tidal and/or electromagnetic forces."⁴⁷ They also cautioned that "it is *impossible a priori* to state that the system is unstable for all values of α [i.e. the distance of Earth from the Sun in astronomical units] and for acceptable changes in the planetary masses that may have resulted from a catastrophic collapse of the system."⁴⁸

In the end, even Roger Ashton yielded to the physical problems he saw as inherent in the Saturn configuration theory and he, too, ended up raising objections re the feasibility of the Saturnian system.⁴⁹ His main criticism centered on what he deemed to be the gargantuan cataclysmic destruction on Earth that would have resulted during and after the break-down of the Saturnian system.⁵⁰

What remained curious about Ashton's recantation is that, despite all his objections, he did not discard the Saturnian model or its accompanying scenario. How could he when he himself had spent hours of research, especially in Sanskrit literature, and reams of paper,⁵¹ in *successfully* verifying the model's basic premises?⁵² In fact, in a 1987 paper of his which, as of this writing, has not yet seen publication, he stressed his belief that the so-called Saturnian apparition from which "the metaphors of myth" can retrospectively be derived can be considered the very *bedrock* of myth.⁵³ But then, reverting to the old canard that the identification of deities with planets is late, he convinced himself that the Saturnian apparition, as it might have appeared in man's ancient sky, had nothing to do with planets.⁵⁴ Apart from the fact that this is verifiably untrue, he seems to have forgotten that, in many instances, ancient records speak specifically of planets besides their corresponding deities, as shown in earlier pages of this work. Even so, if not planets, *what*? What was it that Ashton believed was responsible for the so-called Saturnian apparition? I quote directly from the paper concerned:

"To abandon the planetary and retain the north celestial polar aspect of the primeval gods allows for an open and unbiased approach to the question of whether there was ever any original physical basis for mythical conceptions. Until the thesis set forth in the course of this essay receives some measure of physical verification, it is still easily conceivable that the material of myth is due to subjective, visionary, psychic, mystic, metaphysical, cryptic, subliminal, or, if one can stomach the idea, occult factors. This may be true no matter how neatly mythical motifs coalesce into one composite image retrospectively, and no matter how well the archaeological finds...may seem to attest that coalescence."⁵⁵

He was, however, obviously unhappy with this so, in lieu of it, he *did* forward a physical model of sorts, one which turns out to be even more bizarre than the planetary model he no longer espoused. As he explained:

⁴⁷ *Ibid.*, pp. 14-15.

⁴⁸ *Ibid.*, p. 19.

⁴⁹ R. Ashton, "The Unworkable Polar Saturn," *AEON* I:3 (May 1988), pp. 39 ff.

⁵⁰ See here also, D. Cardona, "Ashton's Bedrock of Myth," *AEON* VI:2 (December 2001), pp. 30-33.

⁵¹ Constituting numerous articles and research memoranda which remain unpublished but copies of which continue to reside in my files.

⁵² See here, for instance, R. Ashton, "The Genie of the Pivot," *KRONOS* (Fall 1984), pp. 16-25.

⁵³ *Idem*, "The Bedrock of Myth," 1987 unpublished essay, MS p. 1.

⁵⁴ *Ibid.*

⁵⁵ *Ibid.*

"[The model] must agree with the variety of metaphors of myth. [The apparition] must be present when human technological metaphors require it to be so. It must be visible in the same form to people scattered over wide areas of North America and Eurasia. *I therefore propose a hologrammatic phenomenon of polarization of light of stratospheric particles which is manifested only at certain points in a series of intensities of solar radiation at harmonically related electromagnetic frequencies.*

"At an appropriate intensity, the radiation at various frequencies is in a proper mutual relationship, and the hologram is brilliantly lighted. It is seen in essentially the same form from points of viewing thousands of kilometres apart. It appears to be in the rotational polar space. It constitutes the central feature of the sky. The complete visual assemblage of it is that lost ancient sky which was radically different from what we now associate with the sky."⁵⁶

In order to circumvent the problem raised by the invisibility of this hologrammatic apparition in the present sky, Ashton proposed that "between the activating intensities of solar radiation, there is an interference phenomenon which [now] blots out the polar apparition."⁵⁷ He even provided "a hypothetical instance of how this might work"⁵⁸ but, as he made clear in 1999, the entire exercise becomes irrelevant since he himself eventually disavowed it all. As he then wrote: "In 'The Bedrock of Myth,' as yet unpublished, I explain why, by content of myth alone, I reject the role of planets in the Polar Assemblage, which I think may well have been objective, *but for which I failed to propose a plausible model.*"⁵⁹

One should recommend Ashton for his honesty but, since he continues to believe that what he terms the Polar Assemblage was the very bedrock of myth, and since he now admits that the hologrammatic model he had previously advanced cannot be considered plausible, what is he left with to explain the apparition he continues to believe in?

Knowing Ashton for the intelligent man he is, it remains my personal opinion that he jumped off the planetary Saturnian ship a little too hastily and much too early.

All of the above attempts, noble efforts one and all, suffered through similar problems and, in one respect, by one and the same difficulty. All of them, in one way or another, were burdened with items which are contrary to what the mytho-historical records demands, and/or with items which, at best, are not *contained* within that record. To be fair to all concerned, most of those who had thus far attempted to solve the axial problem inherent in the Saturnian configuration were in something of a peculiar situation in that the Saturnian scenario had not yet been gathered together in chronological sequence in any one place. Worse than that, not all of the events, with their celestial interactions, and their consequential outcomes, had till then received treatment. Nor can the present work alleviate that problem because, while a chronology of sorts is here being attempted, the history of the Saturnian system contains too many constituents, and too many events, only a few of which have so far been touched upon, to be told in one short volume. Add to all that the additional problem the above theoreticians encountered in that they were already faced with slight disagreements between the main proponents of the thesis, and one can well understand the shortcomings of their attempts.

The one difficulty with which they all strained, however, was in their location of the Saturnian configuration *within* the bounds of the Solar System. This encumbered their theories

⁵⁶ *Ibid.*, MS p. 7 (emphasis added).

⁵⁷ *Ibid.*, MS p. 8.

⁵⁸ *Ibid.*

⁵⁹ *Idem*, in response to R. M. Smith, "Purple Darkness," *AEON* V:4 (July 1999), p. 6 (emphasis added).

because their attempts had to take the mass of the Sun into consideration. This mass would not have been involved, at least not initially, in our alternative scenario where the co-axial Saturnian system would have originally sustained itself far away from the Sun's gravitational and/or electromagnetic influence. And this should not be wondered at because, despite Juergens' original concept regarding the extraneousness of the Saturnian system, the theory had not yet received much publicity.

Besides, as Talbott himself was astute enough to recognize, until all the mythological chips are in their correct place, theories concerning the astronomical workings of the Saturnian system must remain hypothetical at best. As he had it stated:

"What I will argue for is that the search for physical explanations have at its highest priority reckoning with the full implications of myth, wherever a definitive consensus is indicated. As more information is brought to the discussion this will require a continued willingness to reconsider previous speculations—with no qualms about modifying or even abandoning earlier frameworks."⁶⁰

THE LESSON OF SHOEMAKER-LEVY 9

The problem then becomes even more obvious because, despite the internal consistency of the mytho-historical record, our theory continues to demand an astronomical solution. As already noted, there are no bodies in the present Solar System which are linearly aligned. Worse than that, present Solar System theories, based on purely gravitational forces, even with the refinements introduced from lessons learned through the detection of extra-solar planets, do not seem to allow for celestial bodies to be so aligned. But then, in July of 1994, Comet Shoemaker-Levy 9, which taught us more than one lesson, plowed into Jupiter.

The most important message writ large by this impact was more of a warning than anything else. It taught astronomers, once and for all, that Earth is not the safe haven they had previously believed it to be. If a comet could collide with Jupiter, as this one did, chances of a similar collision with Earth could not be as far-fetched as once believed. Geologists, of course, had long recognized the scars left behind by previous terrestrial impacts, but these had always been pushed beyond the reaches of the present into the dim horizon of a long-gone past. Until recently, and despite the devastation it caused, even the impact of a fireball⁶¹ in the valley of the Tunguska River in northern Siberia, in June of 1908, failed to alert astronomers to the dangers of cosmic impacts. Shoemaker-Levy 9 accomplished what the Tunguska fireball failed to do. It sent entire nations on a world-wide program designed to keep track of near Earth-grazing objects, such as errant asteroids, in an attempt to forewarn humanity of any impending cosmic-induced catastrophe—even though no one seems certain of how to avoid the calamity if and when such a time comes.

The second lesson learned from the impact of Shoemaker-Levy 9 had to do with the nature of comets which, for years, had been touted as being mainly composed of ice—"dirty snow-balls," they have been called, or "snowy dirtballs," as some jocularly termed them. But when Shoemaker-Levy 9 impacted on Jupiter, no water was detected.⁶² Again, as in the case

⁶⁰ D. Talbott, *op. cit.*, p. 15 (first emphasis as given, second emphasis added).

⁶¹ The object is generally referred to as a fireball because it has never been ascertained beyond any doubt what it might have been—a meteorite, an asteroid, or a comet, although it will be found that all three are related.

⁶² S. Flamsteed, "The Great Comet Crack-Up," *Discover* (January 1995), p. 32.

of the missing neutrinos, astronomers did their best to explain the lack of water.⁶³ In fact, a year later, they began to doubt that the object had been a comet.⁶⁴ But this was mainly due to back pedaling because, when first sighted, Shoemaker-Levy 9 definitely exhibited both a coma and a halo,⁶⁵ and that puts it in the class of objects known as comets.⁶⁶

The third lesson, the one with which we are mainly concerned here, had to do with the manner in which the fragments lined up after the comet broke up. To be sure, Shoemaker-Levy 9 had already fragmented when it was first spotted close to Jupiter by the team of Eugene Shoemaker, his wife Carolyn, and David Levy on May 22, 1993. Retrocalculations later showed that the comet had been orbiting Jupiter for quite a few years. By 1992, it had come to within 10,000 miles of the planet when the giant's powerful gravity ripped it apart.⁶⁷

Although to Levy and the Shoemakers the comet first appeared like "a fuzzy, glowing line,"⁶⁸ it had already fractured into twenty-one separate fragments, each of which displayed a coma and a tail.⁶⁹ The separate bodies did not, however, start circling around each other as one might have expected them to do. And this was not because the fragments were not massive

enough to exert their own orbital pull. Despite its small size, the asteroid Ida, with a mere length of 34 miles, has its own satellite, named Dactyl, orbiting around it at a distance of 60



The break-up of Shoemaker-Levy 9.
(Photograph courtesy of NASA.)

⁶³ See here, for instance, *New Scientist* (January 14, 1995), p. 10; *ibid.* (January 21, 1995), pp. 30-35.

⁶⁴ S. Flamsteed, *loc. cit.*

⁶⁵ *Ibid.*, p. 28.

⁶⁶ J. Reston, Jr., "Collision Course," *TIME* (May 23, 1994), p. 46.

⁶⁷ S. Flamsteed, *loc. cit.*

⁶⁸ *Ibid.*

⁶⁹ *Ibid.*

miles. Like Shoemaker-Levy 9, Ida and Dactyl are believed to be fragments of a once single larger asteroid that was shattered by interacting with some other celestial body.⁷⁰ Nor does Ida seem to be alone in this respect.

Instead of orbiting around each other, the fragments of Shoemaker-Levy 9 ended up "strung out like pearls," as one reporter expressed it,⁷¹ in a linear configuration that was almost as straight as an arrow. What this means is that celestial bodies *can* be linearly lined up, one "beneath" the other. If twenty-one individual bodies (the fragments of Shoemaker-Levy 9) can do so, then so, too, can two of them (in our case, Saturn and Earth)⁷² despite the difference in size and mass.

Just as it was Jupiter's gravitational pull that was responsible for the fragmentation of the comet, so also was it that same force which "stretched" its fragments into their now-famous line-up. It may therefore be objected that Shoemaker-Levy 9's linear coupling was a *transient* phenomenon. True—but it can no longer be claimed that a linear coupling of celestial bodies is physically impossible. Shoemaker-Levy 9 taught us that.

THE TRANSITORY SYSTEM

From the very inception of his Saturnian scenario, Talbott had expressed his opinion that, long before Saturn wed Earth in axial coupling, the Saturnian deity was seen to wander in space. As he stated in 1977: "A number of sources suggest that the solitary god wandered for a time, but eventually came to rest at a stationary point, which is celebrated as the cosmic center."⁷³ Later, and elsewhere, he wrote: "In the primordial epoch the creator first appeared in the Abyss, alone, wandering without a resting place."⁷⁴ And: "For a time the creator wandered in the luminous sea but eventually came to rest at a point of stability..."⁷⁵

In this scenario, the axial coupling of the two planets would have taken place at the moment mankind saw their Saturnian deity coming to rest at his stationary celestial point. What, then, would have been Earth's relation to Saturn during this wandering period?

According to Frederick Hall, while Earth might have always been a satellite of Saturn, it originally orbited the giant planet equatorially but, like the Moon in relation to Earth, the terrestrial globe would have been phase-locked so that one hemisphere would always have faced its Saturnian primary.⁷⁶ This was identical to Lynn Rose's model and Talbott, who could not fail to note it, despite the fact that he objected to it, found reason to accept it as a temporary condition of the developing Saturnian system. As he announced:

"The simple scheme suggested by Rose may in fact add a vital ingredient to the model-building process. As noted by Fred Hall...there *is* terrestrial evidence that the Earth was once a satellite of a larger planet, rotating in phase with its revolution. And as I have, in turn, stated to Hall in private communication, there is a great deal of mythical evidence as well. Mythically, the key is the original state of the old sun god, prior to creation. The god, in his earliest remembered state, is 'inactive' or 'motionless,' not in the *axial* or *polar* sense, but apparently in the sense of doing nothing, lacking activity or animation. This is the state which, in the myths, *precedes* the god's

⁷⁰ R. Naeye, "Little Rocks Have Littler Rocks," *Discover* (January 1995), p. 32.

⁷¹ S. Flamsteed, *loc. cit.*

⁷² Actually, there were more than two but, in this work, we are only concerned with Saturn and Earth.

⁷³ D. N. Talbott (see reference #3), p. 3.

⁷⁴ *Idem*, *The Saturn Myth* (N. Y., 1980), p. 74.

⁷⁵ *Ibid.*, p. 75.

⁷⁶ F. F. Hall, "Solar System Studies," Part 2, *AEON* 1:4 (July 1988), p. 26.

wandering and eventual finding of a resting place that *is* the axial center...What Hall's preliminary scenario offers is a bridge between two apparent phases in Saturn's mythical history. Though Hall himself would be the first to emphasize the tentative character of his speculations, the very fact that they are *worth discussing*...is at least a partial vindication of Rose's efforts."⁷⁷

While the above is not in keeping with the scenario presented in this work, I do concur with Talbott in that it *is* worth discussing. More than that, it is worthy of further consideration *despite* its disagreement with the alternative concept presented in this work. At this point one nevertheless wonders why I bother to bring all this up. I do so because Hall's hypothesis led to yet another attempt in explaining how the co-axial system of Saturn and Earth could have been held together in at least a temporary stability. This has to do with Hall's elucidation of the transition from Earth's phase-locked equatorial orbit around Saturn to its later axial alignment. As Hall explained:

"Now assume this primordial, dying system enters the alien system of the Sun, eventually encountering the Sun's largest satellite Jupiter (whose spin axis tilt—or let us say, *non tilt*—marks it as a primordial companion of the Sun). As a result of this encounter, or perhaps a series of encounters, Proto-Saturn...is drawn in the direction of the Sun's equatorial plane which, we shall assume, meant a northerly direction. In effect, Proto-Saturn is pulled from the center of its native planetary system by a massive force 'above' it, while Proto-Saturn, in turn, pulls [its former satellite, Earth] in its wake...

"Under this obviously-precarious state, the usual *orbital* mechanics have suddenly become irrelevant. What, then, might happen to the Earth?...One of Saturn's powerful magnetic poles is now much closer to Earth and the other more remote. Thus, while magnetic forces are much weaker than the force of gravity [actually the opposite is true⁷⁸], we have here a classic case in which they can be invoked."⁷⁹

In short:

"Earth is exposed to forces acting as a couple, with the near Saturnian magnetic pole attracting one of Earth's magnetic poles and repelling the other. As a result, the Earth is flipped over and is locked into a *polar alignment with Saturn*."⁸⁰

Talbott's proposed temporary wandering of Saturn would then have taken place during the transition period between Earth's phase-locked equatorial orbit around its primeval primary and Saturn's eventual settling in Earth's north celestial pole due to its axial alignment with the giant. As Talbott himself explained:

"[After years of research] I concluded that the earliest remembered condition was that of phase lock. That was the best explanation for the initial MOTIONLESSNESS or INACTIVITY of Atum-Ra, prior to...the wandering of the god as he looked for a

⁷⁷ D. Talbott, "On Models and Scenarios," in *ibid.*, pp. 7-8 (emphasis as given).

⁷⁸ See here, for instance, D. Goldsmith, *Einstein's Greatest Blunder?* (London, 1995), p. 182.

⁷⁹ F. F. Hall, *op. cit.*, p. 27 (emphasis as given).

⁸⁰ *Ibid.* (emphasis as given).

resting place...But the initial inactivity seems to suggest the motionlessness you would get from a phase lock of a satellite to its primary.”⁸¹

I will not here comment on the validity, or otherwise, of Hall’s particular scenario. I merely note that, regardless of the mechanism proposed by Hall, what he described is precisely what *later* happened to Comet Shoemaker-Levy 9. And so—enter Wallace Thornhill who proposed just such an analogy.

To begin with, like Hall and Talbott, Thornhill was also of the belief that Earth originally orbited Saturn equatorially.⁸² And, like Hall, he was of the belief that this earlier system was stretched into its co-axial formation only on entering the Sun’s domain of influence. Granted, as already noted, the Shoemaker-Levy 9 event was a transient one. But, according to Thornhill, *so, too, was the axial-coupled Saturnian system*. To quote him:

“We have seen graphically how an assemblage of orbiting bodies can become strung out in a line with the recent dismemberment of Comet Shoemaker-Levy [9] by the influence of Jupiter. That model takes care of the polar Saturn configuration (which I consider to have been short lived but spectacular.)”⁸³

“The break-up of the components of [Shoemaker-Levy 9] under the influence of Jupiter may provide an object lesson for the formation of the Saturnian polar configuration, as compellingly reconstructed from ancient sources.”⁸⁴

Unlike Hall, however, Thornhill did not see Jupiter as the cause of the Saturnian System’s dismemberment. Instead, he credited our present solar primary “as Saturn’s gravitational sphere of influence shrank on approach to the Sun.” As he explained: “The polar configuration seems to have been a spectacular transitory arrangement between the break-up of the original Saturnian stellar system” and its capture “by our current Sun.”⁸⁵

And:

“It therefore seems that the spectacular Saturnian polar configuration...was created when its planetary system was disrupted by the Sun in a manner similar to that when Jupiter disrupted comet Shoemaker-Levy 9 into a ‘string of pearls.’ Such an arrangement is unstable and, therefore, transitory.”⁸⁶

“Once inside the heliosphere, proto-Saturn would have exchanged charge with the solar wind at an ever increasing rate as the charge density increased radially toward the Sun. This, I think, would explain why the linear formation was maintained on the

⁸¹ D. Talbott, in an electronic post on Kronia, November 20, 1998 (upper case as given).

⁸² W. Thornhill, “The Electric Saturnian System,” *AEON* VI:1 (February 2001), p. 36.

⁸³ *Idem*, electronic post on Kronia, May 26, 1997; see also, *idem*, “Gyroscopic Precession,” *SIS Internet Digest* 1998:1, p. 18; *Idem*, “Saturnian Biosphere,” *THOTH* (electronic newsletter), III:7 (May 14, 1999), p. 9.

⁸⁴ *Idem*, *The Electric Universe* (Beaverton, Oregon, 1997), p. 92.

⁸⁵ *Ibid.*

⁸⁶ *Idem*, “Stars in an Electric Universe,” *AEON* V:5 (January 2000), p. 49; see also, *idem*, “Friday Evening Discussion,” *Chronology & Catastrophism Review* 2000:1, p. 7; *idem*, “The Electric Saturnian System,” *AEON* VI:1 (February 2001), pp.35-36, 37-38.

long journey to the inner Solar System. It was a dynamic equilibrium maintained by proto-Saturn's linear acceleration."⁸⁷

How short-lived was this transitory system? Thornhill would not vouch for "thousands of years" but "maybe only a few centuries."⁸⁸ Accepting Talbott's postulate that "Saturn seems to have wandered in the sky before assuming a fixed polar station," he presented two possibilities for this errant motion. As he himself adduced:

"This could mean either that *the pre-existing polar configuration* was disturbed or that Saturn's [satellite was] dislodged from [its] phase locked Saturnian equatorial [orbit] by the increasing influence of the Sun...and moved into the polar configuration."⁸⁹

Faced with that choice, Thornhill then opted for "the second option" as being "more likely."⁹⁰ Four years later, however, Thornhill had reason to revise his valuation of the co-axial system's time span. As he then stated during an interview:

"When it comes to estimating the duration of the polar configuration, the best that can be done is to look at the relative velocities of nearby stars. If we take, for the sake of argument, that the relative radial velocity between proto-Saturn and the Sun averaged 10 kilometers per second, it would have taken proto-Saturn about 45 years to cover the 15 billion kilometers to the inner Solar System."⁹¹

He, however, also added that this forty-five year period was "merely an order-of-magnitude calculation. As he said: "It could have taken much longer, but I don't think it likely to have been much shorter."⁹²

Thornhill's *minimum* forty-five year period was better than Spedicato and Del Popolo's *maximum* of three months for the duration of the Saturnian co-axial system but, when other parameters are taken into account, not by much. To begin with, as Thornhill's interviewer found reason to comment:

"The one thing that bothers me in all this are those 45 years. Okay—so you say it could have been much longer. Unless I am mistaken, however, I doubt that you would be thinking in hundreds, let alone thousands, of years. And yet, Saturn's linear formation left such an indelible wound on the human psyche—leading to the birth of religion, complete with human sacrifice, the scars of which remain with us till the present—that it is difficult to believe this was the result of a short transient event. Would 45 years—at best a person's life-time—or even a hundred, account for the universal mass of mythological material we have at our disposal concerning the event in question? Would it have been enough to scar humanity for the rest of its existence on Earth?"⁹³

To which Thornhill replied:

⁸⁷ *Ibid.*, p. 38.

⁸⁸ *Idem*, "Speculations on Polar Configuration," *THOTH* (electronic newsletter), I:27 (December 10, 1997), p. 10.

⁸⁹ *Ibid* (emphasis added).

⁹⁰ *Ibid.*

⁹¹ *Idem*, "The Electric Saturnian System" see reference # 83, p. 38.

⁹² *Ibid.*, p. 39.

⁹³ *AEON* interviewer in *ibid.*



Would a protracted but transient event which unfolded over a period of 200 years have left such an indelible wound on the human psyche, leading to the birth of religion, complete with human sacrifice?

Shown above, Aztec human sacrifice to the gods.

(Illustration by John Green.)

"The best I can do at present is make an estimate made on the best guess of the extent of the heliosphere and the relative speeds of nearby objects. Meanwhile, the celestial effects as viewed from Earth would have been so dramatic that it seems to have completely overshadowed even the growing appearance of the Sun as this loomed closer. I'm not able to say how long it would have taken for the Saturnian configuration to have had the lasting influence it has had on the human psyche. I have tried to visualize the apparition in the sky, and I think it would have been psychologically overwhelming and disturbing. I imagine that all it would have taken would have been one generation of exposure to that sky for it all to become 'imprinted' on mankind."⁹⁴

To say the least, this was not a satisfactory answer. As Jueneman, in agreement with Thornhill's interviewer, noted, "the idea of a 45-year-long excursion into the inner Solar System wouldn't begin to impress mythological engrams on the psyche of the human survivors."⁹⁵ In reply, Thornhill did hedge a little. "There are too many unknowns at present," he wrote, "to pin down the duration of the polar configuration to 50 years, 100 years, or 200 years."⁹⁶ But would even 200 years have been enough for the permanent scarring of the human race?

My own main objection to such a short length of time during which the Saturnian system sustained itself in axial alignment, however, has more to do with the paleontological evidence than with the time required for such engraphic impressions. As detailed in a previous chapter of this work, this state of affairs stretched back into the remote past, possibly as far as the Cretaceous Period, definitely as far as the Paleocene Epoch of the Tertiary Period. And even if one were to grant a reduction in time of these geological ages, there is no way in which they could be reduced to a mere 200 years. Even Thornhill would balk at that.

There is, however, one possible way in which Thornhill's scenario could be made to accommodate the palaeontological data, and so I present the last tentative scenario before driving home. I do so not to play the role of devil's advocate, but in an endeavor to leave no possible solution unaccounted for.

An original Saturnian system with Earth in a phase-locked equatorial orbit around it ala Hall and Thornhill's hypothesis would satisfy the message of the mytho-historical record as well as the palaeontological data *if* the present terrestrial north polar region would have faced Saturn. Under this condition, Saturn would still have appeared stationary in Earth's north celestial pole providing Earth with the required north polar temperature demanded by the southward radiation of fauna and flora from the Arctic region. Earth's original axis of rotation would thus have passed through points in the present equatorial latitude.

At this point, one might even ask: Why not *adopt* this system—which is basically Rose's model with some modifications—and leave it at that? Would this not be more believable than having Saturn and Earth sharing the same axis of rotation?

The problem with this is that, in a change from a phase-locked system in equatorial orbit to a later co-axial formation, Earth would have had to undergo a series of drastic changes. Its gravitational lock would have had to be broken only to be re-installed in an entirely different mode; its orbital speed would have had to come to a halt; its axis of rotation would have had to shift by 90°; and its rotational speed would have had to increase. To all this must be added the acquisition of an equatorial bulge due to the increase in Earth's rotational speed. Each

⁹⁴ W. Thornhill, in *ibid.*, p. 40.

⁹⁵ F. B. Jueneman, "Further Comments on the Saturnian Configuration Theory," *AEON* VI:2 (December 2001), p. 13.

⁹⁶ W. Thornhill, in answer to F. B. Jueneman, *ibid.*, p. 15.

one of these changes on its own would have entailed catastrophic destruction on Earth regardless of the speed with which they would have occurred. Acting in concert, abrupt or otherwise, these changes would have resulted in an even more colossal upheaval the gravity of which would boggle the mind. They even belittle Ashton's previously mentioned gargantuan cataclysms, making it doubtful that life would have survived on Earth. It is not that catastrophic signs are absent from Earth's geological strata somewhere near the Age of Saturn but, regardless of their extension, these nowhere show signs of the dimensions demanded by the *totality* of the above mentioned terrestrial changes.

And then, when all is said and done, why bother with this proposed change from one type of system to another when, as seen from Earth, nothing would have appeared to change in the celestial sphere? After all, as seen from Earth, Saturn would have ended up motionless in the north celestial sphere just as it would have been prior to the change from the earlier system to the later one.

Besides, what *is* there in the mytho-historical record that can be interpreted in favor of such a change? As we have seen, Talbott is of the opinion that "the earliest remembered condition was that of phase lock."

What *led* him to this?

As we have also indicated, still according to Talbott, a phase-locked Saturnian system is "the best explanation for the initial MOTIONLESSNESS or INACTIVITY of Atum-Ra" and that this initial inactivity "seems to suggest the motionlessness you would get from a phase lock of a satellite to its primary." But, unless I have badly missed something, there is nothing in the mytho-historical record that differentiates between an earlier type of Saturnian inactivity or "motionlessness" and a later but different sort of "motionlessness" or inactivity. All that the record proclaims is that Saturn and/or its anthropomorphic deity was motionless and/or inactive in Earth's north celestial pole. No change is indicated.

In his own objections to Talbott's postulate concerning the placement of Jupiter behind Saturn, Thornhill had declared that: "The principle of parsimony of hypotheses suggests that we don't introduce another massive body into the system if there are no reports of it during the transition of the proto-Saturn system from a primordial configuration into a polar configuration."⁹⁷ Would it not, then, be just as parsimonious in not introducing a different Saturnian system since no indications of it can be inferred from the human record? Would not this be in harmony with the scientific principle of Occam's razor which specifies that entities and events must not be needlessly multiplied?

What, then, of Talbott's insistence concerning the previous wandering of Saturn prior to its eventual stationary establishment in Earth's north celestial sphere? As Talbott himself well knows, this constituted a postulate which I had for long contested. In the end, however, due to continuing research, I finally ended up accepting it. Not only had I been looking in the wrong place, due to some sort of blind spot I had even misconstrued some of the clearest messages. As it turned out, and as it had been apparent to Talbott from the start, the message of the human record, in this case, turns out to be unequivocal. What, then, to make of this event?

Actually, Thornhill had already supplied the answer himself—but he disregarded it. As already noted, when faced with the postulate of Saturn's early wandering, he presented two possible scenarios to account for it. "This could mean either that *the pre-existing polar configuration was disturbed*,"⁹⁸ he wrote, "or that Saturn's [satellite was] dislodged from [its] phase locked Saturnian equatorial [orbit] by the increasing influence of the Sun...and moved into the polar configuration." While he opted for the second proposition as being the "more

⁹⁷ W. Thornhill, "The Electric Saturnian System," *AEON* VI:1 (February 2001), p. 35.

⁹⁸ Emphasis added.

likely," it is the *first* proposal that best fits the scheme. It was a "pre-existing polar configuration" that was disturbed "by the increasing influence of the Sun."

