

A GEOCENTRICITY PRIMER

Introduction to Biblical Cosmology

by

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Accommodation: the theory which states that God goes along with the commonly accepted story even though he really doesn't believe it.

— Anonymous

PREFACE

Four hundred years ago there raged a debate among the learned men of Europe about whether or not the earth orbits the sun. Until then, it was commonly accepted that the sun, moon, stars, and planets were embedded in crystalline spheres centered on the earth. In the debate, the Biblicists held that the sun goes around the earth once a day as well as once a year; whereas, the secularists maintained that the earth daily rotates on an axis and orbits the sun once a year. This latter idea, called heliocentrism, held the sun to be at the center of the universe. The modern view is that there is no center to the universe.

When geocentrism (the idea that the earth is stationary at the center of the universe) was finally defeated, humanists heralded the victory as signifying the death of the Bible and, consequently, the death of Christianity as a reasonable faith. Many who contributed to the defeat of the Bible's authority on nature were names now famous. Most notable are Copernicus, Kepler, and Galileo. However, the victory was not total, for there have been supporters of geocentrism until this very day. Among the most famous and capable of the early geocentric defenders are Tycho Brahe and three generations of the Parisian astronomers, Cassini.

In the last half of the twentieth century, geocentrism resurfaced in a new, technical form called *geocentricity*. Among its advocates and supporters one finds several with earned Ph.D.s in astronomy, mathematics or physics. Two world-wide organizations serve the geocentric community. One is the Association for Biblical Astron-

omy (A.B.A., formerly called the Tychonian Society), and the other is the *Cercle Scientifique et Historique* (CESHE) which maintains offices in Belgium and France. Differences in whether or not the earth rotates and the size of the universe is what distinguishes the two groups. CESHE is devoutly Roman Catholic and was organized to promote the works of Fr. Fernand Crombette, believes in a small universe with rotating earth; A.B.A., which holds the Holy Bible as its final authority, takes the opposite position.

Now the typical reader may be puzzled by such a resurgence of an old, “long-dead” idea. After all, what are the issues? The essential argument is presented by the chapter quote. At issue is the inerrancy and preservation of Scripture, especially in the light of the pronouncements of science. At stake is the authority of the Bible in all realms, starting in the realm of science.

So, is geocentricity an anti-scientific myth? Is it actually a throw-back to the flat earth? Is it the case, as one creationist group claims, that geocentrists are heretics teaching an end-time heresy? Or is there something to geocentricity, after all? And what does it have to do with Mach’s Principle, which makes geocentricity as plausible as any other center? Such questions constitute the substance of this book. But until all the issues are aired out in the open, geocentrists will just have to stick to Acts 24:14:

But this I confess unto thee, that after the way which they call heresy, so worship I the God of my fathers, believing *all* things which are written in the law and in the prophets.
[Emphasis added.]

My special thanks to the many people who have spurred me on with the writing of this book by their expressions of encouragement and interest. In particular, I wish to thank my wife, Beth, for her support, and Prof. James Hanson for his encouragement and contributions in its writing, and for Gordon Bane for publishing this abridged edition.

Cleveland, Ohio, 8 November 2004

Yea, hath God said...?
— Satan, Genesis 3:1

1

THE SIGNIFICANCE

To hear tell, geocentrism, the ancient doctrine that the earth is fixed motionless at the center of the universe, died over four centuries ago. At that time Nicolaus Copernicus, a Polish canon who earned his living by preparing astrological charts for his mentor, claimed that the sun and not the earth was at the center of the universe. His idea is known as *heliocentrism*. Despite the best efforts of vocal and enthusiastic supporters such as Galileo Galilei, it took almost a hundred years for heliocentrism to become the dominant opinion; and it did so without any scientific evidence in its favor.

The Copernican Revolution, as this change of view is called, was not just a revolution in astronomy, but it also spread into politics and theology. In particular, it set the stage for the development of Bible criticism. After all, if God cannot be taken literally when he writes of the “rising of the sun,” then how can he be taken literally in writing of the “rising of the Son?”

By contrast, there was *geocentrism*, the ancient belief that the earth is located at the center of the universe. Until well into the seventeenth century the thought that the earth was immobile at the center of the universe was taken for granted to be both Biblical and natural. The earth was, after all, central in God’s attention, affection, and purpose. It was to the earth that Jesus Christ came. It was on earth that he died; and it was on earth that he was resurrected for the sins of *man*, not any other creature of the cosmos. It is on earth that those things which “the angels desire to look into” (1 Peter 1:12) are occurring. How logical, then, the idea that the earth is nestled unmoving at the center of all creation?

But the rise of *heliocentrism* in the sixteenth century changed all that. Gradually the heliocentric belief became the dominant belief so that today, except for minor modifications, one is considered scientifically illiterate if one seriously questions heliocentrism at all. Actually, modern science no longer believes the Copernican and Galilean idea that the sun is at the center of the universe. Today's predominant scientific opinion has it that there is no center to the universe. So the modern view is more properly termed *acentrism*, but because of its widespread historical familiarity we will refer to the modern point of view as *heliocentrism* throughout this work.

That the Bible is overtly geocentric has been noted by believer and unbeliever alike. Augustus De Morgan, an agnostic and one of the foremost mathematicians of the nineteenth century, wrote about the immobility of the earth as taught in the Bible:

The question of the earth's motion was the single point in which orthodoxy came into real contact with science. Many students of physics were suspected of magic, many of atheism: but, stupid as the mistake may have been, it was *bona fide* the magic or the atheism, not the physics, which was assailed. In the astronomical case it was the very doctrine, as doctrine, independently of consequences, which was the *corpus delicti*: and this because it contradicted the Bible. And so it did; for the stability of the earth is as clearly assumed from one end of the Old Testament to the other as the solidity of iron. Those who take the Bible to be *totidem verbis* dictated by the God of Truth can refuse to believe it; and they make strange reasons. They undertake, *a priori*, to settle Divine intentions. The Holy Spirit did not *mean* to teach natural philosophy: this they know beforehand; or else they infer it from finding out that the earth does move, and the Bible says it does not. Of course, ignorance apart, every word is truth, or the writer did not mean truth. But this puts the whole book on its trial: for we can never find out what the writer meant, unless we otherwise find out what is true. Those who like may, of course, declare for an inspiration over which they are to be viceroys; but common sense

will either accept the verbal meaning or deny verbal inspiration.¹

Likewise, the famous twentieth-century agnostic philosopher, Bertrand Russell, recognized the crucial challenge which heliocentrism presented to the Bible's authority when he wrote of the Ten Commandments that their authority:

rests upon the authority of the Bible, which can only be maintained intact if the Bible is accepted as a whole. When the Bible seems to say that the earth does not move, we must adhere to this statement in spite of the arguments of Galileo, since otherwise we shall be giving encouragement to murderers and all other kinds of malefactors. Although few would now accept this argument, it cannot be regarded as absurd, nor should those who acted upon it be viewed with moral reprobation.²

Several pages later, Bertrand Russell writes about the demise of geocentrism concomitant with the Bible's authority among Christians. He notes that:

. . . inconvenient Bible texts were interpreted allegorically or figuratively.³

and, still later he credits the Copernican Revolution with the demise of Christians themselves as authorities:

. . . in the period of time since Copernicus, whenever science and theology have disagreed, science has proved victorious.⁴

It is not just the philosophers and mathematicians but also theologians who recognize and admit the inherent geocentricity of the Bible. Rabbi Louis Jacobs of London, for example, while writing of the biblical model of the universe, states that "the Biblical picture is clearly geocentric."⁵ In rare moments of candor, even

Evangelical theologians will also reflect on the problem of reconciling the geocentricity of the Bible with the heliocentrism of modern science:

To illustrate what we mean by unconvincing hermeneutical procedures, we need only recall the way many conservatives seek to harmonize the Bible with the Copernican view of the universe. When Copernicus first abandoned the geocentric model of the universe for a heliocentric one, the church was appalled. Church leaders appealed to Scripture, which compares the sun to “a strong man running a race whose circuit is from one end of heaven to the other” (Psalm 19:4 and 5) and which declares that the “world also is established that it cannot be moved” (Psalm 93:1). From these and similar texts they conclude that the sun moves around the earth which remains fixed in its position. They were correct insofar as this is what the text of the Scripture says. Today, however, we can no longer accept this as a scientific description of what happens. Some conservatives, however, feel compelled to reconcile Scripture with reality. Normally they handle the problem by replying that the passages in the Psalms are poetry. But this hermeneutical observation is more erudite than helpful, for poetry is as clear in its meaning as prose. “The world also is established that it cannot be moved” can hardly be a poetic way of saying that the earth is spinning on its axis and gyrating through space in a path determined by the orbit of the sun. The meaning which the older interpreters gave the text is no doubt the meaning the author intended. To admit as much is simply to apply the fundamental hermeneutical canon of the grammatical-historical method.⁶

From these several quotations it becomes evident just what the central issue is in the heliocentric debate: the issue is that of the authority of the Holy Bible. Did God really write “true truth,” as Francis Schaeffer called it; or did he write an untruth for the sake of convenience so that his word would not appear too cryptic to the

ancient mind? However, this begs the question of why God would make it cryptic for us and not for the ancients. Is the Bible clear in its teachings, or do we need scientific “experts” to advise us as to what “God really *meant* to say” but evidently did not have the wits to say properly, forthrightly or plainly? And if God does write things which are not true truth in those passages which refer to the immobility of the earth, then how can man trust anything else God writes? How could we possibly know what God “meant” to say or what is true if he does not say what he means in the first place? Or is the heliocentric idea merely another version of Satan’s ploy to deceive Eve as recorded in Genesis 3:1, to cast doubt upon the veracity of God’s word? And finally, is the evidence for heliocentrism really as overwhelming as the elementary text books make it seem, or is this one of those cases which Kuhn refers to when he writes of the origins and history of scientific ideas that:

In the case of textbooks, at least, there are even good reasons why, in these matters, they should be systematically misleading.⁷

Finally, over the last century, there has been an explosion of knowledge, unprecedented in history, in the light of which geocentrism has returned in a new form called *geocentricity*. The key distinction between geocentricity and geocentrism is this: geocentrism was, as the suffix *-ism* relates, a divisive idea; divisive in the sense that the model did not allow for a universe in which the parts were free to interact. Before and throughout the Dark Ages, the geocentric model was one where the planets moved on crystalline spheres and where no astral body could leave its particular sphere. Geocentricity, by contrast, is an integrative model which ties the parts of the cosmos together into a whole. Heliocentrism, on the other hand, generally needs additional hypotheses for its explanation of a phenomenon. This aspect of geocentricity we shall examine in the last chapters of the book. But first, we examine the biblical model.

