CREATION DAY 4

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Preamble

The traditions of people throughout the world refer to a series of world ages, each terminated by a natural catastrophe of cosmic dimensions, in which raining fire and stones, tidal waves, volcanic eruptions, earthquakes, thunderbolts, etc. contributed to the general destruction of the earth and its inhabitants. Throughout the Historic Period (665 BC-Present), students of ancient literature – particularly such regarding each culture's pantheon of pagan gods – suspected that these traditions refer to actual events which occurred not only in the dim past, but well within recorded history. Moreover, these events divided the past into ages, such as Ovid who wrote about a Primordial Age, a Golden Age, a Silver Age, a Bronze Age, a Mycenaean or Heroic Age, and an Iron Age.

The most exhaustive study of this subject that I have encountered was done by Immanuel Velikovsky (1895-1979), an Israeli psychiatrist, who spent the last forty years (1939-1979) of his

life basically (a) psychoanalyzing the myths, legends, early histories, and unearthed ruins and relics of the ancient world and then (b) writing fascinating books about his conclusions.

In his book, In the Beginning,[1] Velikovsky describes the series of world ages that he put together on the basis of his research.

1. **The Solar Age**, which was dominated by the Sun - It began with the formation of the solar system and ended with a catastrophe that involved Earth's Moon. (He was open to the possibility that there had been previous ages as well.)

2. **The Selenian Age**, which was dominated by Earth's Moon – It began with the Lunar Catastrophe and ended with a catastrophe that involved Uranus. It might have been equivalent to the Bible's Edenic Period or the ancients' Primordial Age.

3. **The Uranian Age**, which was dominated by the planet Uranus in association with the planet Neptune – It began with the Uranian Catastrophe and ended with the Saturnine Catastrophe, which produced a global flood (WATER). It was undoubtedly equivalent to the Bible's Antediluvian Age = the ancients' Golden Age.

4. **The Saturnine Age**, which was dominated by the planet Saturn – It began with the Saturnine Catastrophe and ended with the Mercurian Catastrophe, which confused mankind's languages and destroyed the Tower of Babel. It was undoubtedly equivalent to the first half of the Bible's Early Postdiluvian Age = the ancients' Silver Age.

5. **The Mercurian Age**, which was dominated by the planet Mercury – It began with the Mercurian Catastrophe and ended with the Jovian Catastrophe, which eliminated the Vale of Siddim, thereby destroying Sodom and Gomorrah (also FIRE) and creating the Dead Sea and the Great African Rift or its greater expansion. It was probably equivalent to a second half of the Bible's Early Postdiluvian Age = the ancients' Silver Age.

6. **The Jovian Age**, which was dominated by the planet Jupiter – It began with the Jovian Catastrophe and ended with the Venusian Catastrophe, which produced the Ten Plagues of Egypt and the cataclysmic events and the Hebrews' Exodus from Egypt. It was undoubtedly equivalent to the Bible's Late Postdiluvian Age = the ancient's Bronze Age.

7. **The Venusian Age,** which was dominated by the planet Venus – It began with the Venusian Catastrophe and ended with a catastrophe involving both Venus and Mars, which produced a titanic earthquake. It was undoubtedly equivalent to the Bible's Post-Exodus Period = the ancients' Missing Age[2] and the ancients' Mycenean Age.

[1] Velikovsky, Immanuel, In the Beginning- the origin of the solar system, Christian Media, Jacksonville, OR, undated.

[2] The ancients' Bronze Age was followed by a four century long period that could have been regarded by them as a portion of either their Bronze Age or their Heroic or Mycenaean Age. I believe that they overlooked it because it contained few remains and little of cultural value, because mankind was recovering from the Venusian Catastrophe, which devasted the globe and killed off much of its flora.

8. **The Martian Age**, which was dominated by the planet Mars - It began with the catastrophe involving both Venus and Mars and ended with the Martian Catastrophe, which destroyed the army of the Assyrian king Sennacherib. It was the equivalent of the last half of the Bible's Divided Kingdom[3] = the ancients' Iron Age.

This essay is focused primarily on what happened in the Solar Age, which, in my opinion, is equivalent to Days 4-7 in Creation Week.

Summary of Creation Week

In Chapter 6–The Cosmology of the Bible, which can be found in *Volume 3–Natural History* of my book, A Biblical View of Nearly Everything, I comment on the Bible's creation story in Genesis 1:1-2:3. Here I summarize what I wrote there, as follows:

In **Day 1** – God created Universe with the power of his own word. One minute there was nothing; the next minute there was something, and by the end of the day, that something consisted of two parts: Part A-Matter, a giant globe of water, illuminated on one side, at Universe's center and Part B-Space, a spherical shell of unknown composition and thickness, above and surrounding the matter, which I call the 2nd Heaven (see next paragraph).

In **Day 2** – God divided Part A-Matter into three parts or spatial segments, and by the end of the day, Universe consisted of four parts or spatial segments: Part A1–a small globe of water at Universe's center, which I call the Lower Waters or proto-Earth; Part A2 – a spherical shell of water above and surrounding the small globe of water, which God call "the firmament" and would become the 1st Heaven;[4] Part A3-a spherical shell of water above and surrounding the firmament, which I call the Upper Waters, and Part B – a spherical shell of unknown composition and thickness above and surrounding the Upper Waters, which again I call the 2nd Heaven. Its outer edge is the border of Universe, beyond which lies the 3rd Heaven.[5]

In **Day 3** – God transformed Part A1 into Earth, which he further divided into three parts or spatial segments: Part A1-a-Land, a ball of minerals at Earth's center, which he further divided into Earth's core, mantle, and lithosphere; Part A1-b-Sea, a sphere shell of water above and surrounding the Land; and Part A1-c-Air or atmosphere, a spherical shell of gases, which he further divided into five parts: the troposphere, the stratosphere, the mesosphere, the thermosphere, and the exosphere. God then adjusted the interface between the land and the sea – probably using tectonic upheavals within the lithosphere, so that the surface of the matter below the air was divided into two segments: (a) a single continent, which appeared out of the sea and a single sea, which surrounded the land.

[3] This period lasted roughly from Azariah 24 to Hezekiah 29.
[4] Revelation 21:1.
[5] 2 Corinthians 12:2.

