

ASTRONOMICAL ORIGIN OF BIBLICAL CORRESPONDENCES

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INTRODUCTION

One of life's most exhilarating experiences is to see an old, familiar thing in an entirely new light. When we become too enamored with our own discoveries and insights, it is sometimes both refreshing and humbling to find that others have arrived there before us and may even have surpassed us in the acuity of their observations. The "ancients," to whomever that generic title applies, were far more profound in their thinking than we moderns have supposed. For many decades we viewed the scattered monoliths of Stonehenge and other megalithic sites only as products of dark and primitive superstitions. We looked upon the pyramids of Egypt as megalomaniac endeavors of pharaohs to erect impenetrable barriers to desecration of their remains. Yet these structures show extraordinary engineering skills, and we still do not know exactly how and why they were erected or what scientific principles might have been commonplace in those days. In our ignorance we tend to dismiss the ancient structures as quaint tourist attractions.

It is difficult to say just when the science of archaeoastronomy gained public attention. Closely associated with names like Gerald Hawkins and Alexander Thom, the study of ancient star watchers has revealed a sobering side to our intellectual heritage. Hawkins' book *Stonehenge Decoded* (1965) spawned a number of spectacular media events in the sixties. On TV, one could see the midsummer sun rise majestically over the Stonehenge heelstone as predicted. In those days, highspeed computers were still quite exotic; it was a shot in the arm for publicity that Hawkins used an IBM 704 to determine that the various solar and lunar alignments at Stonehenge exceeded chance by a significant margin.¹ Part of an even

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¹Gerald S. Hawkins, *Stonehenge Decoded* (New York: Doubleday, 1965).

older Stonehenge composed of 56 Aubrey holes on the same site led Hawkins to the theory that the structure was used to predict eclipses. By sequentially moving stones from hole to hole in a prescribed sequence the ancient priests could have kept track of coming celestial events. This system works; the author of this paper has a computer program that uses a similar algorithm, so it is true that Hawkins really did decode that aspect of Stonehenge. The marriage of archaeology and astronomy has produced a fertile knowledge base that continues to shape our views of how well ancient astronomers were able to catch the rhythms of the spheres in both spatial and temporal dimensions.

When we look at the surviving writings of the ancient Sumerians, Babylonians and Egyptians we find a rather dismal potpourri of myth, history and pseudo-history which gives the impression that there was little of the systematic in their endeavors and much of the autistic. And yet there are these monuments. The Sphinx, obelisks and pyramids of Egypt, the enormous ziggurats of Babylon and the many sites in Neolithic Britain like Stonehenge, Woodhenge and Silbury Hill clearly served astronomical purposes. Silbury Hill itself covers five acres. It is constructed of over a million tons of hand-moved earth. All sites reflect consummate geometric skill employed for purposes that elude us. One thing is very clear: it is no longer possible to consider these sites apart from their astronomical motivation. The intriguing thing is not that this should come as such a surprise but that the astronomical aspects of ancient scientific endeavor should be so inextricably coupled with *religion*. It is of course true that some would see this as a completely natural amalgam—the creation of a pantheon of gods and spirits to account for the unpredictable. Supernatural beings then would be responsible for events that a more rational age might impute to a strictly objective and deterministic universe. From this perspective it is difficult to decide whether the psychoanalyst or the astronomer is best suited to comment on the meaning embedded in our ancient myths and sagas.

It is only in our age that the universe has been stripped of its awe in favor of a view of natural causation and determinism. We view the stars not in terms of vast powers capable of influencing human destiny but as material bodies subject to quantum mechanics and stellar evolution. The animism that the ancient mind appeared to impute to the heavenly bodies

seems to be of historical interest only. Some conclude, however, that the manner in which the ancient records in papyrus and clay depict the activities of their deities greatly obscures, and at times completely hides, a profundity of thinking enshrined in the antique reckonings. Themes that appear veiled in those reckonings suggest that, while humans have become technologically more sophisticated, the capacity of ancient minds to grasp essential cosmic principles and intuit the grand design of things is presently unmatched. This may sound heretical in the face of our demythologizing telescopes and computers, but there appears to be increasing awareness that this is the case.

RELIGION AND ASTRONOMY

The connection is inescapable. The names of time periods like days and months are also the names of gods, this being true in our own culture as much as in cultures far removed from our own. The grand cycles of destiny are intertwined with cosmic significance. Excavations in the tells of the Near East and other sites have yielded up a profusion of ancient records mixing religious motifs with astronomical computations. Even in the New World, explorers and scholars were astounded to find that the jungle enshrouded monuments of the Toltecs and Mayans codify calendrical computations of such sophistication that they remain unequalled in our contemporary time-keeping systems. A complex but very accurate calendar beginning in what is our equivalent of August 11th, 3114 BC and computations of the movements of Venus within 14 seconds a year are but two of the complacency-shattering discoveries in the Mesoamerican jungles.² In the hoary documents of Sumer and Babylon we find myths about the creation, about the great Deluge and about a number of primeval Noachs that survived the end of an earlier age in order to propagate a new world order. Flood or other early catastrophe stories are present in every culture so far examined.³

² George. E. Stuart, "Riddle of the Glyphs." *National Geographic* 148:6 (December 1975).

³ Theodor H. Gaster, *Myth, Legend, and Custom in the Old Testament* (New York: Harper & Row, 1969).

One stumbling block to a more penetrating analysis of the old myths is the fundamentalist interpretation of those myths as actual history. Thus the view that Genesis is a historical document bequeathing us a chronologically untarnished record of the creation, the Deluge and the genealogy of the Antediluvian Patriarchs completely vitiates any interpretation of these stories as repositories of older, more profound motifs. George Smith's discovery and translation of the fabulous Gilgamesh epic with its Noah equivalent in Ut-napshtim unearthed a Great Flood story that predated Genesis. Similar Sumerian, Babylonian and Akkadian documents began to accumulate, undermining any conviction that the Genesis Flood story reflects authentic history. Moreover the fabulous longevities attributed to the Genesis Patriarchs were greatly exceeded by the immense reigns of the mythological Sumerian kings. These enormous life spans indicated unequivocally that the various king lists referred to something other than the lives of kings, rulers, or patriarchs.