Wherefore, if meat make my brother to offend, I will eat no flesh while the world standeth, lest I make my brother to offend.

— 1 Corinthians 8:13

2

MOTIONS OF THE WORLD

The Bible makes a consistent and important distinction between the world and the earth. It is crucial that this distinction be understood in looking at the motions of the earth and world in scripture. Literally, the word *world* comes from two Germanic roots: *wer*, meaning “man,” and *ald*, meaning “age” or “old.” Job 37:12 best serves to illustrate the difference between the words “earth” and “world” when it states:

And [God’s bright cloud] is turned round by his counsels:
that [God’s clouds] may do whatsoever he commandeth
them upon the face of the world in the earth.

The clause “upon the face of the world in the earth” indicates that if it can be shown that the world does not move, that then the earth does not move either, and *vice versa*. So we must look at the moving and fixed-world passages to see if they are consistent with the motions ascribed to the earth in the Bible.

The Bible references to the immobility of the world can be broken up into two groups: the first group is those which refer to the world to come, while the other group refers to this present world. That these two worlds are not one and the same is clearly presented in Matthew 12:32 where Jesus rebukes those who blaspheme against the Holy Ghost with the words:

...it shall not be forgiven...neither in this world, neither in
the world to come.

It is the latter world that is sometimes referred to as the “world without end” in such places as Isaiah 45:17 and Ephesians 3:21. When it comes to this present world, there are only two references in the entire Bible describing its motion.

Motions of the Present World – Psalm 93:1

The first of the two references to the motion of this present world occurs in Psalm 93:1 which reads, in part:

. . . the world also is stablished, that it cannot be moved.

The word “stablished” may sound strange to the modern ear, but it communicates a very subtle point which, though present in the Hebrew, is lacking in all modern versions which favor the word “establish,” instead. *Stablish* means to stabilize; *establish* means to set up. The rendering in the King James Bible reflects God’s continuing, stabilizing influence on this present world. This makes a lot of sense considering that the world is founded on waters (also compare Genesis 1:9). To use the English word “established” in this verse would allow one to draw the erroneous conclusion that God “set up” the present evil world system and now lets it run down on its own, analogous to the Mohammedan idea of *kismet*. By contrast, the use of the word *stablish* indicates that God is actively keeping the world from the destabilizing effects of evil. As if to underscore that theme, the next verse of Psalm 93 interjects God’s throne into the picture. It is from the throne that righteousness will judge:

Thy throne is established of old: thou art from everlasting.

We shall have more to say on the matter when we talk about the earth as footstool to the throne.

Since Psalm 93:1 indicates that the world cannot be moved, it would follow that it is not now moving. Some heliocentric apologists have suggested that what the verse is *really* saying is that the

earth can neither be deflected out of its orbit around the sun nor be perturbed in its orbit. They maintain that what God *really* means is that the **orbit** of the earth is stable rather than that the **world** is stablished. But is God really such a clumsy grammarian? If that is what God *really meant* to say, then could he not have done so simply by changing the wording a little? After all, what would be so unusual or cryptic about his having written words to the effect of “the circuit of the world”? God does so in Psalm 19:6, for example, where reference is made to the “circuit” of the sun. Or could he not better have written of the “course of the world” instead? Furthermore, proper grammar would have required that God then use such words as “deflected” or “perturbed” instead of “moved” if, indeed, the passage is intended to refer to the earth’s motion through space.

Now there are two problems with the heliocentrists’ interpretations. First, they have confused the world with the earth; and second, they have violated their own heliocentric physics. Consider: the interpretation brought to bear is that the earth cannot be deflected in its orbit. But every physics student knows that the earth is constantly being deflected, being subject to the gravitational influences of all of the other planets. So heliocentrically speaking, the earth is being deflected in its orbit. Even its very orbit is deflected, which deflection is called the *perihelion precession*.

It is interesting to look at some of the interpretations of Psalm 93:1 as conceived by various revisionists. Kenneth Taylor, for example, in his *Living Bible* (which Taylor claims is not a Bible yet he titled it a Bible anyhow), goes so far as to equate the “establishing” of the world with the “establishing” of God’s throne in Psalm 93:2 and promptly declares that the world is God’s throne. This is not only bad translating but also bad exegesis and logic as well. Isaiah 66:1 clearly teaches that the earth is God’s footstool, not his throne; Psalm 11:4 places God’s throne in heaven and not on earth.

Sometimes the revisionists’ attempts around the implicit geocentricity of the passage humorously confounds them. De Witt, in his *Praise Songs of Israel* renders Psalm 93:1 as:

So the world standeth fast; it cannot be overthrown.

Changing “cannot be moved” to “cannot be overthrown” certainly does remove the geocentric overtones of the verse. But notice that “stablished” has been changed to “standeth fast” which reintroduces the geocentricity of the passage, by moving it to the previous phrase.

R. K. Harrison, in his *Psalms for Today*, has decided that the word “world” is not proper English because of the geocentricity inherent in the passage. Instead of what is properly translated as “world,” he opts for a more obscure and archaic meaning for “world,” namely, “universe.” If “universe” is actually meant here instead of “world” then this would be the only such occurrence in Scripture. To assume this on the say-so of heliocentrists is sheer folly. Harrison renders the verse as:

The universe has been established immovably.

So we see that attempts to circumvent the geocentricity inherent in Psalm 93:1 have proven to be rather weak, even comical.

Motions of the Present World – 1 Corinthians 8:13

The second of the two passages which speak of the lack of motion on the part of the world is 1 Corinthians 8:13:

Wherefore, if meat make my brother to offend, I will eat no flesh while the world standeth, lest I make my brother to offend.

Since only the Authorized Bible renders this verse in a geocentric context, it might be objected that this is just bad translating on the part of King James’s translating committee. But there is more involved than simply that. Psalm 12:6-7,¹ in all Reformation translations as well as the old Hebrew lexicons, indicates that the word of God will be inerrantly translated and preserved into every language. All modern versions as well as the Reformation translations

read “forever” instead of “while the world standeth” in 1 Corinthians 8:13. Despite this, the Greek idiom is phrased exactly as we find it in the Authorized Translation. Furthermore, that rendering is consistent with the translators’ resolve to use the same English wording for each Greek wording wherever the context allowed it.

In summary, then, there are no passages which indicate any motion for this present world; and two verses, Psalm 93:1 and 1 Corinthians 8:13, expressly deny any motion is partaken of by this current world.

Motions of the World to Come

If no motion is experienced by this present world, then certainly none should be experienced in the perfect world to come. Here, too, we find only two verses with reference to the new world’s motion. These are 1 Chronicles 16:30 and Psalm 96:10. 1 Chronicles 16:30 reads:

Fear before him, all the earth: the world also shall be stable,
that it be not moved.

The word “shall” here indicates the future tense so that, by itself, the verse cannot be invoked to indicate that the present world is immobile. But it does teach that the world to come will be stable and unmoving.

Again, the suggestion has been made by heliocentrists that the verse refers to the orbit of the new earth; but the same arguments as were presented against that interpretation of Psalm 93:1 can be invoked against using that interpretation here. To indicate heliocentrism, the Masoretic text and all the translations should have used “deflected” or “perturbed” instead of “moved.”

Interestingly, some heliocentrists have totally missed that this verse is in the future tense, and have attacked its validity on the erroneous assumption that the **present world** is here claimed to be immovable.

Psalm 96:10, the second passage about the immobility of the world to come, reads:

Say among the heathen, that the LORD reigneth: the world also shall be established that it shall not be moved: he shall judge the people righteously.

This verse is strongly reminiscent of Psalm 93:1. Note here that the word “established” is used whereas in the former verse the word “stablished” was used. In the light of what we noted earlier in this chapter about the distinction between these two words, the use of “established” here shows that the world to come will be “set up” by the LORD without any process of decay; and that, as such, it will not contain the evil that is inherent in this present world. This conclusion, too, is absolutely Biblical.

Conclusion

In summary, then, there is not one single passage in the entire 66 books of the Bible which would lead one to conclude that the world is now or ever will be moving. Instead, we found one reference which directly indicates that this present world is not moving, and two verses which say that the world to come will not move either. Attempts to reconcile these verses with modern heliocentrism make God out to be a clumsy grammarian and make the reconcilers out to be the clairvoyants of what God actually *meant* to say but did not care to say clearly in the first place.

But if the world does not move, then what of the earth? Let us look at those verses next.

Sanctify them through thy truth: thy word is truth.

— John 17:17

3

MOTIONS OF THE EARTH

Like the biblical passages which deal with the motions of the world, the passages which refer to the motions of the earth can be divided into two categories. But unlike the “world” passages, there are no “moving earth” references to a “new earth.” Instead, the earth passages can be split into those which pertain to the earth as it now is and those which describe the condition of the earth at the last judgment.

Motions of this Present Earth – Psalm 104:5

The most famous and yet among the weakest of all geocentric passages is Psalm 104:5, which states that God:

...laid the foundations of the earth, that it should not be removed for ever.

Heliocentrists have assailed this verse from a number of different angles; yet strangely, none seem ever to have correctly read the verse. Psalm 104:5 is conditional: it is not absolute; for we see the conditional “should” which does not necessarily reflect the way things are. Heliocentrists, having missed that point, have charged that the words “laid the foundations” are improperly translated from the Hebrew; or they claim that the word “removed” is not correct; or they dismiss it as mere poetry, as if poetry never conveys literal truth. One of these charges we have already addressed in the first chapter. The long quote from De Morgan lucidly denotes the logical flaw in the “phenomenological poetry” argument—every word is

true, poetry or prose, or the God of Truth could not have written it. With this, the chapter quote concurs.

