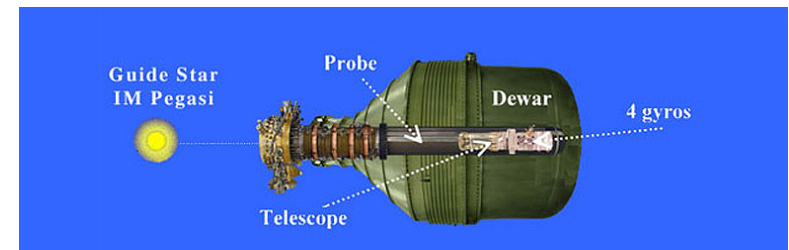
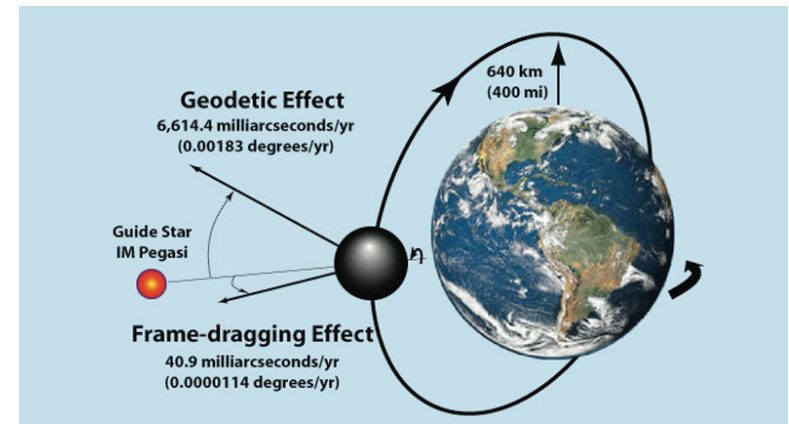


THE BIBLICAL ASTRONOMER

SUMMER 2007



GRAVITY PROBE B

Gravity Probe B was to be a straightforward experiment: one year of collecting data and a year of data reduction. The reality is much harder than that. Read more about it in the “Panorama” article in this issue.

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.** We sold this same video 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, (\$35 outside the USA). 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: Gravity Probe B started out pointing to the guide star. To where it ended up pointing was a complete surprise. Find out more in this issue's "Panorama."

THE BIBLICAL ASTRONOMER

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EDITORIAL

At last, the Summer issue of the *Biblical Astronomer*. What happened to the Spring issue? Well, the Spring issue's cover was mislabeled "Winter," that's what happened. As usual over the last year or so, this issue is late. The Fall issue, due out in October, will hopefully be done in time.

In this issue we begin our Conference coverage. We start with an overview of the Conference and follow with two introductory papers that were not presented at the conference but will provide background to your editor's paper which was presented at the conference. Few of the presenters were prepared to have publishable papers but their transparencies and PowerPoint presentations will be available on the web site within the next few months.

In addition to the Conference coverage we include a short piece by Dr. Robert Sungenis, the Roman Catholic co-author of *Galileo Was Wrong*. He has been working on the second volume, entitled *Galileo Was Wrong: the Church was Right*; and in the course of researching it, he came upon the information covered in the article. We also reprint a short letter of geocentric import that was written by Amnon Goldberg, D.D.S., to the editor of *New Scientist*.

QUOTABLE QUOTES

Regarding the recent discovery of dinosaur flesh with a measurable amount of Carbon-14:

[Let's] put some (quick and dirty) numbers on the situation. The half-life of carbon-14 is 5730 years. The dinosaurs became extinct ~65 million years ago. Therefore any carbon-14 has been through 11343 half-lives so there is $1/(2^{11343})$ of the original carbon 14 atoms; or to put it another way one out of every $3.8E10^{3414}$ (i.e. a number over three thousand digits long) original carbon-14 atoms would remain. This means that even if the T-Rex was made of nothing but carbon-14 much less than one atom would remain.

—Anonymous

Stress is when your gut says, "No way" and your mouth says, "Sure, no problem."

—Anonymous

Cursed be the love for whose sake the Bible must be put to the stake.

—Martin Luther

EARTHY PHILOSOPHY

Amnon Goldberg, M.D.¹

Tel Aviv, Israel

The letter quoting Ludwig Wittgenstein on Geocentrism (Letters, 23 March 1996, p.64) reminds one of Bertrand Russell's observation:

“Whether the earth rotates once a day from west to east as Copernicus taught, or the heavens revolve once a day from east to west as his predecessors held, the observed phenomena will be exactly the same: a metaphysical assumption has to be made.”

And in a letter to *New Scientist* (16 August 1979), Darcy Readyhoff, lecturer in navigation at RAF Cranwell, wrote:

“One can of course believe anything one likes as long as the consequences of that belief are trivial. But when survival depends on belief, then it matters that belief corresponds to manifest reality. We therefore teach navigators that the stars are fixed to the Celestial Sphere, which is centred on a fixed earth and around which it rotates in accordance with laws clearly deduced from common-sense observation. The Sun and the Moon move across the inner surface of this sphere, and hence perforce go around the Earth. This means that students of navigation must unlearn a lot of the confused dogma they learned in school. Most of them find this remarkably easy, because dogma is as maybe, but the real world is as we perceive it to be.”

After all, the most straightforward explanation of the zero-velocity result of the Michelson-Morley experiment and the positive-velocity of the Michelson-Gale experiment is that the universe really is going around a fixed Earth!

¹ This letter was originally sent to the editor of *New Scientist* (NewScientist.com) and was printed in issue no. 2028, p. 54 on 4 May 1996.

JOB 37:18¹—The Constitution of the Firmament

Robert Sungenis, Ph.D.

Introduction

In 1615, a Carmelite friar by the name of Paulo Antonio Foscarini was censored by the Congregation of the Holy Office not only for his publishing a book advocating heliocentrism, but also because he maintained in it that the heavens were “very thin and tenuous” as opposed to “solid.” The censor cites Job 37:18 as his proof against Foscarini. Cardinal Bellarmine later used the censor’s information of his condemnation of Foscarini’s book. This was a whole year before Galileo was brought before the Congregation of the Holy Office.

Foscarini’s Copernican Theory

During the 17th century investigations of the Congregation of the Holy Office into the Copernican theory, a Carmelite friar by the name of Fr. Paulo Foscarini was censored in 1615 (prior to the Galileo case) for his heliocentric cosmology. Little known is the fact that he was also censored for his belief that the heavens were “very thin and tenuous.” Among other things, the censor stated:

On page 45 he says that the heavens are very thin and tenuous, not solid and dense. This is clearly contrary to Job 37, “Together with this you have created the heavens which are most solid and spread out like the air.” This cannot be explained as an appearance (as the author indicates) because the solidity of the heavens is not apparent to us.²

Obviously, the Catholic censor was treating Job 37:18 the same way the Catholic Church was treating the geocentric verses – they were all taken at face value and considered factual truth, regardless of what subject matter they addressed. Here we see that even the particulate

¹ Hast thou with him spread out the sky, *which is strong, and* as a molten looking glass?

