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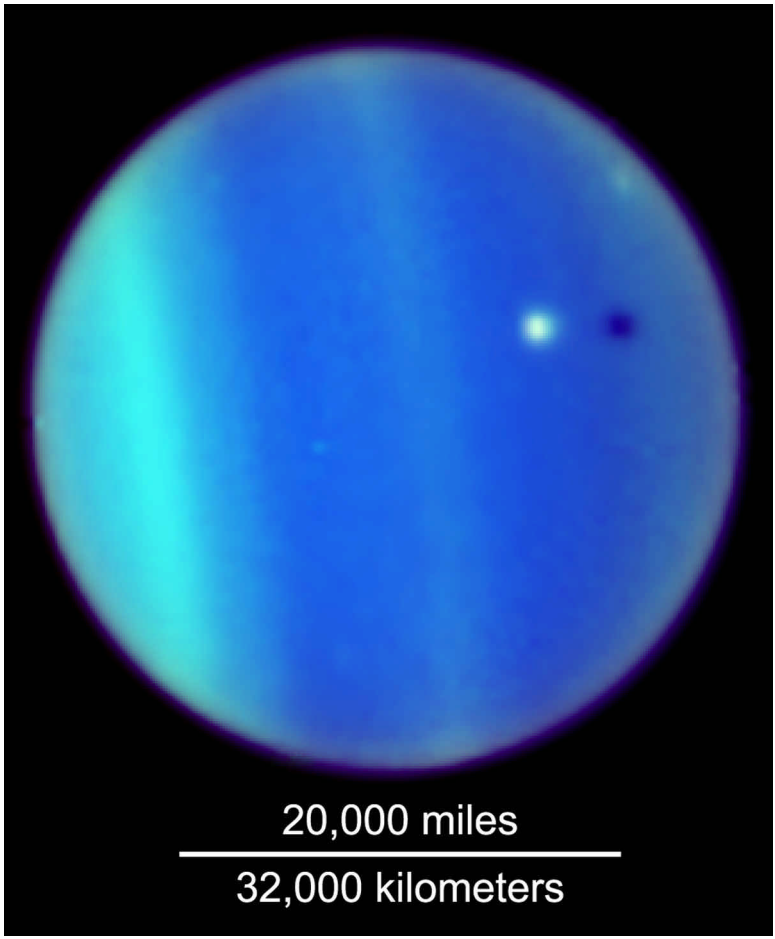
THE BIBLICAL ASTRONOMER

FALL 2006



RENEWED ITEMS

(Continued from the back cover)

The following two items have not been available for some time and are now available again.

Vital Questions by Philip Stott. (Second edition) Tackles just how flimsy the evidence is for such well-established ideas as the Big Bang, Relativity, and evolution. 155 pages. $20

Where in the Universe Are We? by Philip Stott. **DVD video**. This is the same video we sold in VHS format some years back, but now reissued in DVD format. $25

Problems in Astronomy by Philip Stott. VHS video $15

Foreign orders, please read pricing policies
on the back cover of this issue.

Subscriptions to the *Biblical Astronomer* are $15 per year ($25 outside the USA). Membership is $20 per year, ($30 outside the USA) and members are allowed a 15% discount on all materials published by the Biblical Astronomer. Offerings to make possible additional publishing and research projects are gratefully accepted. Foreign orders please send either cash or cheques drawn on a United States bank. Credit cards are acceptable only on the Internet through PayPal's secure payment service. The product list, including items not listed in this issue, is at http://www.geocentricity.com/geoshop/index.html.

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Front Cover: A solar eclipse on Uranus. The bright spot is the moon, Ariel, and its shadow falls on the clouds of Uranus to the right of the moon. If there were an observer in that shadow on Uranus, that observer would see Ariel covering the sun, an eclipse of the sun. (NASA Photo.)

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EDITORIAL

Because of the lag in publication (we are an issue behind schedule, this one will, D.V., catch us up to the schedule for the next issue) we have not had an editorial for two issues.

Planet Pluto, RIP

Pluto is no longer a planet. It is now a "dwarf planet," whatever that is. In this issue we examine the debates and machinations that went on at the International Astronomical Union in Prague earlier this year. As usual, the press invented its own news—literally. At issue is the definition of "planet," but if we take the new definition literally and strictly enough, there are now no planets in the Solar System except, perhaps, Mercury.

The demotion for Pluto is also a disappointment for the widow of its discoverer, Clyde Thombaugh. Mrs. Thombaugh, now 93, has trouble adjusting to her new role as the wife of the discoverer of the first dwarf planet instead of the wife of the discoverer of the ninth planet. Clyde Thombaugh died in 1997 at 90 years of age. At the time of his death there was already a movement afoot to strip Pluto of its historical planethood.

Last issue's cover featured the Atlas V rocket that launched the New Horizon space probe headed for Pluto. While Pluto was being demoted, the space probe was in the asteroid belt speeding towards its destination for a 2015 arrival. Aboard the New Horizons craft are Dr. Thombaugh's ashes. If all goes according to plan, the remains of Pluto's discoverer will orbit that body until the dissolution of the heavens pronounced in II Peter 3:12.

For more on the matter from an insider's perspective, read "The Reclassification of Pluto." It's far from over: the press to the contrary.

Thirty-day Month

There is a common story in the Judaeo-Christian world that the pre-flood calendar consisted of thirty-day months. The theory stems from the chronology of the Flood. But does the chronology really fit? And what does it mean? Professor James Hanson examines the matter in "The Thirty-day Month" in this issue.

Report on the Shape of the Universe

If you thought the geocentrists' arguments on the size of the universe were complicated, just look at the evolutionists' arguments on the shape, and coincidentally, the size of the universe. Is it a sphere or a torus (donut), a cube, or a polyhedron? Smoke and mirrors, anyone? See the article on page 125 for details.

On a Personal Note

In May of 2007 I shall retire from teaching at the College. Lord willing and my health holds out, I shall be able to spend more time on matters geocentric. I would also like to write a multi-volume treatise on the astronomy of the Bible. There have been several books written about that subject but none have been even remotely complete, let alone exhaustive. But first, an updating of *Geocentricity* is in order.

All that is going to cost money and that is why this personal note. We have been holding the line on charges for several years. We are not yet planning an increase in subscription costs for 2007 either. At the current rate, we have been able to withstand two postal increases, including very significant increases in overseas rates. We have been able to do so because of decreasing printing costs. A decade ago, when the economy was particularly bad, we were able to cut subscription costs.

One other cost-cutting measure has been to cut the radio ministry in the Philippines in half, from an hour to a half hour. Even at that, we are short 20% for the quarter now under way. The bottom line is that to maintain this ministry smoothly and full-time we need about $3,000 a month. Currently we are running with a budget of about $5,000 per year, sometimes more, sometimes less.

And that brings us to another activity we would like to present to your, our readers. We are planning a third Conference on Absolutes for July 2007, most likely in Houston. The first Conference on Absolutes was held in 1978 at the Cleveland State University, the second in 1992 in St. Paul, Minnesota. Of course, geocentricity will be the main focus of the conference, but other absolute studies, such as relativity, preservation and inerrancy of Scripture, Mach's principle, etc. are fair game. To that end, we have present a preliminary announcement on page 132 of this issue. In the meantime, please consider regular, monthly support for the activities of the Association for Biblical Astronomy.

THE THIRTY-DAY MONTH

James N. Hanson

The Nonsense

The thirty-day month is popular amongst those many fundamentalists who bow the knee to science and, especially, to mathematics. Many seem to delight in appending mathematical trappings to the Bible, e.g., those idiotic Bible codes and Robert Anderson's 360-day prophetic calendar. Anderson and his devotees imagine grand precise chronological structures in the Bible (see Kregel Publication's reprint of *The Coming Prince*, originally published in 1894). These structures don't exist and serve only to obscure the Bible's actual precise chronology. Current examples of the fruits of Anderson's legacy may be found in the popular paperbacks by Grant Jeffrey.[1] Prophecy in the Bible does not employ the prophetic year of 30-day months but does employ the solar year of 365.24… days and the lunar month of 29.53… days as commanded in Genesis 1:14; for God created the sun, moon, and stars for this purpose.