What of the first of the charges, the one about the correctness of the “laid the foundations” translation? The critics prefer “set the earth on its foundations.” But this does not in the least affect the implicit geocentricity of the verse. Instead, such an argument introduces an uncertainty about just who, then, “laid the foundations” if God only “set” the earth upon them. As far as the translation is concerned, the correct translation is “laid the foundations” even as we find it in the Authorized King James Bible.

In looking at the second of the arguments, the status of the word “removed,” it is advisable to consult a dictionary. In previous chapters we have noted several cases where so-called archaic or “difficult” words have revealed very subtle shades of meaning, shades which are generally lost on Bible critics. The word “removed” affords us such an example. “Removed” means “to shift out of a designated place.” “Move,” on the other hand, means to change position. Thus “removed” indicates that the earth is located in a place which is special to it: a place especially prepared for it, a “home” for it. In fact, the British still use the word “remove” when a family moves from one dwelling to another. This subtle overtone is also present in the Hebrew and so is exactly translated by the use of the word “remove.” Hence there is no problem with the translation of Psalm 104:5.

In Psalm 104:5, too, it has been proposed that the verse *really* refers to the orbit of the earth, indicating that the orbit is stable and that the earth shall not be “removed” or “moved” out of it. This raises the same objections that we saw in Chapter 2 where that proposal was applied to Psalm 93:1. Again, should God then not have written “deflected” or “perturbed from its course” instead of “removed”? Actually, according to modern astronomy the earth is continually being perturbed in its orbit by the gravitational pull of the other planets in their respective orbits about the sun. Thus the proposal that the verse refers to the orbit of the earth does not at all bring the text into “conformity” with modern science. There is simply no heliocentric view which is compatible with any of the

various attempts around this passage, let alone with the literal truth of it.

Some of the Reformation translations are even stronger in their geocentric import of this verse than is the Authorized Bible. The Dutch *Statenbijbel*, for example, reads “totter” instead of “removed.” Some modern versions also use that word; but in so doing the heliocentrists strongly bring themselves into direct conflict with modern astronomy because, according to astronomy, the earth is perpetually tottering on its axis, a phenomenon known as the *precession of the equinoxes*. The precession of the equinoxes is exactly akin to the tottering of a top or gyroscope. (In the geocentric case the tottering is ascribed to the heavens, not to the earth; but more of that in our later consideration of the scientific evidence.) No matter what the heliocentrist tries, there seems to be no way around the conclusion that the verse is geocentric.

Psalm 104:5 is of such great historical importance in the debate between heliocentrism and geocentricity that private interpretations and attempts at phenomenalization abound. Let us examine just a few of these as representative of all. We start off with De Witt who, in his *Praise Songs of Israel* presents:

... that it should not be overthrown for ever.

Verkuyyl, in his *Modern Language The New Berkeley Version* in modern English, (ML) agrees, rendering it as:

... so that it should never be overthrown.

Taylor’s *Living Bible* (LB) gives the verse as:

... that it should never fall apart.

The *New King James* (NKJV) loses the fine points of the verse with its rendition of:

... so that it should not be moved for ever.

Finally, the *Revised Standard Version* (RSV) offers us:

... so that it should never be shaken.

Quickly let us note that contrary to the RSV, the earth does “shake” during an earthquake; and despite the LB, it will “fall apart” at the end time. At that same time, Isaiah 24:19-20 say that it will be “overthrown”; contrary to De Witt and Verkuyl. We could go on and on and round and round with this; but as was noted, the heliocentrist has completely missed the one “out” afforded him.

Despite the long, hot debate about Psalm 104:5, most of it has been in vain. The resolution of the text does not hinge upon whether or not the earth be “moved” or “removed.” Nor does it hinge on whether or not it is the earth that is referred to in this verse or else its orbit around the sun. The simple fact is that the verse is conditional. Despite the centuries of arguing, the verse neither proves nor disproves geocentricity. All that Psalm 104:5 says is that God “...laid the foundations of the earth, that it *should* not be removed for ever.” The word, *should*, is a conditional word, a word which must not be held to necessarily reflect things as they are.

In short, the text does not say that God laid the foundations of the earth that *it not be* removed for ever. The verse teaches neither geocentricity nor heliocentrism – it merely states that the earth was founded in such a way that it “*should not be removed for ever.*” If an inference must be drawn, however, it is clear that the inference is geocentric.

The Abiding Earth

There are two other verses in the Bible which verses seem to indicate the immobility of the earth. The first of these is Psalm 119:90 which states that:

Thy faithfulness is unto all generations: thou hast established the earth, and it abideth.

The second such passage is found in Ecclesiastes 1:4:

One generation passeth away, and another generation cometh: but the earth abideth for ever.

Both of these verses use the word “abide,” a word which in English is not particularly strong in indicating a stationary earth. Historically, however, both verses have been held to support geocentricity. Interestingly, most of this has been done by Jewish scholars rather than Christian scholars. This is because the geocentric implication of these verses is much stronger in Hebrew than in English. Note that in both Hebrew and English the word “abide” has in it not only the sense of waiting, but also a sense of dwelling, which is consistent with the earlier discussion about the word “removed” in Psalm 104:5.

From all the passages of Scripture to which we have turned thus far no strong case can be built in support of geocentricity, but there is certainly no support for heliocentrism there either. By contrast, there is a set of Bible passages which do express definite motion on the part of the earth. These verses all refer to the earth in the context of the judgment. Yet these passages, although they afford the earth some motion, do not at all help the cause of heliocentrism.

The Moving Earth

There are actually several passages which refer to motions on the part of the earth. The first occurs in Job 9:6 which states that God:

shaketh the earth out of her place, and the pillars thereof tremble.

The second, Psalm 99:1, speaks likewise:

The LORD reigneth; let the people tremble: he sitteth between the cherubims; let the earth be moved.

Isaiah 13:13 contributes:

Therefore I will shake the heavens, and the earth shall remove out of her place, in the wrath of the LORD of hosts, and in the day of his fierce anger.

Finally, Isaiah 24:19-20 is even broader:

¹⁹ The earth is utterly broken down, the earth is clean dissolved, the earth is moved exceedingly.

²⁰ The earth shall reel to and fro like a drunkard, and shall be removed like a cottage; and the transgression thereof shall be heavy upon it; and it shall fall, and not rise again.

Notice that implicit in several of these verses is the notion that this present earth has a *place*, not a *path*. “Place” is hardly a fitting terminology for a moving earth in this context. Again, if a heliocentric context had been intended then would God not have better used such words as “course,” “orbit,” or “circuit” instead of “place”? Such wording is not mystical or obscure and is entirely consistent with heliocentrism. If the earth is to be shaken out of its place at the judgment, then at that time the earth definitely will have motion. This concept of a motion for the earth at the judgment time is entirely consistent with the rest of the scriptures and with all judgment passages which refer to the earth; it is only superficially inconsistent with verses such as Psalm 104:5 where the disallowance of motion is conditional.

Note that in Isaiah 13:13 the use of the word “remove” is fantastically consistent on the part of the Authorized Bible. As was noted earlier in this chapter, Psalm 104:5 teaches that the earth “should not be *removed*”; and we saw that the word “remove” has implicit in it the sense of the earth having a special place of its own.

The word “move” has no such significance, yet here, in this verse, the earth’s place is again in evidence. There is no contradiction between the earth’s being removed, as per this passage, and the statement that it should never be removed in Psalm 104:5, because the latter is conditional. The Bible teaches that it is man’s sin which causes the conditions to change so that the earth will ultimately be removed even though it was founded so that it should never be removed.

Psalm 99:1 does not necessarily say that the earth is now moving, it only says “*let* the earth be moved.” It indicates the removal of something that is presently hindering the earth from moving. Hence this can not refer to changes in the course of the earth through space. It implies an earth that is presently immobile. (Strangely, if taken out of context this is the only verse in the Bible where one might remotely conclude that the earth is currently allowed to move; but heliocentrists fail to pick up on it, choosing instead to alter the wording to read “quiver,” “shake,” or “quake” instead of “move.”)

As far as Isaiah 24:19-20 are concerned, again note the presence of the word “removed” in the immediate context of a dwelling (cottage). Remember, too, that the world, not earth, is said to be immovable in Psalm 93:1. We see the fulfillment of this thought in Revelation 20:11 where it says of the earth:

And I saw a great white throne, and him that sat on it, from whose face the earth and the heaven fled away; and there was found no place for them.

They are replaced by a new heaven and a new earth. The transfer of the inhabitants amounts to a removal.

We might expect that if the earth is to move at the end times, that there might be some reference to the foundations of the earth to emphasize the fact of that motion. Psalm 82:5 does give us such a reference when it states that the wicked:

know not, neither will they understand; they walk on in darkness: all the foundations of the earth are out of course.

The context of this passage, too, refers to the final judgment; for the Psalm begins with:

God standeth in the congregation of the mighty; he judgeth among the gods...

and it ends with:

Arise, O God, judge the earth: for thou shalt inherit all nations.

But what of the use of the phrase “out of course” here? Does this not indicate that the present earth has a course and is thus not standing still? May we not conclude this even though the verse refers to the judgment? Does this not contradict the other verses which indicate that the earth is not moving? We might indeed be able to draw this conclusion if it were not for the simple fact that this verse does not speak of the earth being out of course but instead speaks of the *foundations of the earth being out of course*.

