THE
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SUMMER 1999
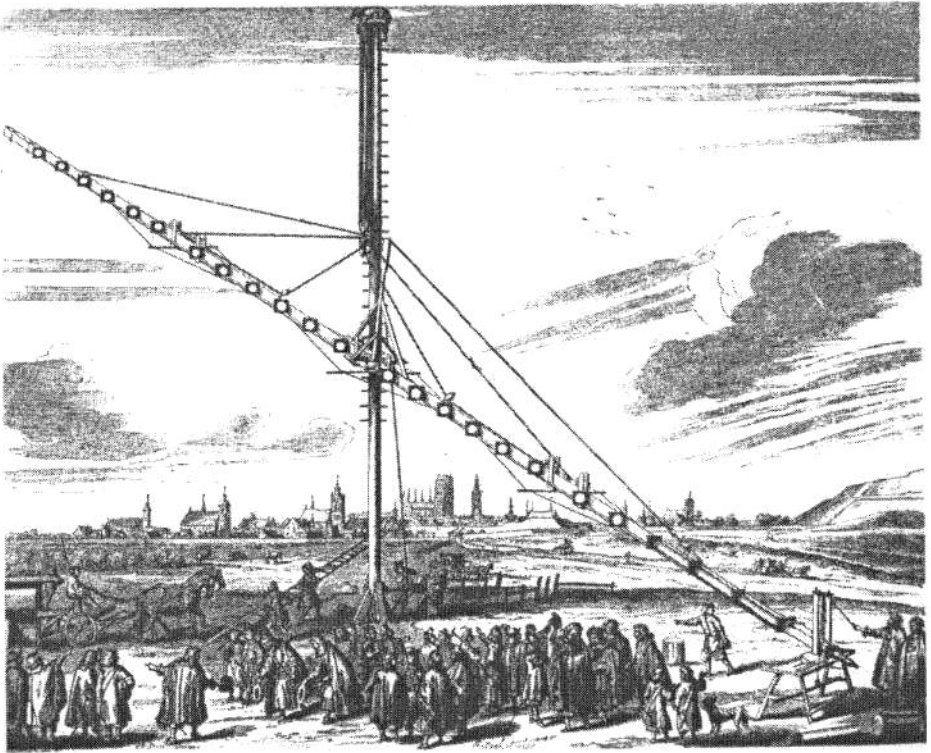
Cover: Galileo is credited with inventing the telescope, and this is a mammoth one built by Hevelius in the seventeenth century. Now it seems the first telescope may date back many centuries before Galileo. (See "Panorama." Cover plate from Johann Hevelius, *Machina Coelestis*, c. 1670.)

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EDITORIAL

In this issue we conclude Jim Hanson's look at the possibility of moving stones in the conditions expected after the flood. In the last issue he presented the math for his hypothesis — that people might have harnessed lightning and the stronger magnetic field of the earth to move stones in the building of the pyramids, for example. In this paper he looks at the geocentric motion of such a charged stone and finds that it can move as much as a 100 miles per day.

We also look at the latest cogitations about the expansion of the universe and we find that the theoreticians are converging on a common age for stars and universe. After that we report on the resurgence of the NASA missing day story, which purportedly found Joshua's long day.

In this issue we also start a two-part look at what the second law of thermodynamics has to say about a world dictatorial government such as seems to be looming on the horizon. The first part, presented here, is an overview of the problems presented in deriving the equation of state (an equation which describes the major features of a given situation or object) of the world's economy and the mechanics of population growth. In the second article, yet to be published, we shall get to specifics and look at how the greed of man will cause a world order to fail catastrophically, under its own weight.

I derived the equations and solved them more than twenty years ago. Indeed, the current paper is a reworked and somewhat updated version of a paper I submitted to the Club of Rome (shows you how naive a young Christian I was at the time) to solve the "problem" of overpopulation. Needless to say, I did not write the prize winning paper. My "great" contribution to the analysis was the application of Bose-Einstein and Fermi-Dirac statistics to the entropic problem (paper 2), but they never got to see that because I never made it past first base with them.

The upshot of the paper in this issue is that an economy based on perpetual growth cannot exist indefinitely. At some time all resources (e.g. money) will flow to one location (institution or man) with disastrous consequences for all (as per the next paper). Only a Biblical economy based on real property can exist indefinitely; one where growth is based on increases in real property and not induced as part of a virtual reality scheme as is now done world-wide. Until then, the rich will continue to get richer and the poor will continue to get poorer.

Finally, "Panorama" finds that the earth has a stabilizing effect on the inner solar system. This is one of the lesser evidences for geocentricity. We also present the correct definition of a blue moon. Contrary to popular belief it is not the second full moon of the month. We also report on the origin of that erroneous notion. Next Panorama discovers that vice president Al Gore knows that the Bible is geocentric but believes in God anyhow. Then we find that the telescope is at least 2700 years old. After that we report on a new theory which tries to avoid the singularity (a paradoxical contradiction) inherent in the big bang by postulating that the universe once rotated very slowly but 11 billion years ago stopped rotating and started expanding instead. We note that this solution is not a solution. Then, of course, there is the anthropic principle, the idea that the universe was created for man. We report on two cases, first the abnormal behavior of the sun which misbehaves by releasing powerful cosmic rays every five years instead of massing for a killer release once every hundred years, and second, that the Milky Way is strangely deficient in sterilizing gamma-ray bursts which can be expected to kill all life once every 100 million years. (Of course, there's an explanation from the young earth perspective, too.) We close out with the discovery of a small earth-grazing water-rich asteroid with a 5-minute day and a 5-minute night.

MORE ON LEVITATION AFTER
NOAH'S FLOOD

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Abstract

In a previous article[1] I considered trajectories of highly charged objects (stones) moving under the forces due to ambient electricity prevalent after Noah's Flood. Here, the path of these stones is analyzed if perfect levitation is accomplished, *i.e.,* force-free motion.

Geocentric equations of motion

Let $w = (0, 0, w)$ where $w = 2\pi$ radians per day is a constant of nature, and let r be the distance vector of any point in space referred to a geocentric coordinate system whose origin is at the earth's center and whose coordinate axes lie in the equatorial plane and through the north pole. The the geocentric motion of a particle of mass m is given by

$$\ddot{r} = m^{-1}\,F - 2\,w{\times}\dot{r} - w{\times}(w{\times}r)$$

where F is the resultant of all forces acting upon m. Initial conditions, of course, are geocentric. The earth does not rotate but, instead, the sky rotates about the earth as prescribed by w. If this equation is transformed from Cartesian coordinates to geographical coordinates, then

$$-r \cos \phi \, \ddot{\lambda} - 2(\dot{\lambda} - w)(\dot{r} \cos \phi - r \sin \phi \, \dot{\phi}) = X$$
$$r\ddot{\phi} + 2\dot{r}\dot{\phi} + r \cos \phi \sin \phi \, \dot{\lambda}(\dot{\lambda} - 2w) = Y$$
$$\ddot{r} - r\dot{\phi}^2 - r \cos \phi \, \dot{\lambda}(\dot{\lambda} - 2w) = Z$$

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1. Hanson, J. 1999. "Levitating and Moving Large Stones by Ambient Electromagnetic Fields Prevalent after Noah's Flood," *Biblical Astronomer,* **9**(88):6.

where r, λ, ϕ are radial distance from the earth's center, longitude, and latitude respectively, and where X, Y, Z are the components of $m^{-1}F$ resolved along the eastward longitudinal direction, northward latitudinal direction, and vertically through the local zenith. Additional terms could be added (*e.g.*, terms due to mass m varying with time and the Eulerian term $-\dot{w}xr$). The geocentric implication of these terms will be considered in another article.