The Bible Code nonsense was first introduced by Israelis Witztum and Drosnin. This code, through equidistant letter sequences, deifies the rabbinate by allegedly finding their names in "Scripture." For an antidote to such baloney read Ingermanson's 1995 book, *Who Wrote the Bible Code*, (Waterbrook). He finds Dr. Suess' *Cat in the Hat* has more such structures and prophecies than the Hebrew Torah. One may wish to go to the Web site, www.caltech.edu/code/petition, prepared by some of the California Institute of Technology Mathematics Department and signed by professors of mathematics from the U. S., Israel, New Zealand, and the Ukraine. Therein one will read, "All claims of incredible probabilities for such clusters are bogus, since they are computed contrary to standard rules of probability and statistics."[2]

Temple Destruction vs. Prophetic Year

One of the alleged triumphs of the prophetic year of 30-day months is the 586 B.C. date for the year of the destruction of Solomon's temple. Somehow this ridiculous date had become entrenched in

[1] Jeffrey, Grant, 1988. *Armageddon, Appointment with Destiny*, (Frontier Research Publications).

[2] For more, see G. Bouw, 1998. "The Bible Code," *B.A.* **8**(83):21, also, Forum, 1998. "Dr. Bouw just doesn't get it," *B.A.* **8**(85):7.

fundamentalists' lore even though it blatantly contradicts Daniel 9:26, 2 Chronicles 36:22-23, Ezra 1:1-2, and many more verses. It is clear from those texts that the destruction of the temple took place 520 years before the Lord's nativity:

Years	Event
0	The Lord's nativity.
+33	Lord's age at his death.
-483	=69 x 7, from Cyrus' command to death of Christ.
-70	Destruction of temple.
-520	B.C. date for destruction of temple.

Anderson, as is customary, takes the commandment to rebuild the temple to be issued by Artaxerxes, not Cyrus, and states that the days from this commandment to the cutting off of the Messiah (Palm Sunday) is 360 x 69 x 7 days. Not only are his event dates wrong or irrelevant, but he does not even count correctly. He nowhere shows how he computed his number of days. However, he did correctly use the Hebrew calendar. Jeffrey freely includes Anderson's mysterious calculations in his Bible-like razzle-dazzle. Nevertheless, there are many useful references in Anderson and Jeffrey; however, they are often used in a cavalier manner.

The Origin of 586 B.C.

Our editor, G. Bouw, has previously reported[3] on my speculation that this 66-year discrepancy was foisted upon us by Dionysius Exiguus (A.D. 525?-600?) perhaps the foremost chronicler and encomiast of the Roman Catholic Church. It was he, we are told, who established the time of the Lord's nativity. I posit that he placed it 66 years further in the past so as to place the reign of Justinian (483-565, reigned 527-565) at 6,000 *Anno Mundi*, using Julius Africanus' (160?-240?) Septuagint-like chronology. He thus managed to have the Roman Catholic Church, by virtue of their great Emperor, usher in the Millennium at its appointed time in the year A.M. 6,000, i.e., through its greatness and works, the Roman Church brought in the Millennium. Thus I claim (suggest) that the rapture will occur in the year 2060 (= 2001+66-7). It is interesting to note that Isaac Newton had computed the same date, as was recently discovered in one of his papers in the possession of the

[3] Bouw, G. D., 2004. "Sir Isaac Newton and the End of the Church Age," *B.A.* **14**(108):60.

Hebrew University in Jerusalem; a paper that had not been studied all these years since his death in 1727.

The Flood versus the Prophetic Year

The only place in the Bible where one can find a 30-day month is found in Genesis 7:11 and Genesis 8:3-4 where a five-month period spans 150 days. I suspect (and will use) the present Hebrew calendar (which keeps miraculously accurate account of the sun's motion and, especially, of the moon's motion) may be used to chronicle Biblical events even as long ago as Noah's year at sea. To be sure, the Rabbis and Pharisees of the first Christian centuries had to change the placement of the Passover and First fruits in order to obfuscate (see the rules of postponement of the molad of Tishri) the fact that the Lord Jesus came and died at the prophesied days. But they obviously retained its timekeeping precision. The point I wish to make, is that the Hebrew calendar does not permit five successive 30-day months. The Hebrew calendar is an arrangement of 29 and 30-day months so that the new moon, on average, occurs on the first day of each month, and that, on the average, the sun returns to irs position in the heavens in one solar year. For an excellent algorithmic definition of the Hebrew calendar, see Lois Resnikoff's papers.[4]

An examination of the Flood year shows that the month was not 30 days. But first, by using an average of 29.5 days per month we obtain:

354	12 x 29.5, 12 months beginning at Gen. 7:11
+10	10 days of Gen. 8:14
+ 1	to include either the day of entering into the ark of the day of leaving
365	

The Flood Lasted One Solar Year

So we see that all the months cannot be thirty days. To demonstrate that the Flood lasted precisely one solar year, thus verifying the above calculation, we will superimpose the Hebrew calendar on the years A.M. 1655 and 1656. This is shown in the following figure, in which one may count the number of days from the entering in the ark until the leaving. The number of days is 365. Resnikoff's algorithm was used in the construction of these tables.

[4] Resnikoff, Louis, 1943. *Scripta Mathematica*, pp. 191-195, 274-275.

EVENTS IN THE FLOOD YEAR

Event no.	Noah's Year	Calendar Year (AM)	Mon	Day	Month name	Description of event	Ref. In Genesis
1	600	1655	2	10	Heshvan	Noah & family enter the Ark	7:4, 7, 10
2	600	1655	2	17	Kislev	Waters started from the deep and heaven	7:11
3	600	1655	3	26*	Tebet	Rain ends after 40 days from #2	1:4, 12, 17
4	600	1655	7	18*	Nisan	Waters yet prevail 150 days from #2	7:24; 8:3
--	600	1655	7	17	Nisan	Ark rests on Mt. Ararat same day as #4	8:5
5	600	1655	9	1*	Sivan	Noah sends raven 40 days from #4	8:6, 7
6	600	1655	9	8	Sivan	Dove sent forth, brings back olive leaf	8:10
7	600	1655	9	15	Sivan	Dove sent forth, does not return	8:12
8	600	1656	1	1	Tishri	Noah sees dry land	8:13
9	600	1656	2	20	Heshvan	All leave Ark to dry land, Mt. Ararat	8:14

(Days inferred from the Hebrew calendar, and not from the Bible, are indicated by *)

Table 1: Flood Events Recorded in Genesis

THE YEAR 1655 DAY BY DAY

Month Days of the month

	01	05	10	15	20	25	30	Month Length	Hebrew Month	Month no. Gen	Exod
1	----	S------S-	----S----	-S---				30	Tishri	1	7
2	---S	----**1**S---	-**2**S------S-----					30	Hesvan	2	8
3	-S--	---S-----	S------S-	**3**---S				30	Kislev	3	9
4	----	-S------S	-----S---	--S-				29	Tebet	4	10
5	----	S------S-	----S----	-S---				30	Shevat	5	11
6	---S	-----S---	--S------S----					29	Adar	6	12
7	--S-	----S----	-**44**-----S	-----				30	Nisan	7	1
8	S---	--S------S	------S--	---S				29	Iyar	8	2
9	**5**---	-S**6**-----S**7**-----	S---	--S--				30	Sivan	9	3
10	----S	------S--	---S-----	S---				29	Tammuz	10	4
11	---S	-----S---	--S------S-----					30	Ab	11	5
12	-S--	---S-----	S------S-	----				29	Elul	12	6
1	**8**---	--S------S	------S--	---S-				30	Tishri	1	7
2	----	S------S-	----**9**----	-S---				30	Hesvan	2	8

(S indicates the 7th day Sabbath; numbers, the Flood events in the table on the facing page)

Table 2: The Time Spent aboard the Ark

Notes:

1. The number of days from event 1 to 9, including either the beginning day or the ending day, is 365, not a multiple of 30. The Flood year started on the day before the Sabbath of 11 Hesvan AM 1655 and ended on the Sabbath day of 20 Hesvan 1656.
2. Event 4 cannot occur on two days but, instead, is the same day, indicating possible alteration of the calendar of Creation by the Jewish leaders in the early Christian era.
3. The year AM 1655 is a normal full year of 355 days.
4. According t Mt. 24:36-39, the beginning to the end of the Flood year is likened to Daniel's 70th week, thus indicating that the 365-day solar year is the year of prophecy. However, the Lord will permit (Dan. 7:25) the antichrist to institute a 30-day month for exactly a duration of 7 x 12 x 30 + 7x 12 x 30 (=1260 + 1260 =2520) days. That the antichrist will do so is documented in Rev. 11:3 and 12:6. It is ludicrous that Anderson or anyone should use this to prove a 30-day prophetic month.
5. Enoch preached the Flood, and his 365-year life span may be the first instance of equating a year with a day.