When it comes to the earth’s foundations, we need only consider two: the underlying foundation, which is the Lord Jesus Christ himself, and the core of the earth. The context of the Psalm is the judgment. Christ came to earth to atone for the sins of man and thus to enable the salvation of anyone and everyone who would believe his sacrifice to be both necessary and sufficient. On those who do so falls none of the last judgment. Having the sin of the entire world imputed him would most certainly be “out of course” for the Sinless One. Furthermore, in considering the nature of the earth’s core, which is one of its “foundations,” it is noted that there are fluid motions in the core of the earth. These motions maintain the magnetic field of the earth. Technically, for life to persist, the magnetic field should be relatively strong. There are a number of reasons for this, but the most important is that the magnetic field of the earth deflects cosmic rays (high-energy particles from space akin to radioactivity) which, among other damage, cause cancer. The earth’s magnetic field is decaying at a rate that indicates it should

vanish in one or two thousand years. This, too, when applied to the earth's core, could be viewed as a foundation "out of course."

Historically, no heliocentrist has ever gone on record favoring Psalm 82:5 as proof for a moving earth; and there is good reason for this. No argument on behalf of a moving earth can solidly be based upon this verse. The context is all too clearly that of the last judgment, just as is the case for all Bible references to a moving earth.

Conclusion

The end of the matter is this: the earth is not moving; it has a place of its own. But at the great white throne judgment, the earth will be removed; it will flee away and move for the first time in its history. After these events there will be a new heaven and a new earth; one which is perpetually sustained by the Lord in a way that this present world is not sustained; for that new world will have been bought by the precious blood of the Son of God.

And Hezekiah answered, it is a light thing
for the shadow to go down ten degrees.

— 2 Kings 20:10

4

HEZEKIAH'S SIGN

Three times, in three different places, the Bible tells the story of Hezekiah's terminal illness, his appeal to God for recovery, and God's gracious promise of recovery accompanied by a sign to assure Hezekiah of the truth of God's promise. The heliocentrists, in their attempts to reconcile the miracle with natural "laws," generally concentrate on only one of the three accounts. Let us begin with 2 Kings 20:9-11:

⁹ And Isaiah said, This sign shalt thou have of the LORD, that the LORD will do the thing he hath spoken: shall the shadow go forward ten degrees, or go back ten degrees?

¹⁰ And Hezekiah answered, It is a light thing for the shadow to go down ten degrees: nay, but let the shadow return backward ten degrees.

¹¹ And Isaiah the prophet cried unto the LORD: and he brought the shadow ten degrees backward, by which it had gone down in the dial of Ahaz.

Historically, Biblicists have interpreted this as indicating that the sun backed up ten degrees in its daily path and then continued its regular descent from that point on. That particular day would have been forty minutes longer than a normal day. But not all agree that such is the correct interpretation. Let us examine the evidence.

The Shadow Did It

Considering the above text by itself, it may be argued that since only the *shadow* on the sundial ("dial") is mentioned, only the

shadow on the sundial went back and so the sun was not affected by the sign. That day was, then, a normal 24-hour day as far as the rest of the world was concerned. The sun itself did not change position in the sky; only the shadow went back. Effectively this makes the sign an “optical illusion” which could be witnessed only on the sundial which Hezekiah’s father, Ahaz, had built. If this were all that the Bible says about the event then we would be justified in concluding just that.

Seen Only in Judah

But the 2 Kings account is not the only one in the Bible; we have another mention of the event in 2 Chronicles 32:24 which, though it adds no detail to the event, confirms its reality by saying:

In those days Hezekiah was sick to death, and prayed unto the LORD: and he spake unto him, and gave him a sign.

After Hezekiah’s recovery Berodach-baladan, king of Babylon, sent ambassadors to Hezekiah to inquire about the sign and Hezekiah’s miraculous recovery. Hezekiah regally received them and showed them all the riches with which the Lord had blessed him. This flagrant demonstration of pride displeased the Lord, for in the thirty-first verse of the same chapter we read:

Howbeit in the business of the ambassadors of the princes of Babylon, who sent unto him to inquire of the wonder that was done in the land, God left him, to try him, that he might know all that was in his heart.

Noting the use of the word “land” here, some heliocentric apologists have concluded that the sun only appeared to go back ten degrees just at the sundial site in Jerusalem or, on the basis of this verse, in the entire land of Israel. This makes the sign an optical illusion visible only from Jerusalem or Judea. Given just the two accounts seen thus far, such conclusion may be deemed feasible.

The third account of Hezekiah's sign is found in Isaiah 38:7-8 where we find some additional details:

⁷ And this shall be a sign unto thee from the LORD, that the LORD will do this thing that he hath spoken;

⁸ Behold, I will bring again the shadow of the degrees, which is gone down in the sun dial of Ahaz, ten degrees backward. So the sun returned ten degrees, by which degrees it was gone down.

The eighth verse forces a radical modification of the above conclusions, for it states that it was the sun, not just the shadow, that returned to retrace its path. This eliminates the conjecture that only the shadow on the dial was affected. So we are left with two alternatives: first, that the sun actually went back ten degrees as the Bible says; or second, in light of the reference to the "land" in 2 Chronicles, that the sun appeared to go back only in the land of Judah. But this second alternative discounts the fact that Isaiah 38:8 states quite explicitly that the "sun returned ten degrees." If it was only an optical phenomenon and not a real returning, should it not have been reported as such?

So what of the reference to "land" in 2 Chronicles 32:31? Does this not appear to contradict the sun's *actual* regression implicit in Isaiah 38:8? Note, however, that the 2 Chronicles passage speaks of the "wonder" instead of the "sign." It was the *wonder* that was done in the land. The wonder, as a whole, includes God's speaking to Hezekiah and his miraculous recovery, as well as the solar sign. Since Hezekiah was king of the land at the time, it would certainly be correct to refer to the wonder as being "done in the land" without limiting the scope of the effect of the sign to the land of Judah.

The straightforward reading of the three accounts of Hezekiah's sign indicates that the sign was global in extent and that the sun went back ten degrees in the sky, thus lengthening that day by forty minutes for the entire world. It also indicates that the sun did the moving, not the earth.

Degrees or Steps?

In their efforts to try and make these verses more “in accord with modern science,” the authors of the modern Bible versions have oftentimes compounded the so-called contradictions. One ploy has been to cast doubt on the Hebrew Masoretic text. The translating committee of the *Revised Standard Version*, for example, ignores the Hebrew; and on the basis of one Syriac manuscript, replaces “by which it [the shadow] had gone down on the dial of Ahaz” with “by which the *sun* had declined on the dial of Ahaz.” (Emphasis added.) By changing the subject from shadow to sun they present the ludicrous image of the sun descending the sundial as if it were walking down a series of steps. This linguistic error is repeated in Isaiah 38:8 after adding a footnote to the effect that the Hebrew is “obscure.” Of course it is obscure if one is unwilling to admit to the biblical teaching of geocentricity.

The use of the word “degrees” has also been challenged. In his book, *The Astronomy of the Bible*, Maunder¹ constructed an elaborate scenario based on the use of “steps” instead of “degrees.” Maunder speculated that the “steps” were part of the temple and that the Bible does not really refer to a sundial at all. He proposed that an accidental arrangement of temple pillars cast a shadow on a staircase built by Ahaz as a private entryway from his palace to the temple. In the course of the day, the shadows of the pillars would appear to “ascend” the staircase. In Maunder’s opinion, the “sign” was a routine, daily occurrence and involved absolutely no change at all in the motion of the sun.

There are several problems with Maunder’s speculation. Firstly, Ahaz so hated the Lord that he had the temple boarded up. It is most unlikely that he would build a special staircase linking the palace to the temple. Secondly, there is good reason to doubt that “steps” is the correct translation of the Hebrew word *mahalal*, and that “degrees” is correct.

In English, the word “degree” means 1/360th part of a circle. Superficially, this would seem unique to modern times, for one might reasonably expect that today’s system of measuring angles is

different from that of the ancient Hebrews. One wonders just what fraction of a circle is represented by the Hebrew word *mahalah* (especially since it also appears in the prefaces to many of the Psalms). Bible critics insist that no one can know the correct meaning of *mahalah*, but it turns out that the Babylonians measured angles with a unit of measure whose name is almost identical to the Hebrew word under consideration. Interestingly, that Babylonian unit amounts to $1/360^{\text{th}}$ of a circle. This is exactly the definition of our modern degree. Thus the Authorized Translation is correct and modern versions miss the mark by changing “degrees” to “steps.” Ten degrees means ten degrees after all; and, given that information, we know that the sun turning back ten degrees would lengthen that particular day by forty minutes.

Attempts at Naturalistic Explanations

Attempts to explain away Hezekiah's sign have produced some very unusual proposals. Some have suggested that there was an earthquake at Jerusalem which tilted the ground just enough to tip the sundial by ten degrees so that the shadow appeared to “go back” ten degrees. But then why was there no mention of the earthquake? It would certainly have been noted by Isaiah or by Hezekiah; and would the earthquake itself not have been enough of a sign? Others have suggested that the sundial was improperly mounted; and that as a result, the shadow only appeared to retrace its steps at certain times of the day. But if such were a daily occurrence then it would be no sign at all. Furthermore, no one has ever demonstrated just how a sundial might be mounted so that a shadow would retrace itself during the course of the day: such a “mismounting” is physically impossible. Certainly no regular sundial could accomplish such a feat; although Christopher Schissler of Augsburg, Germany, did in 1578 construct a bowl-shaped sundial which, upon water being poured into its bowl, will make the shadow of a wire go back as much as twenty degrees. It was not built as an explanation of the miracle but as a demonstration device.²

Another proposal is that there was a partial eclipse of the sun that day at Jerusalem. An eclipse of the sun happens when the moon passes between the sun and the earth, and a partial eclipse occurs in those places where the sun is not totally obscured. As a result, the shadow was “off-center” for the duration of the eclipse. Such a proposal may sound good on the surface but there are a couple of serious problems with it. First, if such an effect does happen during an eclipse, then it would at most amount to half of a degree, certainly not to ten degrees. Secondly, the closest eclipse to the usual date for the reign of Hezekiah, an eclipse visible from Jerusalem, was 11 January 689 B.C. That eclipse was over twenty years too late. Hezekiah was long dead by that time, let alone having another fifteen years to live. In short, there is no plausible alternative but to take the text literally.