In **Day 4 -** God transformed Part A2-The Firmament into interstellar space, the 1st Heaven. Its content by mass is probably mostly *electromagnetic plasma* (est. 96%) and secondarily *astronomical bodies* (est. 4%), such as stars, planets, moons, asteroids, and comets which are located within *astronomical objects* such as galaxies, star clusters, and planetary systems - starting with the earth's Sun and moon. Its extent is unknown. God refers to the astronomical bodies and objects as lights, and he explains that he intends the Sun to rule the day, the moon to rule the night, and the other lights in the firmament to mark (a) the signs and (b) the years, seasons, and days.

In **Day 5 -** God populated the seas and lakes with the fish and the air with fowl.

In **Day 6** – God populated the land with animals and then man, whom he placed in the Garden of Eden.

In **Day 7** – God rested from his creative work.

The phrase "the evening and the morning were the...day" (Genesis 1:31) with which the author ends the record of each of the first six days indicates that an exact, twenty-four day is meant, and that the delimiting of the day should start with night-time and end with day-time – i.e. following the order of creation, in which darkness preceded light.

The Organization of the Solar System

When the Solar System Was Organized

I believe that God organized the solar system in Day 4 of Creation Week, all within the twenty-four hours of a normal Earth day. How is that possible?

D. Russell Humphrey's hypothesizes in his book, Starlight and Time,[6] that (a) Universe is bounded, (b) that the visible portion of Universe was once inside an event horizon, and (c) that it expanded out of a white hole. Humphrey explains (a) that time effectively stands still inside an even horizon and (b) that, from the perspective of someone standing on Earth as the event horizon arrives, distant objects in Universe would appear to age billions of years in a single day. He suggests that "God's intention was to define time in terms of the *earth's* rotation and the *earth's* motion around the Sun, thus speaking of periods of time in our own frame of reference" (p. 29) – that is, one week of seven normal, 24-hour days..

So what happened on Day 4, when God organized the solar system and put the Sun and the moon in the sky and the stars beyond?

[6] Humphrey, D. Russel, Starlight and Time – Solving the Puzzle of Distant Starlight in a Young Universe, Master Books, Colorado Springs, CO, 1994

One answer was produced by Donald Patten and Samuel Windsor in their book, The Recent Organization of the Solar System.[7] I believe it is worth looking at even though, in the end, it suffers from a fatal defect.

Here is some data concerning the solar system, of which we need to be cognizant.

TABLE A - ASTRONOMICAL DATA [8]

Earth's Sun – It has (a) n/a, (b) n/a, (c) orbital velocity of ? mph, (d) a mass of 2,192,000 x 10^{21} short tons, (e) 99.866 % of the mass in the solar-system, (f) a diameter of 865,370 miles, (g) a spin-axis obliquity of 7.25 degrees (h) a spin-rate of 576 hours, (i) angular momentum of 1,120,000 x 10^{36} L, and (j) 3.482 % of the angular momentum in the solar-system

Mercury – It has (a) an average solar distance of 32 million miles, (b) an orbital period of 87.97 days, (c) orbital velocity of 10,584 mph, (d) a mass of 0.364 x 10^{21} short tons, (e) negligible % of the mass in solar-system, (f) a diameter of 3,032 miles, (g) a spin-axis obliquity of 0.1 degrees (h) a spin-rate of 1,406 hours, (i) angular momentum of 910 x 10^{36} L, and (j) 0.003 % of the angular momentum in the solar-system.

Venus – It has (a) an average solar distance of 67 million miles, (b) an orbital period of 224.7 days, (c) orbital velocity of 7848 mph, (d) a mass of 5.37 x 10^{21} short tons, (e) negligible % of the mass in the solar-system, (f) a diameter of 7520.8 miles, (g) a spin-axis obliquity of 177.4 degrees (h) a spin-rate of 5,832.5 hours, (i) angular momentum of 18,000 x 10^{36} L, and (j) 0.056 % of the angular momentum in the solar-system.

Earth – It has (a) an average solar distance of 93 million miles, (b) an orbital period of 365.26 days, (c) orbital velocity of 6,660 mph, (d) a mass of 0.00597 x 10^{21} short tons, (e) negligible % of the mass of the solar-system, (f) a diameter of 7,926 miles, (g) a spin-axis obliquity of 23.4 degrees (h) a spin-rate of 23.9 hours, (i) angular momentum of 27,000 x 10^{36} L, and (j) 0.84 % of the angular momentum in the solar-system

Earth's Moon – It has (a) n/a, (b) an orbital period of 27.3 days, (c) orbital velocity of 230.4 mph, (d) a mass of 0.081 x 10^{21} short tons, (e) negligible % of the mass in solar-system, (f) a diameter of 2,159 miles, (g) a spin-axis obliquity of 6.7 degrees (h) a spin-rate of 655.7 hours, (i) angular momentum of 0.029 x 10^{36} L, and (j) negligible % of the angular momentum in the solar system.

[7] Patten, Donald Wesley and Windsor, Samuel R., The Recent Organization of the Solar System, Christian Media, Jacksonville, OR, 2005. The authors identify this book as the first in a series of four-five volumes:, to be followed by Volume 2-The Scars of Mars, Volume 3-The Mars-Earth Wars (from an Earthlings view), Volume 4-The Flood of Noah (25th Century B.C.E.), and possibly Volume 5-The Earth's Atmosphere, a Greenhouse Effect.

[8] I was surprised to find so many disagreements among the sources which I consulted to construct this table.

Mars – It has (a) an average solar distance of 141 million miles, (b) an orbital period of 686.98 days, (c) orbital velocity of 5,400 mph, (d) a mass of 0.708 x 10^{21} short tons, (e) negligible % of the mass in the solar-system, (f) a diameter of 4,214 miles, (g) a spin-axis obliquity of 25.19 degrees (h) a spin-rate of 24.62 hours, (i) angular momentum of 3,500 x 10^{36} L, and (j) .011 % of the angular momentum in the solar-system.