The Difficulty of 5 Months = 150 Days

Having said all this we are still left with the difficulty that there was, indeed, a 150-day period of 5 months during Noah's Flood year from which one might infer that the month was 30 days. Subsequent astronomical data and figures are found in Meeus.[5] This difficulty is hard to reconcile since:

1. The Hebrew calendar does not support it. The longest 5 month period would be 30 + 30 + 30 + 29 +30 = 149 days (e.g., the months Tishri, Hesvan, Kislev, Tebet, and Shevat during a full emolistic year of 385 days).
2. The maximum lunation is about 29 days, 10 hours, 58 minutes which is 29.832 days. This occurred for the lunations beginning 15 January 1881 and 16 December 1881. From Meeus we may qualify this occurrence to be when the longitude of the moon's perigee equals the longitude of the sun's perihelion.
3. Using this period gives 150-5 x 29.832 = 0.840 days. In other words, we are shy by about a day even using the longest lunation.
4. If account is taken of the sun's orbital eccentricity in Noah's time, the lunation is increased and we get 150 – 5 x 29.834 = 0.830, which helps a little (see Meeus, pp 30-31).
5. In actuality, we have no right to expect 5 maximum lunations in a row. A more likely maximal 5 month sequence would be 29.4 + 29.7 + 29.83 + 29.832 + 29.7 = 148.46 days. Even this extremely optimistic sequence fails by two days. However, it seems clear that a 5-month period of at least 148 days is possible. As an example we include Meeus' figure for the lunations between the years 1900 to 1980.
6. That 1655-1656 was the year of the Flood is obtained in the usual way by understanding that the birth dates given in Genesis 5 are precise, being referred to the beginning (1 Tishri) of the birth year.

Reconciliation of 5 Months = 150 Days

Possible reconciliations for the missing one- or two-days problem, are:

1. The lunar motion during the Flood year actually provides for 5 lunations over a complete 150-day period even though extrapolation of presently-observed motions back to Noah's time does not

[5] Meeus, Jean, 2002. *More Mathematical Astronomy Morsels*, William-Bell.

support this. That is, the present orbital elements of the moon are wrong or not sufficiently accurate.

2. Assuming this 5-month period of Noah to be 148^{+}, we might claim partial beginning and terminal days of this period would require 148 plus small amounts but be counted as full days. For example, 0.01 + 148 + 0.01 would be reckoned as 150 days. I do not like this explanation since it has no biblical basis and leads to absurdities such as the nonsensical Good Friday handling of the three days during which the Lord Jesus was in the earth.
3. The Hebrew (or whatever it was called) calendar in Noah's day may have permitted five consecutive 30-day months. This may be one of the alterations made early in the Christian era by the Rabbis and Pharisees, (Exodus 12:2, only changing the beginning of months from Tishri to Nisan). For example, the sequence 30, 30, 30, 30, 30, 29 could have been altered to 30, 30, 30, 29, 30, 30 without affecting the calendar's timekeeping accuracy but may shift or eliminate a day of special observance.
4. Since Noah was not fixed to the earth but adrift on a global ocean, he possibly did not know where he was and during this period he could have drifted against the motion of the sun so that he saw 150 sunrises even though 148 or 149 actually occurred as viewed from a fixed point of the earth. He would have subsequently drifted in the reverse direction loosing one or two days and thereby preserving the chronology of the Flood year.
5. In a geocentric cosmology, the earth does not move. Hence earth-centered catastrophic events such as the Flood that cannot effect the earth's orientation but can, instead, effect the diurnal rotation of the cosmos. In this case, the earth's moment of inertia was increased by the addition of water on the surface of the earth from the "windows of heaven," and by the "fountains of the deep" (Gen. 7:11). This water was subsequently returned to its place. Hence, if we invoke the conservation of angular momentum, we would have the diurnal rate slow down and then speed up to, and return to its previous rate. In the meantime, the moon's motion is barely affected and its synoptic period is temporarily increased during this 5-month period. (See James Hanson, 1977. "A Simple Geometric Model for Computing Pre-Flood and Post-Flood Geomorphology," *Creation Research Society Quarterly*, December, pp. 157-168.)

Explanation 3 seems most likely. Number 4 is interesting but has no biblical support, while 5 does. Number 1 is possible but is not in evidence. I reject 2 for the reason there stated.

APPENDIX

Lunations: the Variation in the Length of the Lunar Month

The longest lunations, 1760 to 2200

From the New Moon of	*to that of*	*Duration of the lunation*		
1769 Nov. 28	1769 Dec. 28	29 days	19 hours	54 minutes
1787 Dec. 9	1788 Jan. 8	29	19	58
1805 Dec. 21	1806 Jan. 19	29	19	57
1824 Jan. 1	1824 Jan. 31	29	19	51
1955 Dec. 14	1956 Jan. 13	29	19	54
1973 Dec. 24	1974 Jan. 23	29	19	55
1992 Jan. 4	1992 Feb. 3	29	19	50
2132 Dec. 7	2133 Jan. 6	29	19	51
2150 Dec. 19	2151 Jan. 17	29	19	54
2168 Dec. 29	2169 Jan. 28	29	19	51

Figure 1: The Longest Months

The shortest lunations, 1760 to 2200

From the New Moon of	*to that of*	*Duration of the lunation*		
1858 June 11	1858 July 10	29 days	06 hours	38 minutes
1867 June 2	1867 July 1	29	06	36
1876 June 21	1876 July 21	29	06	36
1885 June 12	1885 July 12	29	06	34
1894 July 3	1894 Aug. 1	29	06	39
1903 June 25	1903 July 24	29	06	35
2035 June 6	2035 July 5	29	06	39
2053 June 16	2053 July 15	29	06	35
2071 June 27	2071 July 27	29	06	36

Figure 2: The Shortest Months

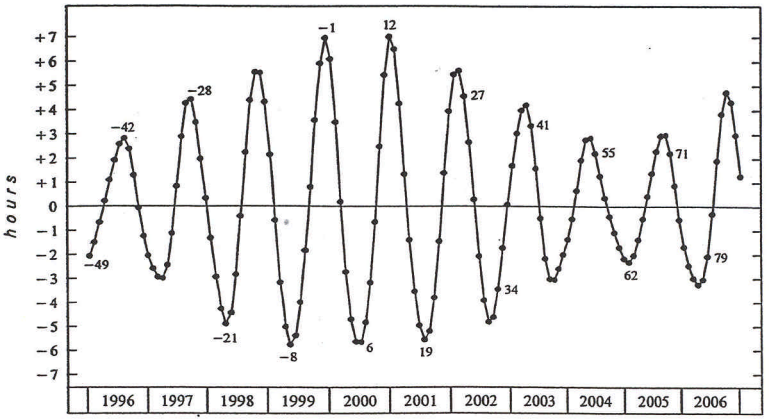
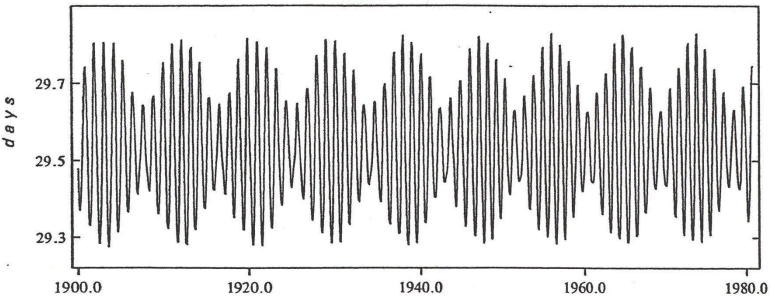
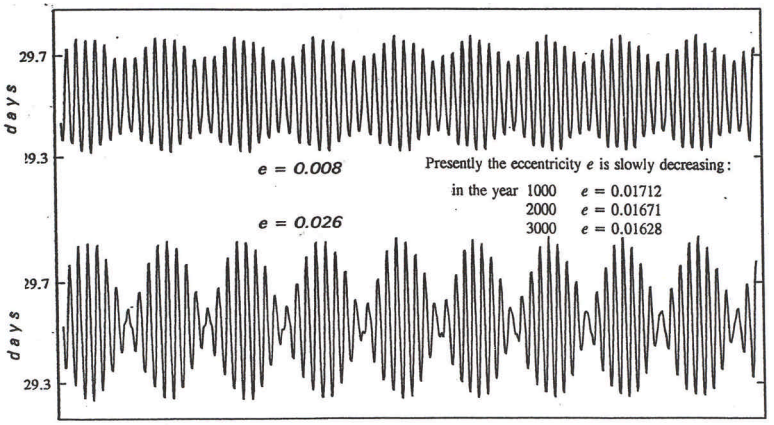


Figure 3: Variations of the duration of the lunation for 1996 to 2006. Dots indicate the deviation with respect to the mean value of 29 days, 12 hours, 44 minutes.