One could, of course, discount the whole incident of the sign as a fabrication or as an elaboration of a quite natural event. Perhaps it was only local to the land of Judah. (Israel ceased to exist during the reign of Hezekiah, just prior to the sign.) But are there any other accounts of a similar event elsewhere in the world’s folklore? We answer that question in the affirmative.

Hezekiah’s Sign in India

The Hindus have a very long epic poem called the *Mahabharata*. The more widely known *Bhagavad Gita* is itself just a part of that epic poem. In section 146 of the *Mahabharata* there is an account of a war which the Hindus date as having happened about 3102 B.C. The story goes that the war was won by the forces of good because of a ruse by the sun god. It had been foretold that the evil forces would win if the battle did not end by nightfall. The battle proceeded until the sun set in its normal matter and the evil forces began their celebration. Unbeknownst to them, however, the forces of good had made a pact with the sun and as per agreement, the sun retraced its path, rose in the west, and stayed above the horizon for the greater part of an hour. This is precisely what would be expected if the effect were worldwide and

occurred mid-afternoon Jerusalem time (about 3 p.m.). But what of the date? 3102 B.C. is a far cry from Hezekiah's reign which was roughly 700 B.C.

Actually, even Hindu scholars themselves discredit the 3102 B.C. date for the war mentioned in the *Mahabharata*. The majority of modern scholars date the war as happening sometime between 1500 B.C. and 800 B.C. Even at that, a date of 700 B.C. is not at all unlikely; nor is it inconsistent with available evidence. The poem seems to have been written about the sixth century B.C., about the time of Daniel. Even the history of the epic poem is fraught with exaggerated claims, and this is entirely consistent with the degree of unreliability of Indo-Persian historical reporting. For example, one hundred years after being conquered by the Greeks, the Persian historians had no recollection of ever having been conquered by anyone.

And so the *Mahabharata* account appears to describe the same event as Hezekiah's sign but in a different geographical location with an appropriately different time of day indicated.

Hezekiah's Sign in China

Not only do we have the Hindu account of Hezekiah's sign, but also we have a parallel account from China. According to Alfred Forke,³ Huai-nan-tse tells us that in the fifth century B.C.:

When the Duke of Lu-yang was at war against Han, during the battle the sun went down. The Duke, swinging his spear, beckoned to the sun, whereupon the sun, for his sake, came back and passed through three solar mansions.

This would have happened in western China. Further east, in the capitol, it would have been dark throughout the duration of the sign. Hezekiah's sign may account for another ancient Chinese report which states that at the time of Kingcungus, the planet Mars went back three degrees.⁴ There is a problem with the "three degrees" for the regression of Mars. Since the Chinese degree is

$1/365.25^{\text{th}}$ of a circle, the three degrees are not nearly enough to match the ten degrees of scripture; but the measure would have been an estimate since there would have been no background stars relative to which to measure the angle. Furthermore, there may have been a delay of a half hour before a measurement relative to the ground could be made, assuming that the Chinese had both clocks and tables of planetary positions, which seems unlikely. There is yet another account, also mentioned in Forke, which tells that the king of Ch'in promised Prince Tan his freedom if the sun would go back, which it did.

Hezekiah's Sign in North America

If it is the case among the Chinese and Indians that the sun should set and come back up, what about tales of the sun rising and going back down. For these we must search the Americas. Robert H. Lowie reports such a tale: the story of Cottontail.⁵ In the story, Cottontail devised a plan to kill all humanity and the sun. Digging a hole, he waited for the sun to rise. But the sun saw him and quickly dove back under. After a while the sun rose again; and after several failed attempts at killing the sun, Cottontail succeeded in knocking a piece of the sun off with a club. The world was set ablaze and the fire chased Cottontail who eventually found a fireproof weed in which to hide. After leaving the weed, the heat of the ground burned off three of his legs. Hopping on the fourth he built a shelter for the night. During the night it snowed, and the next day the sun changed Cottontail from a man into a rabbit.

The inconsistencies in the story are obvious: men don't have four legs, for example. But embroidery aside, here we do have an account of a sunrise followed by a solar retreat followed by another sunrise a while later: precisely as required by Hezekiah's sign.

The Menominee Indians of Michigan have a tale of the sun rising and then reverting to darkness. In their myth, two brothers were out hunting. One became tired and stopped to rest, but he did not get much rest because the sun kept teasing him. In revenge he obtained a hair from his sister and stretched it across the sun's path.

Upon arising that morning, the sun was snared and started to choke. As a result, the sky became dark. A helpful mouse chewed through the hair and rescued the sun, thus restoring light to the earth.⁶

Yet another account reminiscent of Hezekiah's sign is told among the Indians of Northern California. According to their legend, the sun accidentally fell from the sky just about sunrise. A quick mole caught it before it touched the earth. After some time, help arrived, and they were able to restore the sun to the sky.⁷

Although the actual sunrise, retreat, and re-rising of the sun probably occurred far to the east, it also happened some 2,600 years before these stories were recorded. This is ample time for the tale to have spread. It is important to realize that, with only one exception, there are no sunset, retreat and re-setting tales in North America. The one exception is in California and may reflect a Chinese origin.

Hezekiah's Sign in the Central and South Americas

Turning our attention further south, a hesitation to rise on the part of the sun is recounted in Aztec folklore but appears as part of an account of a very long night. The two events may have been combined into one story later in Aztec history.⁸ In the *Popol Vuh* there is an account of the horizon reddening and a subsequent darkening:

But as it was about to dawn and the horizon reddened:
"Make it dark again, old one!" the buzzard was told.
"Very well," said the old one, and instantly the old one
darkened the sky.⁹

In South America, Zechariah Sitchin¹⁰ reports, Andean legends tell of a "brightening darkness." Although Sitchin takes it as a reference to Joshua's long day, the term "brightening darkness" seems more reasonable for a brightening with a subsequent return to dark-

ness than it is for a lingering dawn. If so, then this could be a reference to Hezekiah's sign.

It is recorded¹¹ that in the Peruvian Andes there stand two ruined towers on opposite hills of a pass. Clamped to the walls there are iron hooks which, tradition has it, held a net designed to catch the rising sun. The local Indians report that the sun was caught once and held with a chain that allowed it only a little bit of up and down motion.¹² How it was released, for how long it was held, or how many times it bobbed up and down is not recorded.

The Peruvian tale seems to have traveled to Polynesia, for the Polynesians tell how their chief god, Maui, traveled far to the east to trap the sun in a net between two walls he had built for that purpose. It has long been suspected that the islands of the Pacific were settled from the east, from South America; the migration of the arrested, struggling sunrise throughout Polynesia to as far north as Hawaii (where Maui used a vine to trap the sun for his mother) lends credence to that supposition. As we shall see in the accounts of Joshua's long day, there is at least one account of the sun being snared at sunset. That tale has not migrated eastward, so that the predominant cultural influence seems to have come from the east.

We see here, as in the North American accounts, that the tales may have moved around geographically and have been embroidered quite a bit; but the basic theme is the same: the sun rose, went back, and then rose again. In some of the accounts it did not retreat far enough to the east to set, but it was very near the horizon. The conclusion is that the terminator (the line separating day from night) ran somewhere through the eastern United States and western South America.

Other Accounts

It is unlikely that many peoples would have noted a lengthened night since only the Egyptians had clocks, and a clock would be necessary to notice a forty-minute lengthening of the night. Few people in the Pacific Ocean basin, for example, would have been awake to see the stars turn back ten degrees.

One may question whether the stars participated in the retrograde motion. If there are remnants of truth scattered throughout folk tales, we may conclude that they did. According to one Greek legend, Zeus settled an argument between two brothers as to which would become king of Mycenæ by reversing the course of the sun, Helios:

Helios, already in mid-career, wrested his chariot about and turned his horses' heads towards the dawn. The seven Pleiades, and all the other stars, retraced their courses in sympathy; and that evening, for the first and last time, the sun set in the east.

Although the time of day at the start of the myth is correct for Hezekiah's sign (about 12:30 in the afternoon in Greece), adding at least seven hours to the day is inconsistent with the sun going back only ten degrees. Perhaps the Greek's time estimate was taken from (or else it inspired) the tract Sanhedrin 96a. According to the tract, God allowed only two hours of daylight the day of Ahaz's death so that there would not be any time for mourning or proper burial of the old king. The tract continues that the ten lost hours were restored by Hezekiah's sign. Despite all of this, the Bible clearly states "ten degrees," not ten hours; and it only takes forty minutes for the sun to move ten degrees.

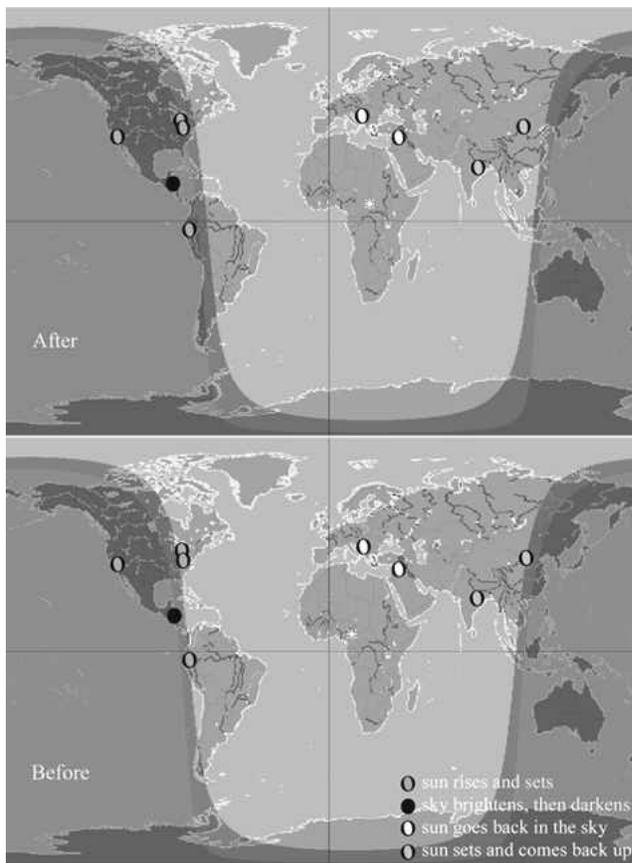
The Time of the Sign

Given all of the above accounts at their respective values, it is possible to plot them on a globe to determine what time of day it was at Jerusalem when the sign happened. Doing so makes several things clear. The Chinese accounts seem the most reliable with the Indian account either originating from the easternmost borders of India or else being imported from Burma or China. It is not uncommon for Indian folklore to be borrowed from the Chinese, so the latter assumption is reasonable. The terminator is in the proper position at about 1:30 p.m., Jerusalem time, give or take a half

hour. Furthermore, it must have been in either late March to early April or else early to mid-September. The early spring is the most consistent with the snow mentioned in the Shoshone tale, for what that is worth.