² The censor’s document is titled: *Judicium de spistola F. Pauli Foscarini de mobilitate terrae* (Lerner in *The Church and Galileo*, p. 24) and the text is provided by Richard J. Blackwell in *Galileo, Bellarmine and the Bible*, pp. 253-254. We have changed “Tobit 37” to Job 37 since Blackwell apparently misread the original Latin.

constitution of the space constituting all of the heavens is not considered a trivial and obscure point that can be ignored. It is regarded with the utmost divine authority and the basis for rejecting Foscarini's whole approach to Scripture. The battle ground here, as we will see in Chapter 4, is: can Scripture be trusted to give us factual information about the cosmos in addition to its already accepted infallible authority on faith and morals? The answer of the Catholic Church of the 17th century was an unequivocal and unqualified "affirmative," as it was for the sixteen centuries prior.

Accordingly, Job 37:18 has some very interesting features that support the censor's contention against Foscarini. The Hebrew sentence reads as follows: מִן תִּרְקֵי ("can you beat out or spread out") לְשָׁמַיִם ("with him") לְשָׁמַיִם ("the sky, the heavens") מִיָּד ("hard") כִּי־מִיָּד ("like a mirror") מִיָּד ("cast"). The first word, תִּרְקֵי, is a verb appearing 12 times in the Hebrew Bible, which normally means "to spread or stretch out" (Exodus 39:3; Numbers 16:39; 17:4; II Samuel 22:43; Job 37:18; Psalm 136:6; Isaiah 40:19; 42:5; 44:24; Jeremiah 10:9; Ezekiel 6:11; 25:6). It is very similar to the noun, רִקִּי, which is translated as "firmament" in Genesis and the Psalms (Genesis 1:6-8, 14-17, 20; Psalm 19:1).

The word, לְשָׁמַיִם is from the root שָׁמַיִם and appears 21 times as either "sky" (Deuteronomy 33:26; II Samuel 22:12; Job 37:18; Psalm 18:11; 77:17; 108:4; Isaiah 45:8; Jeremiah 51:9); "clouds" (Job 35:5; 36:28; 37:21; 38:37; Psalm 36:5; 57:10; 78:23; Proverbs 3:20; 8:28); "heavens" (Psalm 68:34; 89:6, 37) or even "dust" (Isaiah 40:15), with a notable difference between "sky" and "clouds" (II Samuel 22:12; Psalm 18:11). All in all, it carries the idea of a finely-grained substance that fills the sky, and by extension, the rest of the space of the firmament.

The word, מִיָּד appears over 40 times and is translated as "strong" (Exodus 13:9); "mighty" (Exodus 32:11); "hard" (Ezekiel 3:9). The word מִיָּד is from the root יָד and is translated variously as "cast" (Exodus 25:12); "pour" (Leviticus 2:1); "forms" (Job 38:38); "firm" (Job 41:23-24); "attached to" (Psalm 41:8); "molten" (I Kings 7:16). The literal meaning is that the sky, the heavens or firmament, is not a tenuous, vaporous entity. Although ostensibly it is transparent and pliable, on another level (implied is the subatomic level), Job 37:18 indicates the heavens are composed of a super dense material substance. At the beginning of creation it was expanded to fill the firmament, or perhaps became the firmament once it was expanded. As we noted in Volume I of *Galileo Was Wrong: The Church Was Right*, modern science has corroborated these biblical truths with a plethora of scientific data showing that space is not a vacuum but is filled with an extremely fine but extremely dense particulate matter.

The firmament, רָקִיעַ, comprises the entire space between the Earth's surface and the edge of the universe, and into which the stars and other heavenly bodies are placed. This is in distinction to other Hebrew words, such as רוּחַ (*reyach*), which refers to "space" (e.g., Genesis 32:17, not to be confused with רוּחַ (*ruach* = spirit, e.g., Genesis 1:2; Exodus 13:10)) or רַחֲוֵק (*rachok*), which refers to spatial distance (e.g., James 3:4; Psalm 22:2), words that the Hebrew writer did not choose to describe the substance of the heavens. Accordingly, many biblical translators have utilized the English word "firmament" (or its foreign equivalent) for the Hebrew רָקִיעַ in order to denote a firm but pervasive substance to represent the constitution of the heavens (Genesis 1:14, 15, 17, 20; Ps 19:2; 150:1; Ezekiel 1:22-26; 10:1; Daniel 12:3). In Exodus 39:3; Numbers 17:3; Jeremiah 10:9 *raqia* appears as "hammered"; while in Ezekiel 6:11; 25:6 it is "stamped"; as compared to "beaten," "crushed" in II Sam 22:43.

Essentially, Scripture tells us that the heavens are both flexible and rigid. Apparently, Foscarini's censor, by nothing more than a simple declaration from Holy Writ, accepted the dual nature of the firmament, one observable, and the other unobservable, with the latter state being one in which "the solidity of the heavens is not apparent to us." Conversely, a solid-shell model of the firmament, which is popular among more traditional Protestant Biblicists, ignores these atmospheric and celestial dimensions, and consequently, does not do proper justice to the Scriptural language.³

³ See "Is the *raqiya*' (firmament) a solid dome?" at answersingenesis.org/docs/4169.asp, James Holding versus Paul Seely, first published in *Technical Journal* 13(2):44-51, 1999.

CONFERENCE REPORT

The Third International Conference of Absolutes, held at the Hilton Garden Inn at The Woodlands, Texas from 16 through 18 July, is now history. Twenty-three attendees heard seven speakers. A good time was had by all. At the end, we were all sorry that the conference was over and resolved to do it again. Additionally, the hotel staff went out of their way to help in whatever way they could.



Most of the Conference attendees are pictured here. Back row, from left to right: Russell Arndts, Dr. Frank Wolff, Prof. James Hanson, Martin Selbrede, Gordon Bane, David Mitchel, Steve Gaupp, and Rhonda Mitchel. Front row: Dr. Thomas Strouse, J. Timothy Unruh, Dr. E. Christian Kopff, Allan Daves, Michael Berzins, Pastor Joey Faust, Shaughn Larkin, David Mitchel, Judith Larkin, Dorothy Bane, and Dr. Bouw.

The meeting was opened on Monday with a welcome by Martin Selbrede who lives in The Woodlands.

By the luck of the draw, Dr. Bouw spoke first. He presented the case for geocentricity to introduce the topic to those in the audience who were marginally familiar with it. Dr. Bouw spoke two more times during the conference. The second time, on Tuesday, he spoke on Scripture's view of time and related it to the sheets of modern cosmology's Topological Geometrodynamic model. A complete exposition starts in the current issue and will conclude in the next issue. The paper presented in the next issue is the one read at the Conference. The third time was on Wednesday when Dr. Bouw used the Norwalt Orrery to

present geocentric explanations for phenomena commonly claimed to be proofs of heliocentrism.