Variation of the duration of the lunation during the years 1900 to 1980.



Variation of the duration of the lunation over a time span of 80 years, for two values of the eccentricity of the Earth's orbit.

THE RECLASSIFICATION OF PLUTO

Gerardus D. Bouw, Ph.D.

By now most readers should be aware that Pluto is no longer counted as a planet. Just how that happened is a matter of emotion and strongly-held opinions. But to appreciate how that came to pass, we must first look at some astronomical history.

The Original Seven Planets

Every elementary textbook on astronomy takes pains to explain that the word *planet* (wandering star) comes to us from the Greeks. We find that Jude 13 speaks of gainsayers as "wandering stars, to whom is reserved the blackness of darkness for ever." The Greek there is αστερεj πλανηται, *asterez planetai*, i.e., "stars wandering," to put it literally. The original definition of a star was any astronomical body' meaning any object that is above the first heaven, the atmosphere of earth. That includes what we now mean by the word stars, but also includes asteroids, planets, comets, meteoroids, and, when meteoroids hit the atmosphere, meteors.

From that definition, the Greek wandering stars, called "planets" for short, included the sun and moon, as well as the five classical planets, Mercury, Venus, Mars, Jupiter, and Saturn.

The Copernican Revolution and the Number of Planets

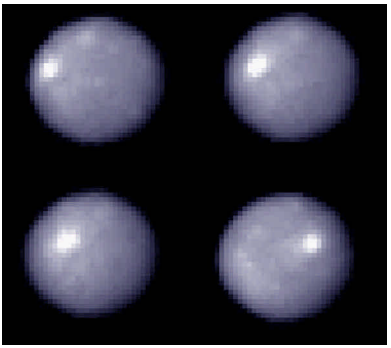
The Copernican heliocentric model, introduced in 1542, removed the sun and moon from the list of planets but added the earth to the list. That reduced the number of planets to six.

Some fifty years later Galileo trained his telescope on Jupiter and found four satellites accompanying it. He named them the "Cosmian Planets" after his patron, Cosimo de Medici, but Kepler regarded them as moons and dubbed them *satellites*, instead.

Herschel's Planet

During his lifetime, Sir William Herschel used his telescope to scour the heaven for comets. In 1781 he discovered what he thought was a comet. Further observation proved it to be a planet instead. Some decades of argument later, the world settled on calling it Uranus. At that point the number of planets was back to seven, namely, Mercury, Venus, Earth, Mars, Jupiter, Saturn, and Uranus.

In 1801, Giuseppe Piazzi discovered Ceres, a small body about 580 miles (930 km) in diameter orbiting between Mars and Jupiter. Piazzi added Ceres (pictured showing its rotation at right) to the list of planets, making eight, but because it only appeared star-like through telescopes, meaning that it was too small to show a disk, Herschel classified Ceres and the other bodies later found forming a ring of objects around the sun and between the orbits of Jupiter and Mars, *asteroids*. The name stuck, and Ceres was not counted as a planet. Significantly, in 1833, Herschel's son, John, who became the greatest astronomer of the nineteenth century, counted eleven planets: Mercury, Venus, Earth, Mars, Vesta, Juno, Ceres, Pallas, Jupiter, Saturn, and Uranus, which included four asteroids.



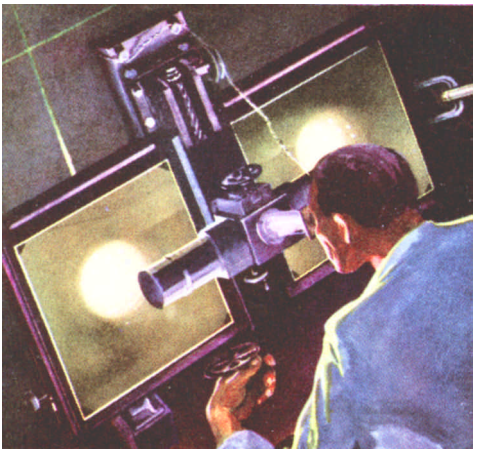
Enter Neptune

The discovery of Neptune in 1846 increased the number of planets to 12. However, by mid-century, it was clear that the number of asteroids was too great, and their sizes too small to be counted as planets. One of the 1853 editions of the *Monthly Notices of the Royal Astronomical Society* published a list of 23 asteroids under the title "Minor Planets." The label was kept and incorporated into the International Astronomical Union's Minor Planet Center, which keeps track of the hundreds of thousands known asteroids.

Removing the minor planets from the count reduced the number to eight: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.

And One Makes Nine

In 1931, Clyde Thombaugh used an instrument called a blink comparator (pictured on page 116) to compare two photographs taken some days or weeks apart. By alternatively showing one then the other in an eyepiece, objects that had moved in the interim appear to jump back and forth. This was a common method of finding minor planets. This time, however, it was not a minor planet that jumped back and forth. It was Pluto.



At the time of its discovery, Pluto was thought to have a mass about the same as earth's. Over time, it was found that Pluto was actually very much lighter and smaller than the earth. Pluto is now known to be less than 1% the mass of the earth and is smaller than our moon. Furthermore, Pluto's orbit is inclined by 17 degrees to the orbits of all the other planets, that is, the *ecliptic*. For part of its year (as is the case at this present time), Pluto is actually closer to the sun than is Neptune. As a planet, Pluto was clearly an oddball.

The Kuiper Belt Objects

In 1992 another object beyond the orbit of Neptune was found. That was followed by another, and then another, until the number of such objects now runs into the thousands. Each is a small, icy body that would probably show up as a comet if it approached the sun. The area is known as the Kuiper Belt.

To make matters worse for Pluto, about a hundred bodies in the Kuiper Belt have an orbit that has about the same period as Pluto, namely, 248 years. That is one and a half times as long as Neptune's period of 165 years. This means that these objects, dubbed *plutinos*, are locked to Neptune in a three-to-two ratio.

In 2003 Sedna was discovered. That trans-Neptunian object was almost as big as Pluto. The same year, a second body that still bore its temporary designation of 2003 UB_{313} during the IAU meeting, proved to be even larger than Pluto. If it is a planet, its naming is the responsibility of the IAU's group for planetary-system nomenclature. Otherwise its naming is the responsibility of the Minor Planet Center.[1] The uncertainty as to which committee should name it helped precipitate the crisis that eventually demoted Pluto.

[1] **Note added in proof**: in September, after the IAU's ruling on Pluto, UB_{313} was officially named Eris after the Greek goddess of discord and strife. Its moon is called Dysnomia after the goddess of lawlessness. Eris's earlier nickname, Xena, was dropped. So far, more than 300 planetary scientists have signed a petition protesting Pluto's demotion.

Problems Confronting the IAU Nomenclature Committee

It is informative to list the problems and concerns that confronted the IAU Committee last August:

1. Children may not be able to learn the names of 50 planets. On the other hand, they learn fifty states and their capitols; at least, they were able to do that forty years ago.
2. New technology such as the Hubble telescope has revealed factors that could not have been foreseen in prior centuries. This precipitated the issue in the first place.
3. Little children love Pluto; don't demote it. Then, too, there is tradition to consider.
4. If astronomers in the 1930s knew Pluto was actually smaller than the moon, they would not have called it a planet.[2]
5. If we rank the solar system bodies by size, is there a break in the distribution that we could use, and if there were several, would we break at Pluto's size, or smaller, or larger?
6. A 19-member committee after two years of debate could not define the word, "planet." Could the present committee in several weeks come up with a definition that had escaped the prior committee?