Conclusion

Given these separate racial accounts, all of which are rather consistent with the day-and-night geography, there is no way to avoid the conclusion that there was a day in history when the day was lengthened by about forty minutes. One may argue as to whether the earth temporarily reversed in its daily rotation or that



the sun and cosmos re-traced their daily paths by forty minutes, but unless one does not fear to call God a clumsy writer, the inescapable conclusion is that the universe, sun included, backed up ten degrees and then resumed its regular motions about the earth.

Figure 1: *Hezekiah's Sign before and after.*

O fools, and slow of heart to believe all
that the prophets have spoken ...

— Luke 24:25

5

JOSHUA'S LONG DAY

After leaving Egypt and wandering in the Sinai wilderness for forty years, Israel entered the land of Canaan late March to mid-April, 1448 B.C.¹ The Israelite leader, Joshua, had a clear-cut task set before him: to completely eradicate all the previous inhabitants of the land. The story is quite familiar to every Sunday school student: how the Israelites marched around Jericho until the city fell, the subsequent defeat at Ai followed by the judgment of Achan, the fall of Ai, and the ruse of the Gibeonites who tricked the Israelites into an unholy alliance. When the surrounding nations heard of that alliance, they attacked the Gibeonites who then sent to Joshua for help. The account of the battle that followed occupies about half of the tenth chapter of the book of Joshua where verses twelve through fourteen tell of the peculiar event which is commonly called *Joshua's long day*:

¹² Then spake Joshua to the LORD in the day when the LORD delivered up the Amorites before the children of Israel and he said in the sight of Israel, Sun, stand thou still upon Gibeon; and thou, Moon, in the valley of Ajalon.

¹³ And the sun stood still, and the moon stayed, until the people had avenged themselves upon their enemies. Is not this written in the book of Jasher? So the sun stood still in the midst of heaven, and hasted not to go down about a whole day.

¹⁴ And there was no day like that before it or after it, that the LORD hearkened unto the voice of a man: for the LORD fought for Israel.

Reactions of the Commentators

The geocentric implication of this passage is obvious. Instead of the sun's motion through the sky being due to the rotation of the earth, here it states that the sun and moon daily move around the earth. The sun is commanded not to move or rise; it is not the earth which receives the commandment to stop turning. Over the last 400 years, this has been the source of much consternation among the commentators and Bible critics – both higher and lower critics. Their reactions fall into two main categories: those who wish to make the event to be a fiction and those who try to accommodate the account to modern science's insistence that the earth rotates daily on its axis. In either case, it is science that is held to be correct, and it is the Bible which is held to be in error and which must be conformed to modern belief.

Those who try to accommodate Joshua's long day to science fall into two groups. The first group includes those critics who try to blame the geocentric "flaw" in Joshua 10 on faulty transmission of the text or, at least, to faulty translation or a misunderstanding of what God meant to say. The second group consists of those who try to make of the event an illusion or else a quite natural occurrence. Generally, both groups will admit of a miracle, but not all will admit to a miracle in the sky; and all make the miracle something less than the Bible claims it to be.

The Fiction Faction

Bible critics who claim that Joshua's long day is a fiction or allegory have contributed a great deal to our understanding of the event. Their main thrust is to disprove the account by showing either that there are no independent accounts and that Joshua 10 stands alone, or else to show that all accounts derive from one sun-stopping myth. The latter, for example, would be demonstrated if all accounts the world over stopped the sun in daytime. As a result of their efforts, we have a wide selection of tales to evaluate; and they do prove useful in understanding Joshua's long day as a

worldwide event. We shall look at those geographically unrelated accounts later in this chapter.

One of the fundamental assumptions of the fiction faction is that the Bible is the product of the human mind. This assumption is really what lies behind the agenda to collect the so-called "sun-catcher myths." If Joshua's long day is pure fiction, then the whole Bible may be relegated to the trashcan as nothing more than a pack of lies and fables. After all, if Joshua 10:12-14 cannot be trusted, what can be trusted in the Bible? The Bible claims itself inerrant. It either is or it is not. The fiction faction has decided that Joshua's long day, if not the whole Bible, is bunk. What's interesting is that most of those who have decided that are not yet ready to banish the Bible to the landfills of history.

Adjusting the Language

Not all Bible critics are ready to throw out the Bible on the basis of the apparent conflict between the geocentric implications of Joshua's long day and modern science's heliocentric leanings. Many bend over backward to accommodate the Bible to science on this and other points. As far as Joshua's long day is concerned, some have suggested that the effect was psychological, that the day only *seemed* supernaturally long. Deane made that proposal with these words:

...the Israelites may well have regarded the events of that one day as equivalent to the work of two, and thus in course of time it came to be believed in current tradition that the day was prolonged to twice its usual length, though Scripture itself nowhere supported the statement.²

There is one basic problem which must be dealt with by all who would wish to maintain that the actual time elapsed involved fifteen hours or less of daylight. Given the geography as related in Joshua 10, the Israelite army as a whole marched well over thirty miles. Any army would be hard pressed to march thirty miles in one day,

let alone to fight as well. The larger the army; the slower it moves. Yet if Deane is correct, not only did the army march thirty miles, but it also fought a full-fledged battle as well, and all in twelve hours of daylight, (it being late March or April when these events took place). Deane, of course, assumes that men and not God authored the Bible. If that is the case, then the Bible can be safely ignored since God cannot be held accountable for the blunders of humanity.

It is very common to find commentators claiming that the Hebrew is mistranslated or misunderstood whenever the Bible disagrees with their notion of what it should say. When applied to Joshua's long day, for example, one proposal is that the words "stand still" are better understood as "be silent" or "be still." Doing so caused the nineteenth century astronomer Maunder to claim that Joshua meant nothing more than that there be an end to the blazing noonday heat. According to Maunder, the miracle was the sudden appearance of storm clouds from the Mediterranean Sea.³ To this Bernard Ramm concurs.⁴

Collett argues the same, claiming that the Hebrew should be translated "be inactive" or "be silent." He then makes this astounding unsoundly unscientific statement:

We have already seen that light is vocal, and it is generally held among scientific men that it is the action of the sun upon the earth that causes the latter to revolve [sic] upon its axis.⁵

In Collett's opinion, light not only speaks, but sunlight shining on the earth is what causes the earth's rotation. So, according to Collett, when the sun stopped shining at Joshua's request, the earth stopped turning because there was no longer any sunlight to keep it turning. Both opinions are scientifically preposterous, especially the latter.

Boling⁶ presents a look at the schizophrenia inherent in the "be silent" proposal. Although he translates Joshua 10:13 as "Sun was *stilled* and Moon stood fixed"; and so admits the interpretation "be still": and although he allows that the Hebrew may mean "to be

clouded over," he believes that Joshua's long day was an eclipse. Significantly, despite the above admission that the Hebrew might mean to "be still," he finally contradicts his own translation by concluding that the Hebrew can only mean "stay put," "hold a position," or "strike a pose."⁷

But the introduction of clouds to cover the sun could not in the least account for the report of the thirteenth verse that the "sun stood still" and the "moon stayed." The only way that the Hebrew word *dawmam* could be translated as "silent" would be if the sun were making so much noise that it was either disrupting the battle or Joshua's concentration. And, lest anyone doubt God's ability to tell us plainly when the sun is covered with clouds, we present Ezekiel 32:7 for his consideration:

And when I shall put thee out, I will cover the heaven, and make the stars thereof dark; I will cover the sun with a cloud, and the moon shall not give her light.

Be that as it may, having Joshua say "stand still" to the sun does not change the content of the thirteenth verse where the sun is said to stand still. Generally, the commentators can get Joshua off the "scientific" hook, but they have no luck at all getting God off the hook in the thirteenth verse; it still reads that the sun "hasted not to go down about a whole day."

Take the Ferar Fenton version from the early twentieth century as an example. Fenton rendered the twelfth and thirteenth verses of Joshua 10 as:

¹² Joshua also called to the Ever-living on that day: "Jehovah! Give the Amorites to the face of the children of Israel!" and he added, "Sun! In the eyes of Israel be still at Gibeon, and Moon! in the valley of Ailan!"

¹³ And the sun and moon stood still, till the nation had mastered its foes! Is not this recorded in the true Record? — that the sun stood still in mid sky, and hastened not to set for about a full day?

Note how Fenton saved Joshua from making the “error” of thinking that the sun goes around the earth by having the words “in the eyes of Israel” be part of the quote rather than the commentary. Fenton may have saved Joshua’s pride, but God is still left “holding the bag” in the thirteenth verse, where the commentator’s words have not been changed. Fenton wrote in his foreword that his version was the “first ever” in which the translator “used his brain”!

The Jewish Commentators

Oddly, only the Gentile commentators “know” enough Hebrew to notice that Joshua told the sun to be still: it seems to have escaped the Jewish commentators. Jewish scholars, both those who believed in the miracle and those who did not, make no such distinction in their writings; even among heliocentrists. One of the earliest Jewish commentators extant is Philo, who is notorious for bad paraphrasing and interpolating his own ideas into the Jewish text and history. His account:

And when Jesus arose to rule over the people, it came to pass in the day wherein he fought against the enemies, that the evening drew near, while the battle was strong, and Jesus said to the sun and the moon: O ye ministers that were appointed between the Most Mighty and his sons, lo now, the battle goeth still, and do ye forsake your office? Stand still therefore today and give light unto his sons, and put darkness upon our enemies. And they did so.⁸

Note, no mention of “be silent.”