Analysis

Assume the electrostatic and magnetic fields are controlled so as to very nearly balance gravity, *i.e.*, let $X = Y = Z = 0$. Then we wish to discover the trajectory of m due to only initial velocities $\dot{\phi}(0) = \dot{\phi}_0$, $\dot{\lambda}(0) = \dot{\lambda}_0$ where we set $\dot{r}(0) = 0$ so that the motion is parallel to the earth's surface. Let a be the earth's radius and let $r \approx a$, $\dot{r} = \ddot{r} = 0$, $|w| >> |\dot{\lambda}|$. We will assume the motion to be local so that ϕ and λ are nearly constant. Let $c = \cos \phi$, and $s = \sin \phi$ then the first two equations simplify to

$$\ddot{\lambda} = -2wsc^{-1} \dot{\phi}, \quad \lambda(0) = \lambda_0, \quad \dot{\lambda}(0) = \dot{\lambda}_0$$
$$\ddot{\phi} = 2wsc\, \dot{\lambda}, \quad \phi(0) = \phi_0, \quad \dot{\phi}(0) = \dot{\phi}_0$$

The solutions of these are

$$\phi(t) = b_0 + b_1 \sin (2\,wst + b_2)$$
$$\lambda(t) = c_0 + c_1 \sin (2\,wst + c_2)$$

where

$$b_2 = \tan^{-1}(-c^{-1}\dot{\lambda}_0/\dot{\phi}_0) \qquad\qquad c_2 = \tan^{-1}(-c^{-1}\dot{\phi}_0/\dot{\lambda}_0)$$
$$b_1 = \dot{\phi}_0(2ws \cos b_2)^{-1} \qquad\qquad c_1 = \dot{\lambda}_0(2ws \cos c_2)^{-1}$$
$$b_0 = \phi_0 + (2wsc)^{-1} \dot{\lambda}_0 \qquad\qquad c_0 = \lambda_0 - (2wsc)^{-1} \dot{\phi}_0$$

The period, P, of the motion is seen to be

$$P = \pi(ws)^{-1}$$

and the latitudinal and longitudinal amplitudes about their mean positions (b_0 and c_0) are

$$b_1 = (2ws)^{-1} (1 + c^{-2}\dot{\lambda}_0{}^2)^{1/2}$$
$$c_1 = (2ws)^{-1} (1 + c^{-2}\dot{\phi}_0{}^2)^{1/2}$$

Numerical example

In order to picture the motion, let t be eliminated between $\phi(t)$ and $\lambda(t)$. The path may be shown to be an ellipse as pictured below.
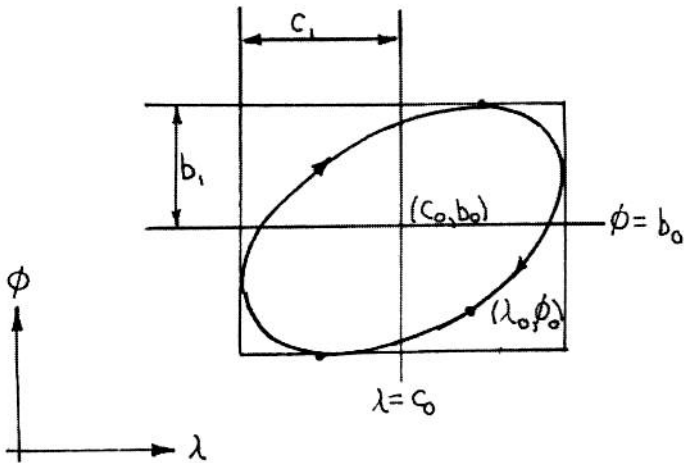
Let x and y be local coordinates on the ground,

$$x = a\phi \qquad\qquad \dot{x} = a\dot{\phi}$$
$$y = a\cos\phi_0\,\lambda \qquad\qquad \dot{y} = a\cos\phi_0\,\dot{\lambda}$$

Let $\phi_0 = 10°$, $\dot{x}_0 = \dot{y}_0 = 1$ meter-sec^{-1}, $\lambda_0 = 0$, then $c_1 = 5.6 \times 10^4$ meters, $b_1 = 8.2 \times 10^4$ meters, and $P = 2.5 \times 10^5$ seconds = 2.87 days. That is, the mass would circulate around an ellipse inscribed in a box of 104 kilometers by 112 kilometers in 2.87 days or 2 days, 20 hours 53 minutes.

THE FIX OF THE HUBBLE CONSTANT

We begin with a long quote from a recent NASA press release.[1]

The Hubble Space Telescope Key Project Team today announced that it has completed efforts to measure precise distances to far-flung galaxies, an essential ingredient needed to determine the age, size and fate of the universe.

"Before Hubble, astronomers could not decide if the universe was 10 billion or 20 billion years old," said team leader Wendy Freedman of the Observatories of the Carnegie Institution of Washington. "The size scale of the universe had a range so vast that it didn't allow astronomers to confront with any certainty many of the most basic questions about the origin and eventual fate of the cosmos. After all these years, we are finally entering an era of precision cosmology. Now we can more reliably address the broader picture of the universe's origin, evolution and destiny."

The team's precise measurements are the key to learning about the universe's rate of expansion, called Hubble's constant. Measuring Hubble's constant was one of the three major goals for NASA's Hubble Space Telescope when it was launched in 1990.

For the past 70 years astronomers have sought a precise measurement of Hubble's constant, ever since astronomer Edwin Hubble realized that galaxies were rushing away from each other at a rate proportional to their distance, i.e. the farther away, the faster the recession. For many years, right up until the launch of the Hubble telescope -- the range of measured values for the expansion rate was from 50 to 100 kilometers per second per megaparsec (a megaparsec, or mpc, is 3.26 million light years).

The team measured Hubble's constant at 70 km/sec/mpc, with an uncertainty of 10 percent. This means that a galaxy appears to be moving 160,000 miles per hour faster for every 3.3 million light-years away from Earth.

"The truth is out there, and we will find it," said Dr. Robert Kirshner

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1. Savage, D., N. Neal, & R. Villard, 1999. "Hubble Completes Eight-Year Effort To Measure Expanding Universe," May 25 NASA press release no. 99-65. The text of the press release is here reproduced *in toto*.

of Harvard University. "We used to disagree by a factor of two; now we are just as passionate about ten percent. A factor of two is like being unsure if you have one foot or two. Ten percent is like arguing about one toe. It's a big step forward." Added Robert Kennicutt of the University of Arizona, a co-leader of the team: "Things are beginning to add up. The factor-of-two controversy is over."

The team used the Hubble telescope to observe 18 galaxies out to 65 million light-years. They discovered almost 800 Cepheid variable stars, a special class of pulsating star used for accurate distance measurement. Although Cepheids are rare, they provide a very reliable "standard candle" for estimating intergalactic distances. The team used the stars to calibrate many different methods for measuring distances.

"Our results are a legacy from the Hubble telescope that will be used in a variety of future research," said Jeremy Mould of the Australian National University, also a co-leader of the team. "It's exciting to see the different methods of measuring galaxy distances converge, calibrated by the Hubble Space Telescope."

Combining Hubble's constant measurement with estimates for the density of the universe, the team determined that the universe is approximately 12 billion years old -- similar to the oldest stars. This discovery clears up a nagging paradox that arose from previous age estimates. The researchers emphasize that the age estimate holds true if the universe is below the so-called *critical density* where it is delicately balanced between expanding forever or collapsing. Alternatively, the universe is pervaded by a mysterious *dark force* pushing the galaxies farther apart, in which case the Hubble measurements point to an even older universe.

The universe's age is calculated using the expansion rate from precise distance measurements, and the calculated age is refined based on whether the universe appears to be accelerating or decelerating, given the amount of matter observed in space. A rapid expansion rate indicates the universe did not require as much time to reach its present size, and so it is younger than if it were expanding more slowly.