Dr. Bouw was followed by Russ Arndts who spoke on the problems introduced by the theories of relativity's *gedanken* experimental approach, which he called "Procedural Definitions." He examined the Hafele-Keating experiment in which atomic clocks were flown around the world in opposite directions and the results were claimed to support the theory of relativity. Mr. Arndts pointed to the inaccuracies in the original experiment and noted that it could be done much more accurately today.

Timothy Unruh followed with a presentation on tektites, pieces of glass that were once molten and show signs of ballistic motion through the atmosphere. Mr. Unruh believes tektites are of lunar origin, a theory in which he is not alone. He has a large collection of tektites and brought some of them to pass around at the Conference. On Wednesday, Mr. Unruh spoke again, this time on his theory for the origin of the asteroids.

After Monday's lunch break, Dr. Frank Wolff presented "Will the Real Number of Epicycles Please Stand Up? or What Are They Really Teaching in Astronomy Courses these Days?" Starting with an analysis that requires 18 epicycles for Copernicus' heliocentric model compared to 15 for Ptolemy's geocentric model, Dr. Wolff showed how Copernican apologists have systematically inflated the number of epicycles in Ptolemy's model. Over the years, the number of epicycles needed for the geocentric model has increased from 15 (or 34) to 40, 80, even 240 epicycles.¹

Dr. Wolff gave two more papers on subsequent days. The second was entitled "Copernicus' Proof of the Earth's Motions" and the third was on Galileo's "proofs" of the Copernican model. All of Dr. Wolff's presentations were well received, particularly his first one. We hope soon to post his slides on the Conference web site.

Martin Selbrede spoke second Monday afternoon. He spoke on the polemics of the Tyconic model and focused on the astronomical technical language encountered in the Greek of James 1:17. His second presentation, on Tuesday, introduced a model of the firmament that could be developed into a geocentric model on which strict geocentric and modified Tyconic advocates could agree.

Monday's last speaker was Dr. Thomas Strouse, whose articles have graced past issues of *The Biblical Astronomer*. His first article, entitled "Absolutes in Scripture and Geocentricity," looked at the key scriptures upon which geocentricity is based. To reinforce his geocen-

¹ Motz, L., and A. Duveen, 1966. *Essentials of Astronomy*, (Wadsworth Publ. Co.: Belmont, CA), p. 135.

tric points, Dr. Stouse took an in-depth look at the Doctrine of Absolutes as presented in Scripture.

Professor James Hanson spoke first thing Tuesday morning. He spoke twice, covering three topics. Each topic was illustrated by a 12-panel page of cartoons. The first topic was on parallax-aberration. It was published last year in two issues of *The Biblical Astronomer*.

His second 12-panel topic covered Geocentric Mechanics. In it Prof. Hanson generalized the definition of force to include the so-called fictitious forces due to inertia. The last topic was Geocentric Gravity in which he spoke on the Newton-LeSage explanation of gravity. In that model, the particles in the firmament, in constant random motion, are shielded by material objects, shadowing the area between two objects, thus pressing bodies together in a force which we call gravity.

Tuesday evening there was a group dinner in a private room for those who desired to partake of it. The food and fellowship were delightful and afforded participants yet another chance to meet others for conversation.

Many of the participants departed Wednesday afternoon, but ten of us boarded a rental van and traveled to NASA Houston where we were met by Phillip Burley. Mr. Burley took six of the participants on a special tour while the rest took the regular tram tour of the NASA site. During the special tour we saw the next shuttle crew's practice maneuvers in the shuttle simulator. We visited the control room where the simulation was being controlled. We also saw the control room where the International Space Station was being monitored, live.

After the tour, most of the tour participants stopped for supper at a Denny's near the hotels.

Many of the participants who flew into the Conference encountered weather delays in their return flights. Some sat on the tarmac for roughly an hour while others were delayed at the terminal. All arrived safely home.

VISTAS IN TIME I: THE PHYSICS

Gerardus D. Bouw, Ph.D.

Introduction

This paper was started back in 2002 and was originally entitled “Inconstant Constants.” However, no matter how exciting and stimulating its start, the original attempts quickly disintegrated into boredom.

This paper focuses on the speed of light. The universe appears to be immense. We speak of billions of light years as if it really took billions of years for the light to reach earth from the most distant objects observed. That such long travel times are not required has been demonstrated numerous times by such luminaries as Parry Moon and Dominica Spencer and John Byl. In 1956 Moon and Spencer showed that the light from a 10-billion light-year distant galaxy could reach earth in as little as 15.6 years.¹ About twenty years ago, Dr. John Byl reduced that to less than ten years.

Still, many geocentrists and creationists think that the universe cannot possibly be so large without making a liar of God in the physical realm. They assume that we know all things perfectly—that the speed of light is sacrosanct—so that God would have to invent a fictitious history of the universe in order to make it appear that light took billions of years to reach earth whereas light could have traveled only as far as 6,000 light years since the creation.

To address that concern, Barry Setterfield postulated that the speed of light was much greater during the creation week. Later he teamed with Lambert Dolphin to reassess and confirm his conclusion that historic evidence shows a steady decline in the speed of light until 1960. But therein lies the problem with his theory. Why would the speed of light stop decreasing in 1960? It is too much of a coincidence to believe that we would detect the decrease in the speed of light just after the time it stopped decreasing. It seems much more likely that our measuring technology is much better than in prior decades.

In 1982 the inflationary universe was introduced into the study of cosmology. According to that theory, for a brief instant in time, the universe’s size inflated some thirty orders of magnitude² while the speed of light was equally increased. The inflationary theory was first proposed some ten years earlier, in 1972, but was ignored because it

¹ What Moon and Spencer did was in the same vein as what we shall do in this paper. Moon and Spencer proposed a Riemannian *metric* (curved space) along which light travels. We shall confine ourselves to Euclidean (flat) space because we are dealing in a realm where space is absolute and relativity is irrelevant.

² In mathematics, an order of magnitude is a factor of ten. Thus two orders of magnitude is a factor of 100 and thirty orders of magnitude is a one followed by thirty zeroes.

showed the entire universe to be at most 100,000 years old instead of the “scientifically acceptable” ten billion or more. By moving the time of the inflation back, closer to the universe’s origin, the billions of years supposition was saved and the theory was rescued from obscurity.

The inflationary model demonstrated that a rapid stretching of space increases the speed of light without affecting time. Prof. James Hanson notes that modern science views time as the ultimate independent variable.³ The net effect is that the universe “ages” even though the length of a second of time remains the same. In a sense, this is the four-dimensional counterpart of the expanding universe. The Big Bang is sometimes described as “an explosion of space instead of an explosion in space.” Likewise, inflation can be likened to an explosion of time instead of an explosion in time.

And that brings us to the essence of this paper. What happens if our units of measure, the inch, the second, the pound, the kilogram, the meter, etc. changes over time? The question is related to how the wavelength of light and radio waves changes as the universe expands. Although the mathematics is algebra with a little bit of multivariate calculus notation thrown in, it should never be forgotten that we are not describing how things normally happen.