It was the last issue—the definition of planet—that the nomenclature committee decided to tackle. There are two ways to define a planet. One method involves its shape, and size. The other method is dynamic, by how it interacts gravitationally with other bodies in the solar system. The size ranges from Jupiter to specks of dust. Some of the asteroids exhibit structural and dynamics of both planet and asteroid.

The Shape of a Planet

The committee, chaired by astrophysicist and historian of astronomy Owen Gingerich, considered the spheroidal shape of an object as a possible defining property for a planet. If a body is large enough that its gravity pulls it into a sphere, that could define a planet. Rocky bodies become spheres above 0.1% earth's mass, which happens at a diameter of about 500 miles (800 km). Icy bodies, such as Pluto and its moon, Charon, become spheres at about half the size of rocky bodies.

Indeed, the dirty ice balls are much more numerous than rocky ones. They all reside beyond the orbit of Neptune and have orbits that are eccentric and significantly inclined to the ecliptic plane. For that

[2] This is a specious argument. It only makes sense in hindsight, knowing that there were other, smaller bodies beyond it. If Pluto were unique, it would still have been called a planet, even if astronomers had known it was smaller than the moon.

reason, Dr. Gingerich proposed that these objects be called *plutons*. In addition, a pluton must have a period in excess of 200 years, a boundary that also divides short-period comets from long-period comets. In that way, the name would preserve Pluto's historic role as the first-discovered object as well as solve their difference to the major planets. Though the proposal removed Pluto from the list of planets, it would add Ceres since that body has been confirmed to be spherical, as can be seen from the figure on page 115. The proposal made a lot of sense.

But sense is in short supply these days. Dr. Gingerich prepared a press release to head off the possibility of misunderstanding. He used the clause, "eight classical planets, Ceres, and a growing number of plutons." But the writers of the press release rejected the accurate wording and wrote their own, which was not related to the committee's work. They announced that Pluto would still be a planet and that there would be twelve planets in all. In addition to the traditional nine, the list included the soon-to-be-renamed 2003 UB_{313}, and Pluto's largest moon, Charon.

The complaints stormed in. The nomenclature was getting too complicated for the children. The press covered the dissidents. Objections arose from many fronts. Several members of the dynamics faction, feeling ignored by the largely structuralist approach, put forth a resolution to add to the definition that a planet must be "the dominant object in its local population zone." They believed that Ceres and the icy bodies, including Pluto, should be eliminated from the list.

As a result of the strategic blunder of the press release, neither the original proposal nor the dynamic faction's proposal could garner a majority vote. As if the matter of hurt feelings was not enough, multiculturalism reared its ugly head when Andrea Milani objected that in Romance languages, *Pluton* is the name of Pluto. Never mind that it was the Americans who discovered and named the planet, and that it was not their fault that the Romance languages decided to use their own spelling instead. Nevertheless, the attendees overwhelmingly rejected the plutons label for the dirty ice balls. They also rejected plutonians.

Back to the Drawing Board

With the public relations storm raging about them, the committee honed in on a simplification of the definition that would assuage some of the critics of the original proposal. Even with the endorsement of the world's largest group of planetary scientists, the Division of Planetary Sciences of the American Astronomical Society against them, the dynamics faction persisted in their vehement opposition to the proposed wording. They insisted that the wording acknowledge the dynamical "evolution" of the solar system.

Some of the dynamics faction were thus added to the committee, including the aforementioned multiculturalist, Milani. The net result of that debate added the contentless and ambiguous wording that a planet must be "the dominant object in its local population zone." Before the final resolution was composed, that ambiguous wording was replaced by an even worse one, "cleared the neighborhood around its orbit."

Definition of a "Planet" in the Solar System

Here is the text of the resolution, complete with footnotes, entitled "Definition of a 'Planet' in the Solar System," that was adopted by the IAU in Prague August 24, 2006:

Contemporary observations are changing our understanding of planetary systems, and it is important that our nomenclature for objects reflect our current understanding. This applies, in particular, to the designation "planets." The word "planet" originally described the "wanderers" that were known only as moving lights in the sky. Recent discoveries lead us to create a new definition, which we can make using currently available scientific information.

The IAU therefore resolves that "planets" and other bodies in our solar system be defined into three distinct categories in the following way:

1. A "planet"[3] is a celestial body that (a) is in orbit around the Sun, (b) has sufficient mass for its self-gravity to overcome rigid-body forces so that it assumes a hydrostatic equilibrium (nearly round) shape,[4] and (c) has cleared the neighborhood around its orbit.
2. A "dwarf planet" is a celestial body that (a) is in orbit around the Sun, (b) has sufficient mass for its self-gravity to overcome rigid-body forces so that it assumes a hydrostatic equilibrium (nearly round) shape, (c) has not cleared the neighborhood around its orbit, and (d) is not a satellite.
3. All other objects[5] except satellites orbiting the Sun shall be referred to collectively as "small solar-system bodies."

The Idiocies of Multiculturalism and Evolutionism

There you have it. The greatest example of the fruit of inclusionism, evolutionism, and multiculturalism you have ever seen. I have

[3] The eight planets are: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, and Neptune.
[4] An IAU process will be established to assign borderline objects into either dwarf planets and other categories.
[5] These currently include most of the solar-system asteroids, most trans-Neptunian objects, comets, and other small bodies.

never seen an amalgam of any two of those, let alone all three, that produced anything that deserved a better rating than stupid, and these definitions are no exception. Let us examine some of the problems inherent in the definitions.

To start, consider the definition of a dwarf planet. We have dwarf people, but they are still people. Astronomy has dwarf stars and dwarf galaxies, but a dwarf star is still a star and a dwarf galaxy is still a galaxy, yet a dwarf planet is not a planet. It is a "celestial body," not a planet; read the definition. Recall, too, that Pluto falls into the "dwarf planet" category and that the press releases told us that Pluto is no longer a planet. There you have it, I've exaggerated nothing.

Another problem occurs in definition (1)(a) which says that planets orbit the sun. By design, it excludes all the planets detected around other stars. Can we still call them planets? They cannot be called dwarf planets [definition (2)(a)]. Maybe we can call them planetoids. It is clear that the definition is far from complete.

Then there are the grammatical errors. Consider definition (3), where it says "All other objects except satellites orbiting the Sun…." The only satellite I am aware of that meets this definition is our moon, which from the sun's perspective always follows a path that is concave to the sun. This is not the case for other satellites. So, according to (3), the moons of all the planets are classed as "small solar system bodies," but not our Moon, which is left unclassified. That is what a couple of missing commas can do.[6]

Finally, consider the addition insisted on by the dynamics faction— those who wanted to incorporate evolutionary ages into the text via orbital evolution definitions (1)(c) and (2)(c). Mark Sykes of the Planetary Science Institute noted, "The problem with this definition is that it is too simple and leads to nutty consequences." A Scottish newspaper carried the headline, "Pluto Row Could Lead to Neptune Losing Planet Status." The reason? Neptune has so far failed to clear the "dwarf planet" Pluto from its neighborhood. That makes Neptune a "dwarf planet" according to definition (2)(c). Then there is earth. It had not yet cleared out of its way the earth-grazing asteroids. Indeed, one of those, Apophis, may pass within 25,000 miles from the surface of earth in 2029. It follows that the earth is not a planet. Jupiter is accompanied by two clusters of asteroids called Trojans. Jupiter also has an entourage of comets, one of which crashed into Jupiter in July of 1994.[7] There is no chance that Jupiter will ever be clear of these so Jupiter does not qualify as a planet either. We expect bodies at the Lagrangian points of all planets, but we have not looked at those points for all planets. Probably, when all the observations are complete, there

[6] It should effectively read, "All other objects, except satellites, orbiting the Sun…."
[7] Unruh, J. T., 1994. "Jupiter and the comet encounter of July 16-22, 1994," *B.A.* **4**(70):5.

will be no planets left in the Solar System; at least, not according to the IAU's 2006 definition. Clearly, evolution enstupifies.