The Hubble Space Telescope Key Project Team is an international group of 27 astronomers from 13 different U.S. and international institutions. The Space Telescope Science Institute is operated by the Association of Universities for Research in Astronomy, Inc. for NASA, under contract with NASA's Goddard Space Flight Center, Greenbelt, MD.

Analysis

The above is the entire text of a NASA press release announcing the results of an international program to fix the Hubble constant at an evolutionarily acceptable value. There are a couple of misrepresentations in the text, such as declaring a value based on a sample of 18 objects "reliable," but the most glaring is the range of values held for the Hubble constant in the last 70 years. The first measurements were in excess of 350 km/sec/Mpc, but over the last four decades the value has fluctuated from a low of 25 km/sec/Mpc to a high of 125 km/sec/Mpc. For some time in the seventies, the University of Chicago dictated that the value be set at 35 km/sec/Mpc and enforced that by banning papers with a higher value from their prestigious *Astrophysical Journal.*

The press release makes clear that different techniques give different ages for the universe (that is, they give different values for the expansion rate or "age") so that some of them show the oldest stars to be older than the universe. If one maintains the superstition of evolution, it is necessary for several billions of years to pass to form the elements which make up the oldest starts. Hence, the universe should be older than the oldest stars by several billion years. That was the paradox with the "old" methods, that the stars seemed to be older than the universe from which they evolved.

Now one could reasonably conclude from this paradox that the difference in age between the oldest stars and the universe itself is so little that one cannot distinguish the difference today, which is to say that the billions of years difference is merely statistical noise about a common age. And this is precisely what the Hubble Space Telescope Key Project Team has concluded. They readjusted the distance and redshift data until they "converged" on a common value, and at a Hubble constant value of $H_0 = 70$ km/sec/Mpc, the universe appears as old as its oldest stars. All that's needed then is to rework the nuclear production rates (the rate at which atomic elements are created in the big bang) so that these "oldest" stars can then form within the first billion years (10% above) with the "expected" initial composition to allow them to age to the point we observe. Expect the inflationary model of the expanding universe to figure prominently in this analysis. At present, not enough heavy elements (beyond hydrogen and helium) are created in the big bang without an initial generation of supermassive stars which all exploded to produce the heavy elements implicit in the observed stars. Except for the elements,

all trace of this initial supermassive generation of stars has disappeared (some think that quasars are a second generation of this type of supermassive star).

The bottom line is still this, science really cannot tell the difference in age between stars and the universe. This still fits within the Bible which states that the difference in age is at most four days.

Geocentric Issues

There is a more fundamental issue regarding the Hubble constant which needs to be addressed but has been placed on the back burner by the astronomical community. That question is "To what degree is the observed expansion rate cosmic, and not local?" In other words, when one draws a graph whose vertical axis is Doppler shift (red shift, the speed the galaxy exhibits toward or away from earth) and whose horizontal axis is the distance to the galaxy, and plots the data for these 18 galaxies, one gets roughly a straight line. But the slope of the line, which is the Hubble constant or expansion rate, is only determined for the 65 million light years (mly) mentioned in the press release. Would the slope be the same if we went out, say, a billion light years? Since we can't observe Cepheid variable stars any beyond the 65 mly, can we really extrapolate that value out to 12 billion light years? After all, the data spans only a half a percent of the total. Local concentrations of galaxies can influence the expansion measured Doppler shifts. So the research is by no means conclusive since it is based on a very small, select sample.

Finally, note that the Hubble constant is inherently geocentric. True, the alleged motions of the earth about the sun, and of the sun about the center of the Milky Way, have been removed, but that does not change the fact that this value is determined from earth. Astronomers take it on faith that if they were removed to any other galaxy in the universe, that there, too, the local Hubble constant would be the same in all directions as we see here on earth. Since we can't go to a distant galaxy to test that, it is taken on faith, pure and simple. Only dishonest scientists would claim it a fact. So we conclude that the general nature of the Hubble constant is geocentric, albeit not strictly geocentric. That is, all distant objects in the universe appear to be receding from earth.

JOSHUA'S LONG DAY AND THE COMPUTERS

From time to time, articles have appeared in the *Biblical Astronomer* and in its predecessor, the *Bulletin of the Tychonian Society*, describing the phenomenon commonly known as Joshua's long day. The scriptural account is found in Joshua chapter 10. An entire chapter is devoted to all aspects of Joshua's long day in *Geocentricity* (see back cover of this issue). Indeed, it is by far the longest chapter in the book. One such aspect involves reports that Joshua's long day has been found either by computers or by ancient calendars.

In the late 1970s and early 1980s two stories appeared in print about a computer finding a missing day. The first is told by Harold Hill in his book, *How to Live Like a King's Kid*.[1] In Hill's own words:

> When NASA's Goddard Space Flight Center here at Greenbelt, Md. first went on the air, a horrendous technical boo-boo surfaced, causing a complete shutdown [of the computer] after less than an hour's operation.
>
> I was called in as an outside consultant and came up with a "quick-fix" that saved the day for them.
>
> After things fired up I stayed around as an interested observer, to catch the very beginning of our Space Exploration activity. That was somewhere back in the sixties. ...
>
> A large team of IBM technicians was present to debug the system and get it running. No one really knew much except that it looked O.K. on paper.
>
> It was during that time that I heard about the aberration in the location of the Heavenly bodies that led to the Bible account of how the MISSING DAY incident came about.
>
> I was not the one who came up with the Bible answer, nor do I know the names of those involved. I simply reported it as it came to me and used it in my lectures on the Bible and Science, which I frequently deliver in schools and Colleges in Science Seminars.

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1. Hill, H. "How to Find a Missing Day," *How to Live Like a King's Kid*, (Baltimore: Logos), Chapter 13, pp. 65-77.

A Newspaper reporter in Spencer, Indiana [Mary Kathryn Bryan in 1970, —*Ed.*] came across a copy, and fed it into the major News Services. To date I have received over 10,000 letters from all parts of the world.[2]

Many have correctly pointed out that computers do not stop "and put up a red flag." Some have reported that Hill has retracted his story, but that is not true. Hill still maintains its veracity even though NASA has disavowed any and all knowledge of him, and others have charged him with various degrees of fraud. I suspected that Hill had based the story on a book by Totten,[3] written more than a century ago, but Hill claims not to have known of the Totten book at the time.

The main problem with Hill's story is that it finding a missing day would require an exact date for some event, such as an eclipse of the sun, *prior* to Joshua's long day. The most ancient of these observations does barely go back as far as 700 B.C., let alone 1,500 B.C., the time of Joshua's long day. Still, Hill's story raised quite a bit of interest.

Dr. Bolton Davidheiser has done considerable research into the backgrounds of not only Harold Hill's story, but the man himself. He found no record of Hill having ever worked as a consultant for NASA Goddard or anywhere else. No one there recalls finding any missing day, and although many have heard the tale, none can recall Mr. Hill.

Well, all that is old stuff form most readers. I do have something new to report. It came by way of an email inquiry from one Dave Benson, dated 27 March, 1999. Mr. Benson is a reported for the *Evening Star*, ... but I'll let him tell the story:

> My name is Dave Benson and I am a writer with *The Evening Star* newspaper in Auburn, Ind. Recently the story of Harold Hill and the NASA astronauts supposedly finding Joshua's Lost Day has resurfaced.

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2. Hill, H. 1984. Private correspondence. Letter dated October 1.

3. Totten, C. A. L., 1891. *Joshua's Long Day and the Dial of Ahaz, A Scientific Vindication and A Midnight Cry,* 3rd Edition, (New Haven: Our Race Publ. Co.) Reprinted in 1968 by Destiny Publishers, Merrimac, Mass.