Jupiter – It has (a) an average solar distance of 484 million miles, (b) an orbital period of 4,332.82 days, (c) orbital velocity of 2,916 mph, (d) a mass of 2,093 x 10^{21} short tons, (e) 0.105 % of the mass in the solar-system, (f) a diameter of 85,881 miles, (g) a spin-axis obliquity of 3.12 degrees (h) a spin-rate of 9.93 hours, (i) angular momentum of 19,000,000 x 10^{36} L, and (j) 59.062 % of the angular momentum in the solar-system.

Saturn – It has (a) an average solar distance of 889 million miles, (b) an orbital period of 10,755.7 days, (c) orbital velocity of 2,160 mph, (d) a mass of 627 x 10^{21} short tons, (e) 0.031 % of the mass in the solar-system, (f) a diameter of 72,367 miles, (g) a spin-axis obliquity of 26.73 degrees (h) a spin-rate of 10.66 hours, (i) angular momentum of 7,800,000 x 10^{36} L, and (j) 24.246 % of the angular momentum in the solar-system.

Uranus – It has (a) an average solar distance of 1,785 million miles, (b) an orbital period of 30,687.15 days, (c) orbital velocity of 1,512 mph, (d) a mass of 95.7 x 10^{21} short tons, (e) 0.005 % of the mass in the solar-system, (f) a diameter of 31,518 miles, (g) a spin-axis obliquity of 97.86 degrees (h) a spin-rate of 17.24 hours, (i) angular momentum of 1,700,000 x 10^{36} L, and (j) 5.284 % of the angular momentum in the solar-system.

Neptune – It has (a) an average solar distance of 2,800 million miles, (b) an orbital period of 60,190.03 days, (c) orbital velocity of 1,224 mph, (d) a mass of 113 x 10^{21} short tons, (e) 0.006 % of the mass in the solar-system, (f) a diameter of 30,599 miles, (g) a spin-axis obliquity of 29.56 degrees (h) a spin-rate of 16.11 hours,[9] (i) angular momentum of 2,500,000 x 10^{36} L, and (j) 7.771 % of the angular momentum in the solar-system.

Pluto – It has (a) an average solar distance of 3,675 million miles, (b) an orbital period of 103,733.84 days, (c) orbital velocity of 1,224 mph, (d) a mass of 0.016 x 10^{21} short tons, (e) negligible % of the mass in the solar-system, (f) a diameter of 1,476.8 miles, (g) a spin-axis obliquity of 119.6 degrees (h) a spin-rate of 153.29 hours, (i) angular momentum of 360 x 10^{36} L, and (j) 0.001 % of the angular momentum in the solar-system.

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Little Brother (LB) – It is an hypothetical satellite of the Sun proposed by Patten, which he estimates has (a) an orbit with a perihelion of 10-15 million miles[10] and an aphelion of 950 au or

[9] Patten, op. cit., p. 9. Patten records this rate as 17.83 hours – roughly 2 hours longer than any other source which I have consulted.
[10] Patten, op. cit., p.86 (the past), p.90 (the future).

88,335-88,340 million miles,[11] (b) an orbital period of unknown number of days, (c) orbital velocity of unknown number of mph, (d) a mass of about forty times larger than Jupiter, which would be 88,720 x 10^{21} short tons, (e) n/a, (f) a diameter of either 190 or 295 thousand miles,[12] (g) a spin-axis obliquity of unknown number of degrees (h) a spin-rate of 744 ± 7.4 hours,[13] (i) angular momentum of unknown number x 10^{36} L, and (j) n/a. [14]

The Planets Did Not Originate in the Sun

The Sun possesses 98% of the solar system's mass, but only 2% of the solar system's angular momentum. The remaining 98% of the angular momentum is possessed by the four largest planets: Jupiter, 59 %; Saturn, 24 %; Uranus, 5.2 %; and Neptune, 7.8 %. The remaining bodies (small planets, moons, comets, asteroids, etc. together possess less than 2 %. If the Sun had birthed the bodies that surround it, it would have retained most of the angular momentum required to do so. Patten argues that all the non-solar material came from elsewhere – outside the solar system via an identifiable delivery system.

The Delivery System

Patten hypothesizes that a cosmic postman exists, which he calls Little Brother (LB) in contradistinction to the Sun, which he calls Big Brother (BB). Roughly 100,000 years ago, LB was heading in the direction of BB. At roughly 1,000-3,000 au away from BB, LB passed through a zone in interstellar space filled with cosmic debris, where he captured three sets of smaller bodies. When LB finally reached BB, the latter stripped all three sets away from LB and then propelled LB into an elongated orbit about itself. According to Patten, these deliveries could have occurred all at once or separately in one, two, or three passes of LB by the Sun, but he tends to believe that they occurred all at once on the first pass[15] and in the sequence evident below.

Patten describes the three packages which LB delivered to BB as follows:

- **Set 1** – It contained two objects that would become known as Neptune and Uranus, each accompanied by their current satellites.[16] Neptune and Uranus formed a binary system which was captured by LB an estimated 1,000 au or more out from the Sun, and which orbited LB at a distance of 600 million miles. At about 2,500 million miles from the Sun, the latter stripped the binary system from LB, thereby separating Neptune and Uranus

[11] Patten, op. cit., p. 25. Patten estimated the major diameter of LB's orbit as 950 au or 88,350 million miles. Subtracting LB's perihelion of 10-15 million mile leaves an aphelion of 88,335-88,340 million miles.
[12] Patten, op. cit., p.80-81.
[13] Patten, op. cit., p. 83.
[14] I will supply the unknowns here if I stumble across them in further reading in Patten's books and essays.
[15] Patten, op. cit., p.88.
[16] In the case of Neptune – rings, Proteus, Triton, and Nereid; in the case of Uranus – rings, Miranda, Ariel, Umbriel, Titania, and Oberon.

and propelling them into separate orbits around itself at distances of 2.8 million miles and 1.8 million miles, respectively. One of the indicators that these two bodies once formed a binary system is the similarity between their spin-rates (16.11 hours for Neptune vs. 17.24 hours for Uranus).

- **Set 2** – It contained two objects that would become known as Jupiter and Saturn, each accompanied by their satellites.[17] Jupiter and Saturn formed a binary system, which was captured by LB an estimated 1,000 au or more out from the Sun, and which orbited LB at a distance of 200 million miles. At about 600-700 million miles from the Sun, the latter stripped the binary system from LB, thereby separating them and propelling them into separate orbits about itself at distances of 895 million miles and 484 million miles, respectively. One of the indicators that these two bodies once formed a binary system is the similarity between their spin-rates (9.93 hours for Jupiter vs. 10.66 hours for Saturn).