Technical Introduction

The analysis presented here is not to be thought of as an attempt to predict the behavior of normal interactions in space and time. Nor is it an order-of-magnitude study (meaning the use of gross approximations). This study deals with fundamental units, namely, units of mass, length, and time. It describes what would happen to the speed of light, say, if the first law of thermodynamics—also called *conservation of energy* and often described as “Energy can neither be created nor be destroyed”—is inviolate and the length of an inch or centimeter were to shrink or expand. In order to conserve energy, other units such as the

³ Independent variables are quantities that drive the dependent variables. Usually the dependent variable is found on the left hand side of an equal sign while the independent ones are on the right side. Philosophically, treating time as the ultimate independent variable means that scientists will have to look to time to make their theories work. For instance, those who do not like the Bible’s account of creation will look to time (billions and billions of years) to account for the creation as a chance event. Sometimes that appears as, “In time we will discover how it ‘really’ happened.” For instance, 25 years ago I spoke with a biologist who thought Joshua’s long day was a hallucination. When I mentioned that Joshua’s long day was a long day for half the world and a long night for the other half and that there was even an account of a long sunset he was flustered. He had assumed that all tales of a long day were of a long period of daylight hallucinated by one man or a mass hallucination. All he could do was to blurt out, “Well, the study of phenomenology is a just new science. In time we’ll know how it happened.” In other words, “I don’t want the Bible to be true, so I’ll put my hope in the thought that in the future someone will come up with an explanation for such a mass hallucination.”

second or the gram would have to adjust. In effect we say that the unit of energy, the erg, is a true constant.⁴ The analysis shows how those units will adjust to any such fundamental change.

Conservation of Energy

We have all seen the formula $E = mc^2$. It is the most famous of equations and the foundation of our analysis. Unit-wise this formula can be stated as $\text{erg} = \text{gm cm}^2/\text{sec}^2$. Doing so is rather confusing so we shall designate the unit of energy as $\langle E \rangle$, the unit of mass as $\langle m \rangle$, the unit of length as $\langle l \rangle$, and the unit of time as $\langle t \rangle$. That way we are not bound to cgs (centimeters, grams, seconds) or mks (meters, kilograms, seconds) units but can deal with any units. Our famous formula now fades from view when we rewrite it as:

$$\langle E \rangle = \langle m \rangle \langle l \rangle^2 \langle t \rangle^{-2}. \quad (1)$$

Remember that this is not the same as $E = mc^2$. It is a statement about the units we use to express that formula.

The changes in units for expression (1) relate as follows (∂ reads “change in” and d as “the total change in”):

$$d\langle E \rangle = \langle l \rangle \langle t \rangle^{-2} \partial \langle m \rangle + 2 \langle m \rangle \langle l \rangle \langle t \rangle^{-2} \partial \langle l \rangle - 2 \langle m \rangle \langle l \rangle^2 \langle t \rangle^{-3} \partial \langle t \rangle.$$

In what follows, we shall drop the unit notation unless it is necessary to the understanding. Doing so for the above statement gives:

$$dE = l t^{-2} \partial m + 2m l t^{-2} \partial l - 2m l^2 t^{-3} \partial t.$$

Conservation of energy tells us that the total change to the unit of energy dE must be zero. In turn, that makes the above restatement read:

$$l t^{-2} \partial m + 2m l t^{-2} \partial l - 2m l^2 t^{-3} \partial t = 0. \quad (2)$$

⁴ This is probably the weakest part of my argument. Even though the conservation of energy is called a law, *viz.* the first law of thermodynamics, yet a certain degree of ambiguity (fiction?) enters the picture when we consider potential energy, which is a relative energy, not absolute. Ludwig Boltzmann and Ernst Mach argued whether energy is real or not, Mach claiming it to be real. From Boltzmann’s point of view, I should work not from the stance of the first law of thermodynamics but from the second law, entropy. The second law can be derived from the first, however, so we continue under the assumption that the only absolute potential energy is bound in the rest mass of a particle and is thus measured relative to the firmament. We shall also ignore the “force times distance” definition of energy.

Physicists avoid this complication by assuming the solution $\partial m = \partial l = \partial t = 0$; a trivial and boring solution. We can simplify equation (2) quite a bit by multiplying both sides by $(t^2 l^2)$:

$$l \partial m + 2m \partial l - 2m l \partial t / t = 0 \quad (3)$$

Equation (3) relates changes in the units of mass, length, and time under the constraint that energy must be conserved. Thus an increase in the centimeter ($\partial l > 0$) must be counteracted by either a decrease in the gram ($\partial m < 0$) or an increase in the second ($\partial t > 0$) or some fit combination of the latter two changes.

Planck's Constant Considered Unit-wise

Planck's Constant is usually denoted as h or \hbar (h-bar).⁵ It comes into play when we need to compute the quantum energy of a photon or the spin of a particle. It is sometimes called "central motion" and Planck, himself, labeled it "linear harmonic oscillator." We can write its unit-wise relationship as:

$$\langle h \rangle = \langle m \rangle \langle l \rangle^2 \langle t \rangle^{-1}$$

We can now write any change in the unit of h as, again dropping the unit notation, taking the partial (∂), and multiplying both sides by (t/l) :

$$(t/l) \partial h = l \partial m + 2m \partial l - m(l/t) \partial t.$$

Subtracting $(m l / t) \partial t$ from both sides gives:

$$(t/l) \partial h - m(l/t) \partial t = l \partial m + 2m \partial l - 2m(l/t) \partial t$$

From (3) we see that the rhs (right hand side) is zero. It follows then that after a bit of algebra and rearranging terms:

$$\partial h = m l^2 t^{-2} \partial t.$$

Converting this to unit notation for a moment we get:

$$\partial \langle h \rangle = \langle m \rangle \langle l \rangle^2 \langle t \rangle^{-2} \partial \langle t \rangle. \quad (4)$$

⁵ Basically, h corresponds to a radius equal to the smallest amount of energy that can be passed from one object to another and h is the corresponding circumference, i.e., $h = 2\pi r$.

This is a particularly important result because it says that any changes detected in h over time means that the unit of time must have changed. Conversely, if we find no change in h in the history of the universe, then time's unit has not changed and time has "flowed evenly" since the creation. Thus, if $\partial\langle t \rangle = 0$, equation (3) becomes:

$$l \partial m = -2m \partial l$$

which says that any change in the unit mass will be countered by twice as large a change in the unit length. In simpler terms, if the gram were to double, then the centimeter would be reduced to a quarter of its current length. (For now we beg the question as to how we could know that happened as there would be no noticeable change.)