As you will no doubt recall, the story was first published in *The Evening Word* of Spencer, Indiana, but somewhere the legend was changed to *The Evening Star*, which is our newspaper. I am working on a story about it.

I have in my hand the January 1985 *Bulletin of the Tychonian Society* with your article on the subject.[4] Your final question brings matters to a head: "Does any reader know someone who may have been working on the navigation problem, especially around Greenbelt, in the sixties?"

I was curious. Has anyone ever stepped forward to provide independent confirmation of Hill's story?

The answer is still "No, no one has ever confirmed Hill's story." I referred Mr. Benson to Dr. Davidheiser, but I don't know if he pursued the matter with him. If not, he missed out on some fascinating material.[5]

The second computer account of a missing day appeared in the Swedish *Goteborgs Tidningen* on March 15, 1981. According to that story, Stig Flodmark of the University of Stockholm discovered that the earth's axis had flipped on May 3, 1375 B.C. and associated that with Joshua's long day. This proposal is one that has resurfaced from time to time in creationist circles.

According to Flodmark, an Ugaritic astronomer described the event and gave the date. Flodmark refers to a book entitled *Tidal Friction and the Earth's Rotation*.[6] The comment by the author of the quoted paper,

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4. Bouw, G. and H. Hill, 1985. "NASA's Missing Day?!" *Bulletin of the Tychonian Society* no. 39, pp. 9-13.

5.   By the way, Dr. Davidheiser is finishing a revision of a book, a critique of the wanderings of Dr. Hugh Ross. The first version, entitled *Creation, Time, and Dr. Hugh Ross*, saw a very, very limited distribution and was sheer dynamite.   Though now in his eighties, Dr. Davidheiser has a discerning mind with keen spiritual insights. If his revision is anything like his first work on Ross, expect to find the book available through the *Biblical Astronomer*.

6. Brosche, P., & J. Sndermann, eds., 1978. *Tidal Friction and the Earth's Rotation*, (New York: Springer-Verlag), p. 12.

F. R. Stephenson, in summarizing the Ugaritic observation, is "Sun put to shame; went down in daytime." This hardly describes a tippie top phenomenon, especially with Gibeon at the rotational north pole for the day, for the sun would have been circumpolar (above the horizon all day long) for the Ugaritic astronomer; it would not have gone "down in daytime."

The Ugaritic note sounds more like Hezekiah's sign (Isaiah 38) viewed from the east coast of North America or from South America, both of which have accounts of the sun rising and then setting again in the eastern sky to re-arise at its regular rate. There is some evidence to support the notion that regular trade occurred between the Americas and mid-Eastern merchants at the time, so it is not impossible that the account, though recorded in the mid-East, describes an event seen in the Americas.

ENTROPY AND THE HUMAN SITUATION

Gerardus D. Bouw, Ph.D.

And Jesus looked round about, and saith unto his disciples, How hardly shall they that have riches enter into the kingdom of God! ... but ... with God all things are possible.

— Mark 10:23, 27

Take heed therefore how ye hear: for whosoever hath, to him shall be given; and whosoever hath not, from him shall be taken even that which he seemeth to have.

— Luke 8:18

Introduction

The two quotes above were spoken by Jesus Christ almost two thousand years ago. His teachings subsequently formed the foundation of not only the Christian church, but extend to the very foundations of science. Despite this, his instruction has been largely ignored and even scientists left their original foundation behind in the eighteenth century for what was then considered the more appealing epistemology of positivism.[1] In the second quarter of this century positivism was so badly shaken that science was redefined: first towards engineering, as exemplified by the space program, and subsequently through economics to political expediency, such as the spotted owl fraud which was designed by the president of the Sierra Club to not only stifle Washington state's Weherhauser lumber, but to have the government confiscate its property as well; all so that his own California-based lumber company might gain advantage. Is it any wonder that America's largest tax-free land owners are "environmentalists" such as Havana Ted Turner and his wife, Hanoi Jane Fonda?

The politics of greed and pragmatic materialism cannot support a true

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1. The *American Heritage Dictionary* defines positivism as "A doctrine contending that sense perceptions are the only admissible basis of human knowledge and precise thought."

science. True science deals with truth, not greed. So no longer is science based on its original foundation, the supposition that since the universe was created by a reasonable God (Isaiah 1:18), it follows that the universe must be subject to analysis by reason. Today's science, having abandoned its first love, is nothing more than the latest political whim or power grab. That is the price of evolution, survival of the fittest, the fittest defined as those who exterminate or enslave the lesser creatures. Today's science is a thinly disguised fraud. And all this has happened since the second world war when the democratic socialists, formerly called Communists, learning that Americans looked to science as a means to truth, perverted science to their financial advantage.

The entire scenario is an example of entropy in action, in this case applied to human systems. But entropy must always increase, without exception. And because human systems such as economics are subject to entropy, and since entropy is quantitatively defined, it opens these human systems to mathematical analysis. The field of electronics, for example, has been applied to model the money flow and power flow of entire economies. The method was outlined in a 1979 monograph called "Silent Weapons for Quiet Wars." It was old news even back then.

Entropy

The word entropy has several interrelated definitions.

1. In a thermodynamic system, a quantitative measure of the amount of thermal energy unavailable to do work.
2. A measure of the disorder in a system.
3. A measure of the loss of information in a transmitted message.
4. The tendency for all matter and energy in the universe to flow toward a state of inert uniformity.
5. Inevitable and steady deterioration of a system or society.

The word itself comes from the Greek *en-*, meaning in, plus *trop*, meaning transformation. Entropy has in it subtle shades of meaning such as turning, change, way, and manner. Other related English words include contrive, trophy, tropic, trope (a figure of speech, a musical embellishment, hence troubadour), and trover (a common-law action to recover damages for property illegally withheld or wrongfully converted to use by another). From a Biblical point of view one can see etymologically

that entropy stems from a turning from the creative word of God as manifested in the creation he spake into existence. In other words, works cannot save your soul, only grace can; for works corrupt you and rob you of your liberty (by the Book, as in *lib*rary) and your inheritance (Deu. 31:29 and Psa. 14:1). Entropy is science's term for the phenomenon which the Bible reports with the words "...the whole creation groaneth and travaileth in pain together until now" (Rom. 8:22). It is the wages of sin (Rom. 6:33; Gen. 2:17).

Entropy's applications are quite broad, ranging from thermodynamics, which first "discovered" entropy, through systems information theory.[2] It was Boltzmann who first noticed the statistical nature of entropy and first formulated the expression for entropy S in terms of the statistical weight of a system, W, as

$$S = k \ln W \tag{1}$$

Here k is a constant of proportionality and the term "ln" means the natural logarithm. In a word, entropy is disorder; more precisely, entropy is the degree of disorder. Note that from (1) it follows that negative entropy is order.

The more disordered a system is, the greater is its entropy.[3] Furthermore, entropy can only be created, it cannot be destroyed. This means that the entropy of the universe must increase with every action or process. Local areas of order can certainly exist, but only at a cost of at least as much disorder outside of that locality. Life is a case in point. Life has order and is thus a local entropy minimum, but note that our waste products and all the "stirring around" of things that we do all vastly outweigh our order. Even tidying a room means we stir dust around, heat up the floor by walking on it, and in general disorder more things than the few pieces of furniture we put in order. It turns out that the statement "entropy must always increase in the universe" has as one of its corollaries, the statement "all things must die." Systems tend to go to a state

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2. Shannon, C. E., 1948. *Bell Syst. Tech. Jour.*, **27**, 379, 623.

3. The concept of absolute entropy is only well developed in the field of chemistry. We shall not be concerned with absolute entropy here, constraining ourselves to relative entropy (changes in) for generality.

of maximum entropy which is where they are most stable. Conversely, states of minimum entropy are least stable.