THE ANCIENT CHURCH

Readers familiar with Emanuel Swedenborg will recognize a major theme in the above. For Swedenborg, the postdiluvians were endowed with especial insight into the relationships between the world of nature and spiritual realities. For Swedenborg, the *Ancient Church* was a widespread cultural movement, not peculiar to a single culture, but characterized by a profound awareness of a widely shared, symbolic system of spiritual meanings related to the spiritual life. Swedenborg's ancients were in possession of knowledge and insight of a profoundly elegant but penetrating kind. This knowledge, which he called the science of correspondences, constituted a kind of nexus between spiritual and natural elements of the universe and was widely disseminated across the Old World. We see it reflected in the ancient stories that have come down to us in the form of religious myth. One primary source of the Genesis Flood story and other myths in the first eleven chapters actually predated Genesis. Swedenborg calls this collection of older Scriptures "The Ancient Word." It was well known in antiquity but was eventually lost. The "ancients" referred to by Swedenborg were not restricted to one locale.

Those ancients, with whom that Word is still in use in the heavens, were in part from the land of Canaan and its borders, and also from certain kingdoms in Asia, as from Syria, Mesopotamia, Arabia, Chaldea, Assyria, and Egypt, from Sidon and Tyre, the inhabitants of all of which kingdoms were in representative worship, and thus in a knowledge of correspondences. Their wisdom at that time was from that knowledge, since by it they had communication with the heavens, and interior perception, and also many had converse with spirits. But because that Word was full of such correspondences, which remotely signified heavenly things, and for that reason in the course of time began to be falsified by many, therefore from the Divine providence of the Lord it gradually passed out of sight, and another Word was given, which was written by correspondences less remote, and this through the prophets with the sons of Israel. In this Word, however, the names of places in the land of Canaan and in Asia round about, were retained and kept their signification. For this reason, the posterity of Abraham from Jacob were introduced into the land of Canaan, and the Word in which those places were to be named was there written.⁴

In the process of time, according to Swedenborg, the highly abstract insights of the Ancient Church became reified, degenerated into a form of idolatry and faded from human awareness. The symbols and representative images of the correspondential system became themselves the objects of worship as their genuine, spiritual meanings evaporated. From the maritime districts of Phoenicia and other locales, the correspondences were carried to Greece where they were transformed into fables. In Greek mythology then we can see parts of that lost framework according to Swedenborg who insisted that the early chapters of Genesis contain fictitious history only.

No one can see who adheres to the sense of the letter only, in consequence (and especially is this the case here) of all things being historically connected, and presenting the idea of a history of events. But such was the

⁴ Emanuel Swedenborg, *De Verbo*, n. 15.

style of the men of that time, and most pleasing to them it was that all things should be wrapped up in representative figures, and that these should be arranged in the form of history; and the more coherent the historical series, the better suited it was to their genius. For in those ancient times men were not so much inclined to memory-knowledges (scientiis) as at this day, but to profound thoughts, of which the offspring was such as has been described. This was the wisdom of the ancients.⁵

THE PROOF

In matters such as these, wide open to the wildest speculations and numerical chicanery, any attempt to show that mythological numerologies actually have meaning must be very convincing. Gematria, popular astrology and other efforts to make the esoteric respectable usually fail to do so. Attempts to decipher the Book of Revelation and other apocalyptic writings, too frequently, are not worth reading. The overall purpose of the present study is to show, insofar as possible, that the mythologies of antiquity do in fact have an interior structure and that this structure is rooted in an ancient knowledge base that fell into obscurity with the passage of time. The so called “Ancient Church” of Swedenborg is a rather diffuse concept, a pointer to an epoch when humans possessed a profound grasp of the relationships of the heavenly bodies that was simple but sufficiently elegant to generate a space-time standard for all the world. This framework, embedded in early myth, constitutes a monumental intellectual achievement that we are just beginning to appreciate. In addition, this system seems to embody a cosmic significance that we are hard pressed to define, much less to comprehend. The very architecture of the material universe seems to be inextricably bound up with the mysterious relationships known to readers of Swedenborg as the *science of correspondence*.

It is difficult to know exactly where to begin. Perhaps it is best to introduce the numerical “primitives” that will constitute the foundation for later numerical elaborations. These constitute the temporal dimensions

⁵ Emanuel Swedenborg, *Arcana Coelestia* (New York: Swedenborg Foundation), n. 605.

that, even today, guide our daily lives. The smallest is that of the second. The minute and the hour follow and after this the day of twenty-four hours. Later it will be important to take note of the week, the month and the year and finally, of the great Platonic Year or the precessional period that arises from the earth's wobble around the celestial poles. In addition, the spatial dimension of the 360 degree circle with its divisions into spatial minutes and seconds is the complementary dimension that completes the spatio-temporal framework on which the ancient mythologies are founded. These are the foundation constructs from our past. The fundamental premise of this paper is that *this system of primitives (basic numbers) is the foundation of the ancient king lists of the Sumerians and later of the Chaldeans as well as of the Hebrews. This system constituted the basis of their astronomical and geodetic reckoning systems since they are earth-commensurate.*

We do not know the chronology of the developing mathematical systems of the Near Eastern cultures. We know that the Sumerians used the sexagesimal system as did the Babylonians and Akkadians after them and that they and the Egyptians early on developed the concept of the 360-degree circle and the twenty-four-hour day. Who conceived this system first is simply unknown. What we see when we examine certain ancient lists of kings and Biblical Patriarchs are numbers, vast numbers purporting to measure life spans but composed of values far too large to suggest any historical authenticity. Among the historiographic documents of Mesopotamia are the Sumerian King lists classified as Weld-Blundell 62 and 144. These literary works supposedly recount the names and reigns of historical figures but have a "preamble" with an entirely distinct literary background containing an enumeration of antediluvian kings, a composition entirely different from the remainder of the list. Thorkild Jacobsen, the primary authority on the king lists who initially translated the cuneiform, concludes that the texts stem from a source written at the time of Utu-hegal king of Uruk upon the liberation of Sumer from the Guti.⁶ The antediluvian preamble was actually appended later in the evolution of the composition and represents a completely different literary mechanism. Why it was so appended is unknown.

⁶ T. Jacobsen, *The Sumerian King List* (Chicago: University of Chicago, 1939).