The best we can say for the IAU members who voted for this idiocy is that they were probably so tired of the childish bickering that they voted for anything—even be it idiotic—just so they could adjourn and go home. At worst, the remaining members actually thought they had a working definition and really believed in it. I prefer to believe the former and, if I, and the saner IAU members are right, when next the IAU reconvenes in 2009, they will scrap this piece of idiocy and come up with a working model, one that will also address issues skirted by the adopted resolution.

The two issues not covered in the proposed definition are the maximum mass issue and exoplanet issue.

There is a point at which a planet is so massive it starts to noticeably shine by its own light. The energy source may be gravitational collapse, chemical, or nuclear. At some point a line must be drawn where a body is no longer a planet but becomes a brown dwarf, that is, a star. This is probably the most difficult issue at hand.

The exoplanet issue deals with the hundreds of planets that have been discovered orbiting other stars. This issue can be solved by using the mass definition, but if dynamic considerations are thrown into the mix, the solution is rendered so artificial as to be impossible.

PANORAMA

Evolution theory fails again

Traditionally, evolutionists have insisted that multiple star systems, such as Alpha Centauri, which as three stars orbiting about each other, are not likely to form planets. We observe that two out of every three stars are members of a binary star system. That means that the number of double star systems (binaries) is about the same as the number of single stars. Nevertheless, of the 161 planets thus far discovered beyond the solar system, 30 are found orbiting stars that have at least one partner. This is far more than expected.

Having discovered that to be the case, astronomers are scrambling to fit the old theories of solar system formation to fit the new facts. Alan P. Boss of the Carnegie Institution of Washington, D.C., has introduced a new computer simulation model that works as long as one makes the reasonable assumption that if the gravity of the companion star is weak. In that case, it will not disrupt the disk of its partner so planets can still form in an evolutionary way. In some cases, he maintains, the presence of the companion star can help the formation of planets. The result is that planet hunters are now encouraged to hunt for planets in multiple-star systems, which are the rule in the galaxy.

The two leading theories right now for solar system formation are the accretion model and the gravity-instability model. In the accretion model, planets grow like snowballs in disks of gas and dust. The gas sticks to the dust, forming ice, which collects more dust and ice as particles collide and stick together in temperatures only ten degrees above absolute zero. Gradually these build up pebble-sized objects which grow to boulder size, then house size, then comet size, etc. These slowly become planets.

The gravity-instability model, starts the same way but in it, the disk fragments into pieces that can trigger the formation of large planets, such as Jupiter and Saturn, without any gradual buildup. This allegedly matches recent observations that support the sudden creation of these planetary bodies.

The shortcomings of these two models are the same. They both start with a fully formed disk, but before that, the collapse model starts with a spinning sphere, which heats up as it collapses. The temperature soon rises above that which allows the grains to stick together, especially when the central region, which becomes the star, starts to shine. The radiation from the star disrupts the cloud and expels the dust and gas into interstellar space. Computationally this happens before planets

can fully form. Thus special creation is still the best theory for the origin of planetary systems.

Do cosmic Rays Affect the Weather?

A prominent Canadian scientist, Jan Veizer of the University of Ottawa, has defied the conventional wisdom on global warming by proposing that high-energy cosmic rays, originating from the expanse of space, are hitting earth's atmosphere in ways that cause the planet to cycle through warm and cold periods. Veizer's politically loaded theory appeared in *Geoscience Canada* last year and is generating debate on the causes of climate change within the scientific community.

That cosmic rays strike earth has long been known. What is different now is that more researchers are looking at their effects on the atmosphere, particularly how they might influence weather. In 2004, the British journal *Proceedings of the Royal Society* published a theory claiming cosmic rays "unambiguously" affect earth's climate, especially by forming clouds. Current research at Florida Tech and the University of Florida is aimed at determining whether cosmic rays trigger the release of lightning from charged thunderclouds.

In explaining the mechanism for a "celestial climate driver," Professor Veizer says cosmic rays hit gas molecules in the atmosphere, forming the nucleus of what becomes water vapor, like in a cloud chamber which shows the path of radiation by the chain of droplets it leaves behind. The resulting clouds reflect more of the sun's energy back into space and leave earth the cooler for it. He notes the plausibility of the sun's increased intensity, rather than an increase in carbon dioxide, as the primary cause for earth's warming by one degree over the past century. Other scientists are taking issue with the doomsday scenarios being proclaimed by many global-warming alarmists. Two Filipino scientists criticized Al Gore for claiming global warming was the cause of the flooding of Manila's harbor. They pointed out climate change would only cause sea levels to rise by millimeters while Manila's problems were being caused by rapid subsidence of the land, a local problem created by extraction of groundwater, not by greenhouse gases.

Although Veizer advocates cosmic ray flux variations as the cause of ice ages, there is no solid evidence for more than one ice age, and that ice age probably lasted fewer than 700 years after the Flood. The interested reader is referred to Michael Oard's book, *Frozen in Time: The wooly mammoth, the ice age, and the Bible*, ISBN 089051-418-6, Master Books, 2004.

Spider silk stronger than evolution

A team of scientists studying the spider's thread have found that it is stronger than Kevlar, the strongest synthetic polymer, and has better torsional qualities that the space-age nickel-titanium shape-memory alloy Nitinol. They found that the spider's thread is not only incredibly strong but also damps and resists torsional force after it is twisted, so that it quickly returns to the same position and the little spider does not spin around out of control. The team, led by Oliver Emile of the Laser Physics Laboratory at the University of Rennes in western France, concluded, "The spider has evolved a shape-memory material that needs no external stimulus for total recovery." What an amazing thing. A lowly spider blindly evolving something that man with his intelligence and thousands of years of experience cannot duplicate. What did the spider do for all those "millions of years" while he was attempting to evolve the right thread? And how did that first spider that developed the capability to pass this amazing genetic knowledge along to his offspring?

Too Much Deuterium

Deuterium is a hydrogen atom with one neutron that evolutionists presume to have been created in the postulated big bang's nuclear fireball. Because stars consume large amounts of deuterium and no known process creates significant amounts of it in stars, the amount of deuterium is expected to decrease over time.

Deuterium concentrations in the Milky Way differ significantly from region to region. Theory predicted that it should be rather uniformly distributed throughout the Milky Way. Many assumed that the patchiness of deuterium was due to measurement errors. A new study has proven that assumption wrong; the patchiness is real. The study found that the amount of deuterium was inversely correlated with carbon dust. It is believed that deuterium sticks to the dust better than hydrogen with only a proton nucleus.

The problem that the observations found is that the highest concentration of deuterium in the Galaxy is 27 parts per million, which is close to the amount theory predicts was produced in the big bang. If the measurements are confirmed then over the past alleged 12 billion years, all the stars that now exist and have existed in the Milky Way would have consumed only 15% of the original deuterium. The expected consumed amount is 30 to 40%.

Though this is not a fatal flaw in the big bang theory, it is another nail in its coffin.

A REPORT ON THE SHAPE OF THE UNIVERSE

Analysis of recent data collected about the cosmic background radiation has yielded some surprising insights into the shape and size of the universe. As reported in issue 114, the background radiation has an equator, and that equator is the same as the ecliptic, the path the sun traces out through the zodiac in the course of a year. In this paper, however, we focus on the latest findings suggesting that the universe may be a torus (doughnut, or donut, as we backwoods "Americans" spell it), or a dodecahedron, or maybe a sphere after all.

Introduction

Imagine a donut, a toroid. Now imagine that is the picture of space. Rather than being infinite in all directions, albeit bounded, as the common theory maintains, the universe could be radically smaller in one direction than the others, even as a donut has a thinner diameter for the circular cross-section of the toroid than for its outer diameter.

According to Dr. Max Tegmark of the University of Pennsylvania, "There's a hint in the data that if you traveled far and fast in the direction of the constellation Virgo, you'd return to earth from the opposite direction."[1] He said that on the basis of temperature measurements of the dark night sky, the radiation variously known as the Cosmic Microwave Background (CMB) radiation, also known as the 3-degree black body radiation.