From information theory it follows that two systems which differ in entropy, differ in information, as information can order or confuse. In this light poverty reduces down to the lack of significant information. This lack of relevant information, this difference in the entropies of two nations or peoples, may be deliberately chosen by the poor person himself, or may be imposed by the richer person through the pretense of keeping the poor man "informed." Ultimately, poverty is caused by ignorance of God on the part of the poor man, or the rich man, or both.

The death of positivism in the 1930s meant that man's physical senses could not be trusted. There are two possible reactions. One, become senseless, that is, turn to alcohol, drugs, mysticism, new ageism, eastern mysticism, catholicism, etc., or two, re-incorporate spiritual sense, in other words, go back to science's original foundation, return to science's reasonable God. The former seems to be the drug of choice for man today.

With the death of positivism, philosophy (see warning of Col. 2:8) found itself in the predicament of having to find a different epistemology. The structuralists soon came to prominence who, to settle into a state of higher entropy, soon broke with each other into several schools of thought. One school, of which Claude Lévy-Strauss is a principal proponent, is the structuralist ethnology school which maintains that only universal, permanent, deep structural aspects of the mind can give any sort of genuine understanding of social relations. But these socialists are left with a vacuum, who or what fulfills the structure? Only the Holy Bible can provide the "genuine understanding of social relations." It cannot be found by applying any form of statistical analysis on the responses of people who have been lied to.

A second school is the structural linguistic school of thought, which holds that language consists of three components, a phonological (sound) component on the surface with a syntactic (proper sentence structure) component under that and a semantic (meaning) deep structure component. Like the structuralists, this is a quest for God, only this time for that expression of God called the Word by the apostle John (Jn. 1:1), for you see, all the parts of language are represented in the structure of structural linguistic except the word, which is at the core of the structure.[4]

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4. Bouw, G. D., 1996-1997. For an in-depth look at this relationship be-

Entropy and Economies

In the early 1970s we witnessed the breakdown of the economic theory that replaced the one that failed with the stock market crash of 1929. Geared for an annual inflation rate of at most 5 to 6% per year, the theory worked very successfully until the mid-sixties when unforeseen developments on the international front took place, which developments were not subject to the economic constraints of the theory. According to Irving Friedman, the demise came about because developing countries were not satisfied with such a modest annual increase and pushed for 20% per annum or more.[5] Thus the theory broke down because it had no way to enforce a modest growth rate outside the system it was set up for. Many took this as a sign that a theory to predict human behavior was needed. Actually, the solution lies in an economic system in which growth is based on an increase in scarce resources, such as gold or silver. The model actually failed because it was based on fictitious resources or, more exactly, the model was an early example of virtual reality, that is, realistic-seeming fiction. But such is the Biblical view and, as we noted before, the Biblical view is the *one* view that is not acceptable on a world-wide scale. That left only one acceptable solution, predict human behavior.

Attempts at predicting human behavior have been made by economists, in particular by Keynes,[6] but these have been extremely

tween structural liguistics, the Word, and science, see the three-part article entitled "Theory of Theories" which appeared in issues 77-79 (Summer 1996-Winter 1997) of the *Biblical Astronomer*.

5. Friedman, Irving S., 1974. At the time Friedman was Prof. of Economics in Residence, World Bank, Washington, D.C. Speaking on 27 February, 1974 in a lecture delivered in San Francisco to the afternoon session on paradigmatology, at the 140th Annual Meeting of the American Association for the Advancement of Science. From my notes of that lecture.

6. Keynes, J. M., "The Application of Probability to Conduct," in James R. Newman, ed., 1956, *The World of Mathematics,* (New York City: Simon and Schuster, Inc.), 2, 1360.

general in nature and therefore not very useful in practice. The fields of medicine and biology have also started to approach the problem from their respective points of view, a problem which for the last several decades has been the primary concern of the pseudoscience, psychology. Attempts to analytically predict human behavior by the fields of biology and medicine are exemplified by authors such as Fremont-Smith,[7] Gardner and Ashby,[8] Handler,[9] Kauffman,[10] Laki,[11] and Schrödinger.[12] Complex though the mathematics of human behavior may be, could an understanding of the law of entropy help? The answer is affirmative.

To see this, let us first look at the conditions of equilibrium of a system in terms of its attaining a maximum entropy and the assumptions that are inherent in setting up the equations. The primary assumption is that all the particles (dollars or units of exchange if one prefers) must be in

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7. Fremont-Smith, F., 1971. "The Neurological Justification for the Use of Interruption in Communications," *Perspectives in Biology and Medicine,* **14,** 333.

8. Gardner, M. R., and W. R. Ashby, 1970.   "Connectance of Large Dynamic (Cybernetic) Systems: Critical Values for Stability," *Nature,* **228,** 784.

9. Handler, P., 1971. "Can Man Shape His Future?" *Perspectives in Biol. & Med.,* **14,** 207.

10.   Kauffman, S. A., 1969. "Metabolic Stability and Epigenesis in Randomly Connected Genetic Nets," *Journal of Theoretical Biology,* **22,** 437.

11.   Laki, K., 1975.   "An Attempt to Measure 'Disorder' in Mental Disorders," *Perspectives in Biol. & Med.,* **18,** 157.

12.   Schrödinger, E., "Heredity and the Quantum Theory," in James R. Newman, ed., 1956, *The World of Mathematics,* (New York City: Simon and Schuster, Inc.), **2,** 990.

constant motion. This can be accomplished by ignoring frozen assets and concentrating on liquid assets which are assumed constant in amount for the time being. Call the number of particles in the system N. The N particles will be distributed in some fashion among n individuals or cells, each with an amount N_i where i is an integer ranging from 1 through n. Assuming further that we do not care which particular particle is in whose hands, and assuming n and N much greater than ten, then using Stirling's approximation we derive that

$$\ln W = - \sum_{i=1}^{n} p_i \ln p_i \tag{2}$$

where $p_i = N_i/N$. According to equation (1), this expression is directly proportional to the entropy of the system and corresponds in form to Shannon's derivation. Differentiating and setting the result equal to zero yields two conditions to be met for the entropy to be a maximum, and hence for the system to be stable: first, the net change in the N_i must sum to zero, i.e.,

$$\delta N = \sum_{i=1}^{n} \delta N_i = 0 \tag{3a}$$

and second, if w_i is some measure of the purchasing power of the ith cell, then

$$\sum_{i=1}^{n} w_i \, \delta N_i = 0 \tag{3b}$$

which is another way of saying that the overall purchasing power is constant.

The above conditions hold if there is no inflation, but we can infer from them the form of a growing economy by noting that N, no longer fixed, can be replaced by $N+\delta N$ (constant growth). This introduces second-order terms in the conditions for equilibrium which makes the stability dependent upon changes in the rate of inflation (acceleration). Allowing for the changes of inflation and depression, increases the

likelihood of large random changes, though these will be scarcer than random small fluctuations.[13] We thus derive mathematically what Jesus said in the quote at the beginning of this paper, namely, that the rich will get richer and the poor will get poorer. We find that this results from growth, that is, from the interest charged on borrowed money. To put it bluntly, the imbalance is the unavoidable consequence of greed. And that greed is not just the greed of those who have, as the democratic socialists would have us believe, but the greed of those who have not is the primary contributor to the imbalance.[14]

The Rothschilds and Rockefellers of this world have for generations used relatively high interest rates to amass great riches. Though Bill Gates may be the richest man in the world, worth ninety billion dollars more or less, the foundations and trusts controlled by the aforementioned families control tens of trillions of dollars. And that is not paper money such as currency, stocks, and bonds. The only real riches for them are precious metals and real estate.