What seems to have transpired is that Earth's axis was temporarily and slightly dislodged as the Sun attempted to separate it from Saturn. The Saturnian system's entry into the Sun's domain, however, was a prolonged development that unfolded in a series of awe-inspiring events. For a while of relative short duration, Earth teetered slightly off balance, and it was during this precarious episode that Saturn was seen to slowly circle around its former stationary spot. The god wandered for a time. But Saturn was soon to reassert its hold upon its satellite and the deity returned to his former motionless locale. There is, of course, much that went on *before* this temporary interlude, and even more that *followed* it—but the detailed account of all that, complete with the relative evidence, will have to wait for the proposed sequel to this work.

Through all this we have not been able to lay down our dragon's ugly head—because, if the mechanics behind the break-up of comet Shoemaker-Levy 9 are not the ones we seek in explaining the manner in which the Saturnian system could have maintained its axial coupling, we are simply back to where we had started at the beginning of this chapter. What Shoemaker-Levy 9 taught us is that linear formations can exist, *but only for a short period*. That is not what we seek. What is required is a means to keep such a formation linearly aligned for a much longer period—longer than 3 months, longer than 45 years, 100 years, or 200 years. We need to discover a means to keep Saturn and Earth axially coupled for thousands of years, *if not even longer*.

What, then, is the answer?

COSMIC JETS

The subject of the Saturnian co-axial system was discussed during the private round-table session held for the speakers at the 2000 KRONIA Communications world conference in Portland, Oregon. At that time, the astrophysicist Halton Arp declared that linear formations are not uncommon in the cosmos—to which he added the caveat that such formations are only possible if given a long time to form. While this declaration should have raised eye brows, it raised but little.

When, a month later, I asked Arp what linear formations he had in mind,⁹⁹ he referred me to the "condensations" which had been discovered being ejected by galaxies.¹⁰⁰ These condensations, as Arp called them, are now known to be "violent jets of plasma that erupt from the cores of some galaxies"¹⁰¹ in *poleward* directions. In other words, the jets in question are shot out along the axis of the galaxy's rotation. How are these jets formed?

Once deemed anathema to astronomy, electric currents are now known to exist throughout the Solar System. As James Peebles declared:

"No one today denies the importance of magnetic fields and currents in the solar system *and in its formation*. This is now *completely* accepted."¹⁰²

More than that, as noted earlier in this work, 99% of the universe is now known to consist of plasma, an ionized gas that can conduct electricity.¹⁰³ This led the plasma physicist and Nobel laureate Hannes Alfvén to ask: "why shouldn't plasma still behave the same way for

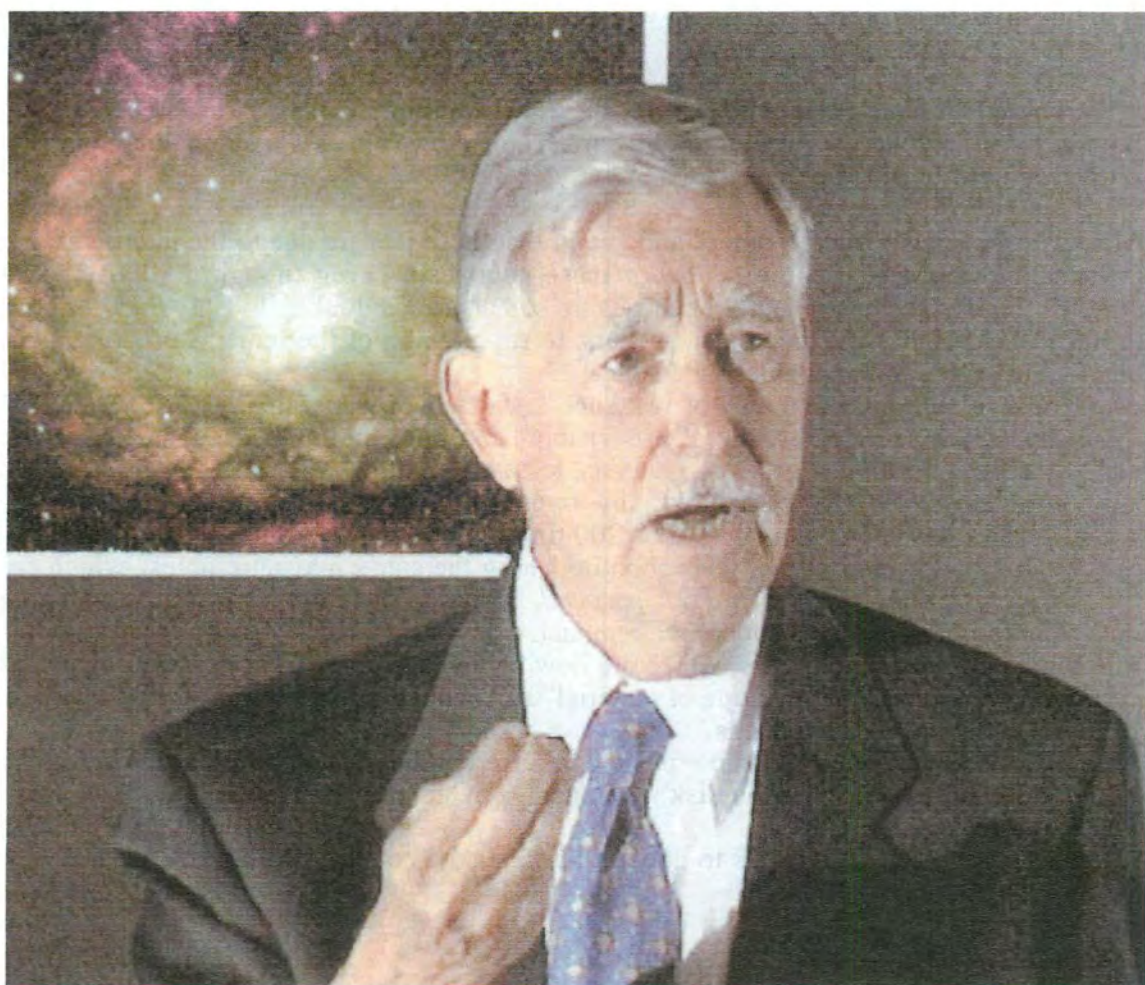
⁹⁹ D. Cardona to H. Arp, October 16, 2000 (private communiqué).

¹⁰⁰ H. Arp to D. Cardona, October 27, 2000 (private communiqué).

¹⁰¹ E. J. Lerner, "The Big Bang Never Happened," *Discover* (June 1988), p. 75.

¹⁰² *Ibid.*, p. 74 (emphasis added).

¹⁰³ *Ibid.*, p. 72.



Halton Arp
(Photograph—2000—by Wallace Thornhill.)

the *entire* observable universe...?"¹⁰⁴

As Eric Lerner explains:

"In Alfvén's theory, a galaxy spinning in the magnetic field of space acts as a huge generator, inducing electric currents in the interstellar plasma. The currents flow in great filamentary spirals toward the center of the galaxy, where they turn and flow upwards *along the spin axis*."¹⁰⁵

It is this model, according to Alfvén, which accounts for the violent jets that are observed erupting from the centre of galaxies.

"Every now and then [says Alfvén], the electric current in a galaxy short-circuits and dumps a vast amount of energy into the core. The galaxy 'blows a fuse,' and the blast propels a jet of plasma up the spin axis."¹⁰⁶

Most astrophysicists, on the other hand, claim that these jets are due to the intense gravity of a black hole harboring at the centre of these galaxies,¹⁰⁷ even though the existence of black holes themselves has recently been raising some serious doubts.¹⁰⁸ But when it comes to similar jets expelled by a breed of new stars, to say nothing of the remains of supernovae, the black hole explanation becomes untenable.

The Crab Nebula is the remains of just such a star which went supernova in 1054 A.D. The explosion blazed so brightly that it was visible from Earth in broad daylight. Plasma jets similar to the ones seen ejecting from galaxies, to say nothing of a ring of hot plasma, have recently been revealed by X-ray photography around the "inner workings" of the Crab. The plasma ring itself has been calculated to be 200 times wider than the Solar System. This ring is believed to be "powered by particles shooting along the star's magnetic poles" which create the twin jets that are seen "firing out *perpendicularly* to the ring."¹⁰⁹ An identical situation has been found in the Vela supernova remnant.¹¹⁰

The same is true of young stars, which are now believed to form from gas and dust which "clump" at the centre of "an envelope of material" surrounded by "a swirling disk." Magnetic forces then "direct jets along the axis."

Actually, even our own Sun is now posited to have exhibited such bi-polar outflows,¹¹¹ to say nothing of a so-called accretion disk, a remnant of which remains to this day as a circumsolar ring of asteroidal dust.¹¹²

But what have these cosmic jets to do with Earth's axial coupling with proto-Saturn?

¹⁰⁴ *Ibid.*, pp. 74-75 (emphasis added).

¹⁰⁵ *Ibid.*, p. 75 (emphasis added).

¹⁰⁶ *Ibid.*

¹⁰⁷ *Ibid.*; see also R. Jayawardhana, "Beyond Black," *Astronomy* (June 2002), p. 33; R. Kunzig, "Black Holes Spin?" *Discover* (July 2002), p. 38 (emphasis in title as given).

¹⁰⁸ R. Jayawardhana, *op. cit.*, pp. 29 ff.

¹⁰⁹ K. A. Svitol, "Cracking the Crab," *Discover* (February 2000), p. 12 (emphasis added).

¹¹⁰ Anonymous, "Do All Pulsars Fly Pole-First?" *Sky & Telescope* (September 2000), p. 20.

¹¹¹ A. M. MacRobert & J. K. Beatty, "Fountains of Chondrules From the Sun's Cloudy Birth," *Sky & Telescope* (October 2001), p. 18.

¹¹² S. F. Dermott, *et al.*, "A Circumsolar Ring of Asteroidal Dust in Resonant Lock With Earth," *Nature* 369 (1994), pp. 719-723.

HERBIG-HARO OBJECTS

At the same round-table conference during which Arp had pointed out that linear features are not uncommon in space, I had passed around the photograph and graphic reconstruction of just such a new star ejecting jets of plasma from both its poles. At least visually, the item in question bore such an uncanny similarity to my proposed model of the proto-Saturnian brown dwarf star that I believed it important enough to share with the other attendees. Unfortunately, all those present who were interested in the co-axial Saturnian system brushed it aside as irrelevant. Worse still, Arp himself declared the item a mistaken interpretation.

It was only during my following correspondence with Arp that I realized he had mistaken my new star for something entirely different. What I had passed around for consideration was a picture of the star designated as HD 163296. What Arp mistook it for was the controversial runaway planet—if that is what it is—that had been discovered streaming away from the double star system known as TMR-1 by Susan Terebey.

Once this confusion was straightened out, Arp reminded me that he himself had included two photographs of a star emitting jets in his 1998 iconoclastic work on redshifts.¹¹³ Both photographs show the linear polar jet expelled by “a young stellar object.” What is of more importance, however, is that, very much like the jets from HD 163296, a number of globular clusters, sometimes referred to as “knots,” *which are astronomical bodies in their own right*, are imbedded in the star’s jet. These jet formations are known as Herbig-Haro objects—thus designated HH—named after their discoverers, George Herbig and Guillermo Haro. The one shown on the two photographs in Arp’s book is HH 34 which



HH 34 showing the “knots” lined up along its jet.
(Photograph courtesy of the European Southern Observatory)

¹¹³ H. Arp, *Seeing Red* (Montreal, 1998), last two photographs following p. 306.

also featured in a more recent article by Thomas Greene.¹¹⁴

The photograph and graphic reconstruction of HD 163296 that I had initially offered for consideration included three of these globular clusters—labeled HH 409-A, B, and C—imbedded in the star's bipolar plasma jets. (The jet itself is labeled HH 409.) HH 34 has at least five of these globular clusters all lined up in a row along the star's polar jet. The tell-tale "accretion disk" is also shown encircling HD 163296.

Here, then, was incontestable evidence—nay, proof—that axially aligned linear formations were not only possible, but actually existed in space. They line up along plasma jets ejected poleward, sharing the same axis of rotation as their parent star, exactly as has been posited for Earth and Saturn in this study. Nor can it be said that these configurations are in any way transitory, as in the case of Comet Shoemaker-Levy 9, since they are believed to exist for millions of years—and thus Arp's caveat re the "very long time" needed for their formation. Moreover, rather than being uniquely rare cases, Herbig-Haro objects occur in profusion. As of 1994, as many as 250 of such objects had been discovered,¹¹⁵ and more keep being added to the list.

Now if these stars can line up as much as five bodies in co-axial alignment, what is so impossible about proto-Saturn having had one such body, that is Earth, similarly aligned? Moreover, as those who are already familiar with the Saturn thesis know, and as I intend to show in future sequels, Proto-Saturn eventually ended up having at least three planetary bodies co-axially aligned. Thus, whatever keeps the bodies in Herbig-Haro jets axially aligned would also have kept Saturn and Earth (to say nothing of later planets) in similar alignment.

What I *must* stress here is that all this is not to say that the Saturnian system *was* a Herbig-Haro object, the immense masses and distances of which alone would preclude such an identity. What *is* being hypothesized is that the Saturnian system can be visualized to have been a *scaled down version* of such an "object," concerning which more will be revealed in our final chapter.

At this crucial point, however, the following question presents itself: Did proto-Saturn display jets?

¹¹⁴ T. P. Greene, "Protostars," *American Scientist* (July/August 2001), p. 319.

¹¹⁵ B. Reipurth, *A General Catalogue of Herbig-Haro Objects*, "Electronic Version 1994-1.

Chapter 21

The Axis Mundi

THE RUACH

Right at the very beginning of the Book of *Genesis* it is stated that, when *eret* (translated as "earth") was still in the age of darkness, before the commencement of Creation, "the spirit of Elohim moved upon the face of the waters."¹ As we have seen, the deity named Elohim is to be understood as a personification of the planet Saturn. We have also seen that the waters referred to were celestial in nature and that these can perhaps be best understood as a circumstellar cloud surrounding the proto-planet in question. What, then, could it mean that the spirit of Saturn moved over the face of these waters?

The Hebrew word translated as "spirit" is *ruach*, a word which has the additional meaning of "wind." We find the same situation in Arabic, as also in Maltese, where the words for "spirit," or "soul," and "wind" share the same linguistic root: *rûh* for "soul" and/or "spirit," *rih* for "wind." And, in fact, the Hebrew Talmud does not "conceive" of *ruach* as God's spirit, but as God's wind.² True, Louis Ginzberg warns that this was "certainly" due "to an anti-Christian tendency, since the Christians identified God's spirit with the Holy Ghost"³ with which the Jews do not comply. Perhaps. There is no denying, however, that *ruach* is the usual word used for "wind" in the entire Old Testament, including *Genesis*. It therefore seems more probable that the reason *ruach* was translated as "spirit" in the second verse of this particular Book stems from the fact that the "spirit" of Elohim (usually translated as "God") seemed to make better sense than "wind" to those who had lost the original meaning behind the verse. James Strong additionally tells us that *ruach* can also be interpreted as "whirlwind,"⁴ a datum we shall not lose track of.

We find the same idea expressed in the Gnostic words of the Sethians according to Hippolytus: "Now from the water there has come, as a first derivative principle, a fierce and violent wind which is the cause of all generation."⁵

Out of Indic lore comes an echo of the same phenomenon. As related in the *Hymn of Narayana*, this being, elsewhere considered "The Primal Lord," had "sat above" in "eternal solitary shade," in "impenetrable gloom," before "things unexisting to existence sprung." We thus recognize Narayana as a manifestation of the primeval Saturnian god. It is then said that a "primordial wind" breathed gently over the "vast expanse."⁶

Similarly, a Buddhist myth relates how the surface of the cosmic waters was "stirred by the dawn wind of creation."⁷

¹ Genesis 1:2.

² L. Ginzberg, *The Legends of the Jews*, Vol. V (Philadelphia, 1968), pp. 7, 74.

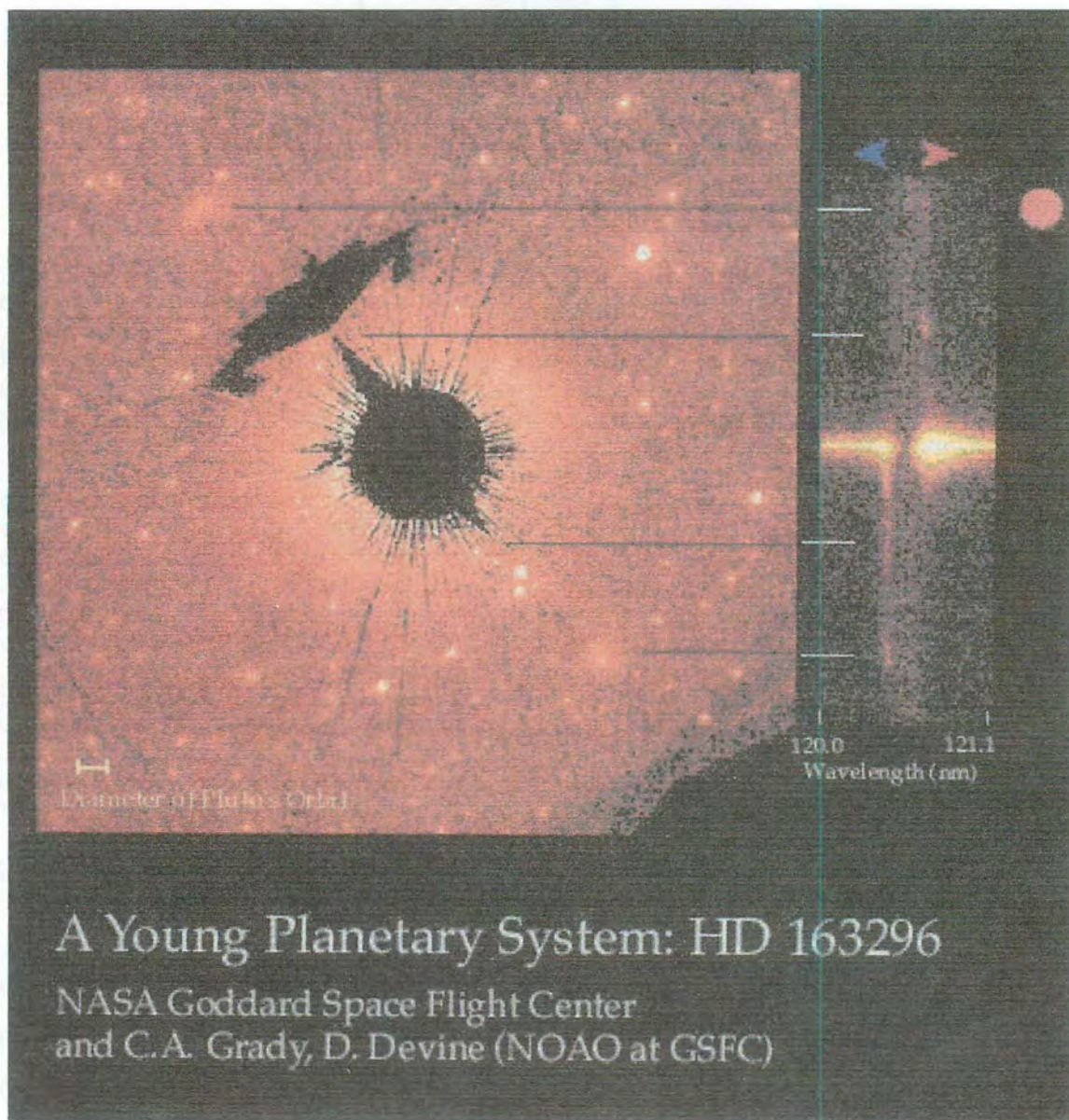
³ *Ibid.*

⁴ J. Strong, *Hebrew and Chaldee Dictionary* (Madison, New Jersey, 1890), p. 107.

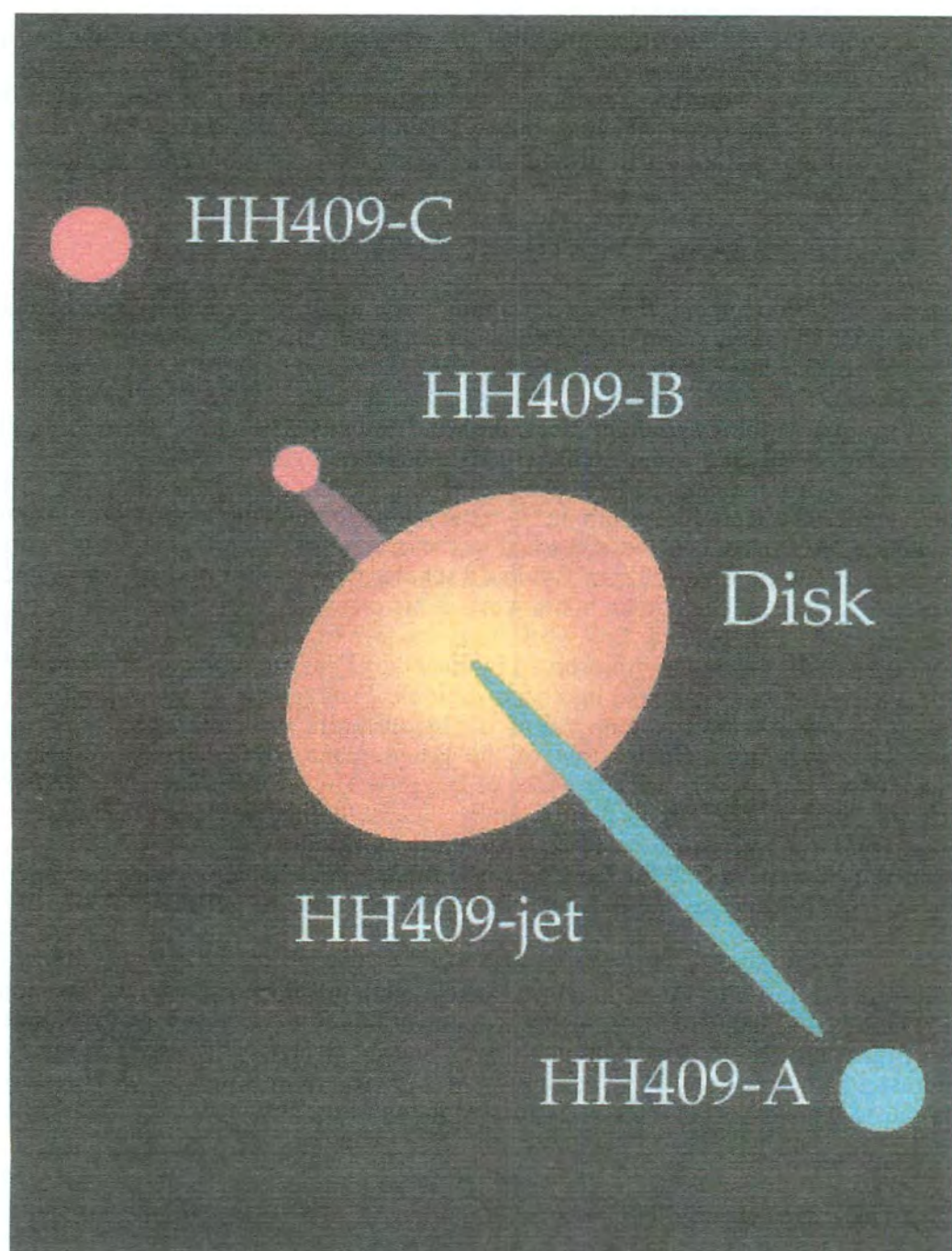
⁵ W. Barnstone, *The Other Bible* (San Francisco, 1984), p. 655.

⁶ R. Van Over, *Sun Songs: Creation Myths From Around the World* (N. Y., 1980), pp. 319-320.

⁷ A. K. Coomaraswamy, *Elements of Buddhist Iconography* (New Delhi, 1972), p. 52.



HD 163296
(Photographs courtesy of NAASA.)



Diagrammatic representation of the HH objects associated with HD 163296
(Courtesy of NASA.)

So, likewise, among the Jicarilla Apache. "In the beginning, nothing was here," they claim, "nothing but Darkness, Water, and Cyclone"⁸—the same three elements we have met in the Creation myths of other races.

Even out amid the vast Pacific we find that the whirlwind was one of the first items created by the Tahitian "Sky-producer," Ra'i-tupua.⁹

We thus notice that, with the exception of the Tahitian tradition, this wind and/or whirlwind was not said to have been created, but was believed to have always been there. But what was this whirlwind, this spirit, or soul, that seems to be so intimately connected with traditions of Creation?

SANCHONIATHON'S COSMOGONY

We turn next to Phoenician, that is Canaanite, mythology. According to Sanchoniathon: "The beginning of all things was a dark and condensed windy air, or a breeze of thick air, and a chaos, turbid and black as Erebus; and these were unbounded, and for a long series of ages destitute of form."¹⁰

Thus, as in the mythology of other races, the wind and chaos, the latter of which we have already identified as Saturn's circumstellar cloud, had always existed.

Sanchoniathon, a Phoenician priest, lived sometime in the 6th or 7th century B. C. He is said to have copied the sacred inscriptions from the pillars in the temple of Melkart, some say of Ba'al Hamon, at Tyre, when these crashed to the ground in an earthquake. His work has not survived in its entirety, but Philo of Byblos, a scholar who was himself a Phoenician, preserved various excerpts of Sanchoniathon's work in his own *Phoinikika* sometime during the last century B.C. As it happened, this work, too, was eventually lost but, once again, fragments from it were discovered and preserved by Eusebius Pamphili, a bishop of Caesarea, Palestine, in A.D. 314, and incorporated into his own work, *Evangelicae Praeparationis*.

As others before me have stated, and as is obvious from the work itself, in part, Sanchoniathon's cosmogony resembles that of the Babylonians while heavily influenced by Greek and Jewish sources,¹¹ if not also those of Egypt.¹² Thus, for instance, when he claims that chaos was as "black as Erebus," he literally means "darkness," Erebus being the dark Greek Limbo said to have been situated between Earth and Hades.

It might not have been fair for George Cook to state that Sanchoniathon's cosmogony cannot be taken seriously "as an account of genuine Phoenician beliefs."¹³ As he himself stated:

"At the same time Philo [and, therefore, Sanchoniathon] did not invent all the nonsense which he has handed down; he drew upon various sources, Greek and Egyptian, some of them ultimately of Babylonian origin, and incidentally, he mentions matters of interest which, when tested by other evidence, are fairly well supported. He shows at any rate that some sort of a theology existed in his day..."¹⁴

⁸ J. Bierhorst, *The Red Swan: Myths and Tales of the American Indians* (N. Y., 1976), p. 52.

⁹ T. Henry, *Ancient Tahiti* (Honolulu, 1928), p. 415.

¹⁰ R. Van Over, *op. cit.*, p. 187.

¹¹ *Ibid.*

¹² G. A. Cook, "Phoenicia," *Encyclopaedia Britannica* (1959 edition), Vol. 17, p. 769.

¹³ *Ibid.* (emphasis added).

¹⁴ *Ibid.* (emphasis added).

What seems to have transpired is that, very much like the Greek Hesiod, who had lived a century before him, to say nothing of other ancient writers, Sanchoniathon collated material from different sources which he then compiled into a single running narrative through the literary device of genealogical descent. Not wishing to leave any of his data unaccounted for, he seems to have gathered disparate myths which recounted the *same* events and presented them as *different* occurrences in a chronological succession.

As Sanchoniathon continues:

"But when this wind became enamored of its own first principles (the chaos), an intimate union took place, that connection was called Pothos; and it was the beginning of the creation of all things. And it (the chaos) knew not its own production; but from its embrace with the wind was generated Mot, which some call Ilus, but others, the putrefaction of a watery mixture."¹⁵

As I have attempted to show in a previous chapter, this *mot* was considered by some as slime and, by others, as a rotting of aquatic composition.¹⁶ As there noted, modern scholars have supported the interpretation of this word as "water."¹⁷ But since this celestial water was obviously the same, or of the same nature, as the chaos which surrounded proto-Saturn as a circumstellar cloud, it also becomes obvious that this is one of those occasions in which Sanchoniathon fused two variant readings of the same event into a sequential one. (There are others, but these do not concern us here.)

As shown above, Sanchoniathon also claimed that some called Mot by the name Ilus. To us, this has interest since, elsewhere, he himself informs us that Ilus was merely the Phoenician form of the Greek Cronus¹⁸ (or Kronos), the same as El. Knowing full well by now whom Kronos and El represented, we again come face to face with the association of these early events with the planet Saturn.

BOREAS

We again find this wind associated with a Saturnian deity, in this case Atum, in Egyptian mythology. More than that, this wind is there described as having been a north wind, said to have come *from* Atum.¹⁹ So, likewise, with Ra (or Re), who is beseeched to "inhale the north wind."²⁰ In the *Pyramid Texts*, this north wind is said to "lift up" the deceased king in his assimilation to the god.²¹ A "lifting up," in turn, connotes a support, another datum we shall not lose track of.

We meet this same north wind in the mythology of ancient Greece where the entity in question was anthropomorphosed as Aquilo, more popularly known as Boreas. Although Greek mythology encompasses four anthropomorphosed wind entities—Boreas, Zephyros, Notus, and Eurus—it is Boreas that holds the centre stage. It is, in fact, from this Greek name, through Latin *borealis*, that the English adjective "boreal" is derived.

¹⁵ R. Van Over, *loc. cit.*

¹⁶ L. Delaporte, "Phoenician Mythology," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 82.