Comparing equation (4) with equation (1) shows us that $\langle m \rangle \langle l \rangle^2 \langle t \rangle^{-2} = \langle E \rangle$ so we can rewrite (4) as:

$$\langle E \rangle \partial \langle t \rangle = \partial \langle h \rangle. \quad (5)$$

If we replace the partial change symbol, ∂ by the uncertainty or error symbol, Δ we can rewrite (5) as:

$$\langle E \rangle \Delta \langle t \rangle = \Delta \langle h \rangle. \quad (6)$$

Usually, physicists assume $\Delta \langle h \rangle = 0$, that is, they assume that h is constant. So assuming means that any change in time, t must be counter-balanced by a change in energy, E . In other words, modern physicists hide a change in h with a change in E or a change in t . Thus we arrive at the usual form presented in physics texts:

$$\Delta \langle E \rangle \Delta \langle t \rangle = \langle h \rangle. \quad (7)$$

Converting back from unit notation to regular notation, we can rewrite (7) in its regular form,

$$\Delta E \Delta t \geq h/2, \quad (8)$$

which is called the "Energy Uncertainty Principle" or EUP for short. It is somewhat related to the famous Heisenberg Uncertainty Principle and we shall have much more to say about this mysterious expression in Part III of our paper. For the time being, we shall confine ourselves to the relationship between the expression (5) and the inequality (8).

The classical, albeit erroneous interpretation of this form of the Energy Uncertainty Principle says that no experiment can ever determine both energy and time to any greater accuracy than half a Planck Constant. The Uncertainty Principle has to do with uncertainties in

experimental measurements, not in units. In (8) it is assumed that there is no change in h . In (5), on the other hand, there is no “uncertainty” in the energy, E , because we approached the problem from the assumption that energy is conserved; that is, from the perspective of a closed system instead of an individual particle which may have energy imparted to it from the outside. That is, expression (5) translates (8) to

$$2E \Delta t \geq \Delta h. \quad (9)$$

In the parlance of physics, (8) is local physics while (5) is universal. *The reader must not infer from this that there is here a contradiction of some sort.* Uncertainty in a measurement is not the same as changes in the lengths of the units used to record the measurement. In other words, any inaccuracy in a measurement of one’s height (local physics) is far more likely due to uncertainties in the measuring process than any uncertainty in the exact length of an inch or centimeter (universal or global physics).

Conclusion

In this first of three papers, we looked at the relationship between energy and time. We started with the assumption of conservation of energy: that energy can neither be created nor destroyed by natural processes. Conservation of energy is also known as the First Law of Thermodynamics. We next examined what would happen if the fundamental units of length, mass, and time were changed under the constraint of the First Law. Although we presented the units of length as the gram, centimeter, and second, they could be any set of units, even the Planck mass, Planck time, and Planck length.

In the course of the analysis, we derived a form of the Energy Uncertainty Principle (9), which does not exactly correspond to the standard EUP (8) because the latter is generally interpreted as statistical instead of physical. However, cosmologists have long recognized that the standard EUP cannot be interpreted statistically. The reason is that the standard uncertainty principles require vectors or operators on the left-hand side of their respective statements. Energy can be an operator, *e.g.* as a Hamiltonian, but time cannot. Our analysis thus exposes a flaw in our concept of time as the ultimate independent variable. To put it bluntly, there is a problem with our linear notion of time. There is a problem with the common view that time flows in a straight line from the past to the future and that the border between the two is the present. However, before we can solve that problem, we need to examine time as used in our so-called natural languages; that is, we need to look at the linguistics of time.

VISTAS IN TIME II: THE LINGUISTICS

Gerardus D. Bouw, Ph.D.¹

Preface to the Reader

In Part I we looked at time from a physical perspective. In the course of the analysis we discovered that the popular interpretation of the Energy Uncertainty Principle suffers from several problems, among which it apparently violates the First Law of Thermodynamics. The cause of this appears to center on a misconceived or incomplete theory of time.

This article covers an area that is implicit in all theories but is commonly neglected in their formulation and that involves the field of linguistics. Mathematics works fine as a language to describe the field of physics, but it is not so successful in other human disciplines. On the other hand, all human endeavors and disciplines use “natural” languages. Part I was mathematical, but this part has no equations. It is entirely written in English, a “natural” language. It looks at time from its perception in language, particularly the language of Scripture.

The current article presents research conducted by the author over the course of the past 43 years, most intensively between August 1969 and April 1973, the spring of 1979, and the spring of 2007. The investigation presents the result of literature searches, collection of anecdotes, as well as experimental results and observation of everyday events.

The study investigated the effect on perception of emotion, chemicals such as alcohol, hallucinogens, magnesium pemoline, mood enhancers, diet pills, etc., in short, anything that we could collect in the literature or by first-person testimony of users and abusers of mind-altering pharmaceuticals. Although the investigative team was somewhat interested in, and most of the world’s research at the time concentrated on, the physical damage done to the brain by these various substances, we were primarily interested in the effect of these substances on perception. Physically, we concentrated on neurotransmitters such as serotonin and dopamine. As a result, the study provided a different dimension of time than thitherto recognized in the literature.

Our starting premise in the study was that the aforementioned substances interfered with or replaced the normal neural transmitters of the brain, most specifically Serotonin. Our first task was to devise a

¹ Professor Emeritus, Baldwin-Wallace College, which does not necessarily agree with any of the work presented in this article.

way to measure the effect of substances on the brain's neurotransmitters. The key to unlocking the neurotransmitter's time-mystery was the discovery of speech-based attention span.

The research team consisted of three people. Our short-term memory expert and our most insightful researcher was a schizophrenic named Kim,² who formulated the speech-based attention span concept. Our long-term memory expert was Mack whose chief interests lay in memory enhancement, the expansion of speech-based attention spans. As the third, and only trained observer in the group, the author's job was to record and assimilate the data, as well as conducting the literature searches and developing a comprehensive theory based on said data. In short, I was the generalist.

This article tells the story of the research and presents our findings. It also presents a statistical picture of two lies which were recorded as an offshoot of the research. The author will take the liberty of speaking in the first person in the remainder of this article as it makes the narrative read more fluently. In the third paper, we will present these results in light of modern topological cosmologies.

Introduction to Attention Span

In the fall of 1964 the Astronomy group of the University of Rochester held a picnic for their undergraduate and graduate students. While awaiting the burgers and hot dogs, Dr. Lawrence (Larry) Helfer regaled us with tales of, among other things, his very young son. The one story that stuck with me was a conversation he had had with his son some time earlier in that year. A couple of days prior to the picnic his son had resumed the conversation right from the point it had ceased some six months earlier. This incident introduced me to the concept of attention span—the length of time it takes the mind to either lose the trend of a conversation or wander off in other directions never to return or to pick up the trend of a conversation and continue with it as if there was no intervening period. In this example, the attention span was at least six months. Over the decades since, I have learned what I can about attention span.

For a given individual the attention span is dependent upon the topic. If a person is interested in a topic, his attention span will be longer than for a topic in which he is disinterested. People who tend to have short attention spans overall were once labeled as inattentive or indifferent but are now said to suffer from "Attention Deficit Disorder," as though it were a disease. It may be in some rare cases, but most

² All names have been changed. Since the locations of the other team members are unknown, it has been impossible to obtain permission to use real names.