The Evidence

In July of 2003, Tegmark, his wife Angélica de Oliveira-Costa, and Andrew J. S. Hamilton reported on the radiation what was left after subtracting out the contribution due to the Milky Way.[2] They end their abstract with: "We argue that our CMB map is clean enough that the lowest multipoles [the lowest multipole is a dipole, where radiation is concentrated in two opposite areas of the sky, a quadrupole has the radiation concentrated in four areas of the sky like at the corners of a square, etc.—*Ed.*] can be measured without any galaxy cut [meaning leaving the galaxy-covered area blank—*Ed.*], and obtain a quadrupole

[1] Panorama, 2003. "Preferred directions in the universe?" *B. A.,* **13**(106):123-125.
[2] Tegmark, M., A. de Oliveira-Costa, & A. J. S. Hamilton, 2003. "A high resolution foreground cleaned CMB map from WMAP," to appear in *Physical Review D*, [arXiv.org/pdf /astro-ph/0302496].

value that is slightly less low than that from the cut-sky WMAP [Wilson Microwave Anisotropy Probe —*Ed.*] team analysis. This can be understood from a map of the CMB quadrupole, which shows much of its power falling within the Galaxy cut region, seemingly coincidentally. Intriguingly, both the quadrupole and the octopole [8 poles, positioned at the eight corners of a cube—*Ed.*] are seen to have power suppressed along a particular spatial axis [direction—*Ed.*], which lines up between the two, roughly towards Galactic coordinates (*l, b*) ~ (-110°, 60°) in Virgo."

More descriptively, this position lies in the plane of the Local Supercluster of galaxies. The Supercluster is like a galaxy made up of galaxy clusters instead of stars. It streams around the sky like a faint version of the Milky Way, passing from Virgo, Coma Berenices (with a spur into Leo), on through Canes Venatici, Ursa Major, and on to Camelopardalis where it thins out and fades behind the Milky Way. It emerges in Andromeda and continues through Pisces, Cetus, Sculptor, Grus, Indus, and Pavo. In eastern Ara it is obscured again by the Milky Way, emerging at Lupus, and from thence through Centaurus, Hydra, and back to Virgo. Several spurs branch off from the Supercluster, which is not mentioned much anymore in the astronomical literature.

The Implications

If true, the donut universe would force cosmologists to reconsider once again their theories about what happened in the earliest moments of the Big Bang. After all, the cosmic background radiation is believed by most astronomers to be the afterglow of the Big Bang itself, a portrait of the universe when it was allegedly 380,000 years old. Since galaxies do not form in the original Big Bang model, it was postulated that the early Big Bang did not expand smoothly but became lumpy, and that the lumps became galaxies, and clusters of galaxies, and platters or walls of clusters of galaxies, and so forth. The latest view is to model these irregularities as microscopic fluctuations born during the first instant of time and then amplified into sound waves as the universe expands and matter and energy slosh around.

By analyzing these waves, cosmologists can fine-tune their modifications until they can "predict" many of the postulated characteristics of the universe such as its age and density. Although there has been much fanfare in the press that these observations validate the Big Bang, the celebration is premature. The observations yield yet another unexpected problem.

According to relativity, the Big Bang should produce a universe that is "infinite, yet bounded." Such a results allows the earth to look

like it is at a special place or center of the universe without it having to be so. The relativistic model of the Big Bang allows each and every spot in the universe to look as if it is in the center and at rest. In such a universe, the slosh-waves in the cosmic fireball should appear randomly distributed around the sky at all sizes, but according to the new map, there seems to be a limit to the size of the waves, with none extending more than 60 degrees across the sky. Thus cosmologist James Peebles, of Princeton, continues to be vindicated when he said, "Cosmologists have built a house of cards and it stands."

The refined map by Tegmark et al., referred to earlier, shows that the universe appears lumpier in one direction in space than it does in another. When the finer variations were taken out of the map, the remaining large-scale variations formed a line across the sky. If the universe is finite in one dimension, like a cylinder or a doughnut, there is a limit to the size of clumps that can fit in that direction. They couldn't be bigger than the universe in that direction; just as a guitar string can only play a note down to a particular note such as an E, determined by its length and diameter. So the biggest blobs would have to squish out in a plane in other directions. The way home around the doughnut would be perpendicular to that plane. Nobody is yet claiming that this is a revolution I cosmology. The notion of a special direction is not on as firm a ground as the discovery of a size limit on large structures.

Dr. Alexei Starobinski, a theorist at the Landau Institute in Moscow, and Dr. Yakov B. Zeldovich, proposed in 1984 that the universe could have been formed as a donut. Dr. Starobinski emphasized that an infinite universe with ordinary Euclidean geometry was the most natural universe and still favored by theory. "However, theory is theory, but observations might tell us something different," he said in response to being questioned about the donut universe results.

A Hall Of Mirrors?

The new work involves topology, the branch of mathematics which deals with shapes. To a topologist, a donut is the same shape as a human, with the digestive tract as the "donut hole." This is because each object has one hole, the two can be deformed into each other and are thus topologically equivalent. The simplest topology is the infinite space of the Euclidean geometry, but cosmologists have a hard time conceiving how an infinite universe could have appeared in that kind of flat space. To them, it seems more reasonable that God created a finite universe which looks infinite. These models are called "compact universes."

The simplest compact universe is one called a 3-torus, a donut wrapped in three dimensions. This object is essentially impossible to visualize: it is like a cube whose opposite sides are somehow glued together. In a way, it is like one of the old video games where an object disappearing on the right hand side of the screen simultaneously reappears on the left hand side. Such a universe would be like being inside a hall of mirrors. Instead of seeing new stars deeper and deeper in space, you see the same things over and over again as light travels out one side of the cube and back in the other.

Such a reflecting universe is not limited to cubes and doughnuts. Universes composed of various polyhedrons glued together in various ways will also loop light around from one face to its opposite face.

Big and Little Loops

Why would the universe want to do this to us? Partly to avoid the difficulties of the infinite, said Dr. Glenn Starkman, an astronomer at the Case Western Reserve University in Cleveland. Besides being difficult to create, an infinite universe is philosophically unattractive. In an infinite volume, he pointed out, anything that can happen will happen.

Moreover, the idea that dimensions could be curled in loops occurs naturally in theories that try to unite gravity and particle physics. For example, according to string theory, the leading candidate for a theory of everything, the universe actually has ten dimensions, nine of space and one of time, instead of the four we normally think of. The extra dimensions are curled up into submicroscopic loops, so tiny that we don't notice them in ordinary life. The torus universe mentioned above is the same idea, but on a very large scale.

As we mentioned earlier, a finite universe creates big problems for the reigning theory of the Big Bang, inflation theory. It posits that the universe underwent a burst of hyperexpansion in its earliest moments. Among other things, it implies that the observable universe today, a bubble 28 billion light-years in diameter, is only a speck on the surface of a vastly greater realm trillions upon trillions of light-years across. "There's no natural way yet proposed to get the inflation to stop and give a space that's big enough to house all the galaxies but small enough to see within the observable horizon," said Dr. Janna Levin, a Cambridge University cosmologist who wrote about finite universes in her 1992 book, *How the Universe Got Its Spots, Diary of a Finite Time in a Finite Space*. It seems that Tegmark's observations rule out inflation." But I remind the reader that the first inflationary model, reported circa 1972 and promptly ignored, yielded the present

universe in roughly 100,000 years, far too little time for life to have evolved without God, and thus abhorrent to secular scientists of this age.

Dodecahedral Space

In a more recent paper, Jean-Pierre Luminet et al. reported the following in their abstract:[3]

> Cosmology's standard model posits an infinite flat universe forever expanding under the pressure of dark energy. First-year data from the Wilkinson Anisotropy Probe (WMAP) confirm this model to spectacular precision on all but the largest scales.... Temperature correlations across the microwave sky match expectations on scales narrower than 60°, yet vanish on scales wider than 60°. Researchers are now seeking an explanation of the missing wide-angle correlations.... One natural approach questions the underlying geometry of space, namely its curvature ... and its topology. In an infinite flat space, waves from the big bang would fill the universe on all length scales. The observed lack of temperature correlations on scales beyond 60° means the broadest waves are missing, perhaps because space itself is not big enough to support them.
>
> Here we present a simple geometrical model of a finite, positively curved space—the Poincaré dodecahedral space—which accounts for WMAP's observations with no fine-tuning required. Circle searching [see below —*Ed.*] may confirm the model's topological predictions, while upcoming Planck Surveyor data may confirm its predicted density of $\Omega_0 \cong 1.013 > 1$. If confirmed, the model will answer the ancient question of whether space is finite or infinite, while retaining the standard Friedmann-Lemaître foundation for local physics.