What is clear to these men is that their accelerating amassment of money (currency) will result in a money explosion akin to the fabled population explosion. They think that at that point they will control or own all the property and resources of the earth. At that point the paper starts to loose actual value. The pressure will then be on to disperse some or all of the resources, increasing their entropy. The expected result is that all men will sell themselves into slavery to their economic masters or die by starvation. Economically, the common man will have reached the entropic heat death. What happens next will be the subject of the second paper in this series, but first we will look at the population "problem."

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13.   The corresponding occurrence in thermodynamics is called *fluctuations*. Although the specific expressions differ here, the statistical charactersitics do not.

14.   For example, it is greed which makes poor people who can least afford it buy lottery tickets, gamble at Las Vegas, or play Bingo in the liberal and Catholic churches of this nation. It is greed which drives them to drink using the excuse that they need to dull the "pain" of the "injustice" done them. Greed drives them to buy cable television systems and facny automobiles instead of fixing the roof, or schooling their children.

Entropy and Population

The physical and moral consequences of population filling up the life supporting environment was first discussed by Malthus[15] who noted that a state of moral degeneracy was likely to accompany such an infilling because of the link between moral degeneracy (sin) and death. The population explosion is a statement of entropy. Twentieth century humanists have been concerned with the stemming of this tide before it reaches such a degenerate level which would take a generation or two to damp out, considering that there is a significant time lag between the firth of an individual and his reaching full consumption. The entropy of the situation is straightforward. The population will increase until the maximum entropy is achieved.

The actual mathematical treatment and the resulting entropy expression for population control is different than is the case for economic systems. That is because with population there is some minimum volume of natural resources below which an individual can not survive, namely, a certain area of land for raising food and housing, a column of air to support that, plus a column of water and mineral resources. Although the resulting expression for entropy is different than equation (2), the stability considerations are the same as equations (3) where w_i this time is the energy that the individual i devotes toward zero population growth.[16] Also included is the amount of energy devoted to instructing the individual, i, plus the energy involved in his decision-making process as well as the execution of that decision.[17] In short and trivially so, zero

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15.   Malthus, T. R., "Mathematics of Population and Food," in James R. Newman, ed., 1956, *The World of Mathematics,* (New York City: Simon and Schuster, Inc.), **2**, 1192.

16.   Though the wording says that cell i expends the energy towards zero population growth, the amount actually includes what may come from other cells such as the energy expended by the Chinese government or Planned Parenthood to enforce their racial eugenics programs.

17.   A discussion of the equation of state of a decision versus that of chance would require more space than can be allocated here. The interested reader is referred to B. S. De Witt, 1970, "Quantum Mechanics and Reality," *Physics Today,* pg. 30, September issue.

population growth is still a matter of personal decision at the individual level (though it may not be for much longer) and requires feedback from virtually every individual in society.

The entropic situation points to the necessity of the Holy Spirit's presence at the individual level. Fortunately, such divine intervention has already occurred and all that is needed is for the relevant information to be released to each and every individual in such a way that the individual can believe. The locking-in-phase with the Holy Spirit (that is, being led by the Spirit) works because of the fundamental property of a free decision, namely, the property which says "yes" to one thing and "no" to all else once the decision is acted upon. And that decision is either for or against the Lord Jesus Christ, who is life himself. That is the only person so named (life), and he is a spirit-possessing entity. All other religions offer only things, which are dead and possess no spirit and which have been rejected by God. That is the crux of the human situation, and the only solution that has ever been offered.

Finally, insofar as entropy is concerned, note that entropy cannot create anything, let alone create itself. We see thus a law that supersedes the law of entropy, namely the law of the Creator who created entropy.

In the next article we shall look at what happens to a world system such as the New Order touted by the Georges Bush.

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Quote

For a deception to be so seductive that even the very elect would take pause to wonder if it is of God, it would have to have all the earmarks of a true work of God. That means it would come in a the name of Jesus, and it would be a "good work." And signs and wonders would accompany it. *Those who might recognize and expose the deception would be looked upon as divisive, hateful and deceived themselves.*

— *Media Spotlight*

PANORAMA

Stabilizing Earth

One of the lesser geocentric evidences we've pointed to from time is the "homage" the "inner planets" pay to the earth. In *Geocentricity* we noted the resonances (that the planets show the same face to the earth when they are at their closest) of Mercury and Venus, and the near-resonance of Mars. We also noted the stabilizing role of the earth. The earth keeps the planets going nicely around the sun.

The most recent contribution comes from Kimmo Innanen and Seppo Mikkola who ran a computer simulation of what the solar system would look like if the earth were removed. They found that the orbits of Mercury and Venus would wildly elongate and broaden (vary in eccentricity) with the eventual ejection out of the solar system of Mercury by Venus. This is due to a resonance, previously unknown, between Jupiter and Venus. But the earth, they report in the October 1998 issue of the *Astronomical Journal*, damps out the resonance and so keeps the inner planets in line.

Once Upon a Blue Moon?

To hear tell, a blue moon is when there are two full moons in the same month. That happened in January and in March of this year. Now the popular astronomy magazine *Sky and Telescope* has confessed that an error on their part led to that misconception.

In their issue of March, 1946, there appeared an article entitled "Once in a Blue Moon." It was written by the late James Pruett, an Oregon amateur astronomer. In that article he referred to the Blue Moon mentioned in the 1937 *Maine Farmers' Almanac* and then wrote "But seven times in 19 years there were — and still are — 13 full moons in a year. This gives 11 months with one full moon each and one with two. This second in a month, so I interpret it, was called Blue Moon." Various radio commentators and editors, including *Sky and Telescopes's* editor in 1950, picked up the notion without checking it with original sources.

Now in 40 surviving issues published between 1819 and 1962, the Maine almanac refers to a Blue Moon more than a dozen times. None of them falls on the second full moon of the month. The reason is now ap-

parent and is described in detail in the May 1999 issue of *Sky and Telescope*.[1]

The Maine almanac uses a tropical year, which is the length of time elapsed from the first day of winter in successive years. Most tropical years have 12 full moons, three in each of the four seasons. These are given names (such as the Wolf Moon, or the Harvest Moon). Occasionally, however, there are 13 full moons in the tropical year. Now the seasonal names start their cycle not in winter, but with the first full moon near the spring (vernal) equinox which is defined to start on March 21. The first moon of the naming, called the Egg Moon, is determined according to the calendrical rules set down for the computation of Easter. On such occasions as there are four full moons in a season, the third full moon is called the Blue Moon. The third is selected instead of the fourth so as not to confuse the naming sequence of several of the other moons. For example, the last full moon in Fall is called the Moon Before Yule while the next full moon, the first one in winter, is called the Moon After Yule.

According to the Maine almanac there are no blue moons in 1999. The next blue moon will occur on February 19, 2000. In other words, there are four full moons coming next winter.

Al Gore's Faith In God, Despite Geocentricity[2]

In his run for the presidency of the United States, Marxist Vice President Al Gore threw a sop at the "Christians" of the United states the other day when he told a group of seven reporters at the White House on 16 July that the "purpose of life is to glorify God." "Faith is the center of my life. I don't wear it on my sleeve. I think the purpose of life is to glorify God. I turn to my faith as the bedrock of my approach to any important question in my life."

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1. Olson, D. W., R. T. Fienberg, R. W. Sinnott, 1999. "What's a Blue Moon?" *Sky and Telescope,* **97**:(5), 36-38.

2. This report originates from Sara Fritz, working for the *St. Petersburg Times,* who was at the Friday, July 16, 1999 Whitehouse session. The story appeared in the 20 July issue of *WorldNet Daily,* (www.worldnetdaily.com).

"It's true that some people are still uncomfortable with a faith-based vocabulary," Gore told the reporters. Gore noted that in recent years many scientists and theologians have been trying to bridge the gap between the two disciplines.