Sumerian King Lists (Antediluvian Section)

Weld-Blundell 144		Weld-Blundell 62	
<i>Sumerian King:</i>	<i>Reign:</i>	<i>Sumerian King:</i>	<i>Reign:</i>
Alulim	28,800	Alulim	67,200
Alagar	36,000	Alagar	72,000
Enmenluanna	43,200	Kidunnushakinki	72,000
Eumengalanna	28,800	???	21,600
Divine Dumuzi	36,000	Divine Dumuzi	28,800
Ensibzianna	28,800	Enmenluanna	21,600
Enmenduranna	18,600	Enzibzianna	36,000
Ubardudu	18,600	Eumenduranna	72,000
???	Arad-gin	28,800
???	Ziusudra	36,000
Years of reign:	241,200		456,000

It seems certain that these antediluvian king lists are part of some tradition later shared by the Hebrew author of the Genesis Patriarch Genealogy even though the numbers vary greatly. All lists of antediluvian kings and Patriarchs, including Genesis, seem to indicate that there are ten, although WB 144 is missing two. The scholar's world of miracles often comes to the rescue in cases like this. While the old Sumerian lists seem somehow incomplete, the author of a much more recent version seems to have cleaned up some of the discrepancies. We are fortunate to have references to the lost works of the Chaldean priest Berosus of the temple of Bel (c. 290 BC). The list of Berosus just happens to contain what is undeniably a reconstruction of the more ancient king lists shown above. From Alexander Polyhistor, Appollodorus, and Abydenus we have a somewhat fragmentary record of the antediluvian times described by Berosus who took the liberty to replace the old Sumerian names with Greek ones when compiling his list in Book Two of the *History of the Chaldeans* (now a lost

work).⁷ The fact that all lists represent variations on a single theme is beyond controversy. The following chart compares the king list of Berosus with the Genesis Genealogy of the Antediluvian Patriarchs.

Caldean and Hebrew Antediluvians

Berosus		Genesis	
Chaldean King:	Reign:	Patriarch:	Years:
Aloros	36,000	Adam	130
Alaparos	10,800	Seth	105
Amelon	46,800	Enoch	90
Ammenon	43,200	Kenan	70
Megalaros	64,800	Mahalel	65
Daonos	36,000	Jared	162
Euedoraches	64,800	Enoch	65
Amenpsinos	36,000	Methuselah	187
Partes	28,800	Lamech	182
Isuthros	64,800	Noah	500
		<i>To Flood:</i>	100
Total Years:	432,000	Total Years:	1,656

The Genesis account (Genesis 5: 3–32) lists the Patriarch’s age from his birth to the birth of his first descendant. Examination of these lists does not significantly advance our understanding of them. What are they? Most of the Chaldean numbers as well as the much earlier Sumerian appear to be evenly and conveniently divisible by seventy-two which gives some credence to the idea that they refer to parts of some cycle, but beyond that it is

⁷ Isaac P. Cory, *Ancient Fragments* (London: William Pickering, 1832, 2nd Ed.).

difficult to speculate. Huge number cycles are characteristic of cosmic computations of a mythic variety and seem to involve the opening and closing of epochs but this is quite general. What do the numbers really mean?

In his book *The Masks of God*, Joseph Campbell compares the three king lists with the Biblical version and refers to an obscure paper by Julius Oppert that the latter wrote in 1877. Oppert's paper, "De Daten Der Genesis,"⁸ compares the Chaldean numerical system described by Berosus with that of the Hebrew Genealogy of Genesis. Oppert was intent on dispelling the notion that either account, Hebrew or Chaldean, contains any legitimate historicity, but that both were based on the same computational framework. His argument was that when *different* cultures using *different* number systems are seen to share essentially the same framework, accidental correspondence can be ruled out. Oppert indicates that Berosus claims his reckoning covered a period of 215 myriads. Since forty-seven myriads passed from the first people up to Alexander, there are 168 myriads in the prehuman time epoch. A myriad is always 10,000 years in ancient chronology. So there are $215 - 47 = 168$ myriads in the prehuman period according to the account of Berosus. Now there is a parallel here in that the Hebrew author of Genesis equates one hour to the Chaldean myriad (one hour = 10,000 years). This can be inferred from the circumstance that a period of 168 myriads is an analogue of the seven-day creation week since *seven days contains 168 hours*. The antediluvian period of the Chaldeans was 168 myriads ($168 \times 10,000$ years) whereas for the Hebrew authors of Genesis the same period (the Creation) was only 168 hours or seven days. The Hebrew hour, therefore is the equivalent of the Chaldean myriad of 10,000 years. So a twenty-four-hour Hebrew day is the equivalent of 240,000 Chaldean years (24 myriads). It is evident, therefore, that there is an exact correspondence between these apparently diverse traditions. Further, Oppert points out that the full time period of a hundred and twenty sari (sar = 3600 years; $120 \times 3600 = 432,000$ years) for the Chaldean and 1656 years for the Hebrew share a common denominator of 72, the number that so evenly divides the vast majority of entries in the Sumerian king lists above. Since 1656 years can be factored as 23×72 it

⁸ Julius Oppert, "De Daten Der Genesis." *Königliche Gesellschaft der Wissenschaften zu Göttingen, Nachrichten* No. 10 (May, 1877).

becomes apparent that in a twenty-three-year period, counting from the beginning through the end with the additional five leap year days (Hebrew chronology counts the first and last day of a sequence) gives $23 \times 365 = 8395$ days + five leap year days = 8400 days. This 8400-day period divided by 7 gives us 1200 seven-day weeks. Now again multiplying by the factor of 72 reveals that $72 \times 1200 = 86,400$ *seven-day weeks from the birth of Adam until the Great Flood of Noah*.

Since scarcely anything was known of Sumer when Oppert wrote his paper in 1877, the earlier lists on which the Chaldean account of Berosus was based were as yet undiscovered. From the vantage point of 1962, Campbell—in reviewing the achievements of the Sumerians—expressed his amazement at the astronomical sophistication of the ancient sages.

Furthermore, by a miracle that I have found no one to interpret, the arithmetic that was developed in Sumer as early as c. 3200 BC, whether by coincidence or by intuitive induction, so matched the celestial order as to amount in itself to a revelation. The whole archaic Oriental world, in contrast to the earlier primitive and later Occidental, was absolutely hypnotized by this miracle.⁹

What neither Campbell nor Oppert realized is that the ancient numerical framework in which the mythological numbers are embedded has far greater implications than appear on the surface. Far from being mere mythopoetic efforts to explain the origin of provincial culture, the myths enshrine a cosmic framework of astronomically derived geodesy, a space-time measurement system that constituted the most salient synthesis of empirical and theoretical reasoning to appear on the planet.

The primitives mentioned in the earlier part of this paper that constitute essential parts of the cosmic framework in question are noteworthy. Oppert does not mention it in his article, but the reader should keep in mind that our twenty-four-hour day contains exactly *86,400 seconds* (24 hours \times 60 min. \times 60 sec.!) This fact alone is sufficient to dispel any remaining doubts that the numbers of Genesis and the numbers in the Chaldean account refer to events of an entirely different order than appear

⁹J. Campbell, *The Masks of God: Oriental Mythology* (New York: Penguin Books, 1976), 128.

in the literal sense. They do, however, *refer to the same basic framework*. Moreover, the Chaldean week of five days gives $432,000 / 5 = 86,400$ five day weeks from the first king, Aloros, to the onset of the Flood, *an exact correspondence with the Hebrew tradition of 86,400 seven-day weeks*. It seems that the number 86,400 signifies some sort of complete cycle since it was employed by the ancients to denote the length of a single day in its most minute elements (seconds) and is used in Genesis to represent the entire period from the birth of Adam to the onset of the Flood.