Luminet helped pioneer the study of cosmic crystallography and his work has been reported before in Panorama.[4] Here he claims superiority for his model, by virtue of a better fit, than the toroidal model.

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[3] Luminet, J.-P., J. Weeks, A. Riazuelo, R. Lehouck, & J.-P. Uzan, 2003. 9 October issue of *Nature*. "Dodecahedral space topology as an explanation for weak wide-angle temperature correlations in the cosmic microwave background," a slightly different version of the Nature paper can be found at arXiv.org/pdf/astro-ph/0310253.

[4] Panorama, 2002. "A small spherical universe after all?" *B. A.*, **12**(99):38-40

But Maybe the Universe Is a Sphere after All

So far, searches for the repeating patterns of quasars or distant galaxy clusters that would occur in a compact universe have been unsuccessful. The first encouragement of note was the aforementioned discovery that the universe appeared to be deficient in large-scale fluctuations. There were no structures extending more than about 60 degrees across the sky. But the finding was subject to large statistical uncertainties, astronomers said.

There are other possible explanations for the cutoff in size. According to inflation, the longest waves appeared first, and thus the missing notes are the earliest ones that would have been emitted. Some think that the new evidence may, instead, say something about the beginning of inflation.

Dr. George Efstathiou of Cambridge University pointed out in a recent paper submitted to the *Monthly Notices of the Royal Astronomical Society* that the Wilkinson satellite data are still marginally consistent with yet another finite shape, namely a sphere. In that case, fluctuations larger than the radius of the sphere might be dampened, he said, producing the observed cutoff.

The Circular Quest for Observational Evidence

The most convincing sign of a donut universe, if it exists, could come from a search of the satellite data now being performed by the team of Spergel, Starkman, and Cornish of Montana State University. They are looking for circles in the sky.

In a 1998, they pointed out that if the universe were small enough, part of the cosmic background radiation would hit the sides of the "box" and appear on the other side. The result, in the simplest case, would be identical circles on opposite sides of the sky with the same patterns of hot and cold running around them. The size of the circles depends on the distance between the walls of the universe: the smaller the universe, the bigger the circles. If the universe is finite but much larger than today's observable universe (14 billion light-years in radius), the circles will not show.

The Infinite Universe and the Bible

What does the Bible have to say about an infinite universe?[5] This was a hot topic of debate in the sixteenth and seventeenth centu-

[5] Also see Byl, J., 2000. "God, Space and Time," *B. A.*, **10**(94):10.

ries. The consensus was that the universe is finite. One reason given for that conclusion is that an infinite universe could never be finished, but God ended creation of the universe in a finite time, namely six days. [6]

Later arguments focused on physical evidence. For instance, in an infinite universe every line of sight must end at the surface of a star. Thus the entire sky, both day and night, should be as bright as the surface of the sun. This is called Olbers' Paradox.[7] Modern science has invoked the expanding universe as a solution to Olbers' Paradox but that merely transforms the problem to another form. You see, an infinite universe must also be eternal. An infinite time must come to pass before this present and an infinite time will follow after. Since energy can neither be created nor destroyed, the energy density of the universe should reach the same as expressed in Olbers' paradox.

Finally, if the universe is infinite, it has the same properties as God, including having no beginning. If that is so, would God still be God?

Of Atom Bombs and Thunder Storms

A single thunderstorm can release to the atmosphere energy equivalent to a megaton hydrogen bomb. And since some fifty thousand thunderstorms break forth on earth every day, the daily energy release equals a billion of tons of TNT.

—Walter Orr Roberts, 1972.
"We're Doing Something About the Weather!"
National Geographic Magazine, **141**(4):518, (quote, p. 528).

Comprehending Engineers

To an optimist, the glass is half full.
To a pessimist, the glass is half empty.
To an engineer, the glass is twice as big as it needs to be.

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[6] Daneau, Lambert, 1575. *The Wonderful Workmanship of the World,*
[7] Bouw, G. D., 1991. "Olbers' Paradox: Why Is the Night Sky Dark?" *B. A.*, **1**(56):11.

ANNOUNCING THE THIRD INTERNATIONAL CONFERENCE ON ABSOLUTES

The Third International Conference on Absolutes is tentatively planned for the third full week of July 2007. It will be held in the Houston, Texas area and will last about three days.

The primary goal of this conference is reach consensus on the definition and scope of geocentricity. To that end, we will be presenting papers on geocentricity, but other Bible and astronomy topics are fair game. To this end, we hope to attract as many people as we can from around the world. It would be nice if we could raise enough money to bring participants in from around the world, but that is probably too lofty a goal.

We request that those who would like to present a paper prepare and send us an abstract by mid-January. For papers to be printed in the Proceedings, we need the finished paper by June 15, 2007. Windows Word or rich text field (.rtf) documents may be submitted by email to bibastron@yahoo.com. Paper document may be submitted by postal service to:

Conference,
4527 Wetzel Ave.,
Cleveland, OH 44109
U.S.A.

We welcome all readers who would like to attend. The registration fee has yet to be determined, as have housing facilities. Remember, too, that Houston is hot in the summer time. We are planning a tour of the NASA's Houston facility, which may have an extra charge. By the time the next issue comes out, in January, Lord willing, we shall have full details available. In the meantime, please mark you calendars and plan to attend.

CREDO

The Biblical Astronomer was founded in 1971 as the Tychonian Society. It is based on the premise that the only absolutely trustworthy information about the origin and purpose of all that exists and happens is given by God, our Creator and Redeemer, in his infallible, preserved word, the Holy Bible commonly called the King James Bible. All scientific endeavor which does not accept this revelation from on high without any reservations, literary, philosophical or whatever, we reject as already condemned in its unfounded first assumptions.

We believe that the creation was completed in six twenty-four hour days and that the world is not older than about six thousand years. We maintain that the Bible teaches us of an earth that neither rotates daily nor revolves yearly about the sun; that it is at rest with respect to the throne of him who called it into existence; and that hence it is absolutely at rest in the universe.

We affirm that no man is righteous and so all are in need of salvation, which is the free gift of God, given by the grace of God, and not to be obtained through any merit or works of our own. We affirm that salvation is available only through faith in the shed blood and finished work of our risen LORD and saviour, Jesus Christ.

Lastly, the reason why we deem a return to a geocentric astronomy a first apologetic necessity is that its rejection at the beginning of our Modern Age constitutes one very important, if not the most important, cause of the historical development of Bible criticism, now resulting in an increasingly anti-Christian world in which atheistic existentialism preaches a life that is really meaningless.

If you agree with the above, please consider becoming a member. Membership dues are $20 per year. Members receive a 15% discount on all items offered for sale by the *Biblical Astronomer*.

To the law and to the testimony: if they speak not according to this word, it is because there is no light in them.

– Isaiah 8:20

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Orders can be honored only if accompanied by payment in United States currency either by cheque drawn on a U.S. bank or cash. All orders add 15% postage. Orders outside North America please add an additional $5 per item **Videotape are NTSC VHS.**

BOOKS DVDs AND TAPES

***The Bible and Geocentricity*,** by Prof. James N. Hanson. A collection of articles, most of which made up the "Bible and Geocentricity" column in the early 1990s. Prof. Hanson has added numerous illustrations. (145 pages, 5.5x8.5 format.) $8

The Book of Bible Problems. The most difficult "contradictions" in the Bible are answered without compromise. "A classic," writes Gail Riplinger. 266 pages, indexed. $12

The Geocentric Papers, A collection of papers, most of which appeared in the *Bulletin of the Tychonian Society*. A technical supplement to *Geocentricity*, including articles on geocentricity, creationism, and the Bible itself. (120 pages, 8.5x11 gluebound.) $15

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Geocentricity: the Scriptural Cosmology narrated by Dr. Bouw explains the seasons, retrograde motion and other phenomena using the Norwalt Tychonic Orrery. $15

The Earth: Our Home by Philip Stott. The wise men, philosophers, and scientists of the world have repeatedly changed their minds about such things as space and our position in it. This book provides and historical look at the topic of geocentricity and offers evidence for it. 32 pp. $4.50

For a complete list of items available, visit
http://www.geocentricity.com

(Continued on inside front cover.)