¹⁷ W. W. Baudissin, *Studien zur Semitischen Religionsgeschichte* (Leipzig, 1876), pp. 1, 11 ff., 195; G. Maspero, *The Struggle of the Nations* (London, 1896), p. 168.

¹⁸ R. Van Over, *op. cit.*, p. 189.

¹⁹ E. A. W. Budge, *The Egyptian Book of the Dead* (London, 1901), pp. 503, 625, where "Atum" is rendered "Tem."

²⁰ *Ibid.*, p. 401.

²¹ *Pyramid Texts*, spells 277 & 1551.



Late depiction of the Greek Boreas.
(From a relief found at Athens.)

The Greeks portrayed their winds as winged individuals, similar to the later Christian depictions of angels, which is appropriate enough as symbolic of winds. Originally, however, Boreas seems to have been envisaged as a being with serpent tails for feet.²²

It is interesting to note that, in the late third century A.D., Lactantius used Boreas as an analogy of the *Sanctus Spiritus* which impregnated the virgin mother of Jesus.²³ As in the case of the Hebrew *ruach*, this obviously stems from the much more ancient identity of the wind as the spirit of Elohim (to say nothing of the entity's fructifying power, which will be explored in a future volume). In fact, as Donald Mackenzie indicated: "Wind' and 'breath' and 'spirit' were believed by many primitive peoples to be identical."²⁴

But, in the main, we note this fact: As a wind associated with Saturn, it is not surprising to find this entity linked to the north since that is where ancient tradition places both the Saturnian planet and its allied deities. We would, on the contrary, have been surprised had this not been reported to have been so. Thus even in much later times, the Hindus were still associating the wind with Dhruva,²⁵ that is the North Star which, as we noted in an earlier chapter, had originally been one of the Sanskrit names for the planet Saturn.

²² R. Graves, *The Greek Myths*, Vol. 1 (Harmondsworth, 1964), p. 171.

²³ *Ibid.*, p. 172.

²⁴ D. A. Mackenzie, *Egyptian Myth and Legend* (N. Y., 1907/1978), p. 188.

²⁵ *Linga Purana* 154:68.



Ehecatl.
(From the Codex Borgia.)

EHECATL

The Saturnian wind is also encountered in the Americas where the postulate cannot be traced to the Near East or Old World cultures, thus indicating the universality of the belief. We find there that Quetzalcoatl, already identified as a personification of Saturn in previous pages of this tome, was *inter alia* referred to by the Aztecs as *Yahualli Ehecatl*, which is Nahuatl for "Wheel of the Winds."²⁶ According to Daniel Brinton, the unprefixated *ehecatl* is also translatable as "soul," "breath," and "wind,"²⁷ the same situation which, beginning with *Genesis*, we encountered in the nomenclature of other races. Additionally, this coincides with Ehecatl's identity as the *breath* of the creator[s],²⁸ just as the north wind was believed to have been the breath of Atum/Saturn. According to Aztec belief, it was through the breathing of Ehecatl that the celestial waters were separated from the terrestrial ones.²⁹ This is an echo of the separation of the waters above from the waters below by Elohim/Saturn that we find related in the early verses of *Genesis*,³⁰ concerning which we will have more to say in the proposed sequel to this work.

In its turn, this myth forces the assumption that this cosmic wind had to have stretched between heaven and Earth, *below* the celestial waters we have tentatively identified as proto-

²⁶ N. Baldwin, *Legends of the Plumed Serpent: Biography of a Mexican God* (N. Y., 1998), p. 75.

²⁷ D. G. Brinton, *The Myths of the New World* (N. Y., 1968), p. 273.

²⁸ N. Baldwin, *op. cit.*, p. 76.

²⁹ *Ibid.*

³⁰ *Genesis* 1:6-8.



El Caracol.

Saturn's circumstellar cloud. As in the case of Boreas and his Egyptian counterpart, this would again testify that the source of Ehecatl lay in Earth's north celestial pole.

At Chichen Itza, in Mexico, there is a circular pre-Columbian building which the American explorer John Lloyd Stephens named El Caracol—"The Snail." This edifice contains an interior spiral staircase which leads to a round observatory oriented to the four cardinal points of the compass. As Neil Baldwin explains:

"The Snail building is an important signpost on our Plumed Serpent trail for several reasons. The round shape of the building links it to the chain of structures throughout Mesoamerica consecrated to *Ehecatl*, the Wind God, one of Plumed Serpent's personalities."³¹

El Caracol was aptly named since its interior winding staircase is reminiscent of the coiling shell of the snail. We find this same spiral coiling in the outer ramparts of the strangely shaped structure at Calixtlahuaca, which was also dedicated to Ehecatl. Among the Maya, this god was known as Kukulcan, one aspect of whom was also that of wind god.³² It is thus fitting that, in a curious Maya vase, Kukulcan is symbolically shown emerging from a snail.³³ It was, however, the conch shell, rather than the snail, which was intimately associated with Ehecatl. As Tom Lowenstein has it:

"...in his guise as Ehecatl, the Plumed Serpent [that is, Quetzalcoatl] wore a conch shell, his symbolic 'jewel of the wind.' In imitation of their deity himself, priests of

³¹ N. Baldwin, *op. cit.*, p. 66.

³² I. Notholson, *Mexican and Central American Mythology* (London, 1967), p. 128.

³³ *Ibid.*

the Quetzalcoatl cult wore conch shells cut in cross section showing a concentric, whorled pattern that represented the movement of the wind. Many of the temples dedicated to Quetzalcoatl were also circular, signifying the eddying of the wind."³⁴

The spiral on the shell of a snail, as well as the interior construction of the conch, both symbolic of Ehecatl as the god of wind,³⁵ are more significant of a whirlwind than an ordinary breeze. This is so much so that, among the punishments which Quetzalcoatl was believed to inflict on the human race were tornadoes and water spouts.³⁶ Tornadoes and water spouts exhibit a verticality stretching between heaven and Earth, much in the manner exemplified by the various wind entities we have been examining. Thus, for instance, in the *Vienna Codex*, Quetzalcoatl-Ehecatl is depicted with arms raised to support the sky.³⁷

SHU

The above cannot but remind us of the Egyptian god Shu, who was said to have flowed from Ra,³⁸ but by others as having been self-created.³⁹ He was, in effect, the very breath of Ra.⁴⁰ Like Ehecatl, Shu was described, and profusely depicted, as holding up the "sky."⁴¹ Additionally, like Boreas, he was also considered to have been the personification of the north wind.⁴² Rather than separating the celestial waters from the terrestrial ones, as in the case of Ehecatl and Elohim, Shu was said to have separated heaven from Earth.⁴³

The very name Shu has been interpreted as "the uplifter."⁴⁴ As the uplifter of heaven, he becomes its support. As Budge informs us, Shu was also considered "a god of light, or light personified."⁴⁵ But light in this instance was also "declared to be the prop of the sky."⁴⁶

Actually, the character of Shu is much more complex than that and, to be sure, he has been presented here somewhat out of chronological order. We will have much more to say concerning this being in following volumes. I have merely included him here as a link in the chain of evidence concerning the nature of the primeval north wind in order to show the near-universality of this motif.

The most popular heaven-sustaining strong-man in the western world, needless to say, is the well-known Greek Atlas. But, because I do not wish to step outside, or beyond, the chronological sequence I have been attempting to follow, his treatment, too, must be postponed to a future work.

In the meantime, what all the above seems to imply is that this primordial wind was visible as an illuminated support of the sky within which the Saturnian orb resided. The only type of whirlwind that could be seen to support the sky would have to have been in the form of a tornado or water spout, already encountered as one of the punishments inflicted by Quetzalcoatl.

³⁴ T. Lowenstein, "Raising the Sky," *Gods of Sun and Sacrifice* (Amsterdam, 1997), p. 75.

³⁵ N. Baldwin, *op. cit.*, p. 69.

³⁶ T. Lowenstein, *loc. cit.*

³⁷ *Ibid.*, p. 74.

³⁸ E. A. W. Budge, *The Gods of the Egyptians*, Vol. II (N. Y., 1904/1969), p. 88.

³⁹ D. A. Mackenzie, *op. cit.*, p. 189.

⁴⁰ E. A. W. Budge, *op. cit.*, p. 92.

⁴¹ *Ibid.*, p. 89.

⁴² *Ibid.*, p. 91.

⁴³ D. A. Mackenzie, *op. cit.*, p. xl.

⁴⁴ *Ibid.*, pp. xl, 188, 308.

⁴⁵ E. A. W. Budge, *op. cit.*, p. 90.

⁴⁶ *Ibid.*



Shu, uplifting the sky who is represented by the arched body of the goddess Nut

But if, as argued in this work, proto-Saturn hung immobile in Earth's north celestial pole, any tornado-like entity associated with it would also had to have been stationary. A fixed vortex of planetary proportions stretched between the immobile proto-Saturnian orb and Earth's northern regions boggles the imagination. And yet, as we shall continue to discover, this seems to be precisely what our ancient forefathers were attempting to describe.

HURAKAN

In Guatemala we meet with the divinity named Hurakan, a deity who was also known in the West Indies. Additionally called Heart of Heaven, he shares this epithet with the Egyptian Atum/Saturn who was also referred to as the Firm Heart of the Sky.⁴⁷ The Chinese Tao, whom we earlier identified as the Saturnian circumstellar or placental cloud, was likewise alluded to as the heart of heaven.⁴⁸ It is therefore noteworthy to find Hurakan pictured in Late Classic times in the middle of stylized swirls of smoke or clouds, which are here interpreted as proto-Saturn's placental cloud. Thus, like the Saturnian deity of other nations, Hurakan is described as having hovered over the cosmic waters.⁴⁹ Venerated as the Lord of Creation, bringing forth the first dawn,⁵⁰ he, too, is said to have presided over the whirlwind.⁵¹ It is, in fact, from the name of Hurakan that the English word "hurricane" is derived.⁵²

⁴⁷ D. Talbott, *Symbols of an Alien Sky*, (Beaverton, Oregon, 1997), p. 34.

⁴⁸ *Ibid.*, p. 40.

⁴⁹ The supposed assimilation of Hurakan with Tohil, as also with the deity known as God K, GII, will be covered in a future volume. So, likewise, with the supposed derivation from Hurakan of the Aztec Tezcatlipoca.

⁵⁰ D. Goetz & S. G. Morley, *Popul Vuh* (Norman, 1950), pp. 81-84.

⁵¹ M. Fauconnet, "Mythology of the Two Americas," *New Larousse Encyclopedia of Mythology* (London, 1972), p. 439.

⁵² G. de Santillana & H. von Dechend, *Hamlet's Mill: An Essay on Myth and the Frame of Time* (Boston, 1969), p. 126.

David Leeming presented Hurakan as an aspect of the Feathered Serpent,⁵³ that is our old friend Quetzalcoatl. In the *Popul Vuh*, however, Hurakan and Feathered Serpent, there called Gucumatz, are presented as partners in Creation. Thus, while we view Gucumatz/Quetzalcoatl as the embodiment of the Saturnian deity, it is obvious that Hurakan, while closely associated with proto-Saturn, was visualized as a separate entity.

In a recent work, M. Preuss had half a mind to identify Hurakan, which name she rendered by the Spanish spelling "Jurakan," with the constellation of Ursa Minor.⁵⁴ This is interesting because Ursa Minor, the Little Bear, is the very northern constellation which contains the Pole Star, thus situating Hurakan in the very locality where the myths of other nations place the primeval north wind. Additionally, however, Preuss was astute enough to note the connection between this deity and the *axis mundi*,⁵⁵ the term used by mythologists to denote the boreal column said to have stretched between Earth and sky.

Of additional importance is the fact that the name Hurakan translates as "One Leg"⁵⁶—which brings us to the next motif in our unfolding scenario.

THE ONE-LEGGED GOD

Among the ancient Egyptians, Osiris was said to have shone "above the Leg of heaven." What this indicates is that this "Leg" appeared beneath the Saturnian orb, represented here as Osiris.⁵⁷ We also note that, whatever this leg was, it had the appearance of fire. "Hail, Leg of fire," was the manner in which it was invoked.⁵⁸ That this "Leg of fire" descended from Earth's celestial north pole, the proto-Saturnian place *par excellence*, was cogently argued by Gerald Massey⁵⁹ and, as Talbott has shown, also by Hermann Kees.⁶⁰ It thus becomes apparent that this "Leg" stood for a support which stretched from beneath Saturn's south pole to Earth's north polar regions.

In India we meet with the deity named Manu whose assimilation to the god Saturn had already been noticed in the 19th century by William Jones and G. S. Faber.⁶¹ That this identification is correct is borne out by Manu's epithet of Satyavrata, which is one of the many Sanskrit names for the planet Saturn.⁶² Moreover, as Jacob Grimm indicated, Satyavrata is the Sanskrit equivalent of the Slavic Sitivrat, which is also a name for Saturn.⁶³ It is therefore noteworthy that Manu was said to have performed a severe penance which consisted of being "poised on one leg" for ten thousand years.⁶⁴

It is also stated in the *Upanishads*, that Brahma, whom we have already seen identified as Saturn, "is only one-footed."⁶⁵

⁵³ D. A. Leeming, *The World of Myth* (N. Y., 1990), p. 60.

⁵⁴ M. Preuss, "A Study of Jurakan of the Popul Vuh," in E. Magana & P. Mason (Eds.), *Myth and the Imaginary in the New World* (Laramie, 1986), p. 364.

⁵⁵ *Ibid.*

⁵⁶ *Ibid.*, pp. 126, 248.

⁵⁷ E. A. W. Budge, *The Papyrus of Ani* (N. Y., 1967), p. 118.

⁵⁸ *Idem*, *The Egyptian Book of the Dead* (London, 1901), p. 370.

⁵⁹ G. Massey, *Ancient Egypt* (N. Y., 1970), p. 311.

⁶⁰ D. N. Talbott, *The Saturn Myth* (N. Y., 1980), p. 211.

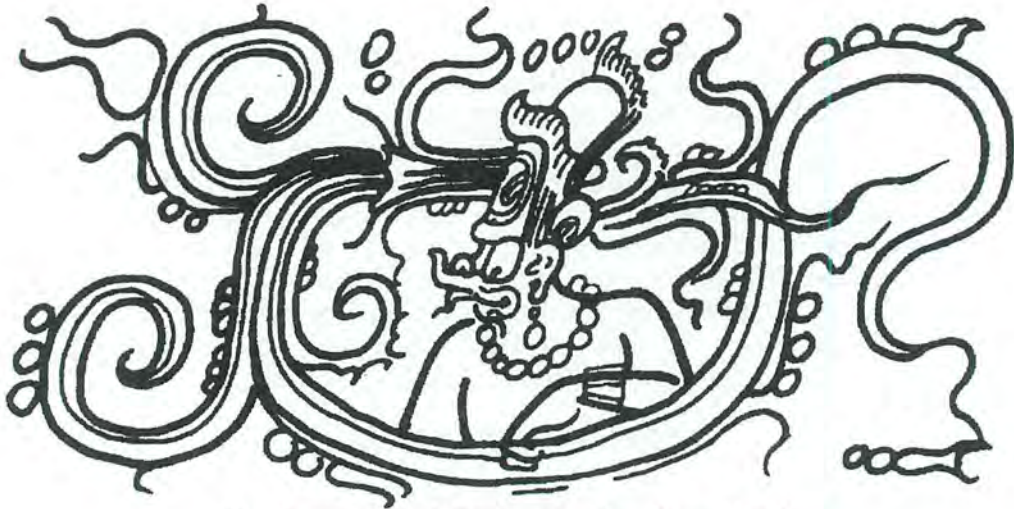
⁶¹ E. Cochrane, "Kronos, Minos, and the Celestial Labyrinth," *KRONOS* IX:2 (Winter 1984), p. 19.

⁶² G. S. Faber, *The Origins of Pagan Idolatry*, Vol. II (London, 1816), p. 491; M. William, *Sanskrit Dictionary* (Oxford, 1872), p. 743; J. Grimm, *Teutonic Mythology*, Vol. I (N. Y., 1966), pp. 248-249.

⁶³ J. Grimm, *loc. cit.*

⁶⁴ Suryakanta, *The Flood in Sanskrit Literature* (Delhi, 1950), p. 4, as cited by D. N. Talbott, *op. cit.*, p. 212.

⁶⁵ Swami Nikhilananda, *The Upanishads* (N. Y., 1963, abridged edition), pp. 221 ff., as cited by D. N. Talbott, *loc. cit.*



Hurakan—amid stylized swirls of smoke or clouds.
From a late Classic vase.
(Illustration by Karl Taube.)

Presently a name for the Pole Star, we have also seen how Dhruva was placed in its position by Vishnu, the location of which he claimed to have been his in an earlier time. More than that, we have actually seen that Dhruva was originally one of Vishnu's own epithets. The added interest here is that, very much like Manu, Dhruva was said to have maintained himself in intense meditation while standing upright on one foot.⁶⁶ Furthermore, in Sanskrit, the word *dhruva* also means "post" and/or "stake"⁶⁷ which, as Roger Ashton indicated, evidently stood for "a celestial support."⁶⁸

In the *Maitri Upanishad*, Vishnu himself is referred to as "All-supporting."⁶⁹ Another epithet of Vishnu is Yamakila, derived from Yama, one of the Sanskrit names for Saturn, plus the suffix *kilah*, meaning "post" and or "pillar."⁷⁰ Yet another epithet of Vishnu was Ekapada, from Ekapad, which means one-footed.⁷¹ Under this archaic epithet, sometimes rendered Aja Ekapad, Vishnu is referred to as the one footed support of the Cosmos⁷² and "the Birthless One-footed One."⁷³ This is in keeping with our theory that the divine Leg under consideration must have been a physical substance that had the appearance of a columnar support. But also, being "birthless" presupposes an existence beyond memory. In other words, this celestial support, stretching between Saturn and Earth, seems to have always been

⁶⁶ J. O'Neill, *The Night of the Gods* (London, 1893), p. 501; G. de Santillana & H. von Dechend, *op. cit.*, p. 138.

⁶⁷ V. S. Apte, *The Practical Sanskrit-English Dictionary* (Delhi, 1965), p. 531.

⁶⁸ R. Ashton, "The Polar Planet," unpublished, MS p. 3.

⁶⁹ *Maitri Upanishad* VI:13.

⁷⁰ V. S. Apte, *op. cit.*, p. 358.

⁷¹ *Ibid.*, p. 313.

⁷² J. Schwabe, *Archetyp und Tierkreis* (Basle, 1951), p. 34, as cited by D. N. Talbott, *loc. cit.*

⁷³ A. K. Coomaraswamy & Sister Nivedita, *Myths of the Hindus and Buddhists* (N. Y., 1967), pp. 388-389, as cited by D. N. Talbott, *loc. cit.*

there as, in fact, *Genesis* implies in connection with the *ruach* which has led us to this disclosure.

Other epithets of Saturn in Sanskrit literature are Pangu, signifying a lame person,⁷⁴ and Shirnapada, meaning "withered foot."⁷⁵

Perhaps the most well-known Sanskrit name for the planet Saturn is Shani (or Sani).⁷⁶ And while Shani is not described as having been one legged, he is nonetheless said to have been lame.⁷⁷

As Talbott has noted:

"The Celtic Sol [so named by the Romans] stood on one foot all day. The African Wachoga tell of the old god Mrule who...had only one leg...Russian myth presents the demonic Verlioka as a...one-legged figure. So also was the Chinese primeval god K'uei one-footed."⁷⁸

One even finds this one-legged god among the Australian Aborigines, where he is remembered as Turunbulun.⁷⁹

One word of caution: There are other deities said to have possessed a single leg or foot who do *not* translate as personifications of the planet Saturn, prime among whom is the Mesoamerican Tezcatlipoca. But that, too, is a related topic that must await a future volume.

THE PHALLIC POST

In the year 2000, while exploring the Neolithic remains at the Nakovana cave near Dubrovnik on Croatia's Dalmatian Coast, Tim Kaiser and Staso Forenbaher made a revealing discovery. Having come across a barrier to the cave, first thought to be a natural rock fall, but later disclosed as having been man made, they penetrated beyond it to three natural chambers. Various shards of pottery, some dating to 6000 B. C., were found scattered all over the floors of these chambers. The central room, however, contained a two-foot high stalagmite, "unmistakably phallic in shape." Examination of this stalagmite showed that it had actually been formed in another part of the cave from where it was detached and moved to the central cubicle. Near the stalagmite was a trough covered with limestone slabs, which is thought to have served as a bench, running the entire width of the cave. A three-foot deep pit was also found nearby.⁸⁰ All of this marks the cave as having been a cult center devoted to the worship of the phallus.

Natural formations of similar resemblance have long attracted the attention of primitive societies as well as members of civilized races. One such phallic rock, an artificially enhanced natural formation, and now a prominent stop for tourists, is Kauleonanahoa, in the forest above the Kalaupapa Cliffs, on the Hawaiian island of Molokai.

It has, of course, long been known that phallic worship was an institution that stretches back into the mist of time. In certain parts of the world, especially in India, it continues to

⁷⁴ V. S. Apte, *op. cit.*, p. 577.

⁷⁵ *Ibid.*, pp. 610, 921.

⁷⁶ This is so well known that no references are required.

⁷⁷ V. Ions, *Indian Mythology* (London, 1967), pp. 100-101.

⁷⁸ D. N. Talbott, *op. cit.*, p. 211.

⁷⁹ *Ibid.*

⁸⁰ Anonymous, "Wine, Aphrodite and a Stalagmite," *Archaeology Odyssey* (March/April 2001), p. 12.



The phallic rock in the forest above the Kalaupapa Cliffs on the Hawaiian island of Molokai.
(Photograph by the author.)

this day. Phallic images—idols, actually—have been found all over Stone Age Europe. One found in a Neolithic temple on Malta, the island of my birth, and now housed in the archaeological museum in Valletta, reproduces the phallus in triplicate form. Triplicate phallic images were also found at Alatri and on the Pelasgic walls at Grottaferrata.⁸¹

Until recently, Western sentiments, especially those harbored by Judeo-Christian faiths, had long been shocked by the veneration of the male reproductive organ. This is so true that, in 1891, a Hindu boy was flogged in Madras, India, by order of the British Police Magistrate “for exhibiting an indecent figure in public view.”⁸² As Count Eugene Goblet d’Alviella recounted:

“What he had explicitly done was to set up, in accordance with universal custom, a phallic image before a house that was in the course of erection...The image was indeed set up before [the house] as a symbol of the Deity...”⁸³

⁸¹ F. T. Elworthy, *The Evil Eye* (N. Y., 1971), p. 155.

⁸² E. Goblet d’Alviella, *Symbols: Their Migration and Universality* (N. Y., 1894/2000), p. xix.

⁸³ *Ibid.*

Those of Western religious sentiment would be even more shocked to learn that the Hebrew El, the very same god who, under the name Elohim, is believed to have created the world, was said to have been equipped with a long penis.⁸⁴

What was this sacred virile member attached to god?

Among the Egyptians, the phallus of Ra was highly honored. This is indicated in the praises glorifying the god. As it was written: "Who is this?" And the answer is given: "It is Osiris." But, as an alternative, which, in this case, as in many others, boils down to the same thing, the passage continues with: "Others, however, say that his name is Ra, and that the god who dwelleth in Amentet is the phallus of Ra, wherewith he had union with himself."⁸⁵

The most popular ithyphallic god of Egypt was Min. Unfortunately, despite Ev Cochrane's attempt to identify this deity as a personification of Saturn⁸⁶ and, later, through a change of mind, as a personification of Mars,⁸⁷ not enough is known about this deity to reach a definite conclusion concerning his genesis.

Although at this point, as noted above, the inclusion of Shu would be out of chronological sequence, it is interesting to note that this god was *inter alia* lauded as "Lord of the Phallus."⁸⁸ In the *Pyramid Texts*, he is actually equated with the male organ of Atum.⁸⁹ What is even more revealing, however, is the fact that, in some depictions, the heaven-sustaining Shu is replaced with the phallus of Geb. It is then evident that the phallus of the deity was itself believed to have acted as the support of heaven much in the same manner that the single leg of the god did.

As Diodorus reported, it was not only the Egyptians who consecrated "that member" in their initiatory rites, but quite a few other nations.⁹⁰ And, as a more modern authority noted:

"The antiquity of the phallus as an amulet is shown by the number found among Egyptian sculptures. No visitor to Egyptian antiquities needs to be told this...The phallus was the most sacred amulet worn by the vestal virgins of ancient Rome. Moreover, we find that Sesostri of the early twelfth dynasty, who conquered Asia, set up memorials of a phallic nature among the people who had acted bravely...In the ruins of Zimbabwe, in Central Africa, are to be seen phalli carved upon stone, similar to those found in Sardinia, which are said to be Phoenician...Again, numbers of phallic amulets in bronze are found in the earliest Etruscan tombs..."⁹¹

Mythologists have always assumed that phallic worship arose out of the ancients' recognition of the male member as a generative organ, and thus worthy of sacred honor as a symbol of fertility. Nor is this entirely a modern view, as evidenced by the writings of Diodorus.⁹² That this is a logical assumption there is no need to tell. As an example, the lower part of a statue of Dionysos, at Phigaleia, was covered with leaves of bay and ivy. Arthur Cook surmised that this was "possibly" done in order to conceal the god's erect phallus and

⁸⁴ F. Cross, *Canaan Myth and Hebrew Epic* (London, 1973), p. 23.

⁸⁵ R. Van Over, *op. cit.*, p. 283.

⁸⁶ E. Cochrane, "Kronos, Minos, and the Celestial Labyrinth," *KRONOS* IX:2 (Winter 1984), p. 14.

⁸⁷ *Idem*, "Thundergods and Thunderbolts," *AEON* VI:1 (February 2001), p. 97.

⁸⁸ D. N. Talbott, *op. cit.*, p. 368.

⁸⁹ *Pyramid Texts*, spell 642.

⁹⁰ Eusebius Pamphili, *Evangelicae Praeparationis* II:i:50.

⁹¹ F. Elworthy, *op. cit.*, p. 153.

⁹² Eusebius Pamphili, *loc. cit.*



The impregnation of Nut by Geb, where Geb's phallus stands in for the usual position of Shu.
From the Papyrus of Tameniu.
(Compare with illustration on page 486.)

continued by adding that, "if so, we may conjecture that a late moralistic intention had been read into an early fertility-charm."⁹³ Such musings, by moderns and ancients alike, do not, however, go to the root of the problem, especially when the subject itself is not even viewed as a problem. A problem, on the other hand, does present itself when in-depth research reveals that the divine phallus was believed to have acted as a supporting post for heaven or the sky.

One thing concerning which Cook was correct is that the cult of Dionysos *was* a phallic one. As Marija Gimbutas elucidated:

"[Dionysus'] cult in Greece is evidenced by temples, sculptures of phalli and descriptions of processions carrying huge phalli as late as the second century BC...Brimming with virility, he was the god most favored by women.

"The abundance of phalli in Dionysiac festivals, in sculptures near the temples, on herms used as signposts on the roads and before the doors of houses suggest that the ancient Greeks were no less obsessed by phallic magic than were the Old Europeans."⁹⁴

And:

"The *Lenaia* festival held in January was preceded by a *Rural Dionysia* in which

⁹³ A. B. Cook, *Zeus: A Study in Ancient Religion*, Vol. II (N. Y., 1965), p. 244.

⁹⁴ M. Gimbutas, *The Goddesses and Gods of Old Europe* (London, 1982), p. 227.



Monumental phallus at the sanctuary of Dionysos on the island of Delos.
(Photograph by the author.)

phalli were carried in procession..."⁹⁵

Broken stone phalli, representative of the god himself, can still be seen at the sanctuary of Dionysos, on the sacred island of Delos, to the mirth, embarrassment, and/or shock of visiting tourists. But what is of greater importance to this study is that the same Dionysos, still decked with ivy-sprays, was elsewhere represented by a post dressed up as the god.⁹⁶ That Dionysos represented an aspect of the Saturnian deity need not be repeated.

The nature of what this divine phallus really was comes to us from Phlius. There, a winged aged man with phallus erect was once depicted on the gates of the city. This being was known as *phaos rhyentes*. What is interesting, however, is that, according to Hippolytus, *phaos rhyentes* was said by the Sethians to mean "the downward flow of light from above."⁹⁷ "For there was a ray coming from above from that perfect light held fast in the dark, dreadful, bitter, filthy water..."⁹⁸ The "perfect light" from which this ray of light emerged was a dim remembrance of the Saturnian sun "held fast" in the centre of its placental cloud, remembered here as "dark, dreadful, bitter, filthy water"—the "mud," or "slime," or *mot* of the Phoenicians. That this was a reminiscence of the *ruach* of Genesis is then indicated when Hippolytus continues by stating that this was "the spirit of light 'rushing' over the water."⁹⁹ And since this ray was remembered as "coming from above," it stands to reason that the water in question was also somewhere above, presumably in the sky, as our thesis actually demands.