"This is not any great blinding insight from moi," Gore said. "People have known for years that you can have the Earth circle around the sun and still believe in God."

Note that Gore recognizes that the moving earth is unscriptural. His message seems to be that you can believe in God without believing God. There is, after all, a difference between *believing in God*, and *believing God* (James 2:19).[3]

Now the question arises, which God? In Al Gore's case it is clear from his book, *Earth In the Balance*, that his is not the Judeo-Christian God encountered in the *Holy Bible*, but the chief of the pagan gods and goddesses of the New Age, Lucifer. How many Laodicean Christians will be fooled by this press release into thinking Al Gore is truly religious? I shudder to think!

Who Invented the Telescope?[4]

The Assyrians, and not Galileo, invented the telescope, and used it to observe the stars and develop astrology, a book by an Italian academic claims.

Giovanni Pettinato, Professor of Assyriology at La Sapienza University, in Rome, said his theory was based on artifacts kept in the British Museum. They include a lens made of rock crystal found by the British archaeologist A. H. Layard in 1850 in Nineveh, capital of the Assyrian empire, now in Iraq.

Prof. Pettinato said the lens acquired a whole new meaning if considered in the context of Assyrian cuneiform tablets which originated in

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3. James 2:19 "Thou believest that there is one God; thou doest well: the devils also believe, and tremble."

4. Johnston, Bruce, 1999.   "Astrologers of Nineveh 'Invented Telescope,'" *Electronic   Telegraph*, issue 1467, 1 June, www.telegraph.co.uk.

the royal archives in Nineveh and are not in the British Museum. Their translation was published in 1992.

Dating from about 750 B.C., they listed goods that had passed through various offices of the Assyrian court, including "lenses" and "tubes of gold." Other documents said the lenses were used by the court astronomers and had the purpose of "enlarging the eye."

In his new book, *La Scrittura Celeste* ("The Heavenly Scripture"), Prof. Pettinato dedicates a chapter to his theory that the Assyrians used the telescope. The observations by ancient astronomers could not have been made with the naked eye, he says. "The first true compendium of astronomy is Babylonian, and certainly dates back beyond 1000 B.C.," prof. Pettinato was quoted as telling Milan's Corriere della Sera. "In his work 72 stars and constellations are listed, including planets."

He adds that more than 4,000 cuneiform texts on astronomy have been found. "Among these documents, which list the names of no fewer than 4,000 stars, there are to be found texts showing how to calculate the movement of the sun, the moon, and the five planets then known [Mercury, Venus, Mars, Jupiter, and Saturn]."

To this I might add that the name of Saturn, in Babylonian, describes it as a rayed arch. When the rings are seen fully extended, the Babylonian description is quite accurate. Clearly these ancients knew that Saturn was more than a point of light, and that it was not spherical. This could have been due to having a telescope, as Pettinato suggests, or it could have been ascertained by sharp-eyed individuals.

By the way, most of you have probably never heard of Layard, the archaeologist mentioned in the article. Layard was the greatest archaeologist of the nineteenth century, if not of all time. He is denied his due respect, however, because he used the Bible to find his archaeological sites. In so doing, he kept embarrassing his atheistic contemporaries who dismissed the Bible's description of Nineveh as exaggerated myth. Layard kept proving them wrong. Today's archaeologists are even more vehemently against using the Bible for archaeological exploration. Thus few have ever heard of Layard.

Universe: Rotate or Expand

There are two rotations which the universe can experience. One is the geocentric rotation in which the universe has to rotate once a day in order

for atomic matter to exist in the firmament, the sea of Planck particles also variously called maximons, or vacuum state fluctuations, or virtual particles. Regardless, the rotation is necessary though one has to take it on faith that the earth is on the axis of rotation. In this first rotation, the universe turn as if it were a solid body.

The second rotation is much slower. In it the universe rotates about some unknown point once every 13 to 15 billion years. Although the former rotation is taboo among astronomers, the latter, not needing to have the earth at its center, is more acceptable. From time to time we report on new proposals for this second kind of universal rotation.

The latest model is spawned by astronomers' attempts to avoid the "singularity" of the big bang. A *singularity* is a point or time in which properties such as density attain infinite values, something which is physically impossible. Thus the big bang had to start as a point of zero size and infinite density. Well, such a point would never expand, but evolutionists "know" that the universe expands, so they avoid the singularity by supposing that the universe started at about the size of an atom and not at time zero, but at a fraction of a second (10^{-44} second) after time zero. Furthermore, we are not to ask what existed before that.

Although scientists appeal to as-yet-undiscovered laws of quantum gravity and other bizarre ways around the singularity, all attribute the event into the unknown, that is, they take it on faith that someday we'll find the answer. I've seen this kind of intellectual stupidity before, when a learned professor, when confronted by the world-wide distribution of Joshua's long day and night (with even a long sunset), countered with the statement "Well, the science of phenomenology is just a new science." In other words, rather than accept the inescapable reality of Joshua's long day, he would rather believe that "some day" the "science" of phenomenology would show him how all the people over the entire globe could hallucinate a long day, night, or sunset, in unison for an entire day, all geographically correct and indistinguishable from reality. Sure, and how do we know we're not all still hallucinating 3500 years later?

Saulo Carneiro of the Federal University of Bahai in Brazil, used a rotating model of the universe, derived from Einstein's general theory of relativity, to escape the big bang singularity by having the universe rotate for an indefinitely long period. According to the physicist, the rotation could have suddenly become an expansion thanks to a "vacuum phase transition" involving the release of energy generated by quantum fluctuations. Translation? The firmament did it.

Carneiro's calculations have the firmament-bound universe rotating once every 13 billion years. It stopped rotating and expanded 11 billion years ago. The law of the conservation of angular momentum means that there should be evidence of that today. Carneiro points to the a relationship observed in the fifties and sixties and formalized in the seventies which related the angular momentum (spin energy) of an object such as a star, star cluster, galaxy, cluster of galaxies, universe(?) and its mass.[5] He computes that each celestial object should have an angular momentum proportional to its mass raised to the 1.7 power. This is close to the observed value which ranges from 1.3 to 1.7 depending on how matter (density) is distributed within the object. Indeed, it was this relationship which Carneiro purports to derive, which led me in reverse to the recognition of the firmament and the necessity of the universe to rotate once a day in order to exist.

Carneiro submitted his paper for publication to *Classical and Quantum Gravity*. Of course, according to the Bible the heaven and the earth came before the firmament and, indeed, light was created before the firmament. Presently I'm convinced that the firmament is itself derived from the properties of light. Carneiro is, of course, not looking to God but trying to avoid God. He says "The most important aspect of the paper is just that it calls attention to the possibility of alternative scenarios for the evolution of the universe."[6] So does he solve the singularity? Not really, he simply pushes it back into the indefinitely long period before the spinning stopped and the expansion began. You still have a singularity when it comes to the origin of the firmament, for as it is finite in both extent and physical properties, theories about its origin are just as subject to singularities as are theories of the big bang. Besides, how did

5. L. M. Ozernoy, 1967. *Astron. Tsirk*. Nos. 405 and 407.

   L. Carrasco, M. Roth and A. Serrano, 1982. "Density Scaling of the Angular Momentum Versus Mass Universal Relationship," *Astron. & Astrophys.* **106**:89-93.

   Also see J.A. Wheeler and C.M. Patton, 1977. "Is Physics Legislated by Cosmogony?" in R. Duncan and M. Weston-Smith, eds., *The Encyclopedia of Ignorance*. (Elmsford: Pergamon Press), pp. 19-35.

6. Matthews, R. 1998. "Cosmic Carousel," *New Scientist,* 19/26 December 1998 - 2 January 1999, p. 19.

the spinning universe precipitate from the firmament in the first place? And about what axis did it spin? And with respect to what did it spin? ...