Manasseh Ben Israel summarized the mainline Jewish opinions on Joshua’s long day this way:⁹

Rabbi Levi Ben Gershon [Spain, circa 1300], philosophizing in the extreme, holds that the sun did not stop..., it is the agency of the mind that performs miracles...so that the miracle consists in taking revenge in so short a period.

In Spain, in the last half of the twelfth century, Maimonides taught that Joshua's long day was "a most perfect day, that is like the longest summer day." In other words, Maimonides did not believe it was a miracle. On the other hand, most Rabbis did believe in a long day, though they differed in opinion on how long the day ultimately was. Rabbi Joshua Ben Levi of Jerusalem about A.D. 200 advocates 24 hours. Three hundred years earlier, about 100 B.C., Rabbi Eliezer, also of Jerusalem, argued for a day of 36 hours. Rabbi Samuel Bar Nachman who lived around A.D. 320 held to a 48-hour day. So Jewish opinion was as divided as Christian opinion about what constituted Joshua's long day.

The consensus of the early Jewish commentators is clear: none invoke the "be silent" approach. So they agree with Boling's conclusion, mentioned earlier, that "be silent" and its variant forms are not valid translations of the Hebrew. As a result, the validity of adjusting the language to accommodate Joshua's long day to science is thrown into question. There seems to be no basis left for doing so.

It's Only Natural

The second of the accommodation groups is those who advocate a naturalistic explanation for Joshua's long day. We have already seen one such explanation when we looked at the suggestion that the Bible's language be adjusted to mean that Joshua's long day was nothing more than a cloud cover to cool the heat of the day. Related to this idea, and also stemming from the "be silent" interpretation, is the opinion that Joshua's long day is an eclipse of the sun.

Was Joshua's Long Day an Eclipse?

An eclipse of the sun happens when the moon passes in front of the sun as seen from earth. If one is within about 100 miles from

the center of the moon's shadow, one may see a *total eclipse* of the sun, at which point the sun's disk is obscured and one sees a halo around the sun (called the *corona*). An eclipse of the sun still inspires fear and awe among peoples of all nations. As a result, even though Babylonian astronomers were able to predict eclipses at the time of Joshua scholars still consider it reasonable to suppose that Israel's enemies were terrified out of their wits by the sudden appearance of an eclipse. So it is that some critics even claim that it was the eclipse, and not God, that caused Israel's enemies to flee.

Robert Dick Wilson (1856-1930) is regarded by many as the foremost linguistic scholar of the nineteenth and twentieth centuries. In 1930, he published an essay dealing with Joshua's long day.¹⁰ Fully aware of the error of rendering the Hebrew as "be silent," Wilson took another common approach among Bible critics, which is to look to a similar language to get the meaning he wanted. In his case, he looked to the Babylonian.

Before we examine Wilson's work, let us give an example of how this approach can turn out. Many have commented on the similarities between English and Hebrew, on the many Hebrew words which are to be found in English. It has even been said that of all the modern languages, English is the closest to Hebrew. Now suppose I am translating some English text into French and I come upon the English sentence "She hit me!" Now we all know that girls are not supposed to hit people; only boys hit people. Suppose I then conclude that the author of the original English sentence cannot have meant what he wrote. Perhaps a copyist error has crept into the text. On the basis of the similarities between English and Hebrew, I may conclude that they are cognate. Now in Hebrew, the sound "he" means "she" in English, and the sound "she" is equivalent to the English "he." So, since English is cognate to Hebrew, the "correct" translation into French of "She hit me!" must be "He hit me!" Using cognate languages to change interpretations of "difficult" Bible passages is done all too commonly.

After replacing the Hebrew words with their Babylonian meanings, Wilson concluded that:

...the day of the battle had two comings-out of the sun, one at sunrise and the other at midday, when it came out from behind the moon; and that it had two goings-in, one when it went behind the moon and the other at sunset.¹¹

On that basis, Wilson provides us with the following translation of Joshua 10:12-13:

¹² Be eclipsed, O Sun, in Gibeon, And thou moon in the valley of Ajalon!

¹³ And the sun was eclipsed and the moon turned back, while the nation was avenged on its enemies. Is it not written upon the book of Jasher? And the sun stayed in the half of the heavens, And set not hastily as when a day is done.¹²

Now note that the geocentric “error” has been transferred to the book of Jasher. Wilson had thus spared himself the shame and embarrassment of being regarded as an ignorant Bible thumper, for he writes:

I confess to a feeling of relief, as far as I myself am concerned, that I shall no longer feel myself forced by strict exegesis to believe that the Scriptures teach that there actually occurred a miracle involving so tremendous a reversal of all the laws of gravitation. It can readily be understood how the Jewish interpreters of latter times, either through ignorance, or because of their overwhelming desire to magnify their own importance in the scheme of the universe, should have embraced the opportunity that the ambiguous terms of this purely scientific account afforded them to enhance the magnitude of the divine interference on their behalf.¹³

Wilson is not alone in his belief that Joshua's long day was an eclipse of the sun. Boling¹⁴ promotes the eclipse of September 30, 1131 B.C. as the very eclipse. Unfortunately, that is more than 200

years too late, given the biblical chronology.¹⁵ Faulstich is of a different opinion. He prefers the eclipse of April 19, 1421 B.C.¹⁶

Although an eclipse makes sense if Joshua wanted to frighten his enemies and to diminish the heat of the day, there are some problems with this approach. Insofar as the heat of the day is concerned, any relief granted the Israelites would also be granted Israel's enemies. More importantly, an eclipse is of a short duration, lasting at most eight minutes. Since the eclipse was already scheduled in God's timetable, how can Joshua 10:14 report that God had listened to the voice of a man? Faulstich answers this by saying that God had Joshua's request in mind when he created the sun and moon and when he set the moon into orbit around the earth. In any case, there is no miracle involved, only a natural event.

The strongest support the eclipse advocates claim is found in Joshua 10:12, where Joshua tells the sun to stand still *over* Gibeon and the moon *in* the valley of Ajalon. Since there is only a matter of a few miles separating the two sites, how can the verse be literally true unless both the sun and moon were directly overhead? In that case, the moon must have been covering the sun, the very situation known as an eclipse.

In response, it must be noted that Joshua is speaking as a man (verse 14) and thus not speaking an inspired revelation. Joshua could be using the language of appearance, an error which God cannot afford to commit. Note that the date is mid- to late-April. The sun at the time is overhead along a circle no further north than one touching the southern-most tip of the Red Sea. Even at its furthest point north (the first day of summer) the sun is overhead only in a circle running through southern Egypt. Gibeon is a good seven degrees further north. The sun is never overhead at Gibeon and never has been in all recorded biblical history. The second thing we note is that the moon is far larger than the valley of Ajalon. Taking Joshua's statement literally would have flattened the entire scene as the moon came down to rest in the valley. It is evident that Joshua could see the moon "in" the valley in order to tell it to stand still. If the moon were close enough to the sun for an eclipse, Joshua would not have seen the moon until the eclipse was actually under way. Why did he not then tell it, too, to stand still "over" the city

of Gibeon? So it is that our conclusion is that Joshua was speaking phenomenologically when he told the sun to stand still *over* Gibeon and the moon *in* the valley of Ajalon, and that God did not put the words into his mouth in Joshua 10:12. (Also see verse 14.) By contrast, in the thirteenth verse God does not repeat Joshua's error of speaking phenomenologically.

The Refraction Rationalization

In Chapter 5 we saw that one of the rationalizations for Hezekiah's sign was that it was an optical illusion. The same has been proposed for Joshua's long day. Keil and Delitsch are among those who hold that both Hezekiah's sign and Joshua's long day were optical phenomena:

an optical stoppage of the sun, or rather a continuance of visibility of the sun above the horizon.¹⁷

Basic behind this proposal is that the rotation of the earth did not stop but that God miraculously bent the light rays of the sun and moon so that, in Canaan at least, the sun and moon appeared to remain above the horizon. Yet the plain wording of the text is that the "sun stopped" and "the moon stayed"; it does not say that God "kept the light of the sun and moon" shining over the battlefield. Now God could have said that, but he did not.

The Gradual Slowdown

Until about the middle of this century, most critics of Joshua's long day had the earth suddenly stopping its rotation. Such a catastrophic change, unless it were supernaturally controlled, would have to occur very slowly or else the earth would be torn to pieces and the oceans would have left their basins and washed over the

continents. Recognizing this problem in the mid-nineteenth century, Gauss¹⁸ dealt extensively on how God could slow down the earth's rotation for Joshua without causing those earthly catastrophes. In the Twentieth Century, the strongest proponent of the rotation slowdown was Immanuel Velikovsky who proposed that the earth was tidally slowed in its rotation by a close passage of the planet Venus and then sped up again to its original rotation speed when Venus left.¹⁹

Now there is no hint in Joshua 10 that there was a gradual slowing of the diurnal motion, but we can give an analogy which will enable an appreciation of the problem as it is commonly defined. Since the equatorial rotation speed of the earth is about 1,000 miles per hour, which is the same speed as a jet fighter, we can use the slowing of a jet plane for comparison. Suppose there is no turbulence buffeting the jet and suppose that there is a saucer of water in the plane. The problem is to stop the plane without sloshing the water out of the saucer. A little experimentation shows that one may decelerate the dish at about 0.5 miles per hour per second without spilling the water. If so, we conclude that it would take about 35 minutes to stop the earth's rotation without the oceans leaving their basins. Such may work for a saucer, but oceans are much deeper and have much more energy. Small shifts in the ocean bottom have been known to cause huge waves, for example. Still, 35 minutes, though optimistic, is not an unreasonable response time to Joshua's request. A further problem is that the atmosphere does not behave as well as the ocean in this regard. The air near the earth's surface would slow down first, but the air aloft would keep going, dragging the air below with it. The slowdown time needed to avoid 1,000 mile-per-hour winds scouring the earth's equator amounts to days, a most unreasonable time to respond to Joshua's request. Lest the reader conclude that the geocentric explanation has no such problem, we note that the geocentric case suffers the same problems. Insofar as the slowing-down of the earth's rotation is concerned, there is no way to escape the conclusion that Joshua's long day was a miracle.