A.D.D. is due to lack of discipline. Some cases may be due to problems with the neurotransmitters of the brain, perhaps due to damage from exposure to foods or chemicals such as alcohol in the person's environment. Others may be due to trauma to the head. It appears that the vast majority of attention deficit is due to spiritual disorders such as laziness and carelessness resulting from the effects of a lax upbringing, television, offbeat music (referring to tension-inducing rhythm patterns as much as content), and lack of exposure to a wide variety of environments and activities. Once someone's interest is piqued, his attention span increases and much of the laziness disappears.

In 1969 I found several ways to study attention spans. One was through the pathologies of food and drug interactions, particularly over-the-counter flu remedies and the effects of alcohol and "recreational drugs." A second method was through argument, an example of which will be given later. A third method was the study of trauma to the brain, including alcohol and drug-induced damage. Much of the initial study was done at the Cleveland Free Clinic's Together Hot Line, a phone number that could be called by people having drug-related problems. Other evidence, such as the effects of alcoholism and drug addiction on memory, came from the literature, including the writings of LSD guru Timothy Leary.

By 1971 two others interested in the study joined in the research. We had an abundance of subjects. One was Virginia, who could not accurately recall any event for more than three weeks. Another could totally switch through several moods in a matter of seconds. Our data supported the premise that many of the aforementioned substances change the effectiveness of neurotransmitters. We concluded that psychotropic drugs such as LSD, STP, and DMT functioned as neurotransmitters, usually less efficiently except for DMT which occurs naturally in the brain and functions, among other things, in color perception. Most shorten the attention span, possibly resulting in perceptual distortions and hallucinations.

Our most valuable subject, Sam, was extremely capable of suppressing hallucinations and illusions under the influence of hallucinogens. While most of the hallucinogen-taking subjects suffered from permanent patterns³ after taking some five to thirty "trips," Sam's never persisted, even after twice as many "trips"; nor did he have any flashbacks. His observations at extremely short attention spans (half a

³ Patterns are a visual phenomenon in which a person's vision sees patterns (e.g., paisley-like, well-defined groupings which may appear to "boil") in things like carpets or walls. Some filamentary type patterns turned out to be caused by blood vessels over the retina. After about 50 to 60 hours of sleep deprivation, most people will see similar patterns, which may swim or boil in the beholder's eye.

second or less, the realm in which LSD takers such as Timothy Leary experienced “religious experiences”) revealed that there are at least two forms or dimensions of attention spans: a physical one dominated by the neurotransmitters; and an abstract one that is totally independent of the human physical body and may even be cosmic, that is, built into the fabric of space and time. Both act as recording devices, the former in human memory, the latter as a cosmic memory. At the time, it was not clear how these two attention spans meshed, but they were perceived as slices or sheets of time.

Pathologies of Attention Spans

As noted in the introduction, some of our information came from pathological findings. Red, one subject who was not part of our study, decided he wanted to stay up on speed (amphetamines) for an entire month. His first try ended when he decided to surprise his grandmother, with whom he lived, by painting her basement. When he finished the walls, he had more paint, as well as more basement left, so he painted the ceiling and then the floor. With still more paint and more unpainted parts of the basement in sight, he painted the sink, the washer and drier. When his grandmother arrived home he had painted everything in the basement and was busy painting himself. At that point, the “men in the white coats” came and took him away. He had a clear goal in mind, to paint the entire basement. Perhaps if he had been more exact in the statement of his goal, to paint the basement walls, things would have worked out differently (though he might still have painted the windows). But his attention span was so long and so tightly defined that the misstatement of his assignment caused him to go too far. From this, and similar anecdotes, we derived the theory of tangential thought, presented below. (By the way, his second attempt to stay up on amphetamines, which started a few weeks after his release from the sanitarium, lasted two weeks when he was frightened out of it by green stools.)

Attention span problems can also be diagnosed by argumentation or debate. In one classic case the topic was especially emotional for the subject, Rich, who had not really thought his position through. We started on one particular point. Rich ceded me the point and jumped to his next point. After about twenty minutes of jumping from point to point, Rich returned to his starting point having completely forgotten he had ceded that point twenty minutes earlier. I repeated my initial argument and he again ceded the point to me and went to the same follow-up point he had made the first time through. We had gone twenty minutes with him retreating from point to point until he had come full

circle in a radius of 3.2 minutes, which was roughly the average time spent on each point. From that we can learn two things about the nature of the ever-faulty circular reasoning: first, the radius of curvature of the circle is a measure of the attention span of that person on that subject; and second, the circular form derives (i.e., the second and third etc., derivatives of the circle) from an emotional strain,⁴ not necessarily by a deficiency in reasoning.⁵

Pathology of Straight Thinking

In our study of attention spans, we discovered several principles that were later verified by neural network (computer) systems. One of those dealt with “straight thinking.” We are brought up to think that straight thinking is good. If someone reasons to a conclusion we have also reached, we call him a “straight shooter” and say, “he thinks straight.” Technically, the conclusion may be right or wrong but we call him a straight shooter because he agrees with us. Such agreement does not make the conclusion right or wrong. All that straight thinking does is amplify one’s own points of view. Straight thinking, referred to as a “linear transform” in the field of neural networks, may enhance or degrade opinions already formed but cannot teach us anything new.

Non-linear Tangential Thought

Tangential thought is nonlinear.⁶ One can learn from it, but relatively few people know how. We all know people who go off on tangents, and it is generally not appreciated. People who go off on tangents may or may not return to the original thought because of the same problem encountered by Red, a de-amplification of the short-term

⁴ We here posit that the strain results from two orthogonal complex dimensions. The product of two complex constants of the same sign is always negative, thus acting like an attractive force towards the central point, that is, the premise defended by the circular reasoning. We shall have more to say on those dimensions when we consider perception and memory.

⁵ We see this in those who insist that only evolution be taught and that no one be allowed to present any evidence against it. Evolution is based on circular reasoning, *viz.* the fittest survive and those that survive are the fittest and rocks are dated by their fossils and the fossils are dated by the rock in which they are found. Likewise we witness this among global warming alarmists who insist that no evidence against their insane notions be allowed to see the light of day.

⁶ Although we normally think of a tangent as a straight line, tangential thought is nonlinear because the higher-order derivatives are usually non-zero. Thus tangential thought is perceived by derivational principles. That is why highly intelligent people tend to love it and are addicted to it. A tangential thought will allow the derivation of higher order revelations or concepts. Each such derivation (discovery) of a new tangent releases a spiritual energy that feeds the mind and souls of perceiver and speaker alike.

memory which keeps one in context. Tangential thought is tied to correlation coefficients, that is to say, several “large” (meaning requiring long attention spans) concepts running parallel at the tangent point and that can be tied together at that point into a single concept or part of a concept (i.e., a subconcept). Imagine Tarzan swinging from vine to vine. He does proceed to the jungle and goes faster than walking on the ground, but not everyone is adept at it, in particular, not everyone trusts the next vine. Those who do know how to learn from tangential thinking will learn about a variety of topics and, from their own tangents as they listen, will learn a whole lot more than if the speaker had not strayed from the topic. Critics of tangential thought condemn it as *pointless*, however, the point of tangential thought is to stimulate the hearer to thinking, to discover for himself the energy that lies in discovery by derivation.