But why was the Hebrew *hour* chosen to represent a Chaldean *myriad* of 10,000 years? The reason is that the Chaldean year is composed of 360 days. Five festival days are added which are not considered part of the year. If we take the number of hours in 10,000 Chaldean years (24 hours x 360 days x 10,000 years) we find that there are 86,400,000 *hours* in a *myriad*, which is a ratio of 1: 86,400,000! It seems likely therefore that by the use of this transcendent number (864) the two numerical systems were able to represent the largest unit (the myriad) all the way down to the smallest unit (the second) within a consistent framework. This number 86,400 or any multiple (like 432,000) is of tremendous importance in our understanding of the temporal-spatial framework of the ancients. As a derivative of this position the reader may note that in addition to the other uncanny relationships the number of *hours* in a Chaldean year is 360 days x 24 hours = 8,640 hours. Strange indeed!

One of the primitives alluded to above is the number seven. While this number is prominent in the Hebrew Scriptures it appears to have acquired great significance long before those Scriptures were recorded. Already in the Sumerian Flood story and certainly in the old Babylonian and Akkadian literature, the number seven is prominent. In the Sumerian Flood story the Great Flood rages for seven days and seven nights.¹⁰ Fortunately Oppert saw that the Chaldean period of 168 myriad of years corresponds to the seven-day week of the Hebrews in which there are 168 hours. Thus one *Hebrew day* is always equivalent to 240,000 *Chaldean years* since one Hebrew hour is equal to a myriad of 10,000 years. But can we relate the seven-day week to our developing framework of primitives? We can if we make an attempt to find the relationship between the day and the week. It is

¹⁰ James B. Pritchard, *Ancient Near Eastern Texts Relating to the Old Testament* (Princeton: Princeton University Press, 1955), see p. 265—Sumerian King List extract.

crucial to note that we have a clue as to why the seven-day week may first have come into conceptual use. It is a fact that there were only seven heavenly bodies other than the stars visible to the ancient world. These planetary bodies, now known as Mercury, Venus, Mars, Jupiter and Saturn were clearly distinguished from their stellar companions in that they wandered away from the sun's apparent path on the celestial sphere (the ecliptic) in a 14-degree belt called the zodiac. On either side of the ecliptic a planet moved away from the path until it seemed to hit an obstacle then bounced back. This *seven-degree path* on each side of the ecliptic provided an additional suggestion that the universe was somehow septenary in structure. The visible planets in combination with the sun and the moon then led to the concept that there were gods or "rulers" of the day and of the night as described in the Genesis creation story. Early on, the deities of the week and their corresponding planets were considered distant from the earth in the following order:

Day of the Week:	Planet:	Mythic Order of Distance from the Earth:
Sunday	Dies Solis	Moon (closest)
Monday	Dies Lunae	Mercury
Tuesday	Dies Martis	Venus
Wednesday	Dies Mercurii	Sun
Thursday	Dies Jovis	Mars
Friday	Dies Veneris	Jupiter
Saturday	Dies Saturni	Saturn (farthest)

The reader may find it puzzling that the succession of days of the week do not correspond to the ancient notion of how far these bodies are from the earth, the order of which can be seen in the third or right column. If the days of the week were astrologically determined even before Greek

and Roman times, we would expect them to correspond in sequence to their then supposed distances from the earth. The problem can be solved, however, if we abandon the notion that the week is ordered on the basis of seven days but instead see that it follows the plan of the ancient cycle of the twenty-four-hour day. Thus, beginning with the Jewish Sabbath, the following table shows how the order follows the concept of a twenty-four-hour earth rotation of 86,400 seconds.

Order of Days Determined by 24-Hour Cycle

Planet:	Weekday:	Hour:	Hour:	Hour:	Hour:
Saturn	Saturday	1 st	8 th	15 th	22 nd
Jupiter	Thursday	2 nd	9 th	16 th	23 rd
Mars	Tuesday	3 rd	10 th	17 th	24 th
Sun	Sunday	4 th	11 th	18 th	(Sun.) *
Venus	Friday	5 th	12 th	19 th	
Mercury	Wednesday	6 th	13 th	20 th	
Moon	Monday	7 th	14 th	21 st	

From this chart it is evident that if the planets are assigned to successive hours, according to their supposed distances from the earth, following a twenty-four-hour cycle, the planet or heavenly body corresponding to the next day falls into its proper place. For example, Saturn (Saturday or the Jewish Sabbath) is followed by the Sun (Sunday) on the twenty-fifth hour, the first hour of the next day at the sun icon (*). Going to the next hour (Thursday), one can see that the twenty-fifth hour will be Friday and so on. It is evident that all the days of the week correctly follow each other

on the basis of one rotation of the earth—one day of twenty-four hours (86,400 seconds). This scheme clearly has an astronomical/astrological basis and is determined by the astrological interpretation of distances of the heavenly bodies from the earth. The seven-day week system, therefore, integrates the then known planetary system (seven proximate celestial bodies) with the twenty-four-hour cycle invented by the ancient Egyptian and Near Eastern cultures as part of a common tradition. This scheme now integrates several of our primitives including the second, the minute, the hour, the day, the seven-day week and the extraordinary 86,400 unit period in this case expressed in seconds. The seven-day week then can be seen as based on the division of a day into twenty-four periods, the days repeating on the twenty-fifth hour. The week, therefore, is not founded merely on the convenient mathematical division of seven into 365 giving fifty-two week periods, but is based on an astrological interpretation of the seven then visible bodies of the solar system after which they are named. These heavenly bodies are associated with deities and combined with the mathematical concept of dividing one rotation of the earth into twenty-four periods (hours).

The interesting thing about the above numbers is that they are obviously parts of an Egyptian-Mesopotamian framework and are prominent in the Hebrew as well. Both Egyptian and Chaldean years are premised on a period of 360 days to which were added another five days of festivities which were not considered part of the year. The 360-degree construct is used to integrate both space and time thus uniting these vital dimensions into a single unitary system. The following mythological account from Plutarch shows the propensity of early writers to scramble mythology with astronomical computations, in this case the origin of the traditional Thoth year—the Egyptian year of 365 days.