- **Set 3** contained two objects that would become known as Earth and Venus, each accompanied by their own satellites. In the case of Earth, they were the Moon (with one face locked on its parent) and Mars. In the case of Venus, it was Mercury (with one face locked on its parent). Earth and Venus formed a binary system, which was captured by LB 1,000 au or more out from the Sun, and which orbited LB at a distance of 200 million miles.

    - ***Set 3A*** – It contained Earth, Earth's Moon, and Mars. The Moon orbited Earth in a circular orbit at a distance of roughly 300,000 miles, with the same face locked on Earth. Mars orbited Earth in an eccentric (or elongated) orbit with a perihelion of 30,000 miles and an aphelion of several million miles. At roughly 200-150 million miles from the Sun, the latter stripped Mars away from LB and Earth and propelled it into an orbit around the Sun.[18] At about 93 million miles from the Sun, the latter stripped Earth and its moon away from LB and propelled Earth into an orbit around the Sun.

    - ***Set 3B*** – It contained Venus and Mercury. Mercury orbited Venus in a circular orbit at a distance of 300,000 miles, with the same face locked on Venus. During the next 25 million miles of travel, LB stripped Mercury away from Venus. At roughly 67 million miles from the Sun, the latter stripped Venus away from LB and propelled it into an orbit around itself. Then, at roughly 35 million miles from the Sun, the latter stripped Mercury away from LB and propelled it into an orbit around itself.

[17] In the case of Jupiter – rings, Io, Europa, Ganymede, and Calisto; in the case of Saturn - rings, Mimas, Enceladus, Tethys, Dione, Rhea, Titan, Hyperion, Iapetus, and Phoebe.
[18] Patten cites the similarity between the spin-rates of Earth (23.93 hours) and Mars (24.62 hours) as an indication that these two bodies were recently in close proximity, not as an indication that Earth and Venus formed a binary system, which he identifies as set 3.

After being stripped of all its satellite systems, LB continued in its own orbit around the Sun and can be expected to return at any time. When it does, it will first appear in the zone of Aries.

Patten writes the following about the foregoing theory:

> *This series of separations from LB, and its repositions of the various planets may seem complicated. It isn't. There are only three branches of planets that were separated from LB, and (or) delivered to the Sun. First was Uranus-Neptune with satellites, second was Jupiter-Saturn with satellites, and third was Venus-Earth, of which two of the three satellites were stripped off, Mars and Mercury.*
>
> *Because of the greater distances from the Sun, Neptune, Uranus, Saturn, and Jupiter each retained their satellite systems. But because Venus and Earth were separated so close to the Sun (within100,000,000 miles), two of the three satellites were stripped off, Mercury and Mars. Today we call them planets, tiny to be sure.*
>
> *In science, there is a maxim that almost always, when science is faced with two explanations for a phenomenon, a simple answer and a convoluted one, the simple answer is almost always the correct one. It is known as "Occam's Razor....*
>
> *Our relatively simple straight-forward theory of capture of three clusters of planets needs to be compared with, and contrasted to the many convolutions and revision after revision of the nebular process. The nebular hypothesis, still a favorite of the gradualists some 200 years later, tries to affirm [that] all planetary components were extruded from the Sun. More on this convoluted, if 'popular' (frequently taught) approach is reserved for Chapter 10."* [19]

In his book, The Long Day of Joshua and Six Other Catastrophes,[20] Patten argues (a) that, when the Sun stripped Mars away from LB and Earth, the Sun propelled Mars into an eccentric orbit around itself that intersected Earth's orbit twice during each orbital trip, (b) that periodically these intersections resulted in near collisions between Earth and Mars which caused serious damage to both bodies, and (c) that these near collisions were responsible for seven catastrophes to which the Bible refers, as well as threats of catastrophes on seven occasions.. They are the following

TABLE B - PATTEN'S THREATS & ENCOUNTERS

[19] Patten, op. cit., p. 52.
[20] Patten, Donald W., Hatch, Ronald R., & Steinhauer, Loren C., Long Day of Joshua and Six Other Catastrophes, The, Pacific Meridian Publishing Company, Seattle, 1973.

The Flood sometime between 2254 and 2500 BC, which is equivalent to my ***Noah Disturbance (2321 BC)***.

Threat 1 in 2146 BC, which would probably be equivalent to my ***Peleg Disturbance (2221 BC)***.

The Confusion of Language and the Destruction of Babel's Tower in 1930 BC, which is equivalent to my ***Terah Disturbance (2070 or 2020 BC)***.

The Destruction of Sodom and Gomorrah in 1877 BC, which is equivalent to my ***Abraham Disturbance (1870 BC)***.

Threat 2 in 1663 BC, which would probably be equivalent to my ***Job Disturbance (1667 BC)***.

The Exodus in 1447 BC, which is the equivalent of my ***Moses Disturbance (1464 BC)***.

The Sun Standing Still for Joshua in 1404, which is the equivalent of my ***Joshua Disturbance (1413 BC)***.

Threat 3 in 1296 BC, which is the equivalent of my ***Deborah Disturbance (1261 BC)***.

Threat 4 in 1188 BC.

Threat 5 in 1080 BC, which would probably be equivalent to my ***Samuel Disturbance (1058 BC)***.

Threat 6 in 972 BC, which would probably be equivalent to either my ***David Disturbance (1008 BC)*** or my ***Cosmic Battle 1 (957 BC)***.

Threat 7 in 864 BC, which would probably be equivalent to my ***Cosmic Battle 2 (855 BC)***.

The Commotion in the Days of Uzziah in 756 BC, which was predicted by Joel and Amos, and which would be the equivalent of my ***Cosmic Battle 3 (754 BC)*** and my ***Azariah Disturbance (754 BC)***.

The Destruction of the Army of Sennacherib in 701 BC, in which Patten seems to conflate three encounters between Earth and Mars: my ***Ahaz Disturbance (695 BC)***, my ***1st Hezekiah Disturbance (680 BC)***, and my ***2nd Hezekiah Disturbance (665 BC)***.