It was then this "downward flow of light" from proto-Saturn and its placental cloud which the ancients likened to the god's single leg and/or his penis. In some instances, the god himself was considered to have been nothing more than the phallus of Creation. Consequently, one of the meanings of the name of the Hindu Creator, Prajapati, is the male organ of generation.¹⁰⁰ More revealing is a passage in the *Linga Purana* which has been interpreted to mean that:

"Pradhana, the primary unevolved matter, the cause of the universe is Linga itself. At the root of Linga the creator Brahma is stationed."¹⁰¹

Here not only do we again find a reference to our posited placental cloud as the "unevolved matter," but its direct association with the linga, that is phallus, as also with Brahma who, as we have seen, originated as an avatar of Saturn. Curiously, in the *Bhagavata Purana*, there is presented the image of a cosmic porpoise with *the planet Saturn itself* projected on its generative organ.¹⁰²

Of most importance is the fact that, in some cases, a phallus "sculptured in granite, marble, or ivory," which used to be kept "in the inmost recess, or sanctuary" of Hindu temples, was "surmounted by a golden star."¹⁰³ A similar colossal phallus was presented by Ptolemy Philadelphus to the temple of Osiris in Alexandria. This, too, was crowned in gold

⁹⁵ *Ibid.*, p. 228.

⁹⁶ A. B. Cook, *loc. cit.*

⁹⁷ W. Barnstone, *op. cit.*, p. 656.

⁹⁸ *Ibid.*, p. 655.

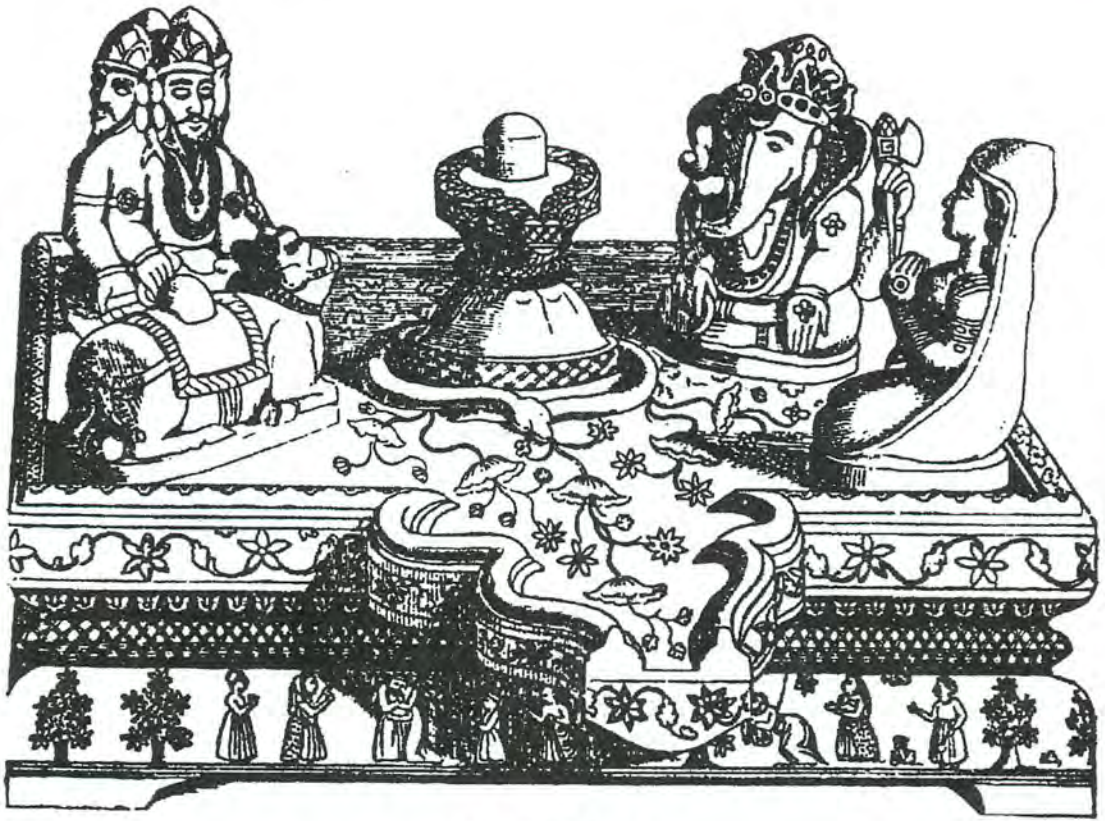
⁹⁹ *Ibid.*

¹⁰⁰ V. S. Apte, *op. cit.*, p. 642.

¹⁰¹ Comment from the translators of *The Linga-Purana* (Delhi, 1973), p. xx; see *Linga Purana* I:74:19-20.

¹⁰² *Bhagavata Purana* V:23:7; see also, Ganesh Vasudeo Tagare (trans.), *The Bhagavata Purana*, Vol. II (Delhi, 1979), p. 754.

¹⁰³ H. M. Westropp & C. S. Wake (with A. Wilder), *Ancient Symbol Worship: Influence of the Phallic Idea in the Religions of Antiquity* (N. Y., 1875), p. 19.



The Sakti Puja.
Tableau of Hindu deities surrounding phallic emblem.

and surmounted by a golden star, which was "carried in a splendid chariot in the midst of religious processions."¹⁰⁴ The meaning these last two items have for us is that, in each case, the golden star surmounting the vertical phallus served as a cogent symbol of the proto-Saturnian sun seen atop the fiery axis in the sky.

Another word of caution: As in the case of the one-legged gods, not all phallic deities, and Shiva in particular, are to be identified as Saturn, but that, too, must await future revelations.

THE SKY PILLAR

In pre-Islamic Arabia, pillars called *hammanim* were set up on the altars of the god Ba'al. On top of each of these pillars rested the disk of Šamsu, usually understood as the name of the Sun.¹⁰⁵ Granted that Šamsu, as well as its variants šemeš and šimša, was *eventually* utilized as a name for the Sun, we have seen that the Assyro-Babylonian Šamas (or Shamash)

¹⁰⁴ *Ibid.*, p. 20.

¹⁰⁵ See the entry under "Shamash," *Encyclopaedia Britannica* (1959 edition), Vol. 20, p. 454.

was by the Assyro-Babylonians themselves specified to have been the name for the planet Saturn. We may therefore safely assume that the pre-Islamic Šamsu *originally* stood for the same planet. This is lent evidence by the fact that our present Sun does not appear to be resting on any kind of pillar while, as we have seen above, the proto-Saturnian sun was so conceived to have stood on a support which was *inter alia* visualized as a vertical whirlwind, a single leg, and/or an erect phallus. Thus, Elmer Suhr, who confused so many mythological issues, was nevertheless astute enough to realize that the primeval wind "is especially effective in the heavens at the top of the cosmic column."¹⁰⁶

Suhr tells us that this cosmic column was "a very old concept dating back to primitive times," and that it was the "sun" on top of this column that created the wind "by its whirling motion."¹⁰⁷ Also: "It is especially important to think of the cosmic column not as a static post but as a constantly whirling crucible, forever forming and re-forming the constituent elements into the changing aspects of human experience."¹⁰⁸

The memory concerning the association of this pillar with Saturn was retained in the *Christian Sybyllines* which proclaim that Sabaoth Adonai "shall sit on a heavenly throne and establish a great pillar,"¹⁰⁹ which is elsewhere rendered a "pillar of glory."¹¹⁰ Sabaoth, sometimes rendered Zebaoth, is a name derived from the Hebrew *tsaba* or *tseba'ah*, meaning "army," and is used in the New Testament as the military epithet of God.¹¹¹ Adonai, meanwhile, means "my Adon," where Adon is a Phoenician title that simply means "Lord."¹¹² Taking their cue from the Canaanites, who were the same as the Phoenicians, the Jews used the epithet Adonai to designate their own God. Thus it was said that when God asked Adam what *his* name was, Adam replied with the words: "Adonai, Lord, because Thou art Lord over all creatures."¹¹³ As Louis Ginzberg has it, the name Adonai is "the very name God had given unto Himself, the name by which the angels call Him, the name that will remain immutable evermore."¹¹⁴ Moreover, when Moses is said to have asked God for his name, God is reported to have replied:

"Thou desirest to know My Name? My Name is according to My acts. When I judge My creatures, I am called Elohim...when I rise up to do battle against the sinners, I am Lord Zebaoth...when I have mercy upon the world, I am Adonai."¹¹⁵

Elsewhere it is said that Adonai and Elohim were "the two sacred names of God,"¹¹⁶ even though, in fact, he was known by various others. This, then, tells us that, as far as the Jews were concerned, Adonai and Lord Zebaoth, which translates as Sabaoth Adonai, was the same as Elohim, the majestic plural of El, that is Saturn.

¹⁰⁶ E. G. Suhr, *Before Olympus* (N. Y., 1967), p. 43.

¹⁰⁷ *Ibid.*, p. 39.

¹⁰⁸ *Ibid.*, p. 79.

¹⁰⁹ W. Barnstone, *op. cit.*, p. 559.

¹¹⁰ *Ibid.*, p. 673.

¹¹¹ J. Strong, *A Concise Dictionary of the Words in the Greek Testament* (Madison, New Jersey, 1890), p. 64.

¹¹² See here for instance, P. Gaber & W. G. Dever, "The Birth of Adonis?" *Archaeology Odyssey* (Spring 1998), p. 54.

¹¹³ L. Ginzberg, *op. cit.*, Vol. I, p. 62.

¹¹⁴ *Ibid.*

¹¹⁵ *Ibid.*, Vol. II, p. 319.

¹¹⁶ *Ibid.*, Vol. III, p. 158.

Also known as "the bond of heaven and earth," this "pillar" was said to have been held by Ninurta,¹¹⁷ one of the Babylonian names for the planet Saturn. In Sumerian, this "bond" is termed *dimgal*, which is fairly translatable as "great binding-post."¹¹⁸ Furthermore, this *dimgal* is also used in reference to the *abzu*,¹¹⁹ or Apsu, that is the celestial waters we have seen associated with proto-Saturn. To clinch the matter further, Kronos/Saturn himself is addressed in an Orphic hymn as the "Father of the blessed gods...you who hold the indestructible bond according to the unlimited order of Aion..."¹²⁰

We have additionally seen that Aion himself was only an aspect of Saturn. And, since the Roman Janus was also identified by the ancients themselves as Saturnus, it does not surprise us that the same Janus has also been equated with Aion.¹²¹ As R. Reitzenstein claimed, under the influence of Aion, Janus became the ruler of the cosmic axis.¹²² This, of course, harks back to Ovid who considered Janus as the connecting link between the upper and lower regions, and said of him to have ruled over the constantly turning axis of the cosmos.¹²³

The Hindu Vishnu, too, was said to have been "erected as the pillar of heaven" in which form he protected the firmament.¹²⁴ "Thou proppedst asunder these two worlds" is the manner in which the god is addressed.¹²⁵ He is thus referred to as the one "who propped the upper seat."¹²⁶

In Japanese mythology, the sky pillar is compared to a reed. Thus it was written:

"At this time a certain thing was produced between Heaven and Earth. It was in form like a reed-shoot."¹²⁷

Elsewhere in Japanese lore it is stated that:

"Before Heaven and Earth were produced, there was something which might be compared to a cloud floating over the sea [our placental cloud]. It had no place of attachment for its root. In the midst of this a thing was generated which resembled a reed-shoot..."¹²⁸

In the Yuki myth of Creation, the sky pillar is represented as a rope. Taikó-mol, the creator whom we have already met in association with the fog and foam that existed over the celestial waters, is said to have "stood on the foam, which still revolved." As it is said, and in keeping with our hypothesis, there was no light at this time. But Taikó-mol "walked" over the water "as if it were land." It was then that he "made a rope and laid it *from north to south*."¹²⁹

Not surprisingly, among the Kwakiutl of America's Northwest Coast, the cosmic pillar was envisioned, and represented, as a totem pole, the name of which was Kalakuyuwish,

¹¹⁷ G. de Santillana & H. von Dechend, *op. cit.*, p. 133.

¹¹⁸ *Ibid.*, p. 413.

¹¹⁹ *Ibid.*

¹²⁰ *Ibid.*, pp. 132-133.

¹²¹ R. Reitzenstein, *Das Iranische Erlösungsmysterium* (Bonn, 1921), pp. 210 ff.

¹²² *Ibid.*, p. 215.

¹²³ Ovid, *Fasti* I:120.

¹²⁴ F. M. Müller (ed.), *The Sacred Books of the East*, Vol. XLVI, p. 356.

¹²⁵ *Ibid.*, Vol. XXVI, p. 130.

¹²⁶ *Ibid.*, p. 133.

¹²⁷ R. Van Over, *op. cit.*, p. 354.

¹²⁸ *Ibid.*

¹²⁹ J. Bierhorst, *op. cit.*, p. 39 (emphasis added).



The Kwakiutl used totem posts like the ones depicted above as uprights to support the roofs of their wooden buildings. It is therefore not surprising that they visualized the sky pillar as a tall totem pole.

which simply meant "sky pole" or "the pole that holds up the sky."¹³⁰

THE FIERY AXIS

Interestingly, in going back to Egyptian liturgical texts, we meet with an entity referred to as *aakhu*, *khu* or *khut* which, among other things, took the form of "the heaven-sustaining column." Like the Hebrew *ruach*, this word is often translated as "soul" and/or "spirit."¹³¹ When written with different determinatives, however, *aakhu* and/or *aakhut* or *khut* also means "light," "radiance," "brilliance," and "fire."¹³² It also stands in for the Light-god or Great Light.¹³³ But, as Talbott has ably indicated, the most common symbol used to denote *khu* and/or *khut* reveals "vertical streams of light ascending the world axis."¹³⁴ But, while seemingly ascending, it was also remembered as a radiant column having been "poured out" by the creator Atum.¹³⁵

As we have seen, an epithet of the Hindu Vishnu is Dhruvakshara, derived from Dhruva, the Pole Star, and *akshara*, which has the meanings of "imperishable," "indestructible," and "undecaying."¹³⁶ The word *akshara* itself is, as Ashton had indicated,¹³⁷ arguably formed from *akshah*, meaning "pivot" or "axis,"¹³⁸ and *-rah*, meaning "fire."¹³⁹ *Akshara* can therefore be translated as "fiery axis."

There is no fiery axis emanating from the Pole Star but, remembering that Dhruva was also an epithet of Vishnu, whom we have already equated with the Saturnian deity, it becomes obvious that this fiery axis, remembered by others as a ray of light ascending or descending from above, must have been seen ascending or descending from that same Saturnian deity.



The Egyptian hieroglyph
for *khu* and/or *khut*
depicting streams of
light ascending the world
axis.

COOK'S SUPPORT

With few exceptions, mythologists have never known what to do with the entity they themselves have dubbed the *axis mundi*, the polar column, or sky pillar. Arthur Cook, who had so much to say about the subject, opted for Jupiter,¹⁴⁰ which he understood as a personification of the sky,¹⁴¹ in lieu of the Saturnian deity, as having occupied the pillar's apex. Despite all that, he could find no physical explanation to account for the phenomenon.

¹³⁰ R. Erdoes & A. Ortiz (eds.), *American Indian Myths and Legends* (N. Y., 1984), pp. 425, 426.

¹³¹ E. A. W. Budge, *An Egyptian Hieroglyphic Dictionary*, Vol. I (N. Y., 1920/1978), p. 23.

¹³² *Ibid.*

¹³³ *Ibid.*

¹³⁴ D. N. Talbott, *op. cit.*, p. 177.

¹³⁵ *Ibid.*

¹³⁶ V. S. Apte, *op. cit.*, p. 6.

¹³⁷ R. Ashton, "The Polar Planet" (January 1984, unpublished), MS p. 2.

¹³⁸ V. S. Apte, *op. cit.*, p. 5.

¹³⁹ *Ibid.*, p. 790.

¹⁴⁰ A. B. Cook, *op. cit.*, pp. 45 ff.

¹⁴¹ *Ibid.*, Vol. I (N. Y. 1914/1964), pp. 1 ff.

As he had it stated: "This pillar has no counterpart in astronomical fact or, for that matter, in astronomical theory."¹⁴² To him, the concept arose out of "the primitive notion that the sky stands in need of a visible support."¹⁴³ As he tells us:

"Early man was in fact haunted by a very definite dread that [the sky] might collapse on top of him. The classical authors bear witness to the terror which this thought inspired among the peoples of Central Europe."¹⁴⁴

Cook has a lot to say about this fear, even though he confessed ignorance concerning its origin. This did not, however, stop him from offering an educated guess.

"How that belief arose, we can only surmise. It may be that in the dim past, when the ancestors of these tribes developed out of hunters into herdsmen and emerged from the forest on to the open plain, they missed the big tree that seemed to support the sky...And in the absence of that mighty prop there was nothing to guarantee the safety of their roof."¹⁴⁵

Cook can well talk about the "big tree that seemed to support the sky" but, in actual fact, a forest is made up of more than a single tree. Why, then, did primitive man not conceive of a sky prop that was composed of multiple posts? Why a single pillar? And, in any case, why would this arboreal support have been visualized as the god's single leg, his erect phallus, or, worse still, a ray of light ascending or descending from above?

SUHR'S LUNAR SHADOW

Other mythologists, needless to say, have not accepted Cook's explanation even though but few of them have ever proffered an interpretation of their own. Among those few was Elmer Suhr. He, too, speaks constantly of "the whirling of the column between heaven and earth"¹⁴⁶ but, when it comes to his interpretation of the phenomenon, he stumbles badly. His belief, of course, was that it was the Sun that rested at the summit of the cosmic pillar.¹⁴⁷ He even speaks of "the sacred disc of the sun" turning itself rapidly as if this was a well-known datum.¹⁴⁸ As he tells us: "The sun, as it rolled or whirled through the sky, had the power to whirl other objects coming within its sphere of influence, and among these objects the column of the cosmos was apparently included."¹⁴⁹ I hope I will not be accused of splitting hairs when I claim that whirling is not the same as rolling, and that while the Sun may be said to roll across the sky, it does not appear to whirl. And then, what would the Sun, arcing across the sky, have to do with an axis which, by its very definition, had to have been stationary? As he himself tells us, "the meteorological column could serve, metaphorically, as a support for the sky just as any stone column could support the roof and ceiling of a

¹⁴² *Ibid.*, Vol. II, Part I (N. Y., 1914/1965), p. 44.

¹⁴³ *Ibid.*, p. 54.

¹⁴⁴ *Ibid.*, pp. 54-55.

¹⁴⁵ *Ibid.*, p. 56.

¹⁴⁶ E. G. Suhr, *op. cit.*, p. 69.

¹⁴⁷ *Ibid.*, p. 79.

¹⁴⁸ *Ibid.*

¹⁴⁹ *Ibid.*, p. 69.

structure.”¹⁵⁰ The sky, however, like a roof or ceiling, does not move while being supported; the Sun, on the other hand, not only moves across the sky, it also disappears from sight at night, which would hardly have made it an appropriate object for a pillar to support.

Suhr, of course, has an answer to all this. As he continues to inform us:

“Many peoples of the Near East and the Mediterranean area believed that the sun...was the primary source for the quintessence of life. It was the sun’s light, *reflected upon the face of the moon*, that brought fertility and life to the soil *by way of the whirling lunar shadow*...”¹⁵¹

One, however, is immediately bound to ask: What has moonshine to do with the concept of a sky pillar? And in what manner can the shadow of the Moon be said to whirl? Suhr explains:

“At the top, the column must have been in contact with the sun and the moon, the two bodies from which it derived most of its life principle...Of course, the two bodies were not always directly above one another, but the sun in ancient astronomy was always exerting an influence on the moon from above, and both influenced the earth—which made the columnar form symbolically suitable.”¹⁵²

And:

“Whether we think of the column as a shaft grounded in the earth or as the cone-shaped shadow of the moon, its lower extremity appears to penetrate the earth...”¹⁵³

Here, then, is Suhr’s answer to this old enigma. According to him, the notion of the sky pillar was derived from the conical shadow the Moon casts in space, which shadow terminates on Earth, during a solar eclipse.¹⁵⁴ As he pointed out in a different work, “surely a shadow from a body ranging somewhere between the sun and the earth and making an occasional direct contact with the earth must have been, for the ancient mind, a projection of divine beneficence.”¹⁵⁵

As we have seen, the real nature of solar eclipses was known to the ancient Greeks. To repeat what we have said on a previous page, both Plutarch and Pliny knew that lunar eclipses were caused by the projection of Earth’s shadow on the lunar surface, and that this projection took the form of a cone, which, as Suhr himself explained, would have been “an observation based on what the naked eye could see” plus “a simple deduction from a law of physics.”¹⁵⁶ As Suhr correctly deduced: “If the ancients were aware of the earth’s shadow, they must also have known, as Diodorus testifies, about that of the moon projected toward the earth during a solar eclipse...”¹⁵⁷

But, while all of this is true, it can hardly be said that this was also known to our primitive forefathers who would not have been capable of any “simple deduction from a law

¹⁵⁰ *Ibid.*, p. 71.

¹⁵¹ *Ibid.*, p. 111 (emphasis added).

¹⁵² *Ibid.*, p. 71.

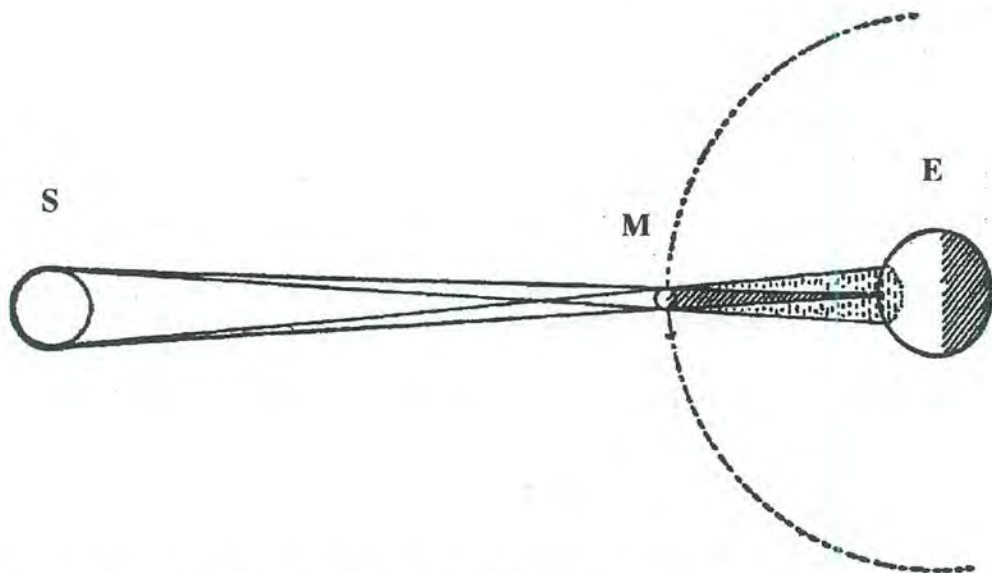
¹⁵³ *Ibid.*, p. 72.

¹⁵⁴ See here also, *ibid.*, p. 114.

¹⁵⁵ *Idem*, *The Spinning Aphrodite* (N. Y., 1969), p. 54.

¹⁵⁶ *Ibid.*, p. 53.

¹⁵⁷ *Ibid.*



Solar eclipse during which the shadow of the Moon (M) sweeps over the surface of Earth (E).
The eclipse is total within the umbra (darkly shaded region), but partial within the penumbra (lightly shaded region).

of physics." The conical shape of this lunar shadow, which we can show diagrammatically as seen from space, is not visible to terrestrial eyes. Besides, even had it been, it does not remain stationary. And it does not whirl. Moreover, the immediate body atop its cone is the Moon, concerning which the myth of the *axis mundi* has nothing to offer. Only a "sun" is sometimes mentioned as having been on top of it. To present this invisible shadow as the prototype of the *axis mundi*, a pillar which was believed to have supported a "sun" and/or heaven itself, is not only to impose "a law of physics" on the primitive mind, it also goes against the grain of everything that ancient man has stated about it.

THE POLE OF THE ECLIPTIC

In *Hamlet's Mill*, de Santillana and von Dechend analyzed some of the most obscure motifs in all of mythology and came up with a cosmic interpretation even though they hamstrung themselves by disallowing any conclusion that threatened to trespass uniformitarian precepts.

Although not the subject of the present volume, the mytho-historical record is full of allusions to cosmic catastrophes which caused terrestrial cataclysms on a colossal scale. We find there records of unprecedented floods, massive earthquakes, the shifting of entire mountains, in concert with the displacement of celestial bodies and a rain of fire from the sky. What de Santillana and von Dechend proposed in the above mentioned work is that ancient man derived these beliefs from the slow displacement of the pole star through the precession of the equinoxes over the millennia (refer back to page 102, this work). Cosmic catastrophism was explained as the dissolution of an order brought about by this slow change in the celestial sphere. Creation consisted in the establishment of a new celestial order. In other words, an

era ended every time the reigning pole star was displaced; the "selection" of a new pole star through precession was the beginning of a new world age.

It has, however, long been understood that most of mythology derives from primitive times, from those eras preceding the birth of writing. It is therefore difficult to accept that the primitive mind of ages past had already noted the extremely slow change of the pole, let alone that the change was understood. De Santillana and von Dechend were, of course, quite aware of this objection, so it is not surprising that they attempted to overrule it.

As noted earlier, the discovery of the precession of the equinoxes has long been attributed to Hipparchus, one of the greatest astronomers and mathematicians of antiquity, who flourished sometime between 146 and 127 B.C. Yet—or so the authors of *Hamlet's Mill* argued—this does not prove that the phenomenon had not been observed prior to his time. Unfortunately, other than that *their* theory demands it, this premise is not warranted by the record and the authors in question must therefore stand accused of reading into that record what is not really there.

What is worse is that even were we to grant that the phenomenon *had* been known since primitive times, it remains difficult to accept that this extremely slow change, *the perception of which requires thousands of years*, could have given rise to a world-wide belief in the cataclysmic end of all things—with flood and fire and the shaking of the terrestrial globe itself—as these authors maintain. After all, when one pole star is displaced by another, no disaster ensues, either in heaven or here on Earth.

More important is the fact—and the authors in question were well aware of this—that certain items of myth and ancient astronomical lore not only refuse to fit the precessional scheme of the equinoxes but, as we have seen, are notorious in not fitting anything else that we presently witness in our Solar System. With the vast amount of research that went into their work, they were bound to run headlong into the ancient notion that the planet Saturn had once played the role of pole star. Not knowing what to do with this datum, they ended up relegating it to the limbo of unacceptable data.

All this has been brought up here because, needless to say, the authors in question were also bound to run headlong into what they themselves termed the polar axis. So how did they attempt to fit this entity into their precessional scheme? Somewhat ambiguously, they tell us that:

"The rotation of the polar axis must not be disjointed from the great circles which shift along with it in heaven. The framework is thought of as all one with the axis."¹⁵⁸

As they explain on an earlier page, the *axis mundi* should be understood as "the equinoctial colure which 'accompanies' the slowly turning, *wholly abstract and invisible axis* along the surface of the sphere."¹⁵⁹ By this they meant the imaginary line running from Earth's geographical pole to the pole of the ecliptic, the centre around which Earth's axis revolves once every 26,000 years—in other words, the imaginary pole around which the precession of the equinoxes takes place.

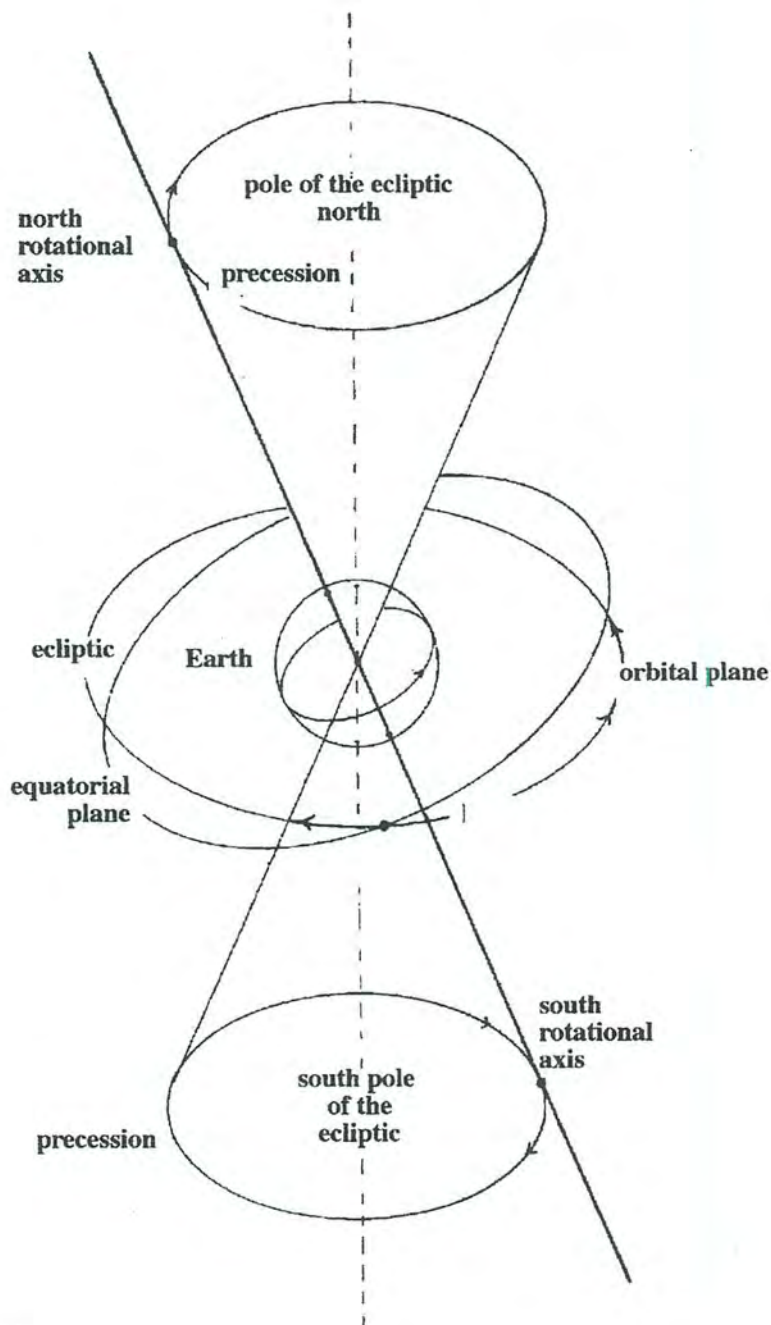
What is highly interesting is that even *they* found this somewhat hard to swallow. As they tell us: "The abstract idea of a simple earth axis, so natural today, *was by no means so logical to the ancients*..."¹⁶⁰

That being so, why is it we find so many allusions to this pole in the mythologies of all races and in such varied dress? Why would a "wholly abstract and invisible axis," like Suhr's

¹⁵⁸ G. de Santillana & H. von Dechend, *op. cit.*, p. 231.