When the sun-god Ra perceived that his wife Nut had been unfaithful to him, he declared with a curse that she should be delivered of the child in no month and no year! But the Goddess had another lover, the god Thoth . . . and he playing at draughts with the moon won from her a *seventy-second* part of every day, and having compounded five whole days out of

these parts he added them to the Egyptian year of three hundred and sixty days.¹¹ (italics added)

The Egyptian calendar, which starts with the Autumnal Equinox, had 360 days (twelve months of thirty days each). Five festival days were added according to Thoth's plan, for a year of 365 days. The above reduces to: $1/72^{\text{nd}}$ of a day = 20 minutes (24 hrs. x 60 min. x 60 sec. = 86,400 sec. / 72 = 1200 sec. = 20 min.). Once again we encounter the interesting number seventy-two which figures in the computations in a most convenient manner. Adding 20 minutes to each of 360 days = 7200 min. = 120 hrs. = 5 days giving us a modified Egyptian year of 365 days which was kept current by use of the leap-year system of adding one day every five years. The leap year plan is intrinsic to the Genesis genealogy where it is required for the numbers to come out evenly. So Genesis carries this system in its interiors while its surface reflects only pseudo-history concerning the progeny of the Patriarchs.

PRECESSION OF THE EQUINOXES

In their seminal book *Hamlet's Mill*, Giorgio de Santillana and Hertha von Dechend attempt to show that the ancient world was preoccupied with the precession of the equinoxes.¹² Arcane references to the precession lie concealed in enigmatic sagas and legends from a great variety of sources. The discovery of the precession is usually attributed to Hipparchus (140 BC), but evidence is accumulating that the phenomenon was known far earlier. The precession caused by the gravitational fields of the sun, moon and planets is defined as the slow gyration of the earth's axis around the pole of the ecliptic. The earth's axis transcribes a circle around the celestial poles to the order of about fifty seconds of arc per year. The earth is like a spinning top that wobbles as it rotates on its axis with the consequence that the equinox shifts westward fifty seconds of arc every

¹¹ Sir James G. Frazer, *The Golden Bough* (New York: Macmillan Company, 1936, 3rd. ed.), II: 6.

¹² Giorgio de Santillana & Hertha von Dechend, *Hamlet's Mill* (Boston: David R. Godine Publisher, 1977).

year. The earth's axis is inclined approximately $23 \frac{1}{2}$ degrees to the ecliptic (sun's apparent path across the sky) and is responsible for the seasons. The phenomenal thing about this arrangement is that the fifty seconds of arc due to the precession *amounts to one degree in seventy-two years*. Here is yet another computation where the number seventy-two is a conspicuous factor giving rise to yet another parallelism within the celestial order. The earth takes $360 \text{ degrees} \times 72 \text{ years} = 25,920 \text{ years}$ to complete one precessional cycle. This great year or, as it is sometimes called, the Platonic Year, appears to have played a role in the generation of myth perhaps as early as Sumer where we repetitively encounter seventy-two or its multiples in the antediluvian reckonings (see Sumerian King lists above). Is it coincidence that the number of years from the birth of Adam to the flood is 1656 or 23×72 ? The twenty-three-degree inclination of the earth's axis to the ecliptic and the precessional period itself of one degree in seventy-two years taxes our tolerance for coincidence. Moreover, to an observer facing east at the equinox relative to the observable constellations, the precession will have the effect of making the equinox occur about twenty minutes sooner each year relative to a given star pattern. Now twenty minutes is $20 \times 60 \text{ seconds} = 1200 \text{ seconds}$ a year. In seventy-two years which is what it takes for the precession to move through one degree of arc, it requires a corresponding *temporal period* of $1200 \text{ seconds} \times 72 \text{ years} = 86,400 \text{ seconds}$ or one 24-hour day! In 72 years, not only does the earth precess *one degree of spatial arc* but it occupies a time period of a complete *day of 86,400 seconds*.

What we have here is something rather arcane. How is it possible for a simple mathematical system to so mirror celestial events that cycles seem to relate to each other in simple cyclical relationships? It is no wonder that the number seven (visible proximate celestial bodies) and the number twelve (lunations per year) figure so prominently in the Scriptures and other ancient writings. The creation of a yearly cycle of 360 days that also lends itself to a division of the circle into 360 spatial degrees is apparently one of the greatest intellectual insights of all time. The other alternative is that there is an order, an inherent architecture of the universe that the ancients understood better than we do today. Their simple division into numerical primitives to order their world is still used to order ours.

THE SCIENCE OF THE ANCIENTS

The above, interesting though it may be, still does not tell the entire story. It is one thing to discover an intricate numerical system embedded in ancient myth, but what is its utility? Why were these numbers considered so significant, so sacred they could be used to express the fundamental properties of the ancient gods and demigods? The secret may lie concealed in the ancient monuments themselves. The discovery that a purely formal mathematical system corresponds to the actual behavior of objects and events in the real world is, in itself, rather miraculous. Priests who could predict events in the heavens like lunar and solar eclipses could command the highest allegiance from kings and paupers alike. Moreover, the development of a space-time framework in which practical as well as ecclesiastical matters can be expressed is a monumental cultural achievement. It is therefore to Egypt that we must return—to those enigmatic mountains of stone known as the pyramids.

The Pyramid of Cheops stands singularly above all others in refinement and structural sophistication. The notion that it was built merely as a tomb for Pharonic security has withered with new discoveries about its construction. The Great Pyramid is composed of over two and a half million blocks of limestone and granite. These blocks weigh from approximately two to over seventy tons. The structure covers over twelve acres of ground and is constructed with such precision that a knife blade cannot be inserted between its stones in some places. Who built it and why remains a mystery.

The exact size of the Great Pyramid has been a subject of controversy over the ages. Prior to World War I there was considerable ambiguity about its dimensions. Sand around the base tended to obscure the lengths of the four sides making the position of the corners uncertain. However, in 1925, with a survey conducted by Ludwig Borchardt, director of the German Institute of Archeology in Cairo, some of the uncertainties were dispelled. Borchardt utilized an engineer named Cole to take very precise measures of the four corners of the pyramid's base after clearing the sand away. Other notable investigators such as Edmund Jomard, one of Napoleon's savants during the Egyptian campaign, John Taylor, amateur astronomer during the mid-eighteen hundreds, Piazzi Smyth, Astrono-

mer Royal of Scotland¹³ and a host of others have each tried to pin down the exact dimensions of the structure with varying success. Like William Flinders Petrie who devoted a great deal of effort to determine the possible dimensions, all lacked the precise measurements that Cole obtained when clearing the base and thus were unable to fully appreciate the relationship of the Pyramid to the geodetic purposes for which it was constructed.