Problems With Both Velikovsky's and Patten's Cosmologies

As I have pointed out, Velikovsky and Patten differed in identifying the cause of Earth's past catastrophes. Velikovsky argued that Uranus Saturn, Mercury, Jupiter, Venus, and Mars had

caused cataclysms on Earth seriatim. Patten argued that Mars was the sole culprit. I tend to agree with Velikovsky. I think Patten's enthusiastic use of Occam's razor led him to over-simplify what had happened in the solar system during the Prehistoric Period, which ended in the mid-seventh century BC, but I am keeping an open mind on the matter.

The main issue for me when judging any cosmology is whether or not it is consistent with what the Bible says. If it is not, it must be rejected. Thus, the problems that concern me about both Velikovsky's and Patten's cosmologies are the following:

- **Bible's Creation Week** - Neither Velikovsky nor Patten discuss Universe's origin – i.e. creation. Velikovsky appears to have regarded Creation Week as a Mosaic construct to memorialize past ages: (1) the age of the Sun, (2) the age of the Earth's Moon, (3) the age of Uranus, (4) the age of Saturn, (5) the age of Mercury, (6) the age of Jupiter, and (7) the age of rest which, Moses expected, would follow the catastrophe at the time of the Exodus (Moses' year 80). To the best of my knowledge, Patten never discussed the Bible's Creation Week, but he did continually disassociate himself from and even disparage Christians who believed in creation *ex nihilo*.[21]

- **Bible's Chronology** – Neither Velikovsky nor Patten discussed the chronological thread which runs through the Bible. It divides Earth and mankind's history into distinct periods, eras, and ages as follows:

TABLE C – HOLBROOK'S OUTLINE OF HISTORY

1-The **PREHISTORIC PERIOD** (3977-665 BC), which is divided into three eras:

1A-The **Early Prehistoric Era** (3977-2321 BC), which is divided into three sub-periods:
1A-1-The ***Creation Week*** (3977 BC).
1A-2-The ***Ancients' Primordial Age*** = the Bibles Edenic Age (3977 BC).
1A-3-The ***Ancients' Golden Age*** = the Bible's Antediluvian Age (3977-2321 BC).

1B-The **Middle Prehistoric Era** = the Bible's Postdiluvian World (2321-1464 BC), which is divided into two sub-periods:
1B-1-The ***Ancients' Silver Age*** = the Bible's Early Postdiluvian Age (2321-1870 BC).
1B-2The ***Ancients' Bronze Age*** = the Bible's Late Postdiluvian World (1870-1464 BC).

[21] Patten, op. cit. - Incidents of disassociation: p.29; incidences of disparagement: p.34, 36, 39. Frankly, I do not understand why Patten wrote so derogatorily of *ex nihilo* creation and its adherents. The term refers to what happened at the beginning of Creation Week's Day 1, when God brought into existence a formless, substance-less something (Genesis 1:2). It does not refer to what happened on Day 4, when he transformed a spherical shell of water into interstellar space. Moreover, Patten emphatically dismissed *ex nihilo* or "fiat" creation with the statement, "...the theological dogma of sudden, instantaneous creation of a 'young Earth' will be laughed into oblivion" (p.91), but he provided no alternative to *ex nihilo* creation. He seems to assume Universe's existence and try to reconstruct Universe's first roughly 100,000 years without any recognition that Universe's development during that period might have occurred with an event horizon such as D. Russell Humphrey's proposed in 1994, twenty years before Patten died.

1C-The **Late Prehistoric Era** = what I call the Turbulent World = the geologists' Pleistocene Period (1464-665 BC), which is divided into three sub-periods:
1C-1-The ***Ancients' Missing Age*** = the Early Turbulent World (1464-1008 BC).
1C-2-The ***Ancients' Heroic Age*** = the Middle Turbulent World (1008-754 BC).
1C-3-The ***Ancients' Iron Age*** = the Late Turbulent World (754-665 BC).

2-The **HISTORIC PERIOD** (665 BC-Present), which is divided into two eras:

2A-The **Early Historic Era** (665-2 BC), which in the west is divided into four sub-periods:
2A-1-The ***Neo-Babylonian Age*** (665-487 BC).
2A-2-The ***Persian Age*** (487-330 BC)
2A-3-The ***Macedonian Age*** (330-149 BC)
2A-4-The ***Roman Age BC*** (149-2 BC)

2B-The **Late Historic Era** (2 BC-Present), which, in the west, I divided into five, non-Biblical sub-periods:
2B-1-The ***Rome Age AD*** (2BC-476 AD)
2B-2-The ***Byzantine Age*** (476-1453 AD)
2B-3-The ***Exploratory Age*** (1453-c.1750 AD)
2B-4-The ***Revolutionary Age*** (c.1750-1918 AD)
2B-5-The ***Globalist Age*** (1918 AD to present)

According to the above chart, every one of either Velikovsky's dates or Patten's dates is wrong. Neither of them (a) mentions what the Bible says about what God did during Creation Week's Days 1-3 (see above), and (b) discusses how God organized the solar system on Day 4 within the confines of a normal, twenty-four hour period. Indeed, both wrote of thousands of years preceding the appearance of Adam.

- **The Bible's God** – What is most surprising to me is that neither man addresses the Bible's first and most important claim: "In the beginning, God created the heavens and the earth" (Genesis 1:1). The Bible indicates that an omnipotent, omniscient, omnipresent, omnicompetent, and benevolent Deity, who exists separate from and transcendent of Universe, (a) designed Universe and its creatures, (b) scripted Universe's entire history (past, present, and future), (c) spoke Universe into existence, (d) energized Universe's inorganic realm and animated Universes organic realm, (e) set the rules for mankind's behavior, (f) provided atonement at Golgotha for mankind's breaking those rules, (g) is now determining and managing every aspect of Universe's life, (h) will judge mankind on the Day of Judgment, and (i) will create new heavens and a new Earth for every man, woman, and child who accepts God as his or her Creator, Redeemer, and Lord to inhabit for eternity. How can anyone overlook such a God's existence and activities? I am particularly surprised by Patten, who claimed to be a Christian (I am not saying this in a pejorative way. I am just genuinely surprised.)