¹⁵⁹ *Ibid.*, p. 159 (emphasis added).

¹⁶⁰ *Ibid.*, p. 232 (emphasis added).



The pole of the ecliptic (north and south)
in relation to the precession of the equinoxes
as it occurs at both poles.

invisible lunar shadow, have obsessed the minds of our primitive forefathers? Why would such an entity have been thought of as a pillar upholding the sky, visualized *inter alia* as the god's single leg or his erect penis? Why, indeed, *unless it was something that was actually seen?*

But what *was* it that our ancestors saw? What was it that could have *looked* like a pillar supporting the sky?

THE WHIRLING RAY FROM ABOVE

As we have seen, the Egyptian Shu was described as light personified, which light acted as a prop of the sky. Osiris/Saturn was lauded as having occupied a position above the leg of heaven, which leg was described as a "leg of fire." The Christian Sibyllines called the pillar of the sky a "pillar of glory." We have seen that the rendering of the Egyptian *khu* and/or *khut*, the heaven-sustaining column, utilizes a hieroglyphic character which translates as "vertical streamers of light ascending the world axis." Through Sanskrit, we have even ascertained that this imperishable pivot, or post, was thought of as a *fiery* axis. The message seems clear enough: Although the direction of the light was interpreted differently by different peoples—i.e., ascending or descending—what the ancients purport to have seen was exactly what Hippolytus described as "the downward flow of light from above" and as "a ray coming from above." Even Plato had reason to describe it as "a straight light like a pillar" which has been understood as "stretching along the axis of the cosmos,"¹⁶¹ while others have presented it as "a cylinder of aetherial fire surrounding the axis."¹⁶² In other words, the phenomenon can be stated to have been a ray of fiery light which stretched all the way from the proto-Saturnian planet to Earth's geographical north pole, a pillar of light which appeared to support heaven and/or the proto-planetary orb of Saturn above it.

But why a wind? What was there in this pillar of light that lent itself analogously to a wind, even a whirlwind no less?

At this point one is bound to think of our posited circumstellar or placental cloud which, as we have seen in an earlier chapter, was *inter alia* described as a fog or foam which "moved round and round continually," a whirling "primeval void," a chaos which "heaved" and "turned" in darkness, the "eternally revolving" Tao of the Chinese, remembered by the Dogon as the spinning and dancing Amma, whirling around while organizing the "world" out of chaos, and/or the Norse Aesir who established their seat on the "whirl-field." Does this not, in fact, accord well with Sanchoniathon's "breeze of thick air," to say nothing of Ehecatl's identity as the "wheel of the winds," illustrated so graphically by the interior design of a sliced conch shell which served as his symbol? Might it not therefore be that the analogous conception of the *axis mundi* as a whirlwind derived from its physical association with the whirling placental cloud in question?

It is possible that the whirling placental cloud could have *added* to the analogy of the *axis* as a whirlwind but, for one thing, the circumstellar cloud would have appeared as a nebular disk around proto-Saturn, and not as a fiery pillar *supporting* that orb. For another, as we have also documented, ancient accounts seem to leave no doubt that the *axis* itself was seen to whirl—and so has it been understood by past mythologists regardless of their blundering attempts in interpreting it. We shall have much more to say concerning the *axis mundi* and its destructive whirling antics as it evolved through time in future volumes,¹⁶³ but enough has been said here to make the point.

¹⁶¹ A. B. Cook, *op. cit.*, p. 44.

¹⁶² *Ibid.*

¹⁶³ See here, for instance, D. Cardona, "The Demands of the Saturnian Configuration Theory," *AEON* VI:1 (February 2001), pp. 58-71.

Chapter 22

Cosmic Genesis

THE NATURE OF THE BEAST

In the beginning, as I slowly reconstructed the Saturnian model and its attendant scenario, nothing perplexed me more than this effulgent ray of light stretching between our humble abode and Saturn's glorious realm. Right from day one, David Talbott had understood it as a luminescent stream of falling debris.¹ One reason I could not accept this interpretation came from the lack of recognizable cosmic material in Earth's Arctic regions. Let's face it, if the polar column was really composed of material ejected from a stationary planet located in Earth's north celestial pole, and since the column is posited to have existed for possible millennia, such constant bombardment should have strewn Earth's Arctic regions with cosmic detritus.²

Since then, however, such material *has* been found in Arctic regions. Thus, for instance, "a large fall of iron meteorites" is now believed to have occurred in northwestern Greenland and the adjacent east coast of Ellesmere Island "*at some undetermined time in the past.*" It is now apparent that this cosmic iron "was discovered by the late Dorset people during the few centuries immediately preceding A.D. 1000, and small pieces of meteoric iron are found on Dorset sites of this period."³ The meteoric iron from northwestern Greenland "spread [through trade] at least as far west as Bathurst Island and Little Cornwallis Island and south to the northern part of Hudson[s] Bay."⁴ Even so, this is hardly the amount of cosmic material one expects to discover in Arctic regions, especially the area in and around the pole, if the debris had been raining down for millennia. Granted that no one has yet conducted a *deliberate* search for such material, not enough has yet come to light from this area to satisfy Talbott's interpretation.

Lynn Rose, on the other hand, compared the cosmic pillar to the flux tube which stretches between Jupiter and its satellite, Io.⁵ This is a stream of electrons—a 5 million amp, 400,000 volt current, which translates into 2 trillion watts of energy⁶—that flows in a wide arc from both Jupiter's poles to Io's. And, to be sure, I had toyed with this idea myself. But I soon discarded it because, while instrumentally detectable, and even photographable through exotic light, Io's flux tube is not optically visible.

Meanwhile, Frederic Jueneman saw this *axis* as a colossal Rankine vortex, a cosmic tornado of planetary proportions, composed mainly of air and water vapor.⁷ Although his model

¹ D. N. Talbott, *The Saturn Myth* (N. Y., 1980), p. 214; but see also, *idem*, *Symbols of an Alien Sky* (Beaverton, Oregon, 1997), p. 100.

² See here also, D. Cardona, "The Demands of the Saturnian Configuration Theory," *AEON* VI:1 (February 2001), p. 59.

³ "In Search of Metal," article retrieved from <http://www.nic-bnc.ca/2/16/h16-4108-e.html> (emphasis added).

⁴ "Exchange/Trade of the Late Dorset," from http://www.natmus.dk/arg/CultHistGreen/dorset2/al_dorset2.htm

⁵ L. E. Rose, "Variations on a Theme of Philolaos," *KRONOS* V:1 (Fall 1979), pp. 37-38.

⁶ T. Gold, "Electrical Origin of the Outbursts on Io," *S.I.S. Review* IV:4 (Spring 1980), p. 111, where other sources are cited.

⁷ F. B. Jueneman, "The Polar Column: A Physical Model of Myth," *AEON* I:4 (July 1988), pp. 36 ff.

called for Mars as the boreal planet, the mechanics of a Rankine vortex could just as easily be applied to our Saturnian model. As Jueneman explained it, a Rankine vortex consists of "nested cylinders of atmospheric gases and debris, one within another, each separated by density gradients caused by pressure, thermal, and perhaps electrical differentials."⁸ But what would have been the *cause* of such a planetary vortex?

As explained in a previous chapter, proto-Saturn's proximity would have raised a lithospheric bulge in Earth's northern region, the shadow of which exists to this day. But, too, as there explained, Earth's hydrosphere and atmosphere would also have responded to proto-Saturn's attractive force. As Jueneman clarified, this gravitational force would have been enhanced by the inertia inherent in the synchronous rotation of the planetary pair. Thus the gentle westerly winds of lower latitudes "would have turned into increasingly violent south-westerly gales" at higher ones. In their northward spiral, aided by coriolis effects, these hurricane winds would then have towered above Earth's north polar region.⁹

"The tremendous energy of forward motion in the air mass, imparted by the relatively close proximity of the northern celestial body, would have been converted into angular momentum, increasing the velocity of this atmospheric maelstrom as it continued to accelerate into a tighter and tighter spiral. Finally, it would have sent a towering tornado-like polar column beyond the upper atmosphere and deep into space, ever reaching toward the northern body and forming a gaseous bridge in an attempt to span the void between."¹⁰

The beauty of this model is that, unlike Talbot's flow of debris and Rose's flux tube, it readily explains the whirlwind motion attributed to the mythological *axis mundi*. But does it lend itself to a ray of light shining from above? After all, as we all know, tornadoes are anything but luminescent. They are, on the contrary, often very dark in appearance, some of them close to black, and definitely opaque enough to mask their internal lightning displays. And yet, external luminosities *have* been known to accompany tornadoes such as that which roared through St. Louis in 1959. This was described by various witnesses as having been of "a continuous illumination," "a flame-like flare right up from the horizon," and of "the shape of a broad sword."¹¹ Others have been described as having a "beautiful electric blue light" around them, or of looking "like a searchlight beam" extending down to the skyline.¹²

Jueneman himself attributes various electrical and light activity occurring within his planetary vortex¹³ but, as he described it, much like the tornado mentioned above, the overall appearance of the planetary vortex would have been a "bluish color" of "exquisite brilliance...encased in a pale green envelope."¹⁴ Granted that some of these effects stem from Jueneman's objective perceptivity, it is difficult to judge how much of them might also be due to his fertile speculation.

For years I had accepted Jueneman's model as being a tentative valid prototype of the mythological polar column. Then, as the years went by, my interest shifted to the discovery

⁸ *Ibid.*, p. 40.

⁹ *Ibid.*, pp. 39-40.

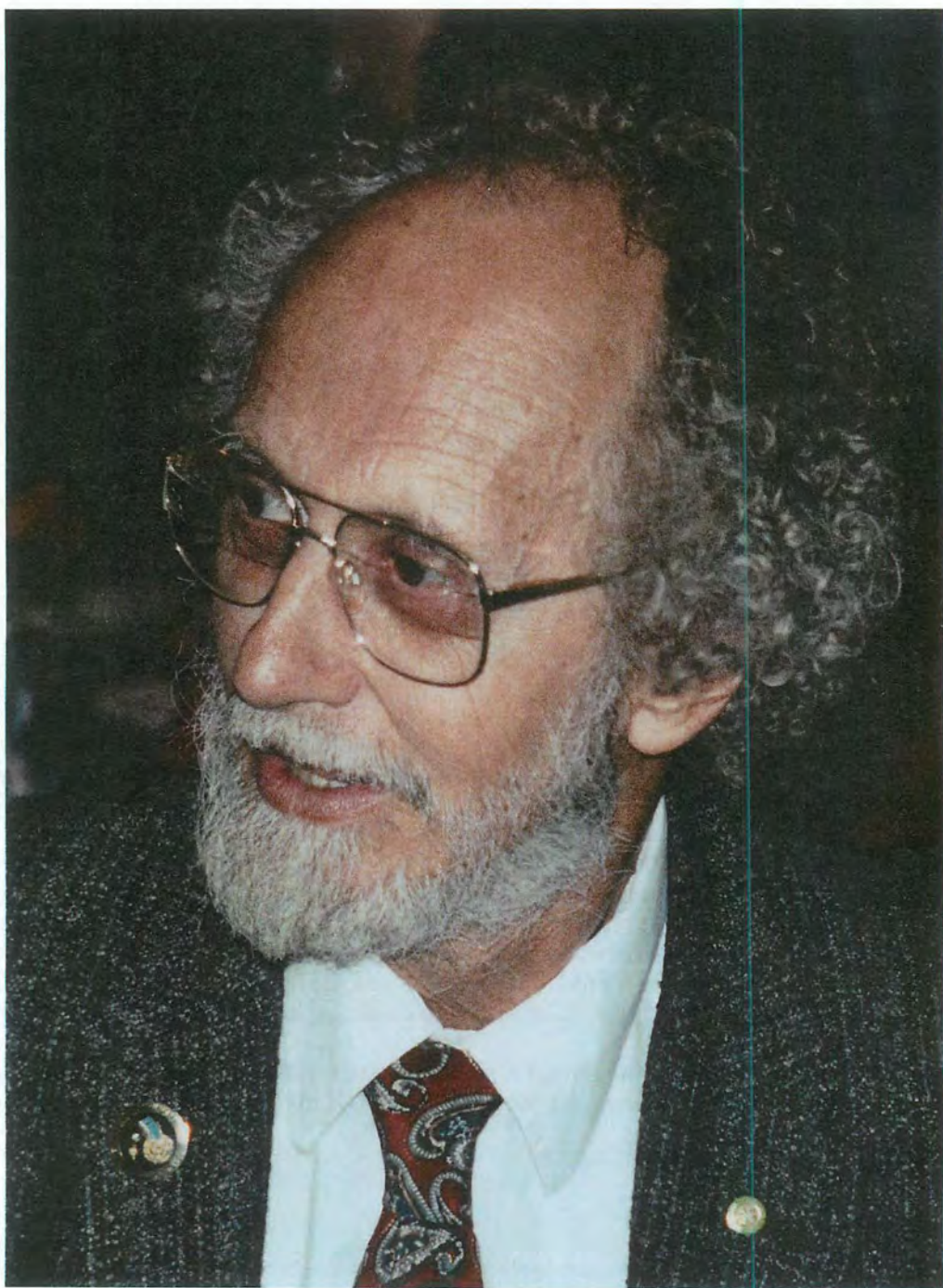
¹⁰ *Ibid.*, p. 40.

¹¹ B. Vonnegut, "Luminosity Accompanying St. Louis Tornado—February 10, 1959," *Monthly Weather Review* (February 1959), p. 64.

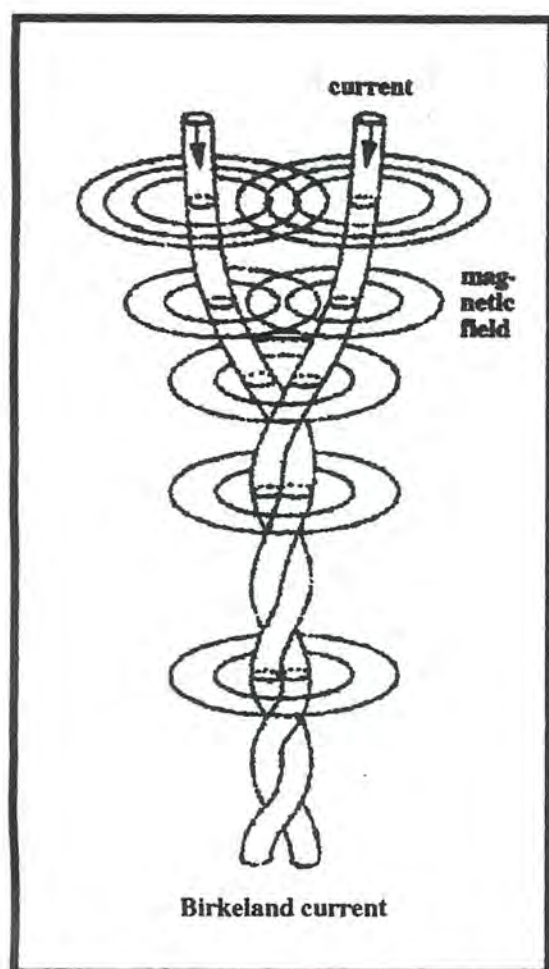
¹² *Idem* (with J. Weyer), "Luminous Phenomena in Nocturnal Tornadoes," *Science* (September 9, 1966), pp. 1213-1220.

¹³ F. B. Jueneman, *op. cit.*, pp. 45-47.

¹⁴ *Ibid.*, p. 48.



Frederic B. Jueneman
(Photograph—1995—by the author.)



of jets of plasma ejected by galaxies along their spin axes and, later, by similar jets ejected by stars. To be sure, I was at first overpowered by the colossal size of these jets which would dwarf even Rose's flux tube and Jueneman's planetary vortex. But then I reasoned that if these jets can exist in both galactic and stellar magnitudes—the difference in masses of which is enormous—they might also exist in planetary dimensions. After all, the difference in scale between planets and stars is much less than that between stars and galaxies. Thus, in a 1997 posting on KRONIA's internet discussion group, I asked whether such jets might not "explain" the polar column associated with the primeval Saturnian sun, to which Wallace Thornhill replied:

"Since the first Portland conference [sponsored by KRONIA Communications in 1997], I have considered the polar column to be a manifestation of a polar jet, which would have enveloped...Earth. The corkscrew motion of that jet would have been responsible for...rotating discharges...as seen from Earth."¹⁵

This polar jet, according to Thornhill, would have been a sustained plasma discharge in the form of Birkeland current,¹⁶ which claim is upheld by the plasma physicist Anthony Peratt.¹⁷

According to Thornhill:

"Birkeland currents are the natural form of electric currents in magnetized plasma. It is the only way to pass high currents through a plasma for any distance. They are the invisible power transmission lines in space."¹⁸

This brings to mind what Ralph Juergens had already noted in 1976, to the effect that "the column-like structure connecting Saturn and earth might have been of the nature of a steady electric discharge."¹⁹

¹⁵ W. Thornhill, KRONIA internet discussion forum, (December 19, 1997).

¹⁶ *Idem*, "The Electric Universe" (Beaverton, Oregon, 1997), p. 100.

¹⁷ A. L. Peratt to D. Cardona on the Intersect electronic discussion group sponsored by KRONIA Communications, July 24, 2002.

¹⁸ W. Thornhill, on the Intersect electronic discussion group sponsored by KRONIA Communications, November 26, 2001 (emphasis added).

¹⁹ R. E. Juergens to D. Cardona (December 19, 1976), private communiqué.

But can an electric discharge be sustained? Apparently so. Thus, for instance, in 1991, Andrew Gray discovered a bright strand, 150 light years long and a couple wide, near the centre of the Milky Way. Dubbed "the Snake," it is similar to other so-called "threads" which have been discovered within the barrel-shaped region of space known as the Galactic Centre Lobe. Gray himself is of the opinion that the Snake "is an electrical discharge, like a vast lightning bolt—so vast that it just hangs in space, instead of disappearing as earthly lightning does."²⁰

Meanwhile, the "corkscrew motion" of the jet, as mentioned above, originates from the plasma's discharge system. As Thornhill succinctly explained:

"...plasma is highly structured, allowing electric currents to flow through it along magnetic field lines in the form of filaments, themselves twisted into ropes. Such twisted filaments are seen in the powerful jets issuing from the cores of active galaxies, the tornadic clouds in the Lagoon nebula, the giant prominences streaming from the sun, comet tails, etc."²¹

Moreover, these twisted filaments are not static, but highly active vortices,²² thus accounting for the whirlwind motion endemic in the mythological *axis mundi*. But then, harking back to *astral* jets, is it known that these rotate? They surely do. Thus, for instance, data received from the Ulysses spacecraft showed that the twisting field lines connected to both poles of the Sun rotate with it. As Thornhill stated: "Astral jets are a more active and visible manifestation of the same Birkeland currents."²³ This, of course, had already been ascertained by others, including Eric Lerner, who described such a jet as "a plasma-pinching vortex filament."²⁴ As he explained:

"The vortices are produced by a phenomenon known as the pinch effect. A straight thread of electric current flowing through a plasma surrounds itself with a cylindrical magnetic field. This field attracts other currents flowing in the same direction. Thus the tiny current threads tend to 'pinch' together, drawing the plasma with them. The converging threads are twined into a plasma rope, much as water converging toward a drain generates a swirling vortex."²⁵

As indicated by the diagram on the previous page, a Birkeland current has the appearance of two serpents twisted about each other. And was not Boreas originally said to have possessed serpent tails for feet? (Even so, it should be noted that the serpentine structure of the *axis mundi* was not always visibly apparent, concerning which much more will be divulged in a future volume.)²⁶

Taking his cue from Thornhill, Talbott, too, latched on to the polar jet theory. Thus, in an interview conducted by *AEON*, he spoke of the "galactic scale plasma model" which carried

²⁰ "Here Be Serpents," *The Economist* (March 8, 1997), p. 120, as cited by W. Thornhill, *op. cit.*, pp. 22-23.

²¹ W. Thornhill, *op. cit.*, p. 17.

²² E. J. Lerner, *The Big Bang Never Happened* (N. Y., 1991), pp. 234-236; W. Thornhill, *op. cit.*, p. 22.

²³ W. Thornhill, on the Intersect electronic discussion forum sponsored by KRONIA Communications, December 29, 2001.

²⁴ E. J. Lerner, "The Big Bang Never Happened," *Discover* (June 1988), p. 73.

²⁵ *Ibid.*

²⁶ For more on this characteristic as contained in the mytho-historical record, and the physical properties which led to it, consult D. Cardona, *op. cit.*, pp. 59 ff.

"the potential for a jetting of material" along the axis of a plasma discharge.²⁷ To which he added:

"This streaming of gases along the axis of rotation has, for 25 years, been part of the bedrock of the Saturn theory."²⁸

Now while, as we have seen, it is true that the interpretation of the polar column as a stream of debris, now clarified as streaming gases, was part and parcel of Talbott's particular model since its inception, the interpretation of the same phenomenon as a plasma jet or discharge was entirely new. Here it is more than evident that, while willing to accept cosmic plasma jets as scaled-up versions of proto-Saturn's boreal column, Talbott was not ready to relinquish his original idea, and thus sought to amalgamate the two. Thornhill himself was not exactly hostile to this unification. Thus, when questioned about Talbott's interpretation of the polar column as a stream of fiery debris ejected toward Earth, he replied with these words:

"I think that for most of the time [the polar column] would have been like a spectacular auroral effect with very little matter transfer taking place. It is only when it transformed suddenly from a glow discharge to an arc that substantial matter would have been transferred between bodies."²⁹

But can a Birkeland current transfer matter between bodies? Apparently so. As Thornhill explained:

"To begin with, a rotating Birkeland current will form a tornado in an atmosphere... Secondly, Eric Crew back in the 80s discussed how lightning usually accelerates positive ions vertically, creating a jet of hot moist air at the top of the discharge channel. In general terms the discharge compresses, heats and accelerates gases from a region of high pressure to a region of lower pressure. So bulk matter is moved by an electric discharge."³⁰

The tornadic quality of this sustained Birkeland current thus compensates for the loss of Jueneman's Rankine vortex model.

Or does it have to? After all, with the tidal heaping of the terrestrial atmosphere due to proto-Saturn's proximity combined with its inevitable spiraling motion, the effects proposed by Jueneman *should* have taken place. Even the twisting of the *axis* can be accounted for through the workings of a Rankine vortex. Just as terrestrial tornadoes "occasionally exhibit smaller counter-rotating vortices in close proximity to the primary whirlwind," so "on a much vaster scale, similar counter-rotating catenulate *bolus flows* would have snaked around the polar column in filamentary fashion."³¹ Could it not, therefore, have been that both causes, a planetary Rankine vortex and a sustained Birkeland current, have joined forces in producing the most colossal tornado Earth has ever experienced? Or would the electrical force inherent in a Birkeland current have overpowered the Rankine effect?

²⁷ D. Talbott, "The Saturn thesis," Part 3, *AEON* IV:6 (May 1997), p. 50.

²⁸ *Ibid.*

²⁹ W. Thornhill, "The Electric Saturnian System," *AEON* VI:1 (February 2001), p. 40.

³⁰ *Idem*, on the Intersect discussion group sponsored by Kronia Communications (February 27, 2001).

³¹ F. B. Jueneman, *op. cit.*, p. 40.

What is left is to explain how a Birkeland current is made visible. After all, since it, too, follows Jupiter's magnetic field lines, Io's flux tube is also a Birkeland current.³² It thus turns out, after all, that Lynn Rose's postulate is not as unsound as I had originally assumed. As stressed earlier, however, Io's flux tube is not optically visible. Neither are the Sun's poleward emissions. As we have indicated, the mythological *axis mundi*, on the other hand, seems to have been very much visible. So are astral jets. Under what conditions, then, can a Birkeland current be made visible as a twisted ray of light? Needless to say, this might not be the right question to ask, especially since Birkeland currents have already been explained as invisible power transmission lines. Even so, as the plasma physicist Anthony Peratt stated at the Laughlin World Conference sponsored by KRONIA Communications on July 8, 2001, a Birkeland current *can* be made visible through the detritus it may collect about it. What is, however, really visible is the plasma through which these currents *flow*. To be sure, the plasma itself needs to be *made* visible.

According to the electrical engineer, Don Scott, there are three different modes in which a plasma can operate, and these depend on the strength of the electrical current passing through it. In what is known as the dark current mode, where the electrical current is very low, the plasma will not glow and, therefore, remains invisible. It can only be detected through the measurement of its electrical activity with sensitive instruments. As Scott explains, the present magnetospheres of the Solar System planets "are examples of plasma operating in the dark current mode." But if the strength of the electrical current is "significant," the entire plasma begins to glow, its brightness being naturally dependent on the strength of the current. If the electrical current is very high, the plasma goes into arc mode, during which it "radiates brilliantly over a wide spectrum," with the current tending to form the filaments we are now becoming familiar with.³³

But, with a current of 400,000 volts, why does Io's flux tube not glow? As Peratt explains, given the size of the system, this is not a "terribly impressive" amplitude. Translating into one mega-ampere, it even falls short of the seven mega-amperes conducted by Earth's circular auroras, made visible in Earth's northern and southern polar skies (even though this varies considerably).³⁴ So that while it *is* the strength of the current passing through a plasma that accounts for its ability to glow, this strength has to be considered in relation to the size of the system that spawns it or, better said, in relation to the magnitude of the plasma itself. As Scott explains further, it is not the actual current in total amperes that is the real issue, but the current *density*, that is the amount of amperes per square meter.³⁵

Actually, Peratt defines the situation even further and, at the risk of befuddling the lay reader, I hereby include his words for the benefit of the specialists. As he stated, whether a plasma glows or not relies on how energetic the relativistic electrons happen to be, plus the strength of the magnetic field, "as this determines the intensity of synchrotron radiation the electrons beam towards Earth."³⁶ Those who are interested enough can consult his major work on the subject.³⁷

As for our own proto-Saturnian polar column—or "polar Birkeland current"—Peratt estimates it to have probably carried something like "a thousand mega-ampere into and out of

³² W. Thornhill, on the Intersect discussion group sponsored by KRONIA Communications, November 26, 2001.

³³ D. Scott, on *ibid.*, December 29, 2001.

³⁴ A. L. Peratt, on *ibid.*, March 23, 2002.

³⁵ D. Scott, on *ibid.*, March 25, 2002.

³⁶ A. L. Peratt, on *ibid.*, March 25, 2002.

³⁷ *Idem*, *Physics of the Plasma Universe* (N. Y., 1992), Chapter 6 *in toto*.

the planetary polar regions.”³⁸

As earlier stated, it would not be correct to claim that proto-Saturn’s polar column was a stellar jet comparable to Herbig Haro objects. Even if scaled down from stellar amplitudes to brown dwarf magnitudes, such jets would remain colossally active in their electrical manifestation. It is more than probable that proto-Saturn’s polar ray *did* originate as such a jet, but it is doubtful that it still retained its full potential by the time man came upon the scene.

As Ken Moss suggested, it would have been more likely that the polar ray mankind remembers was, at best, the *remnant* of an original jet.³⁹ And why not? After all, cosmic jets are known to fade. As Peratt disclosed in 1992:

“Comparison of the integrated magnitude of the jet in M87 over the period 1934-1980 shows that the jet is variable and has been fading, more or less uniformly, by about 0.8 mag per decade between 1964 and 1980. The data imply that over the period 1952-1980, the total jet intensity fell by at least 2.5 mag. Comparisons of isophotes taken in 1964 and 1979 show no obvious differences in overall shape, apart from effects of variation and noise. This indicates that the fading has affected the whole channel uniformly since 1964...”⁴⁰

That jets fade is exemplified by our present Sun. The present poleward fields emanating from the Sun are so relatively weak that they operate in the dark mode. It is, however, doubtful that they always did so.

As we shall soon see, brown dwarfs are believed to degenerate into giant gas planets. What this additionally means is that any jets spawned by such free floaters, already scaled down, would necessarily continue to decay in their electrical amplitude. We have no way of knowing at what exact phase in its evolution the proto-Saturnian brown dwarf star had arrived at during the time of man, prior to its entry into our Solar System. It, however, seems reasonable to assume that it was well along its way in its evolutionary transformation. Even the word “jet” might be misleading here where “a sustained Birkeland current” might much better fill the nomenclative bill.