Early on, it was suspected that the Great Pyramid was constructed as a model of the Northern Hemisphere. By what is now called a Mercator projection, the flat face of the Pyramid is a projection on a flat surface of a spherical earth quadrant of 90 degrees. The Pyramid's apex corresponds to the earth's pole, its perimeter to the equator. Each face represents one spherical quadrant of 90 degrees. In order for this to occur, the quadrant must be the same length as the base of the flat triangle and they must both have the same height. This condition only occurs when the slope angle of the bisection of the face maintains a π relationship between height and base which is the case in this instance.

In his historical review of attempts to measure the Great Pyramid, Peter Thompkins describes one of Napoleon's savants, Edmé-François Jomard's efforts to measure the Great Pyramid while minutely perusing the classics for hints about its construction.¹⁴ According to Thompkins, Jomard found references in authors like Siculus and Strabo to the effect that the Pyramid's apothem is one stadium in length. He found that a Greek stadium is about 185.5 meters which fit his own measures of the Pyramid's apothem fairly well. Going on to relate a stadium of 600 feet to 185 meters he found references suggesting that a stadium was supposed to be 1/600 of a *geographic degree*. This led to the conclusion that there might be something earth-commensurate embedded in the structure. Moreover he found references indicating that the perimeter of the Pyramid was designed to represent a half-minute of longitude so that 480 times the base was equal to a *geographical degree*. Jomard found that classical writers had equated a stadium of 600 Greek feet to 400 cubits, so an Olympic stadium was equal to 600 Greek feet, which is a basic land measurement in the

¹³ Piazz Smyth, *The Great Pyramid* (New York: Bell Publishing Company, 1978). First published in 1880 as *Our Inheritance in the Great Pyramid*.

¹⁴ Peter Thompkins, *Secrets of the Great Pyramid* (New York: Harper Colophon Books, 1971).

ancient world. Jomard's measure of the Great Pyramid's apothem of 184.722 meters gave him a cubit of $= 184.722 / 400 = .4618$ meters which he then realized was the common cubit of the contemporary Egyptians.

From the classics, Jomard learned that a stadium of 600 Greek feet was 1/600th of a geographical degree. This discovery suggested that ancient Egyptians were much more adept in geometry than previously supposed. If they in any way showed an awareness of the geographical degree and hence of the true dimensions of the earth, the notion of Greek supremacy in the area of geodesy and geometry had to be a fallacy.

The question of the dimensions of the Great Pyramid came to the attention of a Harvard-educated scholar with a doctorate in classical mensuration who spent several decades researching the topic. Professor Livio Catullo Stecchini was able to show that Jomard's conclusions about the earth-commensurate nature of the dimensions of the Great Pyramid were correct.¹⁵ He developed convincing evidence that the ancient Egyptians intended for the base of the Pyramid to be related to a portion of a degree at the equator. As Cole found, double the Pyramid's perimeter is 1,842.91 meters and the modern figure for a minute of equatorial latitude is 1,842.9 meters. This is perfect concordance with Jomard and Stecchini's analysis of ancient records indicating that the base of the Pyramid's perimeter is 1/8th minute of degree ($8 \times \text{base} = 1 \text{ minute of degree}$).

With this information Stecchini was able to solve the pyramid problem. His career study of ancient measures revealed that Jomard's *cubit of .4618 meters* was a derivative of the *geographic foot of .3079 meters*—the oldest measure in the ancient world dating back to the middle of the third millenium. It was apparently computed astronomically since it is earth-commensurate. This geographic foot is two thirds of Jomard's cubit of .4618 meter, and it appears that the latter arose from it. In spite of the adamant denial by some Egyptologists that the Egyptians computed in terms of degrees, Jomard's measures—later confirmed by Stecchini—demonstrate that the Pyramid designers did, in fact, envision a great celestial

¹⁵ Livio C. Stecchini, "Notes on the Relation of Ancient Measures to the Great Pyramid." Appendix: P. Tompkins in *Secrets of the Great Pyramid* (New York: Harper Colophon Books, 1971).

equator of 360 degrees which they divided into sixty sections and again into sixty. The relationship of this division to the early Sumerian sexagesimal system seems undeniable. Such a $360 \times 60 \times 60$ division results in a great circle containing 1,296,000 seconds of arc. Based on this purely theoretical division, the ancients then found a spatial measure to correspond to it that could serve as a geodetic measure for all purposes. If they did in fact use this most ancient measure, the geographic cubit, based on the geographic foot of .3079 meters, then they must have known the circumference of the earth. They knew that one hundred geographic feet to a second of arc gives a terrestrial circumference of 129,600,000 geographic feet. It is evident that 129,600,000 geographic feet are 39,904 kilometers and, in fact, the actual circumference of the earth is approximately 40,000 kilometers! Moreover, Stecchini showed that the geodetic implications of this system are far-reaching; his data drawn from the Hieroglyphs reveal that the ancient Egyptians were even aware of the flattening of the poles since their degrees of latitude become longer as they measured northward.

The numbers in the Chaldean creation myths now begin to assume some truly astonishing implications. The geographic or old Egyptian foot is a measure that coordinates time and space and is related to the Egyptian cubit of .4168 meters. Conversion of the old Egyptian foot to the Egyptian cubit, 500 of which form the base of the Great Pyramid, yields an *equatorial circumference of the earth of 86,400,000 Egyptian cubits* (129,600,000 geographic feet $\div 2/3$). If the circumference of the earth is defined as 86,400,000 cubits, then this number or its variants might be seen as the basis for the Hebrew to Chaldean ratio of 1 hour to 86,400,000 as a derivative of this old system of expressing a complete cycle. It is an expression of coordination of time and space in terms of the rotation of the earth with its hours, minutes and seconds and its spatial measures of degrees and arc minutes and seconds. In short it is a way of expressing the ancient science in the form of pseudo-history and religious myth that, according to Swedenborg, was their propensity at that time. A brief review of the principle measures might help at this point.