My Interest in Patten's Hypothesis

Despite my problems with Patten's cosmology, I am genuinely interested in it, because his delivery system may provide a partial answer to some of the questions which aspects of the Solar System raise.

Condition of Universe at End of Day 3

One needs to start with Universe's condition at the end of Creation Week's Day 3 (see above). Universe had been divided into four parts:

- **Part 1 is called Earth** at Universe's center. It consisted (a) a central core of minerals (the land), of which a portion was elevated above the surface of (b) a sphere of water (the sea) above and surrounding the core, which formed a single ocean surrounding a single continent (the land), and (c) an atmosphere of gases (the air) above and surrounding the terrestrial globe below.

- **Part 2 is called the Firmament**. It consisted of a spherical shell of water above and surrounding Earth, which would provide the space and matter for interstellar space and thereafter be called the First Heaven.

- **Part 3 is called the Upper Waters**. It consisted of a spherical shell of water above and surrounding the First Heaven.

- **Part 4 is called the Second Heaven**. Its constituents are unknown. Its outer surface is the outer boundary of Universe.

Nature of God's Work on Day 4

God's work on Day 4 consisted of transforming the Firmament into the First Heaven – i.e. interstellar space. Its content by mass is, in my opinion, probably mostly *electromagnetic plasma* (est. 96%) and secondarily *astronomical bodies* (est. 4%), This transformation of water into interstellar space must have involved several phases.

- First, the molecules of water, consisting of one hydrogen atom and two oxygen atoms, had to be torn apart to free all their constituent atomic and sub-atomic particles.

- Second, the particles had to be formed into all the chemical elements in Universe.

- Third, the chemical elements had to be formed into solids, gases, liquids, and plasma.

- Fourth, the solids, liquids, gases, and plasma had to be formed into *astronomical bodies* such as stars, planets, moons, asteroids, and comets.

- Fifth, these astronomical bodies had to be organized into *astronomical objects* such as galaxies, star clusters, and planetary systems - starting with Earth's Sun and Moon.

- Sixth, the Sun and Moon had to be delivered to Earth's vicinity.

It is this sixth and final phase that I want to consider here. Before I do so, there is an important question to answer. There is no doubt in my mind that Earth started out at the center of Universe as Creation Week's Day 4 began. Where was Earth at the end of Day 4?

Geocentricity versus Heliocentricity

The Bible's Creation Story places Earth at the Center of Universe, and some well-known passages in the Old Testament seem to keep it there, which some geocentrists[22] cite as a Biblical basis for rejecting the Copernican Revolution. They are worth reviewing.

> Fear before him, all the earth: the world also shall be stable, that it be not moved (1 Chronicles 16:30).
>
> The LORD reigneth, he is clothed with majesty; the LORD is clothed with strength, wherewith he hath girded himself: the world also is stablished, that it cannot be moved (KJV Psalm 93:1).
>
> Say among the heathen that the LORD reigneth: the world also shall be established that it shall not be moved: he shall judge the people righteously (KJV Psalm 96:10).
>
> Who laid the foundations of the earth, that it should not be removed forever (KJV Psalm 104:5).

Please note that none of these passages place Earth at the center of Universe. They just state emphatically that Earth shall not be moved – ever. Now, consider the following passages which describe how the Sun mover forward or backward in the sky on at least three occasions - in my opinion due to a shift in the direction of Earth's spin-axis, thereby changing the length of Earth's day.

> Then spake Joshua to the LORD in the day when the LORD delivered up the Amorites before the children of Israel, and he said in the sight of Israel, Sun, stand thou still upon Gibeon; and thou, Moon, in the valley of Ajalon. And the sun stood still, and the moon stayed, until the people had avenged themselves upon their enemies. Is not this written in the book of Jasher? So the sun stood still in the midst of heaven, and hasted not to go down about a whole day. And there was no day like that before it or after it, that the LORD hearkened unto the voice of a man: for the LORD fought for Israel. (KJV Joshua 10:12-14)

[22] The following men have written many books and articles explaining and promoting the geocentric viewpoint: George Airy, Robert J. Bennet, Gerardus D. Bouw, Richard Elmendorf, James Hanson, Robert A. Sungenis, Walter Van der Kamp, and others.

> And Hezekiah said unto Isaiah, What shall be the sign that the LORD will heal me, and that I shall go up into the house of the LORD the third day? And Isaiah said, This sign shalt thou have of the LORD, that the LORD will do the thing that he hath spoken: shall the shadow go forth ten degrees, or go back ten degrees? And Hezekiah answered, It is a light thing for the shadow to go down ten degrees: nay, but let the shadow return backward ten degrees. And Isaiah the prophet cried unto the LORD: and he brought the shadow ten degrees backward, by which it had gone down in the dial of Ahaz (KJV2 Kings 20:8-11).

> Go, and say to Hezekiah, Thus saith the LORD, the God of David thy father, I have heard thy prayer, I have seen thy tears: behold, I will add unto thy days fifteen years. And I will deliver thee and this city out of the hand of the king of Assyria: and I will defend this city. And this shall be a sign unto thee from the LORD, that the LORD will do this thing that he hath spoken; Behold, I will bring again the shadow of the degrees, which is gone down in the sun dial of Ahaz, ten degrees backward. So the sun returned ten degrees, by which degrees it was gone down (KJV Isaiah 38:5-8).

Clearly, according to the Bible, Earth has been moved at least three times – (1) on the day of the battle between Israel and the Amorites at Beth Horon in Joshua's time, (2) on the day of Ahaz's burial in Ahaz 15/16 in Isaiah's time, and (3) on a day in Hezekiah 14 also in Isaiah's time - unless one interprets the above passages to mean that all of Universe moved back and forth to change the length of an Earth day, which I doubt.

Here I would point out that there is a difference between moving from one location to another, and moving in place. The shifts in Earth's axis could have occurred while Earth stayed in place, at the center of Universe, which I am inclined to believe happened, because, if God placed Earth at the center of Universe while he was creating it, why would he decide to move it, particularly when his Holy Scriptures emphatically state that it will never be moved?

It would be interesting if scientists designed and conducted an experiment to determine whether or not Earth moves from one location to another. If they have already done so, I have not heard about it, and I have been looking for such a thing for forty years.