Despite all that, none of the above is to say that proto-Saturn’s polar column was devoid of electrical activity, or that this activity failed to manifest itself in catastrophic dimensions. It should, however, be emphasized that, during man’s existence on Earth, the polar column did not always exhibit its full tornadic force and, if we are to believe the mytho-historical record, its twisted serpentine character was not always apparent. As seen from latitudinal distance, very much as Thornhill intuited, the column would have appeared “like a spectacular auroral effect,” a tapering swath of light stretching all the way from proto-Saturn to Earth’s north axial pole, a thing of beauty, even one of tranquility. Yes—it would have been seen to whirl, perhaps even accompanied by an electric hum. It is even possible that ancient man attempted to approach it. But as one came ever closer to it, its vibrational envelope, to say nothing of an electrical feel similar to that encountered prior to a storm, would have been felt as a warning against further approach.

THE ARCTIC DEPRESSION

Such a planetary tornado, in the form of a rotating sustained Birkeland current, acting continuously over the same area in Earth’s north polar region, scouring the land underneath, should have left an indelible scar. As it happens, small as it is compared to the Pacific and

³⁸ *Idem* (see reference #34).

³⁹ Verbal communication to the author.

⁴⁰ A. L. Peratt, *Physics of the Plasma Universe* (N. Y., 1992), p. 245.

Atlantic, the Arctic Ocean “contains four depressions of oceanic depth which, *unlike other oceans*, hold large volumes of sediment.”⁴¹ This bespeaks a different method from other oceans by which these sediments were collected. Charles Ginenthal understood this extra thick sediment as having been deposited by “a global, oceanic tidal wave, flowing northward.”⁴² This is a theory that has also been proposed by Jueneman.⁴³ As the latter indicated, however, such a flood, acting through waves of translation, would have been subject to Earth’s rotation and would have swept from the equator in a colossal spiraling tide toward both poles, to say nothing of travelling back toward the equator.⁴⁴ That being the case, these waves should just as easily have deposited their load of sediment in other land-encircled seas which would have been in their path, such as Hudson’s Bay and the Black, Caspian, and Baltic Seas. Why, then, do we not find a similar thick load of sediment in these depressions?

It is not that Earth’s Arctic region has not been inundated by an immense flood—which subject is also reserved for a future volume—but this would have entailed an entirely different mechanism.⁴⁵ Under the scheme presented here, it seems more reasonable to suppose that the thick sediment of the Arctic Ocean was created *in situ* by the constant scouring of the tornadic polar column.

Also, as we have seen, Earth’s boreal lithospheric bulge would have risen because of proto-Saturn’s proximity. The tidal heaping of Earth’s interior magma, however, would have actually been greater than at the surface. The thermal energy which would have resulted from the friction between this molten material and the enveloping crust would have enhanced the magma’s mobility. This heated plastic matter would then have broken through the surface, causing a collapse of the crust. This is precisely what has been discovered in the Eurasian Basin of the Arctic Ocean, an area which “represents a regional collapse of the Earth’s surface due to material being removed from the lower mantle.”⁴⁶

Even more recently, a swirling vortex of molten rock has been discovered 3000 kilometers beneath the North Pole.⁴⁷ Peter Olson and Jonathan Aurnou, then from the Johns Hopkins University in Baltimore, Maryland, traced a flow of almost a quarter of a degree per year in a region some 2400 kilometers across. As Olson stated, the flow “has the structure of a giant hurricane.”⁴⁸

There is, incidentally, no point in claiming that these effects could have been caused by a different set of circumstances. What is stressed here is that this is precisely what our theory demands and, in that respect, the demand is met. In conjunction with the other physical evidence from the same region supplied in earlier chapters of this work (to say nothing of what we intend to add in coming volumes), the accumulating signs continue to build up in our theory’s favor.

One more problem yet to be solved concerns the manner in which Earth came to be locked within proto-Saturn’s polar column. This, however, is going to take us on a final tan-

⁴¹ “The Four Oceans at the Top of the World,” *New Scientist* 21 (1964), p. 7 (emphasis added).

⁴² C. Ginenthal, “The Flood,” *The Velikovskian* II:4 (1994), p. 35.

⁴³ F. B. Jueneman, “The Terrestrial Sea: A Critical Model of Science and Myth,” *AEON* IV:6 (May 1997), pp. 32-33; but see also, R. M. Smith, “Some Thoughts on the Saturnian Sun and Polar Column,” *AEON* V:1 (November 1997), p. 5; G. P. Williams, “Changing Sea Levels,” *AEON* V:3 (December 1998), pp. 21 ff.; D. Cardona, *op. cit.*, p. 68.

⁴⁴ F. B. Jueneman, *loc. cit.*

⁴⁵ See here D. Cardona, *op. cit.*, pp. 62 ff.

⁴⁶ Y. Herman (ed.), *Marine Geology and Oceanography of the Arctic Sea* (N. Y., 1974), p. 100.

⁴⁷ “Hurricane of Rock,” *New Scientist* (November 13, 1999), p. 27.

⁴⁸ *Nature*, Vol. 402, p. 170; see also D. Cardona, *op. cit.*, pp. 66 ff., for additional physical evidence from Earth’s north polar region.

gential trek which will go a long way in elucidating the manner in which solar systems are formed.

FREE-FLOATING SUB-BROWN DWARFS

As noted earlier, free wandering objects out in space are now being regularly discovered. The problem that is now facing astrophysicists is to determine whether most of these are planets or brown dwarf stars. As we have already seen, red and brown dwarfs are believed to “occupy the middle ground between planets and stars.”⁴⁹ But the demarcation between stars, dwarf stars, and planets seems forever to be changing. To make matters worse, along the way a new class of free-floating objects were discovered that were “lighter than the lightest brown dwarf and heavier than the heaviest planets.”⁵⁰ While less massive than brown dwarfs, some astronomers have questioned the use of the word “planets” to describe them. Other problems have been listed besides their massiveness. Thus, to give one lame example, it has been calculated that the objects lurking in the globular cluster known as M22 “make up as much as 10 percent of the cluster’s mass—*too numerous to be wandering ‘orphaned’ planets.*”⁵¹ As if quantity has any bearing in the classifying of astronomical bodies.

Alan Boss settled on the term “sub-brown dwarfs” as a designation for these free-floaters. But, as Glen Schneider opined: “Give a billion years of cooling and evolution, and these objects may be indistinguishable from planets.”⁵² This is primarily because it is believed that these objects are still contracting, “collapsing because of their own gravity.” As Maria Zapatero-Osorio stated: “With time, they will look like Jupiter and Saturn.”⁵³ And did not Carl Sagan claim that, at least in the infrared part of its spectrum, “it might even be correct to consider Jupiter a star”?⁵⁴ Did not Mark Marley more recently note that: “If you line a mug shot of Jupiter up with these guys, it [i.e., Jupiter] is just a very low-mass brown dwarf.”⁵⁵ And if Jupiter, why not then Saturn? All of which eliminates the objection concerning whether such a brown dwarf star—or should we say sub-brown dwarf star?—could ever turn into the planet Saturn as proposed in the present work. But what of the stated billion years said to be required for such a transformation?

Unanimity among astrophysicists seems to be as rare as that among politicians. Thus, quite recently, when Göran Sandell discovered what he believes to be a “monster of a proto-star” in the Cepheus constellation, near the emission nebula known as NGC 7538, he claimed that it, and others like it, could develop into a high-mass star “in an astronomical blink of an eye—only about 10,000 years.”⁵⁶

Back in 1977, astronomers focused on a disk-shaped object in the constellation Cygnus which was identified as an evolving star. Not only that, it was said that it “could well be a sun in the process of forming its own planets.” Although the object, dubbed MWC 349, had been known since the 1930s, it was only now that they “realized how unusual it

⁴⁹ K. Wright, “When Is a Star Not a Star?” *Discover* (January 2002), p. 28.

⁵⁰ W. Schomaker, “How to Make a Brown Dwarf,” *Astronomy* (October 2001), p. 28.

⁵¹ Press release from the Hubble European Space Agency Information Centre, Garching, Germany, June 2001 (emphasis added).

⁵² W. Schomaker, *loc. cit.*

⁵³ M. Fox, “Rogue ‘Gas Balls’ in Space Break Rules of Solar System, Astronomers Find,” *The Vancouver Sun* (October 6, 2000), p. A13.

⁵⁴ C. Sagan, *Cosmos* (N. Y., 1980), p. 158.

⁵⁵ “Astronomers Find Jupiter-Like Weather on Brown Dwarf’s,” *Science Daily* [Internet] *Magazine* (June 3, 2002).

⁵⁶ P. Morledge, “Walking Among Baby Giants,” *Astronomy* (October 2001), p. 26.

was.”⁵⁷ As the editors of *TIME* reported: “In simultaneous observations, the scientists discovered that the star, already ten times the size and 30 times the mass of the sun, was surrounded by a great glowing disc some 224 million km. (approximately 140 million miles) in diameter.”⁵⁸ The strange thing about this, however, is that the star was believed to be “little more than 10,000 years old,” even though it is believed to be still developing.⁵⁹ Stranger still was the rate at which it was developing. As stated in the periodical in question:

“Such a process can sometimes take millions of years. But scientists will not have to wait that long to see how MWC 349’s birth turns out. At the rate at which the disc is disappearing, it will be gone in a mere 100 years.”⁶⁰

Another star, FG Sagittae, has been said to be evolving so rapidly, it can actually be seen changing color as it moves from one theoretical phase to another. This star has already changed from blue to yellow over a mere 40 years.⁶¹

In view of these cases, it does not seem reasonable to assume that a body so much less massive would take a billion years to form. Coincidentally or not, 10,000 years is precisely the amount of time Sam Flamsteed claimed it would take a brown dwarf star to turn into a Jupiter sized planet.⁶²

Additionally, it is believed by some that brown dwarf stars do not shine like stars, even though they generate enough heat to be detected by infrared-sensing instruments.⁶³ Stuart Goldman, on the other hand, seems to disagree when he speaks of “the *visible* [although feeble] light from such stellar embers.”⁶⁴ And, according to the editors of *Astronomy*, thirty newly discovered brown dwarf stars in Rho Ophiuchi are considered to be young enough to allow them “to glow slightly brighter than their older relatives.”⁶⁵ This is precisely what we have been proposing for the brown dwarf star that was proto-Saturn in the past pages of this volume.

In the interim, models based on the known characteristics of these dwarfs have been created in order to ascertain what these sub-stellar bodies actually look like. According to what Adam Burrows and his colleagues at the University of Arizona have called a “first stab,” based on the so-far limited data available, the conclusion has been reached that brown dwarfs can radiate in tints progressing “from red to purple to magenta.”⁶⁶ If this turns out to be so, further conforming to our postulate regarding proto-Saturn’s dull red hue, it would also coincide with Thornhill’s claim that, besides its infrared emission, proto-Saturn would have radiated in ultra-violet light.⁶⁷

Some brown dwarfs, it has been theorized, might even be cloudy. As Stuart Goldman explained:

⁵⁷ “Witnesses to a Creation,” *TIME* (June 27, 1977), p. 55.

⁵⁸ *Ibid.*

⁵⁹ *Ibid.*

⁶⁰ *Ibid.* (emphasis added).

⁶¹ *New Scientist* (September 14, 1991), p. 14.

⁶² S. Flamsteed, “Impossible Planets,” *Discover* (September 1997), pp. 80-81.

⁶³ K. Wright, *loc. cit.*

⁶⁴ S. J. Goldman, “Brown Dwarfs Showing Their True Colors,” *Sky & Telescope* (February 2002), p. 22 (emphasis added).

⁶⁵ Boxed item, *Astronomy* (February 2002), p. 28.

⁶⁶ S. J. Goldman, *loc. cit.*

⁶⁷ W. Thornhill, “Stars in an Electric Universe,” *AEON* V:5 (January 2000), p. 48.

"The appearance of the clouds would be affected by the star's rotation. If a dwarf turns fast enough, the spin could drive the clouds into a stellar weather system much like the bands on Jupiter."⁶⁸

Or, one might add, also like the bands on Saturn—although, to be sure, the *proto-Saturnian* latitudinal cloud bands only became apparent toward the end of the configuration's existence.

THE ACCRETION DISK MODEL

Together with the existence of planets in extra-Solar systems, the discoveries enumerated above have added further havoc to the current theory of planet formation. As Zapatero-Osorio has stated: "The formation of young, free-floating, planetary-mass objects like these is difficult to explain by our current models of how planets form."⁶⁹ And: "The most intriguing question now is how can we explain the formation and evolution of planetary-mass objects outside the solar system?"⁷⁰ And, in a press release: "These free floaters may pose a considerable challenge to current theories about how planets form."⁷¹

There was a time when the formation of the Solar System planets was believed to have been due to material being drawn out of the Sun by a close passing star. This theory was however discarded in favor of the one now accepted in which the planets are theorized to have formed from the same gas cloud that collapsed through its own gravity to form the Sun itself. The material remaining after the Sun had formed is said to have continued to circle the Sun in its equatorial plane. Known as an accretion disk, this gaseous cloud continued to collapse into smaller clumps of matter, which clumps eventually aggregated into the planets and at least some of their accompanying satellites. There have been various other theories, but the accretion disk model became the one most widely accepted.

When it comes to extra-solar systems, however, it has recently been discovered that the accretion process encounters difficulties. Thus, for instance, 90% of the young stars known to exist in the Orion nebula are surrounded by so-called accretion disks "that could potentially clump into new worlds." But, as Kathy Svitol noted, "making a planet, it turns out, isn't all that easy to do."⁷²

"[Robert] O'Dell christened these disks 'proplyds,' for protoplanetary disks. The name may actually be a misnomer, because these disks will evaporate within a million years, probably before planets can form."⁷³

"Intense radiation streaming from the nebula's brightest infant stars can stop the process in its tracks, says astronomer C. Robert O'Dell of Vanderbilt University in Nashville, Tennessee. 'Radiation evaporates away the disks in a few hundred thousand years or less,' he says, leaving little or no time for planets to coalesce."⁷⁴

⁶⁸ S. J. Goldman, *loc. cit.*

⁶⁹ M. Fox, *loc. cit.*

⁷⁰ *Science* (October 2, 2000), as quoted by I. Tresman, "18 Possible Planets Lacking a Star," *SIS Internet Digest*, 2000:2, p. 13.

⁷¹ As quoted by I. Tresman, "Intersect 2001 Conference," in *ibid.*, 2001:2, p. 13.

⁷² K. A. Svitol, "Planets in Peril," *Discover* (August 2001), p. 11.

⁷³ T. P. Ray, "Fountains of Youth: Early Days in the Life of a Star," *Scientific American* (August 2000), p. 45.

⁷⁴ K. A. Svitol, *loc. cit.*

These protoplanetary nebulae, says Sun Kwok, “evolve rapidly and exist a mere one thousand years.”⁷⁵

“But similar disks in milder environments,” Thomas Ray opined, “should indeed survive long enough to give birth to planets.”⁷⁶ But how can such disks ever be in a milder environment when they are supposed to exist around newly-forming stars?

So, likewise, in another extra-solar system which consists of two newly discovered planets orbiting around 47 Ursae Majoris. What makes this system doubly interesting is that, unlike others previously discovered, it resembles mostly our own Solar System. One of these planets has been calculated to have a mass equivalent to 2.6 that of Jupiter, with the other containing a mere 0.76 of Jupiter’s mass. The two planets therefore “have about the same mass ratio as Jupiter and Saturn.” Moreover, unlike other previously discovered extra-solar systems, the planets around 47 Ursae Majoris travel in circular, rather than elliptical, orbits. As Debra Fischer noted: “Now, for the first time, we have a system that looks like it had a gentle dynamical history, similar to our own solar system.” What is germane to our present topic, however, came to light when Greg Laughlin conducted a computer simulation of the system only to discover that “the gravity of the larger inner planet would jostle planetesimals in the star’s habitable zone, preventing them from aggregating into a terrestrial planet.”⁷⁷

Granted that the above may be considered unique examples, what about our own Solar System? Despite everything that had been claimed previously, back in 1960, W. H. McCrea’s calculations indicated that planets could not have originated by aggregation between the orbit of Jupiter and the Sun.⁷⁸ That same year, R. A. Lyttleton confirmed this assumption through his own calculations, again showing that the terrestrial planets, that is those within the orbit of Jupiter, could not have formed from the so-called accretion disk, but must have originated, by disruption, from the giant gaseous planets themselves.⁷⁹ Not everyone agreed, however, and, in 1979, Robert Jastrow was still claiming general ignorance when it came to the formation of our Solar System’s inner planets. As he wrote:

“We can understand the birth of the giant planets of the solar system—Jupiter, Saturn, Uranus, and Neptune...But the smaller planets—the earth, Mars, Venus and Mercury—their origin is a mystery. Somehow they collected out of tiny grains of matter and developed into full-sized planets. We may never know exactly how the earth and its sister planets were born.”⁸⁰

By 1997, there were other astrophysicists who began questioning the theory of planet formation through the core accretion mechanism,⁸¹ so that it eventually had to be admitted that the accretion disk model falls flat on its face. By then, Uranus and Neptune were made to join the terrestrial planets as being impossible to have been formed through the accretion process. As Joshua Roth stated: “Pity Uranus and Neptune...no one can even explain why they exist.”⁸² Agreeing with what has now become the general consensus, Roth declares that

⁷⁵ S. Kwok, “Mining for Cosmic Coal,” *Astronomy* (June 2002), p. 49.

⁷⁶ T. P. Ray, *op. cit.*, p. 46.

⁷⁷ R. Naeve, “A Planetary System Like Our Own?” *Astronomy* (October 2001), p. 20.

⁷⁸ W. H. McCrea, *Proceedings of the Royal Society*, Vol. 256 (May 31, 1960).

⁷⁹ R. A. Lyttleton, *Monthly Notices of the Royal Astronomical Society*, 121 #6 (1960); *idem*, *Man’s View of the Universe* (Boston, 1961), p. 36.

⁸⁰ R. Jastrow, “Genesis Revealed,” *Science Digest* (Winter 1979), pp. 38-39.

⁸¹ A. P. Boss, “Giant Planet Formation by Gravitational Instability” and J. Glanz, “Worlds Around Other Stars Shake Planet Birth Theory,” as cited in *THOTH*, electronic newsletter sponsored by KRONIA Communications, Vol. I, No. 18 (July 3, 1997), p. 7.

⁸² J. Roth, “A Fiery Birth for Frigid Worlds?” *Sky & Telescope* (July 2002), p. 20.

"core accretion would take tens or hundreds of millions of years—and the protoplanetary disks that are seen surrounding other infant suns don't seem to last that long."⁸³ In fact, astrophysicists have no further qualms about speaking of "short disk lifetimes."⁸⁴

But if not through accretion, through what method are planets formed?

PLANETARY EJECTIONS

When it comes to free floaters in space, one suggestion that has been proposed by Zappero-Osorio is that "perhaps these objects were ejected from their orbits from their original birth-places around the stars."⁸⁵ Kailash Sahu was of similar opinion when he asked: "Could they be planets torn from their parent stars...?"⁸⁶ In order to accept this, however, it needed to be shown that at least *some* of these free floaters, including brown dwarfs, must still be existing in orbit around some stars. News of such a brown dwarf did not take long in coming.

Actually, there already had existed *indirect* evidence for several brown dwarfs orbiting around stars. But *direct* evidence did eventually filter through. This concerned a brown dwarf that Michael Liu and his colleagues discovered through the infrared adaptive-optics systems of the Gemini North and Keck telescopes. What these optic systems disclosed was a brown dwarf "glowing faintly" around the "Sun-like star" known as 15 Sagittae.⁸⁷ If nothing else, this takes care of the objection that the sub-brown dwarf that was proto-Saturn had no business residing, or settling, within the Solar System. Moreover, in comparison to our Solar System, the proximity of the brown dwarf in question to 15 Sagittae, "as little as 14 astronomical units," would have positioned it "between Saturn and Uranus,"⁸⁸ not far from the very locality in which proto-Saturn itself finally settled.

What is also interesting is that, according to Liu, this brown dwarf "is too massive to have formed within a circumstellar disk like a planet."⁸⁹ While expressing his belief that "there are a diversity of physical processes that act to populate the outer regions of exoplanet systems,"⁹⁰ Liu did not venture to say by what possible procedure such a dwarf could have been formed. Bo Reipurth, on the other hand, has proposed that "brown dwarfs begin their lives as protostellar 'embryos' just like ordinary stars—but are gravitationally ejected from their parent gas clouds before they have time to grow."⁹¹

But what of the planets in our own Solar System? Planetary ejection had been proposed by orthodox astronomers long before the discovery of extra-solar planets. But this was an entirely different mode of ejection in which small planets were theorized to have been ejected by larger ones. In 1989, V. N. Zharkov and A. V. Kozenko revived this theory by again proposing that Jupiter must have ejected an "embryo" which then initiated the formation of Saturn, with further ejected "embryos" forming the planets Uranus and Neptune.⁹² In 1993, while questioning the very process of what he termed "the often-invoked idea that planets all condensed from a collapsed cloud of material in orbit around the Sun," Thomas Van Flandern proposed that cosmic bodies are emitted by a fast rotating parent. Thus, according

⁸³ *Ibid.*

⁸⁴ D. Kaisler, "The Puzzles of Planethood," *Sky & Telescope* (August 2002), p. 37.

⁸⁵ M. Fox, *loc. cit.*

⁸⁶ W. Schonmaker, "Mystery Objects Wander M22," *Astronomy* (November 2001), p. 32.

⁸⁷ D. Tytell, "Brown Dwarf Imaged Close to a Star," *Sky & Telescope* (April 2002), p. 24.

⁸⁸ *Ibid.*

⁸⁹ *Ibid.*

⁹⁰ *Ibid.*

⁹¹ *Ibid.*

⁹² V. N. Zharkov & A. V. Kozenko, "On the Role of Jupiter in the Formation of the Giant Planets," *Earth Physics Institute, Academy of Sciences of the USSR* (January/February 1990).

to him, stars give birth to planets, while planets, in turn, give birth to satellites. Moreover, these emissions are initially jettisoned out in opposite and aligned directions, before being scattered in equatorial planes.⁹³ In fact, as we have seen, astrophysicists began speaking of planets “birthing punier planets” purely as a matter of fact.⁹⁴ If nothing else, this demonstrates that alternative theories claiming that the Solar System planets have been ejected from other planets, so much ridiculed when proposed by Immanuel Velikovsky in 1950, have more than once been proposed by academia.

The planetary ejection models developed by those mentioned above differ from each other, as they also differ from the one propounded in this work. Here we follow what is being discovered in our immediate spatial neighborhood, which continues to lend credibility to all those who have been stressing the plasma and electric nature of the Universe. In this respect, Halton Arp had the following to offer:

“The assumption in cosmogony until now has been that all bodies in the universe condensed out of a uniformly spread, homogeneous medium and hierarchically aggregated to their current sizes. The evidence, however, is that proto-bodies are ejected from previously existing parent bodies and subsequently grow to their presently observed sizes. We have seen this strongly in the formation of galaxies, quasars and cluster galaxies and quasars... We are seeing it now in the formation of planets.”⁹⁵

But bear with me a wee longer while we back-track a little and I promise that, by the end of this last chapter, we will have managed to drive our ultimate peg into its hole.

ASTRAL EJECTIONS

Let us move far out in space into the dominion of galaxies. How *are* galaxies formed? The theory that new galaxies are formed by ejection from older galaxies harks back to 1957 as adduced by Viktor Ambartzumian,⁹⁶ who has long been regarded as a hero of science in his native Armenia. This theory has also been one of the mainstays of Halton Arp’s career. Meanwhile, Hannes Alfvén had for long suggested that plasma filaments, which have since been detected in space in *quantum sufficit*, are responsible for the formation of galaxies. Anthony Peratt, a former student of Alfvén who later acted as his secretariat, and who has since become a renowned plasma physicist presently working at Los Alamos National Laboratory, decided to test Alfvén’s hypothesis. What Peratt discovered in the laboratory is that “plasma filaments tend to twist up into what look like tiny spiral galaxies.” Through computer simulation, he then scaled the action up to galactic size. Starting with two parallel filaments that are drawn together by their magnetic fields, and followed by what Eric Lerner called “a prolonged mating dance,” the filaments merged into a single structure that correctly mimicked a *bona fide* spiral galaxy. Some of these simulations even produced the poleward jets seen emanating from real-life galaxies.⁹⁷

As Lerner noted, computer simulations are one thing, the real Universe is quite another. It was, however, not long after Peratt had published his results that, in 1984, real filaments, more than a hundred light-years long, were observed at the centre of our own galaxy, the Milky Way. As Lerner reported:

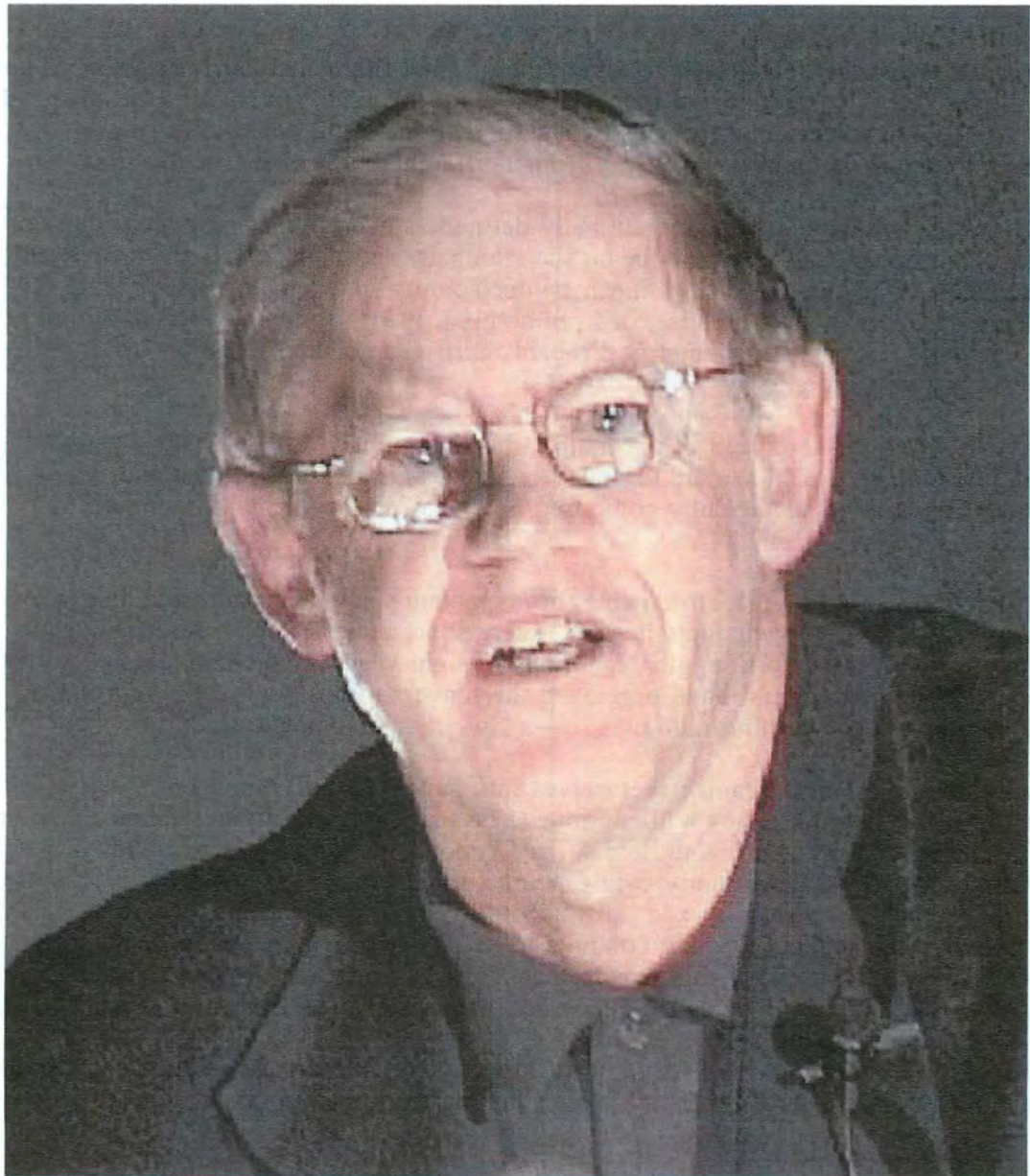
⁹³ T. Van Flandern, *Dark Matter, Missing Planets and New Comets* (Berkeley, California, 1993), pp. 141-142.

⁹⁴ J. Glausiusz, “Solar Revisionism,” *Discover* (March 2000), p. 54.

⁹⁵ H. Arp, *Seeing Red: Redshifts, Cosmology and Academic Science* (Montreal, 1998), p. 222.

⁹⁶ *Ibid.*, pp. 84, 230.

⁹⁷ E. J. Lerner, “The Big Bang Never Happened,” *Discover* (June 1988), pp. 74-75.



Anthony Peratt
(Photograph—2000—by Wallace Thornhill.)