Points and Thought

Speakers who stay on topic may be said to be pointed. In essence, they go from point to point until they make their ultimate point. Typically, each point-to-point transition is more or less linear, amplifying (bringing to the hearer’s mind) the familiar and then sloping the trend of thought to the next point. This should ideally be an integrative process since the point-by-point exposition should trace a curve the same way a connect-the-dots puzzle reveals a figure. Thus the points can exhibit a turn or twist to reorient the hearer to the next point. Pointed speakers will often alliterate their points. However, alliteration promotes the usage of imprecise wordings, leading to fuzzy, confused thought. As a result, most alliterated presentations, in order to maintain the same starting letter for each point, end up emphasizing the intermediate points and often fail to deliver a single unifying concept at the end. In other words, the alliteration presents each point as if it is itself an endpoint.

Discovery of the Unit of Attention Span

Kim’s expertise in short attention spans led to the modification of units of time as the fundamental measurement of human attention span. Since human thought is highly complex and contextual, it is very difficult to measure the attention span factors of human thought. There are too many variables such as the level of interest, distractions, mood, and patience. Instead, we developed the sentence as a unit of measure. In the shortest attention spans, the unit of measure is a word.

To understand what is meant here, consider the following. Sup-

pose a subject's attention span averages three seconds. We first ask the subject to repeat a sentence that takes five seconds to repeat. (Speaking the previous sentence takes about that long.) What happens is that after the three seconds, the subject has forgotten what he is going to say. It takes about three seconds to get to the first "repeat" in our five-second sentence above. The result may be as follows: "We first ask the subject to repeat the second most important thing in existence the importance of the cosmic all." This takes about seven seconds to say and could have run longer or shorter, depending on the tangent taken. The tendency to over-generalize is typical of such cases.⁷

Another sample sentence was, "What is the color of your shoe? Brown," without pause and where brown is the color of the subject's shoes. The problems arise in that first, the subject's name is not Brown, second, is this a command to color the shoes brown, or third, is this a question or a statement? A catatonic state can thus be induced. The key to understanding attention spans is to consider that the subject forgets the start of a sentence before the end of the sentence is reached. We mentioned earlier that religious experiences happen when the attention span reaches the length of a word. In light of John 1:1, this should not be surprising.⁸ We can thus convert the attention span to normal units of time, that is, seconds, by observing how long it takes the subject's mind to wander off into a tangent or stop without reaching a conclusion.

Long Attention Spans

With short attention spans, we noted that the word and sentence are the basic units useful in measuring them. For longer attention spans we need to use longer linguistic structures such as paragraphs, chapters, volumes, etc.⁹ The best way to analyze long attention spans is by argumentation. Mack and Sam were our experts in that area. Both were decadal planners, Sam even to generations yet unborn.

It is difficult to describe such long attention spans. We can point

⁷ It is as if the short-attention span mind spirals outwards as attention span decreases as if trying to reach or make the most important point. Sam observed that if he spiraled inward he would get paranoid. On one occasion, he allowed himself to spiral into his personal hell. He reported it as two geometric solids, a tetrahedron and a sphere, embedded in such a way that he was trapped, unable to move, in one of the interior apex surfaces by the surface of the sphere. Later we were able, from the context in which he experienced his personal hell, to decipher both the general and specific pictures of his geometrical vision. Sam eventually removed himself from the specific (sinful) situation and found great peace of mind.

⁸ John 1:1—In the beginning was the Word, and the Word was with God, and the Word was God.

⁹ Bouw, G. D., 1996. "Theory of Theories" parts 1 and 2, *B.A* 6(77 & 78):22, 18.

to the extraordinary example of the Rothschild family, who since 1776 have focused on the goal of controlling the world's money supply. Such a long-term view is clearly unusual. Bible believers whose faith is in redemption through the shed blood of Jesus Christ have an eternal view. These make up less than 5% of the world's population. To these, intelligence is not a measure of smartness but of awareness of one's environment; and by environment we refer not to the environmentalist's concept, which is sometimes extremely short sighted and unintelligent.

Of the latter, consider an event that happened on a beach in the Caribbean. The beach is world renowned as an area where sea turtles come to lay their eggs. One day a group of environmentalists, concerned about the preservation of sea turtles, walked along the beach waiting for the turtles to hatch from the sand. One turtle started to break the surface of the sand and a seagull spotted it. To keep the gull from snatching the turtle, and before the guide could stop her, a woman scared the seagull away. A few seconds later the sand erupted with baby turtles, much to the delight of the hovering flock of seagulls who feasted royally upon them. Though well-intentioned and at first emotionally satisfying, the environmentalist was ignorant of the way God had designed the sea turtle's hatchling behavior. If a seagull had been allowed to catch the first baby turtle, the rest of the baby sea turtles would have heard it and stayed put in the sand. However, the fact that the first baby turtle ran successfully on the sand for several seconds signified to the others that there were not many seagulls around; hence they left the safety of the sand. Intelligence tells us that God made the earth to sustain life and that man cannot improve upon it but can only function as a gardener at best and a defiler at worst. In particular, man cannot save each individual creature.

Another example of a deficiency in long-term attention span is found in the catch and release philosophy of fishing. It sounds "oh so good" on the surface but the end thereof are the ways of death (Proverbs 14:12). Recall that in the New Testament when the disciples fished and caught a net full of fish, they would bring it to land and sort the bad fish from the good ones. The bad fish were not returned to the water but were allowed to die on the land, becoming fertilizer for the soil. Today the environmental focus is on catch and release. The good fish are kept while the bad ones are released back into the water. This can spread disease among fish. Fish with obvious sores and ulcers are also released, allowing them to spread their diseases to other fish. By killing all fish caught, one keeps the ratio of good fish and bad fish constant. By keeping only the good fish and throwing the bad ones back into the water, the fish population is increasingly threatened with

extinction. Doing so may make one feel good in the short run, but it is neither good nor intelligent in the end. Likewise, if a fish is below the legal size limit, it is thrown back. Now some may be small because they are young and others because they are genetically small. The effect is that the average fish size reduces over time. This is particularly a problem with commercial fishing nets that are designed to let small fish escape while retaining the large ones. Already fishermen are reporting that their catch is decreasing. The problem is not so much that the population of fish is decreasing but that the genes for largeness are being depleted from the genetic pool. In other words, now the smaller fish predominates. Emotions limit ultra-long attention spans.