Until they do so, I must admit that the Copernican, heliocentric view of the solar system, with the Sun at its center and the planets orbiting the Sun, is much simpler and easier to understand than the geocentric view of pre-Copernican astronomers like Apollonius of Perga (2nd century BC), Hipparchus of Rhodes (c.190-c.120 BC), and Ptolemy of Thebaid (2nd century AD), with Earth at its center and the Sun and other planets orbiting Earth, which is a complex idea that ultimately required cycles and epicycles to explain. On the other hand, I also know that, in this age of Einsteinian relativity, any coordinate system can be translated into any other coordinate system, and thus, from a purely mathematical point of view, there is no preferred frame of reference.

Moreover, during the last forty years, I have watched the scientific community move Earth nearer and nearer to the center of Universe as they realize how finely tuned Earth is by position, condition, resources, etc. to accommodate all forms of life. The odds against this happening by chance increase yearly by several orders of magnitude while, not surprisingly, estimates of the age of Universe keep contracting. (I fully expect atheistic science to be backed into a corner, from which it cannot escape, in the not too distant future.)

So What Happened on Day 4?

I think the best way to discern what happened in the sixth phase of Creation Week's Day 4 is to jump forward to the end of the Prehistoric Period (3977-665 BC), when the Solar System finally achieved some stability and the cosmic disturbances which had plagued Earth and its creatures for over three millennia finally ceased.

As I have indicated above, the Prehistoric Period ended with the Late Prehistoric Era (1464-665 BC), which can be divided into three ages: the Ancients' Missing Age (1464-1008 BC), which I call the *Reign of Venus*, the Ancients' Heroic Age (1008-754 BC), which I call *War in the Sky*, and the Ancients' Iron Age (754-665 BC), which I call the *Reign of Mars*. In my opinion, each one of these ages eliminates an aspect of Patten's delivery system.

Reign of Venus (1464-1008 BC)

As I have argued elsewhere, I believe that the comet Venus's orbit intersected with and took it near Earth every 50-52 years from 1464 BC to 1008 BC – specifically in 1464, 1413, 1363, 1312, 1261, 1210, 1160, 1109, 1058, and 1008 BC, resulting in (a) catastrophes on the marked dates, to which the Bible attests, and (b) threats on the unmarked dates. During this time, the close approaches of these two bodies resulted in intense volcanism on both, which produced the first five ice ages.

War in the Sky (1008-754 BC)

As I have argued elsewhere, I believe that Earth, the Moon, Venus, and Mars were involved in three cosmic battles which I identify as ***Homer's Cosmic Battles 1-3*** in order to make clear that I am not basing my argument for them on the Bible, but rather on Homer's Iliad and other Greek literature..

Homer's Cosmic Battle 1 (957 BC)

Homer's first battle in the sky occurred in 957 BC – i.e. King Solomon's regnal year 31 in Israel and Queen Hatshepsut's regnal year 25 in Egypt.[23]

[23] Velikovsky, W-in-C., pp. 246-247. First, Velikovsky writes that Troy was destroyed in the late 9th or early 8th century BC and that afterwards Aeneas escaped from the Greeks, visited Dido in Carthage, which had been built in the 9th century BC, and then settled in Italy, where he founded Rome in the middle of the 8th century BC. I am in general agreement with his chronology. I date the Trojan War to 812-802 BC and Aeneas's settlement on the site of Rome c.790 BC. I believe, however, that this settlement was largely destroyed when a thunderbolt struck its neighbor Volsinium during the ***Azariah Disturbance*** in 754 BC, thereby giving the two Alba Longa princes Romulus and Remus the opportunity to seize the site and establish Rome, in which Aeneas played no role, having died before or in the catastrophe. Second, Velikovsky states that Mars-Nergil did not became a prominent deity until the 8th century BC. Here, I think Velikovsky is mistaken, because he appears to have conflated the Ancients'

Homer's Cosmic Battle 2 (855 BC)

Homer's second battle in the sky occurred in 855 BC - in King Jehoram's regnal year 2 in Judah and Pharaoh Akhnaton's regnal year 6 in Egypt. That year also fell in the time of Atreus and Thyestes in Greece; they were the rival sons and successors of the Mycenaean King Pelops and his wife Hippodamia. Although there is no mention of this event in the Bible, there is mention in Egyptian records of a calamity that convinced the priests of Amon in Thebes that an unacknowledged and unatoned for patricide existed in the land (Akhnaton had committed the equivalent of patricide when, after he ascended to the throne and married his mother, he erased his father Amenhotep III's image and name from the Egyptian monuments and records.) There is mention of an astronomical disturbance in Greek literature; Apollodorus wrote, "Atreus stipulated with Thyestes that Atreus should be king if the sun should go backward; and when Thyestes agreed, the sun set in the east." [24] Velikovsky equates this event with the astronomical disturbance on the day of Ahaz's burial, but I disagree. First, on the day of Ahaz's burial, the shadow on the sundial moved forward 10 degrees, thereby shortening the day, whereas fifteen years later, in Hezekiah 14, the shadow on the sundial moved backward 10 degrees, thereby lengthening the day and correcting the previous displacement. Second, the direction of the sunset did not change from west to east in one of these events, whereas it might have done so two centuries earlier, in the time of Atreus and Thyestes, when a shift of 180 degrees in Earth's spin-axis might have occurred.

Homer's Cosmic Battle 3 (754 BC) [25]

Homer's third battle coincided with my ***Azariah Disturbance (754 BC)*** and caused the ***Commotion in the Days of Uzziah*** (Azariah) which consisted of a *raash*, a term in Hebrew that implies an unusually severe earthquake. Not surprisingly, Claude Schaffer concluded that a titanic earthquake had struck and devastated the entire Middle East at this time.[26]

This was the final contact among Earth, Earth's Moon, Venus, and Mars, and during it Venus was propelled into its current orbit around the Sun, and Mars was credited by many cultures with courage and competence in combat for having engaged and vanquished a larger and more powerful foe.

Now consider the effect on Venus of this encounter. Venus's (a) spin-axis obliquity is 177.4 degrees and (b) spin-rate is 5,832.5 hours, which bear no similarity with those of Earth and Mars

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Mycenaean Age and Iron Age, whereas I believe that the Mycenaean Age (1008-754 BC) preceded the Iron Age (754-665 BC), and I suspect that mankind started taking an interest in Mars as early as 957 BC.