Anthropic Principle: the Sun was Created for Man[7]

About every five years our sun spits a giant blob of ionized gasses in the earth's direction. These "coronal mass ejections" or flares, interfere with terrestrial communications and knock out power grids. But we are lucky it isn't worse.

Studies of stars in our galaxy similar to the sun find that they emit *super*-flares about once every century. If our sun sent such a super-flare our way, the atmosphere would glow like a neon tube, our fleet of satellites would be fried, and half the protective ozone layer would disappear in a flash. Earth life would survive — at least for a while.

Our sun, it seems, is favored with anomalous stability, but no one knows why. We are simply lucky![8]

Corliss finishes with this comment: "We also live in a 'lucky' galaxy. The universe is anthropic (i.e., favoring humans) at all levels!

Anthropic Principle: the Milky Way was Created for Man

In the same issue as referenced in the previous quote, but on page 4 under the title "Now We Know Why!" Corliss files the following report and comment:

Circa 1950, physicist Enrico Fermi observed that our galaxy measures about 100,000 light years across, and that a space-faring race could cross it in only 100 million years, even if their starships poked along at only 1/1000 the speed of light. Since our galaxy is about 10 billion years old,

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7. The section is quoted from, I presume since his name no longer appears on the publication, William Corliss, 1999. "Our Lucky Star," *Science Frontiers*, (Sourcebook Project, Box 107, Glen Arm, MD 21057) no. 122, Mar-Apr, p. 1.

8. Seife, Chas., 1999. "Thank Our Lucky Star," *New Scientist*, p. 15, Jan. 9.

the very reasonable question is: If other intelligences (ETs) exist in our galaxy, why haven't they found us by now? Actually, many ETs from many different cultures should be stopping by frequently.

J. Annis, an astrophysicist at Fermi-lab, believes he can explain the apparent dearth of ETs. The problem is gamma-ray bursts (GRBs). they are so powerful that they sterilize those galaxies in which they occur. Presently, GRBs occur in each galaxy about once every 100 million years, but theory suggests that they were much more frequent in the past.

As a consequence, by the time intelligent life evolves anywhere and figures out how to build spaceships, they are zapped by a GRB. Perhaps some do begin exploration of their galaxy, but they don't get very far.[9]

Corliss comments: Any reader of science fiction can come up with other explanations: (1) ETs have been here but find nothing of interest and leave; (2) ETs were here and helped build Atlantis, the Great Pyramid, the Face on Mars, etc.; (3) ETs are here now but avoid human contact; and (4) ETs are here now but look so much like us that we cannot tell the difference! You are free to make up your own explanations!

Yes, we live in a favored galaxy, because life on earth has not been GRB-sterilized for at least three billion years — thirty times the average period between GRBs. Are we simply lucky?

Bouw comments: Of course, since there is a God, and he created the universe only 6,000 years ago, there's no problem insofar as the lack of GRBs is concerned in the Milky Way, but there'd still be a problem for the solar flares. That goes without saying, at least as far a Bible believing scientists are concerned.

So what's the big deal about the above evolutionary scenarios? Simply this, that even given our godless "scientific" models for the creation and evolution of the universe and its parts, agnostic and atheistic "scientists" cannot avoid the evidence that there is something special about the earth, and in particular, its inhabitants. This is the anthropic principle. The best staunch atheists can do to debunk it is to label its adherents silly or stupid. Names are for calling when there's nothing left to say.

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9. Nattewsm R., 1999. "Sorry, We'll Be Late," *New Scientist,* p. 16, Jan. 23.

Apollo 11 Remembered

Thirty years ago man first landed on the moon. Before the team returned to earth they left a reflector on the moon which has been used for the past thirty years to measure the distance between the earth to the moon.

Called the Lunar Laser Ranging Experiment, the reflector is designed to reflect pulses of laser light fired from observatories on the earth. This way we can determine the round-trip travel time of a laser pulse from the earth to the moon and back again.

The reflector consists of a checkerboard of 100 fused silica half-cubes, called corner cubes, mounted in an 18-inch (46 cm) square aluminum panel. Corner cubes reflect a beam of light directly back to the source, which is what makes them useful in lunar ranging.

Two observatories, McDonald Observatory in Texas, and the Observatoire de la Cote d'Azur, near Grasse, France, regularly send a laser beam through a telescope and try to hit one of the reflectors. Even when the beam is correctly aligned in the telescope, actually hitting a lunar reflector is quite challenging. Even though at the Moon's surface the beam is about a mile wide, astronomers compare the task of hitting the reflector to using a rifle to hit a moving dime two miles away. When the beam hits the reflector, the observatories need sensitive filtering and amplification equipment to detect any kind of return signal. The reflected beam is too weak to be seen with by eye, but under good conditions, one photon will be received every few seconds.

Improvements in lasers and electronics over the years have lead to measurements that are accurate to less than an inch (two cm). We now know the average distance between the earth and the moon to better than one part in 10 billion. This is equivalent to determining the distance between Los Angeles and New York to one-hundredth of an inch.

During the course of the last 30 years the experiment has yielded information on several features of the earth and moon. It has shown that:

- Ocean tides raised on earth by the moon directly influence the moon's orbit. Because of the tides, the moon is receding from earth at about 1.5 inches (3.8 cm) per year.
- Lunar ranging, along with laser ranging to orbiting earth satellites, revealed a small but constant change in the shape of the earth. The

land masses are gradually changing after being compressed by the great weight of the glaciers in the last ice age.

• Small-scale variations in the moon's rotation have been measured. They result from irregularities in the lunar gravity field, from changes in the moon's shape due to tides raised in the moon's solid body by the earth, and from the effects of a fluid lunar core.

• The combined mass of the earth and moon has been determined to one part in 200 million.

• Lunar ranging has yielded an enormous improvement in our knowledge of the Moon's orbit, enough to permit accurate analyses of solar eclipses as far back as 1400 B.C. [Unfortunately, human observations of eclipses don't go back nearly that far,—*Ed.*]

• The atmosphere, tides and the core of the earth cause changes in the length of the day of about one thousandth of a second per year.

New, Fast-Spinning Asteroid

A lumpy, water-rich asteroid discovered in June of last year, and designated as 1998 KY26 is about the size of a baseball diamond (100 ft. or 30 m). Recent observations show its day (rotation period) is only 10.7 minutes long.

KY26 passed 500,000 miles (800,000 km) from earth shortly after its discovery. Dr. Steven J. Ostro of Jet Propulsion Laboratory, Pasadena, CA, and a team of astronomers used radar and optical telescopes around the world to generate an image the 30-meter (100-foot), water-rich ball as it twirled through space. Ironically, the asteroid is smaller than the radar instruments used to observe it.

What of the water richness of the asteroid? Ostro reported that the minerals in 1998 KY26 probably contain about a million gallons of water, enough to fill two or three olympic-sized swimming pools. That's a lot of water for an asteroid.

Ostro speculates: "This asteroid is quite literally an oasis for future space explorers," he said. "Its optical and radar properties suggest a composition like carbonaceous chondrite meteorites, which contain complex organic compounds that have been shown to have nutrient value. These could be used as soil to grow food for future human outposts. And among the 25,000 or so asteroids with very reliably known orbits, 1998 KY26 is in an orbit that makes it the most accessible to a spacecraft."

Since this asteroid is one of the earth-grazing asteroids, the question arises about the danger this asteroid might pose to earth. It turns out that KY26's size makes it comparatively harmless if it were to collide with earth. The asteroid would most likely explode in the upper atmosphere and its fragments would fall to earth with minimum damage. Moreover, 1998 KY26 is in an orbit whose shape and low inclination with respect to the ecliptic plane make it unusually easy to intercept.

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 is preaching 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 20% 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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