Inflationary Argument

We noted above that argumentation or reasoning gives the most information about long attention spans because the ideas under consideration take a long time to think through. We also noted that limitations to intelligence could be due to biological factors or, more significantly, emotional factors. Emotional limits can be extremely dangerous. They can result in a “snow job” once reason breaks down. A “snow job” is a form of sophistry in which an advocate, having run out of reason, attempts to overwhelm his opposition with an emotionally-charged surge of words and claims. The idea is for the surge to overwhelm the opponent so that the job of pointing out that the surge is nonsense is made nearly impossible by the number of individual points, each of which takes time to expose as nonsense to the uninitiated in the field. Geocentrists and creationists run into this all the time. Emotional arguments are flat claims that reduce to nothing more than linear thoughts. They amplify the indefensible position but, being linear, they cannot bring any new evidence to the table. We call this inflationary thought because the flat arguments appear to make the volume¹⁰ of an erroneous idea look infinite or, at least, to have a radius of curvature that appears far in excess of that which the listener’s normal attention span can muster. As a result, the opponent gives up and the one with the lack of evidence claims victory, idiotic though his idea may be.

A Simple Example

Consider the evolution example given in footnote 5. Over the decades creationists have shown evolution to be nonsense so many times in so many different ways that no argument is left the evolution-

¹⁰ Volume here can refer to noise, that is shouting, and it can also refer to inflating one’s idea with specious arguments unrelated to reason.

ist. His only recourse is to keep insisting that evolution is science while opposing ideas are not science. He claims that all “true” scientists¹¹ agree on this: that Special Creation is a myth and that only evolution must be allowed to be presented to the public eye. He is reduced to claiming that Creationism will throw us back into the dark ages. His religion is Humanism and he has forgotten that Humanism is what gave us the dark ages in the first place. His arguments are emotional; he has exhausted his reason and been forced to non-reason, to fiction.

Logic favors the existence of God and his having created the universe in whatever time span he chose. One may argue about whether or not the Holy Bible consists of the words of the Lord, but one’s conclusion will depend heavily on one’s concept of God. In turn, anti-geocentric creationists define “Bible believers” as those who agree with them while geocentrists are dismissed as foolishly deceived or end-time heretics. Humanists perceive that the geocentrist is more consistent than the antigeocentric creationist. Therefore, it all depends on how well one has thought through the implications of being a “Bible believer.”

Conclusion

By looking at how the mind functions, we have discovered that ideas, as expressed in parts of speech, have characteristic times associated with them. We have dubbed that characteristic time “attention span” and regarded it as consisting of sheets, either in the mind or in the cosmos, or both. The sheets reflect the state of the environment somewhat as a mirror reflects the 3-dimensional reality in front of it. The sheets are the topic of the third and final paper in this series on time.

QUOTABLE QUOTE

No greater misfortune can overcome a Christian people than to have God’s word taken from them, or to have it falsified so that they no longer have it pure and clear. God grant that we and our descendents may never be witness to such a calamity.

—Martin Luther
Table Talks, The Scriptures

¹¹ Of course, to such evolutionists, a “true scientist” is an evolutionist. Creationists are excluded from the number of “true scientists.”

PANORAMA

Gravity Probe B Update

Gravity Probe B went into orbit in 2004 to detect two effects allegedly predicted by relativity. One is a shortening of the satellite's orbit because of the strength of the earth's gravitational field (the geodetic effect); and the other effect, called frame dragging, was predicted by Lense and Thirring in 1918 when they looked at what the gravitational field around the earth should look like if the universe spun around it once a sidereal day. Both effects are geocentric effects, predicted because they should happen in a geocentric system; and thus, if relativity is to make every place in the universe look as if it were at the center of the universe—as relativity was designed to do— then these effects should be real.

The satellite consisted of four nearly perfect spheres, spinning gyroscopes, designed to be precessed (have their rotational axis twisted) over the course of its year-long experiment. Magnetic measurements tracked the gyros' rotational axes which, according to Newtonian (non-geocentric) physics should be stable but according to relativistic (geocentric) physics should make the axes drift.

It was expected that the results would be available shortly after the end of the experiment in 2005. However, there has been no word since the announcement that the experiment was complete.

What happened was that the magnetic tracking data discovered an entirely unexpected effect a trillion times larger than the frame dragging effect. The mysterious effect has been tracked to micron-sized (a thousandth of a millimeter) irregularities in the metal casings of the gyros. These were kept at temperatures close to absolute zero and the effect was likely caused by the earth's magnetic field.

Gravity Probe B has confirmed the geodetic effect.¹ The length of the orbit was 1.1 inches shorter than predicted by Newtonian gravity, accurate to 1%.

¹ At the First International Conference on Absolutes in 1978, Ernest W. Silvertooth, a physicist working on the NAVSTAR project, communicated an interesting result. NAVSTAR conducted experiments which led to today's Global Positioning Satellite System. Silvertooth communicated to the Conference that according to Relativity, his satellites produced 15 fewer pulses per day than were actually received on earth. In other words, somewhere in the space between the satellites in orbit and the receivers on earth, 15 additional pulses were generated than were actually sent by the clocks. Clearly this is nonsense, and Silvertooth's point was that the relativity theory of Stefan Marinov, a speaker at the Conference, gave the correct result. It is not clear if the Gravity Probe B satellite contained atomic clocks capable of detecting Silvertooth's observation.

The Lense-Thirring effect was not clearly detected. It is expected to take the rest of this year to filter out the noise produced by the magnetic field. The frame dragging effect is expected to be 0.000011 degree per year. If the result is found, as expected, it will be presented as a triumph for the General Theory of Relativity, but the truth is that the effect was predicted by a geocentric model, not a heliocentric one.

Belief in Creation Still Outstrips Evolutionism

A *USA Today* Gallup Poll taken in May of 2007 reported that evolutionists' shrill propaganda attacks against the creation account of the Bible have not had much effect. The poll also showed a degree of confusion among those polled.

When asked if the statement "God created man within the last 10,000 years," is definitely true 39% of the respondents answered yes. Another 27% answered that it is probably true, giving 68% who believe in a recent creation. When the same question was asked about evolution, 18% answered that it is definitely true and 35% said it is probably true for a total of 53%. This sums to 121% percent, reflecting some confusion on the part of 21% of the respondents. There are differing theories about why 21% of the respondents would answer "yes" to both models. The theory one chooses depends on whether one is an evolutionist or a creationist. Evolutionists spin the result as due to those who believe in science over the Bible but who think that God had something to do with it. Your editor believes that the 21% fall almost entirely in the "probably true" categories and may not be sufficiently versed in both sides of the argument to be able to discern which is true. They may rely on Scripture-illiterate evolutionary apologists like Hugh Ross, who cast doubt on the authority of the Bible by producing a new, "much-needed and vastly improved" Bible version every few months. Add to that the daily assault against the authority of both Scripture and local churches by "ministries" such as Moody, Trinity, and Salem broadcasting networks, and you have a confusion of authorities. So, whom should you believe, the "good, godly" Hugh Ross, the "good, godly" Henry Morris? If in doubt, believe both, after all, why not if they both have reputations of being "good, godly" men.

Now that, my friend, when combined with the absolutely unreasonable belief that there are absolutely no absolutes, is a wellspring of confusion.

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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