[24] Apollodorus, *The Library*, Epitome II.

[25] Velikovsky, W-in-C, pp. 252-253. Velikovsky wrote that Homer described at least two battles in the sky – one in Book 5 and one in Book 21 – but there is also one in Book 20, which is why I choose three. Velikovsky

[26] Schaeffer, Claude F.A., *Stratigraphie Comparee et Chronologie de l'Asie Occidentale*, Oxford University Press, London, 1948.

noted above. Venus does, however, exhibit a curious feature. While its orbital period (sidereal year) is 224.7 days, its synodic period (length of time between two of its closest approaches to Earth) is 584 Earth days. This means that five synodical periods of Venus equal 2919.6 days, and eight Earth years of 365 days equal 2920 days – a difference of only 0.4 days or 9,6 hours. On the other hand, eight Julian years of 365.24 equal 2921.92 days – a difference of only 2.32 days in 8 years and 1.16 day in 4 years. If one follows a Venus-based calendar of four year blocks, the seasons will advance one day in every four years, thus making the scheduling of seasonal activities like planting and harvesting increasingly difficult.

In the 3rd century BC, the Egyptians were still using a Venus-based calendar, and an attempt was made in 240 BC, during the reign of Ptolemy III Eurgetes, "...to reform the calendar 'according to the present arrangement of the heavens' ...[by] replacing the year regulated by the rising of the star Isis – and Pliny says that Isis is the planet Venus[27] – with a year regulated by the rising of the fixed star Sothis (Sirius); this would make a difference of one day in four years, so that, as the decree says, 'the festivals of winter should not arrive in the summer because the change of a day every four years in the rising of the star Isis.' The reform intended by the Canopus Decree did not take root because the people and the conservatives among the priests kept faith with Venus and observed the New Year and other festivals on the days regulated by it." [28] Claudius Ptolemy, in the 2nd century AD observed in his Almagest: "Eight Egyptian years without a sensible error equal five circlings of Venus." [29]

It is interesting that the patron goddess of the Greeks was Athena (Venus) and that, when they established the Olympic Games in 777 BC, the Olympic Period consisted of four years. Clearly, they were following the same Venus-based calendar as the Egyptians, which did not become obsolete until 754 BC, when Earth's year changed from 360 days to 365.24 day.[30] Moreover, like the Egyptians, they continued to date their important events with the 360-day based Olympic calendar.

Reign of Mars (754-665 BC)

With Venus out of the picture, Mars represented the only remaining threat to Earth. Its orbit brought it close to Earth every 14-15 years.

[27] Pliny, *Natural History*, ii 37.
[28] Velikovsky, Worlds in Collision, p. 195.
[29] Ptolemy, Almagest, Book X, Chapter iv.
[30] There is abundant evidence that the annual calendar has changed repeatedly. A calendar of fewer than 360 days per year was used in the Middle Prehistoric Era (2321-1464 BC). A calendar of a 360-day year originated in and was used during the Late Prehistoric Era (1464-665 BC). A calendar of a 365.24-day year appeared in the Early Historic Era (665-2 BC), but was not fully adopted until well into the Late Historic Era (2 BC-Present). As noted above, Ptolemy observed that the Egyptians were still using it in the 2nd century AD; they did so for reasons of religion and tradition, not because they were ignorant of the true length of the year. A 360-day year calendar was used for centuries by the following peoples, all of whom were adept at making astronomical observations: the Assyrians, the Babylonians, the Chaldeans, the Chinese, the Indo-Europeans, the Egyptians, the Ethiopians, the Greeks, the Hebrews, the Hindus, the Incas, the Mayans, the Persians, and the Romans.

Mars Threats (739, 724, and 710 BC)

From 754 to 695 BC, Earth was threatened with an encounter on three occasions – in 739 BC in King Azariah's regnal year 39, in 724 BC in King Jotham's regnal year 2, and 710 BC in King Jotham's regnal year 16. During this period, Amos, Joel, Hosea, Isaiah, and Micah warned continually of an approaching catastrophe because they had experienced the catastrophe in 754 BC and could discern the astronomical path that Mars was following.

Ahaz Disturbance (695 BC)

In 695 BC, on the day of King Ahaz's burial in his regnal year 16, the shadow on the sun-dial moved forward by 10 degrees, thereby shortening the day.

1st Hezekiah Disturbance (680 BC)

In 680 BC, in Hezekiah's regnal year 14, the shadow on the sun-dial moved backwards by 10 degrees, thereby lengthening the day and correcting the previous displacement. Oddly, Patten ignored the Biblical testimony here concerning the encounters in 680 and 665 BC, in which Earth's spin-axis changed twice, clearly indicating that the two planets were adjusting to one another, perhaps because it did not fit his delivery theory, for he argued that both Earth and Mars acquired their spin-axis obliquities and spin-rates when they were still 1,000-900 au from the Sun, over 100,000 years earlier.

2nd Hezekiah Disturbance (665 BC)

In 665 BC, in Hezekiah's regnal year 29, Earth and Mars nearly collided and exchanged interplanetary, electric discharges, one of which destroyed the army of the Assyrian King Sennacherib. It left them with (a) spin-axis obliquities of 23.4 degrees and 25.19 degrees respectively and (b) spin-rates of 23.9 hours and 24.62 hours respectively. These figures are remarkably similar: their spin-axis obliquities are 92.89 % similar, and their spin-rates are 97.07 % similar.

Conclusion

On the basis of the foregoing, I doubt that Patten's idea that Little Brother delivered Set 3 to the Sun with both Earth and Venus exhibiting their current spin-axis obliquities and spin-rates. I believe that their and Mars' spin-axis obliquities and spin-rates were acquired in their close encounters in the Late Pre-historic Era. (1464-665 BC).

That leads me to wonder if God used something like Patten's delivery system (a) to deliver all of the planets excepting Earth to the Sun in mid-Day 4 and then (b) to deliver the Sun and all of its planets and satellites to the vicinity of Earth, which then stripped the Moon away from the Sun,

in late Day 4. That would have put Earth and the Sun in their current relationship, regardless of which orbits the other – a question for science that will only be resolved by a test.