"The filaments look like textbook examples of electromagnetic vortices, consisting of an outer layer of spiraling helices surrounding an inner layer of nearly straight threads. What's more, indirect measurements suggest that the strength of the magnetic field in the filaments is far greater than what most astrophysicists thought possible on such a scale—but just about what Peratt's simulations predicted."⁹⁸

This then raises the question as to where the original filaments that form galaxies come from. Arp talks of "newly created matter" as a matter of fact⁹⁹ as so, also, do most astrophysicists. He, however, clarifies this by stating that "it would not strictly be new creation but merely materialization of mass-energy from a different, perhaps diffuse location."¹⁰⁰

"Of course if the universe is operationally defined as everything that is detectable or potentially detectable there can be no such thing as 'new' matter. So when we speak of creation of matter we do not mean matter coming into our universe from somewhere else (there is nowhere else) or from nothing. We must mean the transformation of previously existing mass-energy. Probably this means materialization from a previously diffused state..."¹⁰¹

Granted, Arp does not speak of plasma, but his "previously diffused state" can be understood as just that. In fact, if we are to believe Alfvén, *plasma simply exists* and, as we have seen, the entire Universe is actually composed of 99% of it. As Lerner paraphrased Alfvén's argument:

"In any plasma...tiny vortex filaments form spontaneously, and over time they grow larger and larger. Given enough time...there's no reason why cosmic filaments couldn't have grown to a length of billions of light-years. Gathering matter around them, the filaments could have organized the universe into a complex web of magnetic fields, electric currents, and plasma—a kind of cosmic power grid."¹⁰²

Once these filaments organize themselves into super-cluster complexes, they will have acquired so much mass that they will continue to be shaped by gravity as well as electric and magnetic fields. Gravity itself would break the filaments into "cluster-size clouds of plasma, like beads on a string." Eventually, while being further compressed by new filaments, the plasma will again be broken up and, still according to Alfvén, would then form galaxies. More than that, the sequence would continue to be repeated in steps, down to stars, planets, and their satellites.¹⁰³ It is for this reason that plasma is now considered to be the Fundamental State of Matter.¹⁰⁴ Or, as the renowned physicist David Bohm has been known to claim: "Plasmas are the origin of everything."¹⁰⁵

Throughout the years, Arp has supplied a large body of observational evidence verifying the concept.¹⁰⁶ Like some of the astral jets emanating from their centres, some galaxies also

⁹⁸ *Ibid.*, p. 75.

⁹⁹ H. Arp, *op. cit.*, p. 109.

¹⁰⁰ *Ibid.*

¹⁰¹ *Ibid.*, p. 228

¹⁰² E. J. Lerner, *op. cit.*, p. 78.

¹⁰³ *Ibid.*

¹⁰⁴ A. L. Peratt, on the Intersect discussion group sponsored by KRONIA Communications (March 20, 2002).

¹⁰⁵ *Ibid.* (January 3, 2002).

¹⁰⁶ H. Arp, *op. cit.*, pp. 7, 17, 43, 119, 215.

exhibit knots in their spiral arms.¹⁰⁷ Together with other evidence, this led Arp to believe that galaxies eject other, perhaps smaller, galaxies laterally along their plane of rotation.¹⁰⁸ Other evidence, however, indicated that galaxies can also be ejected from galaxies along their cosmic jets, that is along their axis of rotation, vertically from either pole.¹⁰⁹

Stars, of course, are formed *in* galaxies. Arp believes that stars are also *ejected* from galaxies through their spiral arms. Actually, he believes the spiral arms themselves to be ejections which then become “the loci of new star formation.”¹¹⁰ But then, in discussing *poleward* ejections, he stresses that: “The tyranny of the observations is to insist on opposite ejection of extragalactic material as a ubiquitous process that operates on all scales.”¹¹¹ If that is so, it would indicate that stars, too, could also be ejected poleward in opposite directions along galactic plasma jets. And, in fact, Arp gives “a vivid demonstration that the phenomenon of ejection of discretized bodies not only characterizes the birth of quasars and galaxies...it also extends down into the realm of young star formation.”¹¹² He does this by referring the reader to the photographs of HH 34, which we have already encountered in a previous chapter as a Herbig-Haro object displaying distinct knots in its jet. He then goes on to say that “there is an uncanny resemblance between the formation of young galaxies and the formation of young stars.”¹¹³ And, to be sure, the belief that Herbig-Haro objects actually give birth to stars is now being preached as a matter of fact.¹¹⁴

If galaxies eject galaxies, and galaxies eject stars, all along their plasma jets in opposite directions in direct line with their axis of rotation, can stars eject dwarf stars through the same process? As we have seen, mainstream astrophysicists are now convinced that brown dwarfs *can* be ejected from star forming regions if not from stars themselves. As Reipurth phrased it, “the smallest [stellar] embryos will often be completely ejected from the star-forming region, destined to spend eternity alone as brown dwarfs.” But also “some brown dwarfs may be kicked *out of the star-forming cores*.”¹¹⁵

Speaking of the “knots” seen in the jet emitted by HH 34, Thornhill offered the following:

“In my humble opinion, HH 34 is spitting out objects which might become individual brown dwarfs...”¹¹⁶

But if Arp is correct in that the ejection of cosmic bodies takes place at *all* scales, why should the next step down not be the ejection of planets *from* brown dwarfs?

Thornhill, however, included gas giant planets with these brown dwarfs—and more. As he explained, “brown dwarfs in the plasma environment of a brighter star become gas giants, spitting out rocky planets and moons from their interiors in an attempt to alleviate electrical stresses.” When it comes to the direction in which these bodies are ejected, Thornhill then offered the following: “Whether the spitting occurs in the polar or equatorial direction de-

¹⁰⁷ *Ibid.*, pp. 88, 93.

¹⁰⁸ *Ibid.*, pp. 88-90, 110-111.

¹⁰⁹ *Ibid.*, pp. 87, 88, 110, 118.

¹¹⁰ *Ibid.*, p. 105.

¹¹¹ *Ibid.*, p. 191.

¹¹² *Ibid.*, p. 223.

¹¹³ *Ibid.*

¹¹⁴ See here, for instance, J. Kennedy, “Best-Ever Image of Star Surprises Scientists,” *The Vancouver Sun* (June 20, 2002), p. A2.

¹¹⁵ W. Schonmaker, “How to Make a Brown Dwarf,” *Astronomy* (October 2001), p. 28 (emphasis added).

¹¹⁶ W. Thornhill on the Intersect discussion group sponsored by KRONIA Communications, January 8, 2002.

depends on which is the stronger, the polar or the toroidal magnetic field of the spitter.”¹¹⁷ As he had previously expounded:

“The Hubble Space Telescope has shown that in regions of star formation large bodies are being shot out as if from a gun...Once again plasma discharges provide a mechanism which can simply explain this...Beyond a certain size proto-stars become electrically unstable and ‘fission,’ spitting out some of the core and giving rise to one or more companions...Not all of the matter ejected from the core of a proto-star may coalesce into a companion star. It may be in the form of one or a number of gas giants...A gas giant, in turn, due to either internal or external electrical disturbances may fission, spitting out its core, to give rise to the highly condensed planets, moons, asteroids, comets, etc.”¹¹⁸

I shall not burden the reader with the detailed electro-mechanics behind this new ejection theory, which involves plasma pinch effects, electrical charge separation, Peratt instabilities, and the probable electrical nature of gravity itself, since these are best understood by experts in plasma physics.

OBJECTIVE EARTH

That brown dwarfs can “spawn their own planetary systems” is now being considered by mainstream astronomers.¹¹⁹ Thornhill, too, feels “confident that brown dwarfs ‘give birth’ to fully formed planets (and maybe expulsion disks).”¹²⁰ The question concerns the manner in which such planets are expelled. In discussing poleward eviction, Arp is also of the opinion that “the phenomenon of ejection of discretized bodies not only characterizes the birth of quasars and galaxies,” but that “it also extends down into the realm of young star formation.” He then asks: “Does the same mechanism evident in the formation of these young stars extend to the formation of planets?”¹²¹ That question he answered in a private communiqué he wrote to this author:

“The HH objects indeed show luminous knots obviously ejected in a line from a central source. I included a picture of HH 34 in Plates 8-19 and 8-20 in my book ‘Seeing Red.’ The purpose of that inclusion is to demonstrate that such ejections happen on both galactic and stellar scales in the universe. *I personally consider the outrageous possibility that planets could originate in such fashion also.*”¹²²

But from brown dwarf stars? Do brown dwarfs emit jets? Thornhill, for one, finds brown dwarfs too electrically low-stressed to eject plasma jets. As he outlined the problem:

“We have no evidence that brown dwarf stars are active enough to produce polar jets. The examples we have of polar jets, from AGNs to HH objects, suggests unusual

¹¹⁷ *Ibid.*

¹¹⁸ *Idem*, “Planets, Stars, and Plasma Physics,” *THOTH* (electronic newsletter sponsored by KRONIA Communications)I:1 (February 20, 1997), p. 8; *idem*, *The Electric Universe* (Beaverton, Oregon, 1997), p. 31.

¹¹⁹ R. Roy, “Strange Object Found, Defying Ideas of Solar System Formation,” posted on the Internet, January 7, 2002.

¹²⁰ W. Thornhill, on the Intersect electronic discussion group, January 11, 2002.

¹²¹ H. Arp, *op. cit.*, p. 223.

¹²² *Idem* to D. Cardona, private e-mail message, October 23, 2000 (emphasis added).

electrical activity. In the case of HH objects, they are generally more active than our Sun, that is, more electrically stressed.”¹²³

Arp himself does not treat of dwarf stars, brown or red. As we have seen, however, observations have led him to believe that poleward ejection is a process that operates on *all* scales. So why *not* brown dwarf stars?

True, no jets from brown dwarfs have so far been detected. Because of their low mass and feeble *optical* radiation, however, brown dwarf stars themselves are very difficult objects to detect. The detection of any existing jets emanating from them would be all that more difficult. Even so, there are other emissions from brown dwarfs to be considered. Thus, even as the writing of this book is nearing the end, astronomical discoveries continue to accumulate in favor of its thesis. To begin with, on December 15, 1999, Bob Rutledge and his colleagues noted an X-ray flare emanating from the brown dwarf star designated LP 944-20, located in the constellation Fornax, estimated at 16 light-years from Earth. “It seemed fantastically bright and hard to believe,” said Gibor Basri who then hailed from the University of California at Berkeley. The flare appeared “briefly as an intense flash before fading out over the following two hours.”¹²⁴

Less than a year later, a group of graduate students on a National Science Foundation summer program, working at the Very Large Array near Socorro, New Mexico, detected strong radio waves emanating from the same brown dwarf star. These emissions “spiked up to 10,000 times stronger than what astronomers thought possible, indicating an intense flare of energy that may be similar to flares on the Sun,” researchers said. The dwarf was found to emit these radio waves *constantly* “with intermittent flares that last for hours.” As Shri Kul-karni stated: “Many astronomers are surprised at this discovery, because they didn’t expect such strong radio emissions from this object.”¹²⁵ Or, as Eduardo Martin, from the University of Hawaii, phrased it:

“It is not surprising that LP 944-20 has flares, but it is surprising that they are so bright in the radio [wavelengths]. The result is significant in telling us that brown dwarfs break the rules of stellar astronomy.”¹²⁶

Call me naïve when it comes to plasma physics, but do not these two items tend to throw a certain amount of doubt re Thornhill’s claim that brown dwarf stars are too electrically low stressed to enable them to emit jets. Besides, as Arp discovered in a certain galaxy that he has studied, the radio jet, the X-ray jet, and the optical jet “are all coincident and define a precise ejection axis.”¹²⁷ Radio and X-ray emissions thus seem to go hand in hand with optical jets. So if brown dwarfs emit both radio and X-ray emissions, the likelihood of their emitting optical jets does not seem that far fetched.

Additionally, and more importantly, there are the so-called accretion, or circumstellar, disks to consider. As we have seen, the birth-place of planets these disks could not be. Most, if not all, of the stars emanating plasma jets, however, are also encircled by these disks. Do brown dwarfs exhibit such disks?

¹²³ W. Thornhill, on Intersect, January 9, 2002.

¹²⁴ M. Weinstock, “Powerful Flare From Brown Dwarf Shocks Scientists,” on *Space.com* (July 12, 2000).

¹²⁵ R. R. Britt, “Brown Dwarf Emits Strong Radio Flare, Muddling Definitions,” on *Space.com* (March 14, 2001).

¹²⁶ *Ibid.*

¹²⁷ H. Arp, *op. cit.*, p. 149.

In 2001, a team from the Harvard-Smithsonian Center for Astrophysics discovered “warm, dusty disks around some of the free-floaters—evidence, they claim, that the objects are stars.”¹²⁸ A year later, “gas-and-dust disks around substellar objects” were being spoken of as a matter of fact.¹²⁹ This not only fits our postulated circumstellar or placental cloud which ancient man saw circling around proto-Saturn, the mythological data concerning this phenomenon, which I first presented to the public in 1993,¹³⁰ could have actually been used to *predict* such clouds around brown dwarf stars.

The above becomes extremely important because bipolar outflows, or jets, are now believed to be linked to these circumstellar disks.¹³¹ More than that, circumstellar disks are believed to be *crucial* in the formation of jets.¹³² As one theory proclaims, it is “a mixture of ions, atoms, molecules and dust” raining onto circumstellar disks along magnetic field lines that accounts for the generation of jets. These magnetic field lines are then said to be “pulled in” from the perpendicular, or pinched. Centrifugal force then “flings material outward along the lines.” Finally, the “inertia of the swirling material twists the field lines into a helix, which helps to channel the outward-flowing material in a vertical direction”¹³³—which is so descriptive of a Birkeland current.

If the above turns out to be correct, the newly discovered disks surrounding free-floating dwarfs should act in like manner, and one can perhaps see the day when astral jets may yet be detected emanating from brown dwarf stars. And yet we have previously seen that Alfvén believed the jets to have been generated by the induction of electric currents in the interstellar plasma toward the centre of galaxies “where they turn and flow upwards along the spin axis.” To use Alfvén’s own terminology, this current then “short-circuits” and, dumping vast amounts of energy into the galaxy’s core, ends up “blowing a fuse.” It is the blast from this “fuse-blowing” that propels the jets of plasmas up the spin axes of galaxies. Although Alfvén was referring to galaxies, rather than individual stars or less massive bodies, is this method of generation really that much different from the one proposed above?

Thornhill himself seems to accept both methods as being compatible. Thus, concerning Alfvén’s theory, he has stated that:

“Our Sun, Jupiter and Saturn, etc., all have equatorial plasmoids. It seems to be the normal state for spherical magnetized anodes in a galactic discharge. Only when the energy stored in those plasmoids becomes excessive will it switch to a polar jet (according to Alfvén).”¹³⁴

But then, in discussing the proposed circumstellar or placental cloud around proto-Saturn, he also had this to say:

“Dwardu [Cardona] mentions proto-Saturn’s accretion disk. Regardless of whether there was such a disk, in my opinion [it] would have nothing to do with accretion and a whole lot to do with expulsion. Whatever its origin, *it would intercept electrical energy* and radiate in the infra-red. In fact it is the infra-red glow from a brown dwarf that is used to infer an ‘accretion disk’ rather than direct observation.”¹³⁵

¹²⁸ K. Wright, *op. cit.*, p. 29.

¹²⁹ D. Kaisler, “The Puzzles of Planethood,” *Sky & Telescope* (August 2002), p. 35.

¹³⁰ D. Cardona, “Darkness and the Deep,” *AEON* III:3 (October 1993), pp. 52-57.

¹³¹ T. P. Greene, “Protostars,” *American Scientist* (July-August 2001), p. 319.

¹³² T. P. Ray, *op. cit.*, p. 46.

¹³³ *Ibid.*, p. 47.

¹³⁴ W. Thornhill, on *Intersect*, January 9, 2002.

¹³⁵ *Idem*, in *ibid.*, January 11, 2002.

Other than that I never referred to proto-Saturn's circumstellar membrane as an "accretion disc," until then preferring instead the term "placental cloud," Thornhill's statement is not all that at variance with the prevailing view. In any case, there seems to be no denying that circumstellar disks and astral jets go hand in glove, and that any body surrounded by such a disk is a prime candidate for astral jetting. Brown dwarf stars seem to fit that category.

If, then, brown dwarf stars *do* emit jets, *it is more than probable that Earth itself would have been ejected by the sub-brown dwarf that was proto-Saturn along its astral jet, or sustained Birkeland current, within which it remained trapped until well into the advent of man*—which would render the long forgotten Oskar Reichenbach's intuitive claim that Earth is "an offspring of Saturn"¹³⁶ right on the mark. Basing his reasoning on the Saturn thesis, James Strickling came to the same conclusion.¹³⁷ And, to be sure, so, also, Thornhill.¹³⁸

¹³⁶ O. Reichenbach, *On Some of the Remarkable Features in the Evolution of the Earth* (London, 1884), p. 5.

¹³⁷ J. E. Strickling, *Origins: Today's Science, Tomorrow's Myth* (Norcross, Georgia, 1996), p. 182.

¹³⁸ W. Thornhill, on Intersect, January 13, 2002.

Epilogue

SCALING UP AND DOWN

It is not reasonable to expect a work of this scope to be entirely free of error. But, relying on an old cliché, I hope no one will end up throwing out the baby with the bath water if such errors are discerned. I also reserve the right to amend what might in future be found to be amiss with the conclusions reached in this work. I will in no way be embarrassed if I have to retract whatever is found not to fit the general hypothesis presented herein. That is the way theories are supposed to be formed. That is the *only* way science can progress. I know this work will run its gamut of criticism. I am prepared for that. After all, if what I have presented bears any semblance to what really transpired in the past, the tenets of various scientific disciplines will have to be reconsidered. Such revisionist work will not sit well with the old guard. But, to use another old cliché, do not mistake me for a lonely voice in the desert. I am not alone in most of what I have so far presented. I belong to an ever-growing school of interdisciplinarians who have immersed themselves in the above and related studies. The old guard will eventually pass away, as it always does. It is to younger minds that the future is bequeathed. In the meantime, I put a gun to no one's head, so believe what you will.

The main problem with the reconstruction of these hoary events lies with plasma cosmology which, ironically, serves as the best evidence in favor of their occurrence. As in other matters touched upon in this work, once again, this is not to be wondered at. Despite Hannes Alfvén's pioneering work in the 1930s, and Anthony Peratt's more recent seminal disclosures¹, plasma cosmology is still in its infancy. As the latter confessed in 1992:

"Because of their strong interaction with electromagnetism, plasmas display a complexity in structure and motion that far exceeds that found in matter in the gaseous, liquid, or solid states. For this reason, plasmas, especially their electrodynamic properties, are far from understood."²

Granted that plasma science has progressed immensely since then, its exact behavior in relation to astronomy remains temporarily controversial. Worse still, proponents of the proto-Saturnian model are not all of one mind when it comes to the mechanics involved in keeping the configuration stacked up in linear formation. And this entails the exact nature of proto-Saturn's polar column. The main contestant of the specific nature of this column as adduced in the foregoing pages stems from the fertile mind of Wallace Thornhill whose knowledge of plasma physics ranks him among the best in the field. It behooves us, therefore, to take his objections seriously enough to comment at some length about them.

Thus, for instance, not only does Thornhill not believe in brown dwarf jets, he even doubts the ejection of brown dwarfs from stars. True, as we have seen, he had previously stated that in his humble opinion, HH 34 is spitting out objects "which might *become*" individual brown dwarfs.³ A day later, however, he revised his opinion by claiming that such a

¹ A. L. Peratt, *Physics of the Plasma Universe* (N. Y., 1992).

² *Ibid.*, p. 2.

³ W. Thornhill on the Intersect electronic forum sponsored by KRONIA Communications, January 8, 2002 (emphasis added).

process “seems unlikely because the HH jet is a highly electrically active environment such that the knots, or concentrations, imbedded in them are as bright as the central star.” And his verdict? “In other words,” he wrote, “no brown dwarfs.”⁴

There are other obstacles that Thornhill has thrown along the route I have been following. Thus, speaking of the knots, or condensations, in astral jets, he rightly pointed out that these are light years away from the star that forms them. “The condensations of the HH 34 jet are easily resolved at a distance of 1500 light years.” As he continued, in a similar Saturnian situation, at such a distance, it would have been impossible to see proto-Saturn at all, let alone as a distinct orb in Earth’s north polar sky. Nor would it have been possible for it to have provided Earth with light, feeble or otherwise, let alone enough heat to generate and harbor life.⁵

What, then, can be said against this? Speaking of the plasma experiments he conducted, Alfvén asked: “If we can extrapolate from the laboratory to the solar system, which is a hundred trillion times larger in extent, then why shouldn’t plasma still behave the same way for the entire observable universe—another hundred trillion times larger?”⁶ I point this out here because, if it is allowable to scale up from laboratory experiments to the Solar System, and from the Solar System to the Universe, it must then be allowable, as it really is, to scale *down* from stellar masses to brown dwarf stars and even lower to sub-brown dwarfs. As Don Scott pointed out:

“The differences in scale (as Tony [Peratt] has tried to point out MANY times) are completely unimportant. They all work the same way.”⁷

Scaling down, however, involves more than just size and mass. It also involves amplitude, and thus luminosity, as well as distance and even speed, to say nothing of time. *All* elements must be scaled down, *and not necessarily all by the same percentage*. Thus, when the knots in an astral jet are scaled down to sub-brown dwarf proportions, they will no longer be as bright as stars, but, *at best*, only as bright as the sub-brown dwarf that spawns them. And even then, this only holds true for the knot’s initial inception. If the sub-brown dwarf that was proto-Saturn eventually turned into the gaseous planet we now know by that name, what is there against assuming that its knots would eventually turn into rocky terrestrial planets? The light-years distance which separates jet condensations from their stellar parents would also then be scaled down to more modest stretches. Besides, does not Thornhill accept that proto-Saturn had been a brown dwarf star? Does he not himself interpret proto-Saturn’s polar column as a sustained plasma discharge in the form of Birkeland current? And has he not also told us that astral jets are a more active and visible manifestation of the same Birkeland current?

At the risk of befuddling the reader, this is the manner in which Thornhill extricated himself from the above dilemma:

“Instead of being a small but normal stellar anode in the galactic discharge, and accepting electrons, proto-Saturn would find itself a cathode, ejecting electrons, once it entered the Sun’s more positively charged domain. Proto-Saturn was then no longer a star by definition. It was a comet! So it could not, by definition or physics, have de-

⁴ *Idem*, on *ibid.*, January 9, 2002.

⁵ *Idem*, on *ibid.*, January 8, 2002.

⁶ E. J. Lerner, “The Big Bang Never Happened,” *Discover* (June 1988), pp. 74-75.

⁷ D. Scott, on *Intersect*, January 9, 2002 (capitalization as given).

veloped a bipolar astral jet. Instead it would have developed a cometary tail as soon as its Langmuir sheath was enveloped in the heliosphere.”⁸

Are cometary tails, however, really that different from astral jets? I realize, of course, that this is a question that will leave astrophysicists aghast. And no, I am not claiming that comets are akin to stars. I am only here concerned with the fabric of their tails. So consider: It has now been conceded for some time that electricity and magnetism are central to the understanding of what a comet really is.⁹ The sunward spikes that some comets display have also been understood as electrical discharges¹⁰—and would not these spikes, in conjunction with the tails, make for a similar situation to a bipolar flow? Like stars, to say nothing of brown dwarfs, comets are now known to emit X-rays.¹¹ Like stars, to say nothing of brown dwarfs, comets also emit radio signals.¹² Like stars, to say nothing of brown dwarfs, comets also glow in ultraviolet light.¹³ Like stars, to say nothing of brown dwarfs, comets are known to flare up.¹⁴ More importantly, like stellar jets, cometary tails are also composed of plasma.¹⁵ Thornhill himself has had occasion to stress that fact.¹⁶ And, like the twisted filaments of Birkeland currents, cometary plasma tails are sometimes “twisty.”¹⁷ Finally, very much like astral jets, cometary tails also exhibit knots, described as “small condensations of matter brighter than their surroundings.”¹⁸ Even Thornhill has used the term “jets” when discussing the emissions from Halley’s Comet.¹⁹ What, then, is the difference between cometary tails and astral jets except one of scale? Or, phrased differently, if a celestial body as puny as a comet can emit a plasma jet, why not a much more massive brown dwarf star? Does this not tend to emphasize Peratt’s contention, mentioned above, that the differences in scale are completely unimportant? Do not all celestial bodies, as Scott phrased it, act the same way? Fair enough, as we have seen, *everything* is made of plasma but, as Ken Moss saw fit to remind me, apples are still not oranges.

True—but they are both fruit.

As Thornhill pointed out, however, astral jets travel.²⁰ Time-lapse photographs of the jet from Herbig-Haro 30, taken a year apart, are said to indicate that it is squirting outward “at velocities close to the speed of light” while stretching “for many millions of light-years.”²¹ Others, however, have settled for “several hundred kilometers per second,” while stretching

⁸ W. Thornhill, on *ibid.*, January 10, 2002.

⁹ C. Sagan & A. Druyan, *Comet* (N. Y., 1985), p. 168.

¹⁰ J. M. Mc Canney, “The Nature and Origin of Comets and the Evolution of Celestial Bodies,” *KRONOS* IX:1 (Fall 1983), p. 22.

¹¹ M. DiChristina, “That Crazy Comet,” *Popular Science* (September 1996), p. 20.

¹² J. M. Mc Canney, *loc. cit.*

¹³ C. Sagan & A. Druyan, *op. cit.*, p. 136.

¹⁴ W. Thornhill, “Evidence for the Extreme Youth of Venus,” *Chronology and Catastrophism Review* (1993 special issue), p. 87.

¹⁵ N. Calder, *The Comet is Coming* (N. Y., 1980), pp. 76, 81; C. Sagan & A. Druyan, *op. cit.*, p. 170; T. Dickinson, “The Seeds of Life,” *Equinox* (July 1997), p. 65.

¹⁶ W. Thornhill, *loc. cit.*

¹⁷ N. Calder, *op. cit.*, p. 85.

¹⁸ C. Sagan & A. Druyan, *op. cit.*, pp. 162-163, 168-169.

¹⁹ W. Thornhill, *loc. cit.*; see also, *idem*, *The Electric Universe* (Beaverton, Oregon, 1997), p. 48.

²⁰ *Idem*, on Intersect, January 13, 2002.

²¹ T. P. Ray, “Fountains of Youth: Early Days in the Life of a Star,” *Scientific American* (August 2000), pp. 44-45; C. J. Lada, “Energetic Outflows from Young Stars,” *Scientific American* (July 1982); R. Kunzig, “Black Holes Spin?” *Discover* (July 2002), p. 38 (emphasis in title as given).



Comet Arend-Roland displaying its famous sunward spike.
(Photograph courtesy of NASA.)

only “thousands of light years.”²² Despite this enormous difference in amplitude—or, at least, a difference in opinion—this would mean that, by the time man came upon the scene, Earth would have moved light years away with no possibility of leaving proto-Saturn within sight.

What the time-lapse photographs in question actually indicate, however, is the displacement, and therefore motion, of “pockets of gas” *within* the jet, and not the motion of the jet itself. The knots, or condensations, in cometary tails also travel down the tail, and quick succession of photographs indicate that they move at speeds up to 250 kilometers per second (540,000 miles an hour). Their motion, however, is erratic, with the acceleration “turning on and off capriciously,” as it varies with time. In fact, some knots have “very little speed or acceleration” and, as Carl Sagan and Ann Druyan reported, their motion “is as unpredictable as the weather.”²³ Moreover, while cometary tails lengthen as they near the Sun, they do not travel away from the nucleus at velocities close to the speed of light. As scaled-down versions of astral jets, their size and velocity of emission are reduced in keeping with their modest amplitudes.

Worse still is that not all knots are seen to travel down astral jets. Comparisons of images from 1934 to 1980 of the jet spawned by M87 show that the knots, or hot spots, imbedded in it did not move.²⁴ It cannot therefore be a law of plasma physics that knots in jets must travel.

Of more importance to our study, when it comes to galaxies, Jayant Narlikar and P. K. Das showed in 1980 that “as the particles in the ejected matter gain mass, they slow down in order to conserve momentum.” In other words, they decelerate, *and even come to a halt*.²⁵ As Arp added: “The Narlikar-Das calculations apply to the most favorable case for escape from the ejecting galaxy” and this material exits “along the minor axis,” which is the axis of rotation.²⁶ We are here, therefore, speaking of galactic jets. And if galactic jets can decelerate, and even come to a halt, so, therefore, can stellar and sub-stellar jets.

²² J. Kennedy, “Best-Ever Image of Star Surprises Scientists,” *The Vancouver Sun* (June 20, 2002), p. A2.

²³ C. Sagan & A. Druyan, *op. cit.*, pp. 162-163, 168.

²⁴ A. L. Peratt, see reference #1, p. 245.

²⁵ H. Arp, *Seeing Red: Redshifts, Cosmology and Academic Science* (Montreal, 1998), p. 231.

²⁶ *Ibid.*

And then, harping back to the ambiguities of plasma science as it exists at present, are jets really jets? In other words, are they really jettisoned material? There does not seem to be a consensus concerning the answer to this most important question. Beginning with the suggestion of W. Baade and R. Minkowski in 1954, astrophysicists have assumed that astral jets constitute the actual ejections of matter.²⁷ But, as Don Scott more recently noted:

"We should not infer too much when we see the word 'jet' used (especially by astronomers). A columnar plasma can *look* like a jet. But these jets are not jet engine exhausts—they are not massive flows of material. There may not be much stuff flowing in the jet—except for an electric current. The 'stuff' may be getting squeezed while remaining relatively stationary within the 'jet'."²⁸

Or, to quote Peratt, who himself uses the word "jet" in relation to these astral emanations throughout his 1992 opus:

"Good as 'jets' are, [they] are not really jets. They are perceived as 'jets' of gas by astronomers and jets of gas do exist. But gas jets do not have the radiation properties, not even the features, of what we observe in space.