SUMMARY OF MEASURES

1 Hebrew hour	=	10,000	Chaldean years (one myriad)
1 Hebrew day	=	240,000	Chaldean years (24 myriads)
1 Hebrew week	=	1,680,000	Chaldean years (168 myriads)
1 geographical foot	=	.30779	meter
1 geographical cubit	=	.46169	meter = 1.5(geo. foot)
1 stadium	=	1/600 th	of a geographical degree
1 stadium	=	184.68	meters (400 geo. cubits; 600 geo. feet)

The parallelism between measurement and myth now becomes evident. The 240,000 Chaldean years or 24 myriads equals a Hebrew day of 24 hours so *one Hebrew day can represent one geographical degree*. Since there are 240,000 geographic *cubits* in one geographical degree and 360 degrees in the equatorial circle there are 86,400,000 geographic **cubits** in the circumference of the earth. (360 x 240,000). There are also 129,600,000 geographic **feet** in the circumference so the earth is rotating on its axis at the rate of 1000 cubits per second and passing through an arc of 100 cubits during a second of time. The system is therefore fully earth-commensurate, uniting units of time and of space in a system so simple and elegant it defies the imagination. The root of the ancient system is the geographic foot of .3077957 meters which is also the ancient Persian artaba. The Egyptians, however, used the conversion to a geographical cubit which results in a terrestrial circumference of 86,400,000 geographic cubits and thus preserves the consistency of the framework. This unit which is one and a half times the ancient foot results in a stadium of 400 cubits for the Pyramid and a degree of 240,000 cubits since they divided the circumference into 360 and again into twenty-four hours. There are then 10,000 cubits in an hour as there are 10,000 Chaldean myriads of years in a Hebrew hour in the antediluvian histories. It is likely that this is one reason why the hour was made equal to a myriad of 10,000 years but perhaps not the only one. Since 240,000 is the Chaldean number of years in a Hebrew day, one day for the Hebrews corresponds to a spatial measure equivalent to one degree and seven times this figure gives 168 myriad in seven degrees of rotation =

$7 \times 240,000 = 1,680,000$ which is the total time of the prehuman period before the Flood according to Berosus which is equivalent to the seven days of creation of the Hebrews. The entire numerical system is an integrated system of geodesic and temporal reckoning requiring a profound degree of insight in first creating the system and then applying it to the real world of measures.

A more comprehensive account of how the ancients were able to achieve their wonders is beyond the scope of this paper but for an enlightening analysis of the geometry of the ancients, the two-volume work by Tons Brunés, a Danish consulting engineer is highly recommended. Brunés convincingly demonstrates the simple geometric logic by which the Great Pyramid and other ancient structures were designed. In *The Secrets of Ancient Geometry*, Brunés concludes that the dearth of historical references to ancient geometry was a function of a highly restrictive code of secrecy, which served to restrict the sacred knowledge to the initiated.¹⁶ We know this to be the case in the Pythagorean number cults. Knowledge was temple-based and not revealed except in myth and indirection. Every effort was made to ensure secrecy among the elite by threat of death should the secret knowledge be revealed. This universal conspiracy of silence created a literary vacuum concerning the methods used by the ancient sages and magi.

There are many notions as to how the ancients achieved their advanced knowledge. In Egypt, numerous obelisks were strategically placed so as to measure star transits at various meridians and loci across the desert; while flashing lights across spaces to indicate the time a star made a transit across a meridian was one way the ancients had of measuring time and space. The theory that the Grand Gallery of the Great Pyramid was open at one point in the Pyramid's construction so as to provide a highly stable astronomical vantage point to measure star transits across the main pyramidal meridian is gaining support. Other engineering feats by the ancient Egyptian and Mesopotamian star observers defy easy solutions as to how they achieved such a degree of precision without benefit of modern instruments.

¹⁶ Tons Brunés, *The Secrets of Ancient Geometry* (Copenhagen: Chronos, 1967; 2 vols.).

INDIAN (HINDU) MYTHOLOGY

The numerical systems of the Near East reverberated around the world. In Hindu mythology we encounter even larger numbers, cycles within cycles—immense days and nights of infinite time in a universe whose respirations constitute the evolution and devolution of all created things. It is generally agreed that Hindu cosmology developed later than that of the Buddhists and Jains. The basic theme, however, was the same: the doctrine that the cosmos passes through cycles within cycles for all eternity.

The basic cycle in Hindu mythology is the kalpa or “day of Brahma.” And to our surprise, this period is 4,320,000,000 years! The night of Brahma is the same length so that both night and day span a time period of 8,640,000,000 years. Now 360 such periods constitute the year of Brahma and the total life span is 100 such years or 311,040,000,000,000 years. After this mind-boggling period of time the whole universe returns to the ineffable world-spirit until another prime-mover god evolves. During the course of a day the god creates the universe and then absorbs it—he sleeps while the universe is only a potentiality. This is not bad reasoning given the Big Bang theory of modern physics!

Each kalpa contains fourteen secondary cycles called manvantaras each lasting 306,720,000 ($4,320,000 \times 71$) years with great intervals between. The multiple 71 is no accident since each manvantara contains seventy-one mahayugas or eons of which 1,000 form the kalpa. Each mahayuga is divided into four yugas (ages or years of the gods). Each of these is 360 human years.

The Yugas of Ancient India

Yugas:	Time Span of Yuga:	Sumerian Equivalent:
Krta Yuga:	$4,800 \times 360 = 1,728,000$	$/60 = 28,800$
Treta Yuga:	$3,600 \times 360 = 1,296,000$	$/60 = 21,600$
Dvapara Yuga:	$2,400 \times 360 = 864,000$	$/60 = 14,400$
Kali Yuga:	$1,200 \times 360 = 432,000$	$/60 = 7,200$
	$? = 2,592,000$	$? = 72,000$

The Hindu figures appear related to the Sumerian sexagesimal system since using the sexagesimal divisor (60), generates some of the figures in the Sumerian King lists. The last Yuga, the Kali Yuga, *our own era according to Hindu mythology*, is the same length as the total number of years the antediluvian kings reigned according to Berosus. Moreover, the Kali Yuga began in 3102 BC, according to Hindu literature and myth, which according to tradition was the very year of the great Mahabharata War (an event of great significance in Hindu mythology).¹⁷ An astute reader may have noticed something of a parallel between the four yugas and the four metal ages, gold, silver, bronze and iron. In Indian mythology, in fact, these ages are often named after these metals as they are in ancient Persia. In addition, from the above table it is apparent that the total number of years in a mahayuga is equal to one hundred Platonic years, that is, of one hundred precessional cycles! There can be no doubt that these systems with their astronomical and calendrical significance were all drawn from a common source and elaborated in terms peculiar to each local culture.