"Jets also do not exist in plasma (charged particle beams) except when a very strong magnetic field is there to keep it from immediately flaring out...The term 'jet' is very popular and convenient if physically incorrect."²⁹

Which brings us back to Andrew Gray's "electric discharge" hanging out in space without dissipating, to say nothing of Thornhill's own *sustained* plasma discharge.

Another objection that Thornhill raised is that "being enveloped in a plasma vortex would not be conducive to pleasant living conditions"³⁰ since this would have placed the entire Earth within the vortex of a world-wide tornado.³¹ And, to be sure, while astral jets are relatively slim or narrow in close proximity to the stars that spawn them, they tend to fan out farther away, "reaching a diameter wider than the orbit of Pluto."³² But this, again, is merely a matter of scale. Thus when we look at HH 34 we see quite distinctly that the width of the jet is not as wide as the diameters of the knots embedded within it. This is even more evident in HH 409, the jet emitted by HD 163296. These two systems show quite clearly that the widths of astral jets fall short of the diameters of the knots. In fact it is quite obvious that, were these knots to be thought of as planets, the jets would only encompass their polar areas, very much as posited for proto-Saturn's polar column in relation to Earth.

Thornhill is also of the opinion that had Earth really been suspended within an astral jet emanating from proto-Saturn, all of terrestrial life would have been electrocuted.³³ In view of the number of deaths of people reported to have been struck by that plasma discharge known to us as lightning, Thornhill's concern is understandable. This author was himself, at the age of twelve, blown off his feet by a lightning discharge. Fortunately it was not a direct hit. Direct hits by lightning discharges on persons who managed to escape with their life are not, on

²⁷ A. L. Peratt, see reference #1, pp. 244-245.

²⁸ D. Scott, *loc. cit.* (emphasis added).

²⁹ A. L. Peratt to D. Cardona on *ibid.*, July 22, 2002.

³⁰ W. Thornhill, on *ibid.*, January 5, 2002.

³¹ *Idem*, on *ibid.*, January 9 & 10, 2002.

³² T. P. Ray, *op. cit.*, p. 45.

³³ W. Thornhill, on *Intersect*, January 9, 2002.

the other hand, that rare. But with the thousand mega-ampere that Peratt has posited for the Saturnian polar column, no one could have sustained it without being electrocuted. But, as Don Scott felt moved to clarify, this would only have ensued at ground zero and could never have applied to Earth's entire population.³⁴

Thornhill disagreed, stating that, as the voltage rises, "the plasma would extend to lower latitudes until the entire surface of the planet was covered."³⁵ He did not, however, provide an electrical justification concerning *why* the jet's voltage should rise. And then, again, we run headlong into Thornhill's belief that proto-Saturn's polar column was a sustained plasma discharge in the form of Birkeland current. Why, then, would this sustained plasma discharge not be subject to a similar, if not identical, rise in voltage?

One of Thornhill's greatest objections has to do with the force that would have kept Earth aligned with proto-Saturn's rotational axis, which brings us full circle to the problem we started with. As he had it stated: "No one has shown how massive planets can be simply suspended above the pole of a star while enveloped in a plasma discharge."³⁶ And:

"Most of the planets so far discovered [in extra-solar systems] are gas giants that occupy normal [that is equatorial] orbits close to their stellar parents. They are not suspended in polar stellar jets."³⁷

"If [what Cardona claims was] the normal mode of planet formation we should not expect to find planets around nearby stars by looking for the stellar wobble caused by normal orbits."³⁸

But, for one thing, no one is advocating that planets can *only* be formed through poleward ejection. If Arp is correct in that *some* galaxies are ejected from other galaxies in a lateral direction, the same may probably be true for the ejection of *some* stars and planets. And then, also, no one is proclaiming that planets ejected in poleward direction must remain forever stacked. Obviously, the Saturnian system itself eventually relaxed into equatorial orbits once it entered the domain of the Sun. Meanwhile, because of their very lack of equatorial orbital motion, any extra-solar planets suspended in polar jets would not cause stellar wobble, and would thus be among the most difficult celestial objects capable of being detected.

Thornhill claims that "there would need to be a persistent force to keep the planets suspended above a stellar pole."³⁹ In discussing the E galaxies aligned along the jet of M87, Arp, too, found reason to ask an identical question: "Why had not these older galaxies drifted off this alignment into the general field in all this time?" But as he himself recognized, "being ejected along the minor axis [that is the axis of rotation] *they have no angular momentum* and simply remain along their original ejection direction."⁴⁰ This applies just as well to our hypothesized situation because, out in space, there would have been no nearby bodies that would have tended to exert their attractive influence on proto-Saturn and its entourage—which is one additional reason demanding that the proto-Saturnian system would originally have been a free-floating sub-brown dwarf system outside our Solar System.

³⁴ D. Scott, on *ibid.*, January 9, 2002.

³⁵ W. Thornhill, on *ibid.*, January 10, 2002.

³⁶ *Idem*, on *ibid.*, January 5, 2002.

³⁷ *Ibid.*

³⁸ *Idem*, on *ibid.*, January 8, 2002.

³⁹ *Ibid.*

⁴⁰ H. Arp, *op. cit.*, p. 245 (emphasis added).

To be sure, Thornhill is not opposed to the contention that planets are ejected from brown dwarf stars. As he has stated: "Brown dwarfs are constitutionally and energetically best suited to produce rocky planets and moons."⁴¹ Neither is he adverse to the claim that proto-Saturn itself ejected planets which are now members of our Solar System, together with our own Earth,⁴² precisely as postulated in the present thesis. Exactly in what, then, does he differ from us? One of the main reasons behind Thornhill's list of objections enumerated above becomes apparent when he compares proto-Saturn's characteristics to Jupiter's magnetosphere. As he explained:

"The polar column can then be imagined as having been equivalent to a hyperactive magnetospheric display of a size exceeding that of Jupiter's in which the Birkeland currents were visible. Remember that Jupiter's 'tail' stretches invisibly for half a billion km to the orbit of Saturn."⁴³

Jupiter's "magnetospheric display," which stretches into its billion km "tail," is however equatorially wrapped around the giant planet. It is not a polar, or bipolar, emission. And this is precisely Thornhill's point because, as far as he is concerned, the planets were ejected from proto-Saturn in a lateral, or equatorial, direction. As we have seen, according to Thornhill, only on entry into the Solar System would the planets have aligned themselves in a linear configuration as proto-Saturn dragged its entourage behind it much in the manner of Comet Shoemaker-Levy 9. Thus, still according to him, "we are talking simply about a linear arrangement of bodies where the only force between them is attractive."⁴⁴ This would then conform with Talbott's contention that Earth had originally orbited proto-Saturn in a phase-locked equatorial orbit, concerning which no evidence was ever produced from the mythohistorical record, and against which enough objections have already been raised in the past pages of this work.

Within the confines of Thornhill's scenario, it then becomes evident that proto-Saturn's polar column would also have come into being *after* proto-Saturn and its entourage invaded the Solar System. And it is this scenario that precludes him from accepting the pre-existence of proto-Saturn's polar column.⁴⁵ But, as Peratt stated on the strength of his plasma studies, "the column is the configuration out of which planets form *so it should always have been there*."⁴⁶ Thus, when I brought it to Peratt's attention that, according to the mythohistorical record, proto-Saturn's polar column was one of two items—the other being the celestial waters—which was never seen as having been created, he reaffirmed both our positions by asserting that there is much quantitative evidence that tends to support this.⁴⁷

Granted that we have been discussing emissions of vastly different amplitudes, might we not, after all, be embroiling ourselves in nomenclature? One thing we have surely learned is that the demarcation between stars, red dwarf stars, brown dwarf stars, sub-brown dwarf stars, and giant gaseous planets is simply one of magnitude. We have also been discussing knots, condensations, plasmoids, and planetisimals "imbedded" in astral "jets" when, in fact, these are terms that connote the same phenomena even if, perhaps, at different stages of

⁴¹ W. Thornhill, on *Intersect*, January 13, 2002.

⁴² *Idem*, "The Electric Saturnian System," *AEON* VI:1 (February 2001), pp. 37, 38; *Idem*, on *Intersect*, January 13, 2002.

⁴³ *Idem*, on *ibid.*, January 10, 2002.

⁴⁴ *Idem*, on *ibid.*, January 9, 2002.

⁴⁵ *Ibid.*

⁴⁶ A. L. Peratt, on *ibid.*, November 20, 2001 (emphasis added).

⁴⁷ *Idem*, on *ibid.*, January 7, 2002.

evolution. Are we not in the same situation when we introduce such terms as stellar jets, plasma jets, Birkeland currents, and sustained discharges? Or where is the demarcation between the members in this last class of objects? Other than amplitude, might we not be inadvertently referring to the same, or associated, phenomena? Thus, when it comes to proto-Saturn's polar column, is it the term "jet" that Thornhill really objects to? Did he not, originally, himself refer to it as a "jet"? Would he rather that I refer to it as a sustained Birkeland current? Have I not referred to it as such? Does he not himself believe it to have been exactly that? Does not Moss' suggested remnant of a jet come close to filling the bill? Call it what you will, this cosmic emission, or sustentation, with or without the participation of a Rankine vortex, would have been the whirling ray of light from above which ancient man remembered as the single leg or phallus of the Saturnian deity, that axis of fire which he saw stretching down as a swath of light from the polar planet he venerated as his god.

AN ALTERNATIVE CONCEPTION

Thornhill's other objections, as enumerated above, must not necessarily be judged as being invalid. My reluctance in accepting his convictions notwithstanding, he might yet turn out to be correct in some of his opposing contentions. While I feel confident in my own views, I will not be adamant about their acceptance. My honest opinion is that both his claims and mine, to say nothing of David Talbott's, should remain open to further investigation until our presently opposing beliefs can be reconciled through further developments, and a better understanding, of plasma cosmology.

Additionally, and to be fair, while the use of Halton Arp's data, as utilized in this work, seems to imply his endorsement of the Saturn thesis, I must confess that nothing can be further from the truth. On the contrary, as he has made clear to me:

"...the biggest difficulty I see with matching the Saturnist interpretation of the historical records is the very long time scales needed for dynamical and material evolution. Also I wonder how much the record reflects the world picture of the [ancient] priests who can be very illusionary and how much it represented the practical observations of the citizens tilling the fields. Your point about independent myths agreeing across time and culture is the point that impresses me the most. But then I think of the unfortunate situation today when experts disagree totally when looking at the same replicable [astronomical] photograph."⁴⁸

There is, however, nothing in the *present* volume that contradicts the posited time scales required by the evolution of celestial bodies. No date for the origin of Earth—or proto-Saturn, for that matter—has been proposed, and no date, or age, shall be. Neither will I offer anything concerning what Arp calls "the unfortunate situation today" concerning expert disagreement on *any* subject.

As for the consistency of the mytho-historical record itself, enough has been presented in these past pages (with much more yet to come in hopeful future volumes). Arp, of course, is not yet well acquainted with this record, having only come in contact with the Saturn thesis during one single conference sponsored by KRONIA Communications, which was held in Portland, Oregon, in September of 2000. This is not to say that he will necessarily accept the thesis, either in part or in its entirety, once he acquaints himself with the evidence in its favor. My only hope is that if he ever gets to read this work, he will at least consider it.

⁴⁸ H. Arp to D. Cardona, private e-mail, October 23, 2000.

It is a somewhat different matter when it comes to Anthony Peratt who had also first come in contact with the Saturn thesis at the same world conference attended by Arp. While not entirely convinced *during* the conference, he soon showed interest right after the event through personal communications with David Talbott and Wallace Thornhill. Thus, during the proceedings of the KRONIA conference, held in Laughlin, Nevada, in July of the following year, he had no qualms in stating that, because of scaled-up Birkeland currents, he was not surprised to hear of the Saturnian configuration or its attendant polar column.⁴⁹ As Thornhill later reported:

“According to Peratt, the recognized authority on the subject, the plasma behaviour fits the detailed representations of the polar column perfectly. I am aware of the complexities of plasma discharge instabilities and am satisfied with Peratt’s subsequent identification of the polar column with that phenomenon. The ‘Peratt instabilities,’ as they are now known, turn out to be far more complex than any of us could have imagined and therefore form an unbeatable test of the polar configuration model.”⁵⁰

What led Peratt to seriously consider the Saturnian, or polar, configuration theory was his own first-hand experience with plasma experiments at the Los Alamos National Laboratories, New Mexico. To begin with, having served as Alfvén’s secretariat, he was quite familiar with the latter’s theories. Thus, during a lecture given at one of Alfvén’s “New Astronomy” seminars at the University of California, San Diego—circa 1980-1981—Alfvén had proposed that cosmic objects form in columns,⁵¹ very much in the manner being here propounded. As Peratt later clarified, plasmoids are produced in an electrical discharge.⁵² And:

“Plasma cosmogony, via Alfvén, provides the physics for the evolution of the plasmoids into planetisimals and eventually planets. These form like beads on a string.”⁵³

It might be argued that one planet suspended beneath another, or beneath a sub-brown dwarf, can hardly be compared to “beads on a string.” However, as those who are already familiar with the Saturnian configuration theory know, and as will be disclosed in future sequels to this work, there were other planets besides Earth that were involved in the configuration in question. Even so, when questioned on the possibility of brown dwarf stars ejecting jets, Peratt’s answer echoed Thornhill’s with a resounding “no.”⁵⁴ How, then, can this be compatible with his assertion that cosmic bodies form in columns like beads on a string?

To begin with, plasma experiments have convinced Peratt that planets and their satellites can form entirely independent of any star.⁵⁵ If nothing else, this would eliminate the necessity of searching for proto-Saturn’s parent, a search that, even if one existed, would certainly prove futile in any case. But the question that this raises is: How, then, would strings of planets form?

The answer to this takes us back into Alfvén’s domain, concerning whom Peratt had this to say:

⁴⁹ Verbally stated.

⁵⁰ W. Thornhill, “Further Comments on the Saturnian Configuration Theory,” *AEON* VI:2 (December 2001), p. 14.

⁵¹ A. L. Peratt, on *Intersect*, January 9, 2002.

⁵² *Idem*, on *ibid.*, October 12, 2001.

⁵³ *Ibid.*

⁵⁴ *Idem* on *ibid.*, January 4, 2002.

⁵⁵ *Ibid.*

"In spite of his accomplishments in plasma waves, the electromagnetic nature of comets, the critical ionization velocity prediction, the father of magnetohydrodynamics, Hannes Alfvén spent most of his career developing a plasma cosmology [which] is complete and consistent and modern in-situ solar system measurements continue to support it."⁵⁶

As we have seen above, it was Alfvén's belief that the "vast magnetic vortices, operating through the pinch effect" can draw plasma together in space, which then itself forms not only galaxies and galaxy clusters, but also stars and planets.⁵⁷ But what is this pinch effect?

An experiment conducted with an empty can of diet Coke, as explained by Thornhill, illustrates the phenomenon quite clearly. The can was placed in the centre of an electric coil through which a strong jolt of current was passed. The can instantly collapsed, catapulted into the air, and came down too hot to touch. The manner in which the can collapsed was through a pinching effect around its middle, thus forming an hour-glass shape. As Thornhill explains:

"The response to the magnetic field [generated by the coil] occurred because the can is a metal and can conduct electricity. In space, plasma is a conductor and behaves in the same way. It is this response to the magnetic force, created by a universal or galactic discharge, that efficiently coalesces and heats diffuse dust and gas embedded in plasma to form galaxies and stars, or constrains the narrow jets of active galaxies. It is this mechanism also which squeezes, heats, and jets material upwards against gravity in a powerful lightning discharge."⁵⁸

Or, in Peratt's words:

"[Cosmic bodies] are formed out of the original intersolar or intergalactic plasma through which the currents are flowing that causes the pinching of the plasma down to a dense state. Then, at least according to my book, or rather Alfvén and the Department of Physics at the Royal Institute of Technology, matter accretes inwards to form 'planetisimals' and eventually planets."⁵⁹

Still based on laboratory plasma experiments, this led Peratt to claim that Earth would have formed at the same time that proto-Saturn itself did.⁶⁰ As deduced "from laboratory framing pictures progressing in time" and "scaled to planetary dimensions,"⁶¹ Peratt could add that:

"Originally the plasmoids were all about the same size...But some accreted more efficiently and then cascaded to smaller terrestrials from the Giant Plasmoids [or Gas giants] they had been...*This configuration could have been recorded anytime over the course of the development of man.*"⁶²

⁵⁶ *Idem*, on *ibid.*, January 3, 2002.

⁵⁷ E. J. Lerner, *op. cit.*, p. 74.

⁵⁸ W. Thornhill, *The Electric Universe* (Beaverton, Oregon, 1997), p. 21.

⁵⁹ A. L. Peratt, on *Intersect*, November 15, 2001.

⁶⁰ This is inferred from *idem*, on *ibid.*, December 12, 2001.

⁶¹ *Ibid.*

⁶² *Ibid* (emphasis added).

As Peratt, however, clarified, there is no reason for a particular plasmoid to condense at the same rate as the others.⁶³ In fact, in keeping with scaled-down experiments, it is found that “all of the plasmoids or planetisimals accrete matter *at different rates*, some finally having captured enough material to condense in size gravitationally.”⁶⁴

Moreover, Peratt is of the opinion that our Sun itself developed “out of a cosmic pinch.”⁶⁵ As he explained: “The planets, also created out of a cosmic pinch, *presumably from a current running parallel to the Sun’s*, produced a polar column of plasmoids that retained their magnetic fields, even as they contracted to planetisimals [and eventually] to planets.”⁶⁶

This would then explain his insistence that brown dwarfs do not emit jets, since the planetary column would not have formed out of proto-Saturn but, on the contrary, *proto-Saturn would have formed out of the jet*. This would also explain his insistence concerning the pre-existence of proto-Saturn’s polar column.

Having spent his entire life immersed in plasma physics, it is not easy to counteract Peratt’s claims. Even so, at this point, with so much yet to learn, a final verdict concerning the origin of the proto-Saturnian system would be premature. Whether cosmic bodies *emit* jets, or jets *form* cosmic bodies, remains temporarily unresolved. Whether the sub-brown dwarf that was proto-Saturn was ejected from a star, or whether it was formed independent of *any* star, remains outside the scope of the present work. Whether proto-Saturn *ejected* the plasmoid that was to become Earth, to say nothing of the possibility of *other* planets, poleward or otherwise, or whether proto-Saturn and its attendants all formed at the same time, will be discussed more fully in the proposed sequel to this work.

END OF ACT ONE

In order to simplify the theory propounded in this work, our theses must now be expanded and reshuffled into a more appropriate chronological order.

Hypothesis #1: That the present gas giant planet we know by the name of Saturn had previously been a sub-brown dwarf star free floating in space outside the demarcation of the present Solar System.

Hypothesis #2: That, from what can be deduced from ancient as well as primitive astronomical lore, Earth had once been a satellite of this proto-Saturnian sub-star, which, because of its proximity, loomed large in the sky as a distinct disc larger than the apparent size of the full Moon.

Hypothesis #3: That, during this period, a nebulous entity, which our ancestors had difficulty in describing clearly, surrounded the Saturnian primary. We have conjectured this entity to have been a placental cloud, or circumstellar disk, surrounding the Saturnian orb in its equatorial plane. This entity seems to have been that to which the ancients alluded to as Chaos.

Hypothesis #4: During this same unspecified period, the Saturnian orb was seen to float over an apparition which, to ancient man, looked like a sheet of celestial water, a cosmic ocean. Whether this “water” was the same conjectural circumstellar disk, which would have had the appearance of a celestial whirlpool, an auroral manifestation, or a combination of both phenomena, is not now easily determined.

Hypothesis #5: That, still according to ancient astronomical lore, during this indeterminate period, Saturn was the only visible celestial body in Earth’s primordial sky.

⁶³ *Idem*, on *ibid.*, December 13, 2001.

⁶⁴ *Idem*, on *ibid.*, January 3, 2002.

⁶⁵ *Idem*, on *ibid.*, January 7, 2002.

⁶⁶ *Ibid* (emphasis added).

Hypothesis #6: That, as seen from Earth, the Saturnian primary did not rise and/or set, but remained visibly immobile at all times.

Hypothesis #7: That Saturn's immobility was due to the fact that Earth was stationed directly "beneath" Saturn's south pole and that, from Earth, Saturn therefore appeared to be permanently fixed in the north celestial sphere, the very place now occupied by the Pole Star. What this also means is that Saturn and Earth were linearly aligned with the both of them sharing the same axis of rotation.

Hypothesis #8: That what appeared as a slow-twirling, relatively narrow beam of tapering light connected the proto-Saturnian orb to Earth's north polar region. This ray from above is interpreted as a sustained plasma discharge in the form of Birkeland current, a scaled down version, or the slowly deteriorating remnant, of a so-called plasma "jet" such as can be seen emanating from stellar, and even galactic, objects.

Hypothesis #9: That, according to some of man's earliest memories, Earth was originally engulfed in what our ancestors persistently referred to as darkness. This was an age which, despite its remoteness in time, ended up etching itself indelibly in human consciousness. It was a time during which the Sun, the Moon, and the stars were not yet visible in the sky. Saturn ruled alone.

Hypothesis #10: This age, we have also found out, could not have been one of *total* darkness, and that, in fact, mankind itself remembers that the Saturnian deity actually shed a feeble light. The terrestrial environment during this age was bathed in a perpetual twilight or, rather, a protracted dawn, which man remembered as the dawn of Creation.

Hypothesis #11: That both Earth and Saturn were embedded in a plasmasphere centered on proto-Saturn, the opacity of which enabled proto-Saturn's radiation to be reflected toward all terrestrial latitudes.

Hypothesis #12: Proto-Saturn's illumination, feeble as it might have been, together with the plasmasphere's opacity are recognized as the means by which the stars were kept from visibility. The Sun, needless to say, was still too far to be seen, while the Moon had not yet been captured by Earth.

Hypothesis #13: There is also the possibility that, due to Saturn's former greater mass and rate of dimming, it might have been even warmer and slightly brighter in ages previous to the advent of mankind.

Hypothesis #14: That, under the scheme described above, Earth would have received enough heat to sustain life. This heat would have radiated directly from proto-Saturn's close proximity about Earth's northern hemisphere. The southern latitude would also have received sufficient warmth, *even if a feebler light*, from the radiation that would have been reflected off the inner surface of proto-Saturn's plasmasphere with which Earth would have been enveloped. In the northern hemisphere, this indirect radiation would have added to the direct heat and light received from above Earth's northern pole. Thus, during this time, Earth's climatic environment would have been one without seasonal change, luxuriating in one single season of eternal spring. (It should, however, be noted that Earth would also have been subjected to slightly different latitudinal temperatures.) Tropical and/or sub-tropical flora and fauna were thus able to thrive in Earth's northern region, even within the present Arctic circle, and the possibility exists that this flora and fauna originated in these regions before migrating to more southerly latitudes. Judging by palaeontological remains in Earth's geologic strata, this environment stretched back into the remote past, possibly as far as the Cretaceous Period, definitely as far as the Paleocene Epoch of the Tertiary Period. Exactly what situation prevailed before that remains to be examined, but since Earth is postulated to have been a satellite of proto-Saturn from its very onset, it becomes evident that all past ages prior to the Pleistocene, including the origin of life, must be reconsidered under this hypothesized scheme.

Hypothesis #15: That, due to Saturn's immobility, and the absence of the Sun, ancient man had nothing at his disposal by which he could calculate the passage of time.

Hypothesis #16: That, at a later time, Saturn shone much brighter than it had previously done, bright enough for ancient man to allude to it consistently as a sun.

Hypothesis #17: That this primordial Saturnian sun shone during that time we today call the night.

Hypothesis #18: That, at some point in time, as the Saturnian system drew closer to the Sun, the Saturnian plasmasphere changed its wavelength, thus robbing it of its former near-opacity. It was at this time that ancient man was able to catch a glimpse of the slowly approaching Sun, at first appearing no bigger than a star, but growing ever larger and brighter.

One question that pops up at this point, and one that I have often been asked, is: What was man doing during this time of free wandering through space? And my answer has always been: Nothing much. Men, women, and children went about their business, whatever that might have been, entirely indifferent to the Saturnian apparition towering above them. And why should they have paid it any heed?

In our present situation, the Sun rises, traverses the sky, and sets. It appears red on rising, a blinding yellow throughout most of the day, and dims back to red on setting. The Moon also rises and sets, appears of an orange color and illusively larger when nearer the horizon, turning to yellow and then white as it gains height in the sky. Unlike the Sun, it can be seen, when seen at all, during both day and night. More importantly, it grows and diminishes as an expanding and contracting crescent, appearing as a full circular orb in between, and does so once every month. At times the Moon is seen passing in front of the Sun, causing a partial, annular, or total eclipse. At other times, Earth itself comes directly between the Sun and the Moon, casting its shadow across the face of our lunar neighbor, thus causing a partial or total lunar eclipse. These are events that *would* have mesmerized our primitive ancestors, as in fact, in later times, they did.

Prior to its actual shining as a sun of night, proto-Saturn would have been bereft of any such changes. Until that time, it did not even brighten and dim. It just hung there, doing nothing. True, had it to suddenly re-appear in this modern age, its towering apparition would awe us, but only because we are now used to a different sky. Those who were born, brought up, and lived beneath its splendor would have simply taken it for granted for the simple reason that it had always been there.

As mentioned before, those who might have dared approach the shining ray from above would have first felt the wind that would have enveloped the far outer fringes of the plasma discharge; they would have heard the electrical hum emanating from it; and they would have experienced the prickling of their scalp and the hairs on their body due to electrical excitation. Both man and beast alike would have known better than to approach nearer.

One could also ask: Did man even inhabit such northern regions in those far off times? Why not—especially since the Arctic was the warmest place on Earth? Stone tools, similar to those retrieved in East Africa, obviously worked by man, have been unearthed in fifteen different sites beneath the permafrost in present Siberia.⁶⁷ Traces of Stone Age settlements, containing "bone implements and arrowheads, as well as needles and axes skillfully fashioned from mammoth tusks," have been found in the New Siberian Islands.⁶⁸ Prehistoric petroglyphs depicting the "well-preserved incised outlines of whales and deer" are still to be

⁶⁷ *Science Frontiers*, No. 92, p. 1, as cited in *Chronology & Catastrophism Workshop* (1994): 2, p. 29.

⁶⁸ C. H. Hapgood, *The Path of the Pole* (N. Y., 1970), p. 102.

seen on the cliffs of Spitzbergen.⁶⁹ Primitive stone tools, as well as the remains of a prehistoric camp, dated as early as 2300 B.C. have been discovered on Ellesmere Island.⁷⁰ Petroglyphs depicting reindeer, bears, elk, whales, and even humans fishing from a boat, dated from 4000 to 6000 B.C. have been found on an Arctic island off the coast of Norway.⁷¹ Only heaven knows what might still lie buried beneath the permafrost of these and other Arctic lands.

Judging by what man has left us from those far off times, it becomes evident that he was not originally concerned with recording his past achievements or the events which shaped his life. But man did not completely forget what his condition had been like before the heavens changed. Among those who remembered were the descendants of the Peruvian Incas. As they eventually had it recorded:

"Where we live now we see villages and cities; we see streams flowing down from the mountains, and being led this way and that to water our crops and our trees; we see flocks of llamas feeding on good grass with their lambs—countless flocks. But in those days we lived where there were thickets and barren rocks; we had no llamas; we had no crops; we knew not how to make the waters flow this way and that way; we had no villages, no cities, no temples. We lived in clefts of the rocks and holes in the ground. The covering of our bodies was of bark or of leaves, or else we went naked in the day and without covering to put over us at night. We ate roots that we pulled up out of the ground, or else we fought with the foxes for the dead things they were carrying away. No one bore rule amongst us, and we knew nothing of duty or kindness of one to another."⁷²

This was the state of man's being as his world free-floated through space. But then came a time when man's environment drastically changed. There came a time when heaven brewed a new production. And it happened without warning. Coming ever nearer to our present Solar System, proto-Saturn finally came within the attractive clutches of the Sun. After aeons of uniform celestial sameness, an event finally transpired that was so stupendous, so unnerving, that it went down in history as Day One.

The story of that glorious event, as also of what followed, will be told in the planned sequel to this work.

Stay tuned.

⁶⁹ *Ibid.*

⁷⁰ P. Schledermann, "Eskimo and Viking Finds in the High Arctic," *National Geographic* (May 1981), pp. 581-584.

⁷¹ See the "Geographica" section of *National Geographic* (October 1993).

⁷² R. Van Over, *Sun Songs: Creation Myths From Around the World* (N. Y., 1980), p. 112.

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ABOUT THE AUTHOR

Rather than being the proverbial lone voice in the desert, Dwardu Cardona is a senior member of an ever growing international school of academicians, which includes scholars from various scientific disciplines, who are presently involved in the scientific reconstruction of the events portrayed in this work. Cardona has been pursuing these studies since 1960. He has since then acted as a Contributing Editor for *KRONOS* and, later, as a Senior Editor for the same periodical, and is currently the Editor of *AEON*. He was a Founding Father of the Canadian Society for Interdisciplinary Studies (now defunct), and has acted as a consultant on mythology and cosmogony for *Chronology and Catastrophism Review*, which is the official organ of the British-based Society for Interdisciplinary Studies. He has also acted as the Series Editor for the *Osiris Series* of books sponsored by Cosmos & Chronos.

As a writer, Cardona has now published well over a hundred articles in various periodicals, most of them on the subject covered in the present book. He has also lectured by invitation at the University of Bergamo, in Italy, as well as at various organizations in Canada, the United States, and England. He presently makes his home, together with his wife, in Vancouver, British Columbia, Canada.