THE SCIENCE OF CORRESPONDENCES

It is astonishing that the architecture of the universe lends itself to the kind of mathematical reasoning described above. The fit of elegant numerical relationships to the ratio of rotations and revolutions (cycles) of the planets and the sun and the moon is truly uncanny. In light of the above discussion, the conclusion that the ancients used their powers of observation and insights into the celestial architecture to frame their ecclesiastical metaphors is undeniable. How well does this astronomical analysis apply to Swedenborg's interpretations of the mythic sections of the Book of Genesis? In addressing this subject it is well to realize that there are formidable concerns about authorship involved. For example, we have no idea who compiled the first eleven chapters of Genesis. If it was Moses, and, as Swedenborg claims, he took those chapters from the Ancient Word, we still do not know who wrote them. Those documents predated the rest of Genesis, but since Moses was born and raised in Egypt and was familiar with its knowledge it is not surprising that the relevant sections of

¹⁷ A.L. Basham, *The Wonder that was India* (New York: Taplinger Publishing Co.).

the Ancient Word were available to him for use in the creation of Genesis as we know it. A precise awareness of the numerical implications must have characterized whoever wrote the genealogical pseudo-history of the Patriarchs containing that extraordinary cycle of 86,400 seven-day weeks. The Codex may be of Canaanite or Phoenician origin, or came from some other culture similar in many ways to that of the Hebrews since the same place names appear in the documents. *The Wars of Jehovah*, for example, contain place names such as Heshbon, Moab, Arnon and others familiar from the Hebrew Scriptures. Since the first chapters of Genesis are part of a more ancient cultural tradition, then that culture had to be aware of the relationships outlined above and privy to the intricate astronomical and geodetic insights that gave rise to the metaphors. They predate our Bible. References to Moab, in particular, figure prominently in extracts from the Ancient Word, but we know precious little about Moab other than what is stated in the Bible and in the basalt Moab Stone found in Dhiban in 1868 involving the exploits of King Mesha. Swedenborg states that many cultures acknowledged the Ancient Word.

Also the Word, which they had, was a written Word, consisting of Historical Sections and Prophetical Parts, like the Old Testament Word. But in course of time that Word came to be lost. The historical sections were called *The Wars of Jehovah*, and the Prophetical parts *The Utterances*, as is clear in Moses, Num. 21:14, 27, where they are quoted. The historical sections of their Word were written in the Prophetical style and were for the most part made-up historical narratives, like those in Chapters 1–11 of Genesis, as is evident from the quotations of those historical narratives in Moses, where the following words occur:

Therefore it is said in The Book of The Wars of Jehovah, Waheb in Suphah, and the streams of Arnon, and the descent of the streams which runs down to the dwelling at Ar and leans to the border of Moab.¹⁸

An extensive analysis of the doctrine of correspondence in relationship to the astronomical systems described above lies outside the focus of

¹⁸ Emanuel Swedenborg, *Arcana Coelestia*, n. 2897.

this study. An example, however, might be useful to see how the system integrates with what we know about correspondential meaning systems. The salient question is this: do we see sufficient evidence of astronomical roots in the initial stories of Genesis to conclude that the ancients based their myths on considerations like those spelled out above? Do other stories in early Genesis, apart from the genealogies, reflect astronomical reckonings or involve movements and states of the heavenly bodies? The answer appears to be yes. To further explore this we need to revisit the Great Flood of Noah.

If, as Swedenborg states, the Ancient Church was the primary author of early correspondential expression, and Noah collectively refers to the seed of the Ancient Church, we would expect that the religious festivals and mythologies of the Ancient Church would be strongly lunar in focus. Swedenborg indicates that the moon is the symbol of spiritual enlightenment while the sun denominates the celestial person or church. We know that there was a very strong lunar emphasis in Sumer and that lunar calendars were used extensively for religious purposes in Mesopotamia. Moreover, the source of Egyptian knowledge and wisdom was the god Thoth, a *lunar* god represented by the ibis—the Hermes of the Greeks and their source of wisdom and scientific enlightenment as well. Even the Greeks used a calendar of moonlight for festival purposes.

The Flood story of Genesis tells us that Noah was a son of 600 years (one Chaldean ner) when the flood began. The Deluge began on the *second month* on the *seventeenth day* of the month. It ended in the six hundredth first year of Noah's life in the *second month* on the *twenty-seventh day* of the month (Genesis 8:14). Suddenly we have a plethora of *lunar* references. Now a month is 29.5 days so twelve months is 354 days; adding the eleven days from the seventeenth (beginning of Flood) to the twenty-seventh day of the month (end of Flood) establishes that the Great Deluge, according to the Genesis author, lasted exactly one Hebrew year ($354 + 11 = 365$ days). But why the seventeenth and twenty-seventh days? These figures seem to cry out for some sort of astronomical/calendrical explanation. Here we are on somewhat shaky grounds, but an attempt at an explanation is better than no explanation at all. It is possible that the specific numbers in the story of the Deluge are derivatives of an ancient calendar of moonlight. A

very ancient calendar, which the Greeks inherited, uses the month as its basis. It acknowledges the fact that some years have twelve months and some thirteen so the year is given two possible lengths, one with twelve lunar months and one with thirteen. In any series of years the first and second years would be given twelve lunar months the third year would be given thirteen. But this will not bring the plan into any exact relation to the solar year. So by using a sequence of *seventeen* twelve-month years and *ten* thirteen-month years the two methods of timekeeping, lunar and solar, will reach final agreement every *twenty-seven years*. The use of alternating twenty-nine and thirty-day months avoids the fractional component of each month. Thus 17 periods of 354 days = 6018 days followed by ten periods of 384 days = 3840 was $6018 + 384 = 9858 / 365 = 27$ years. It is possible that the Noah story may incorporate this ancient system of reckoning because the emphasis on the second month in the story, the seventeenth day of the month and the twenty-seventh day seem too consistent with this calendar of moonlight system to be unrelated to it. If this inference is correct then the Flood story expresses yet another cycle, a cycle combining both lunar and solar features resulting in an expression of harmony between the two. The coming together of a lunar and solar cycle might be an ideal way of expressing a change of state in which a spiritual and celestial order is blended. Cognitive enlightenment (moon) is again brought into agreement with the will from love (sun) just as the moon cycle and solar cycle are reconciled every twenty-seven years. The Deluge lasted one Hebrew year of 365 days—it was clearly the intent of the Genesis author to depict the Flood as a temporal cycle.

In keeping with the symbols of correspondence, it is highly significant that Noah's Ark rested on Ararat on the *seventh month*—a lunar analogue of the solar based system in which the Lord “rested” from the work of creation (regeneration) on the *seventh day*. Ararat apparently means “light” and the mountains of Ararat, actually a range of mountains, signify a heightened sense of enlightenment following spiritual conflict. The flood account of Genesis, therefore, demonstrates a strong lunar association as predicted from the doctrine of correspondence. Secular scholars sometimes have difficulty relating the name Noah to “rest” because there is seemingly no justification for this name of the ancient mariner. The interior sense provides that meaning in the metaphor of regeneration wherein

a ship comes to rest on the “mountains of light,” following a state of spiritual combat. The concept “rest” = “regeneration” provides justification for this meaning.

If we follow the simple idea that the palpable universe is a mirror of spiritual reality, then we will not be surprised that more enlightened persons in a more spiritually oriented age will have gleaned deeper meanings from nature than have arisen from modern technology. The interior meaning of many ancient tales and legends, while they may not be obvious, are, as demonstrated above, no less profound because of their subtlety.

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