The Tippie-Top

Increasingly, heliocentric apologists have tried to abstract the meaning of the sun's arrest to such a degree that the actual intent of the passage is virtually unrecognizable. Howard Rand suggested that perhaps the axis of rotation of the earth changed in such a way that for about one day the battle site became the rotational north pole.²⁰ Although not original with Rand, the idea has gained popularity lately because of the influence of Velikovsky.

In the tippie-top scenario, some event inside the earth or else the fly-by of some planetary body caused the earth's rotational poles to move in such a way that, for one day, Joshua's battle site was at the north pole. One obvious problem is that the moon would still be seen to go around the sun during the battle. But the text says that the moon, too, stood still.

Not so obviously, Professor James Hanson of the Cleveland State University in Cleveland, Ohio, has shown mathematically that Rand's is not a possible explanation. Furthermore, Hanson also has shown that the explanation of Joshua's long day as proposed by Velikovsky is physically impossible unless Venus were still orbiting the earth today in an orbit even closer to the earth than is the moon.²¹ In fact, none of the naturalistic proposals put forth to account for Joshua's long day are physically possible. The simple choice remains: Joshua's long day is either a miracle, or it is pure fiction.

The Book of Jasher

There is one other tact which a handful of commentators have taken in order to allegorize or else account for Joshua's long day, and that is to assign parts of Joshua 10:12-14 to the book of Jasher mentioned in the thirteenth verse. It is their suggestion that there never was a miracle, that Joshua merely asked the sun to be "stilled," and centuries later some nameless "editor" incorporated the fictional account of the sun standing still from an uninspired book entitled the *Book of Jasher*. The word, *jasher*, means "up-right" or "just." The term could just as well refer to the Bible itself

as to any other book. Nevertheless, there is a book in existence today which some claim is the very *Book of Jasher* mentioned in Joshua. This seems extremely unlikely, however, since that *Book of Jasher* was apparently written sometime after the time of David as it contains several poems attributed to David. Most Christian commentators believe the book to be a forgery, written because the biblical reference afforded the occasion for its creation. The text of the *Book of Jasher* exalts the heroic deeds of the great men of Israel, but the men exalted therein were not necessarily righteous men, the title to the contrary. Then, as now, a nation's "great men" are seldom righteous and just. It appears, then, that the real *Book of Jasher* referred to in scripture is either the Bible itself, as the book of the upright and righteous, or else it refers to a long-lost book.

Joshua's Long Day around the World?

Having concluded that Joshua's long day is a miracle, we may ask whether or not it was restricted just to the area of Canaan or whether it was global in scope. Certainly a "missing day" would generate considerable consternation among the peoples of the world, provided it was a global event. Are there other accounts of a long day or even a long night? Indeed, we can find stories of a long night as well as a long day. We can even find tales where the sun hung near the horizon for a long time. All the accounts taken together allow us to ascertain the time of day when Joshua told the sun to stand still.

Some of the world's recitations of Joshua's long day are vague and unspecific while others are quite clear. Among the former are those which relate only that the people had knowledge of the concept that the sun, moon, and stars can reverse their motions. An example of one of these is the account referred to by Augustine in *The City of God* where he quotes the *Æneid* about a witch who:

...can reverse the wheeling of the planets, halt rivers in their flowing.²²

Joshua's Long Day in Africa

Toward the end of the last century, Charles Adiel Lewis Totten, then a retired Professor of Military Science from Yale University, published a controversial study on Joshua's long day.²³ The book dealt extensively with Joshua's long day and Hezekiah's sign. In recent times attempts to discredit it center more on the person of Totten than they do on the mathematics and science involved. Totten was the editor of *Our Race*, a publication devoted to the promotion of what today is called "British Israelitism"; although Totten's stance is eminently more realistic and moderate than that taken by that faction today. Robert Olden²⁴ says Totten obtained most of his material from J. B. Dimbleby of South Hackney, England, who was the premier chronologist of the British Chronological Society. Lest Totten be accused of plagiarism, Dimbleby is cited numerous times in Totten's works. Totten has also been accused of worshipping the Great Pyramid of Giza, from which, it is claimed, he received his inspiration for his work on Joshua's long day. Actually, the latter sounds more like Dimbleby, for a reading of Totten's works on the Great Pyramid reveals none of the mysticism implied by the charge.

Anyhow, flawed though some of Totten's works might be, in his book, he relates two independent and geographically distinct accounts of Joshua's long day. One of Totten's sources is a report by the Greek historian Herodotus who wrote that when he visited Egypt, the priests there showed him an ancient manuscript which told the story of a day which lasted about twice as long as a normal day. Now the Egyptians had water clocks at that time so that they could accurately measure the duration of the day, not being dependent on the motion of the sun, moon, and stars as would other peoples around the world. Totten's second account is from the Chinese which we shall present later.

For the Egyptian account, we find that the French classical scholar, Fernand Crombette, translated some Egyptian hieroglyphics which tell of Joshua's long day.²⁵ The text starts out with an edict from the king to exempt from taxation those who had been

victims of a flood some two weeks earlier. Evidently the flood had been caused by an unusually high tide. The cause, according to the Egyptian hieroglyphics, was:

The sun, thrown into confusion, had remained low on the horizon, and by not rising had spread terror amongst the great doctors. Two days had been rolled into one. The morning was lengthened to one-and-a-half times the normal period of effective daylight. A certain time after this divine phenomenon, the master had an image built to keep further misfortune from the country.

Hephaistos. . .grant protection to your worshipers. Prevent the words of these foreign travelers from having any effect. They are impostors. Let these enemies of the sacrifices to the images be destroyed in the temples of the great gods by the people of all classes. Make life harder for these cursed worshipers of the Eternal. Punish them. Increase the hardships of these shepherds. Reduce the size of their herds. Burn their dwellings.

Rameses, our celestial ancestral chief; you who forced these wretched people to work, who ill-treated them, who gave them no help when they were in need: cast them into the sea. They made the moon stop in a small angle at the edge of the horizon. In a small angle on the edge of the horizon, the sun itself, which had just risen at the spot where the moon was going, instead of crossing the sky stayed where it was. Whilst the moon, following a narrow path, reduced its speed and climbed slowly, the sun stopped moving and its intensity of light was reduced to the brightness at daybreak. The waves formed a wall of water against the boats that were in the harbor and those that had left it. Those fishermen that had ventured onto the deck to watch the waves were washed into the sea.

The tide, which had risen high, overflowed into the plains where the herds were grazing. The cattle drowned represented half the herds of Lower Egypt. The remains of abandoned boats broken against the sides of the canals were

piled up in places. Their anchors, which should have protected them, had been ground into them. Quite out of control, the sea had penetrated deep into the country. The expanding waters reached the fortified walls constructed by Rameses, the celestial ancestral chief. The sea swept around both sides of the region behind, sterilizing the gardens as it went and causing openings in the dikes. A great country had been turned into a wilderness and brought into poverty. All the crops that had been planted had been destroyed and heaps of cereal shoots lay scattered on the ground.

The Crombette account is significant for a number of reasons. For one, it tells that the moon “climbed slowly,” which would be correct if the moon kept its orbital speed but stopped its daily motion. This is allowed by Joshua 10:13’s weaker statement on the moon: “and the moon stayed,” instead of the stronger “stopped,” for “stay” may mean “to linger or wait to witness an event.” Likewise, Crombette’s interpretation that the moon was going to the spot where the sun had risen is thus explained by having the moon continue its orbital motion and its being located west of the sun, perhaps near last quarter.

Whether or not the tides mentioned in translation were really tides or a storm swell cannot be said. It is possible that the tidal bulge kept moving, but it is unlikely that the narrows of the Nile delta and the narrowness of the canals mentioned caused a bore wave, for then such should always have been the case under normal tidal conditions. It is possible, though unlikely, that the breakup for the tidal bulge may have caused waves which interfered with each other and that Egypt’s dikes might have broken at one or two points by constructive interference, thus the resulting flooding. But it seems more likely that the events mentioned in Egypt were the result of a severe storm swell in the Mediterranean caused by the very storm that formed the hailstones mentioned in Joshua 10:11:

And it came to pass, as they fled from before Israel, and were in the going down to Bethhoron, that the LORD cast

down great stones from heaven upon them unto Azekah, and they died: they were more which died with hailstones than they whom the children of Israel slew with the sword.

Although most commentators insist that Joshua's long day started at noon or later, the sun is here mentioned low on the horizon. The Bible itself does not mention the time when Joshua spake. For comparison with the Egyptian account, and complementing it, there is a West African story of a long night.²⁶ In that account, the night lasted way too long because the owl overslept and did not awaken the sun.

The Chinese Account of Joshua's Long Day

The second secular source about Joshua's long day which was mentioned by Totten is based on what seems to be a recently lost ancient Chinese manuscript. In 1810, John Gill presented this account:

In the Chinese history²⁷ it is reported, that in the time of their seventh emperor, Yao, the sun did not set for ten days, and that men were afraid the world would be burnt, and there were great fires at that time; and though the time of the sun's standing still were enlarged beyond the bounds of truth, yet it seems to refer to this fact, and was manifestly about the same time; for this miracle was wrought in the year of the world 2554, which fell in the 75th, or, as some say, the 67th year of that emperor's reign, who reigned 90 years.²⁸

Now the year of the world 2554 is identical to Bouw's independently derived biblical chronology for the date of Joshua's long day.²⁹ Incidentally, note that a 90-year reign (not Yao's age) is thoroughly consistent with the 110 to 120 year ages achieved by Moses, Aaron, and Joshua who would have been contemporaries of Yao. The length of time mentioned by the Chinese, ten days, may be too long simply because the Chinese did not have clocks which

ran independently of the sun's motion so that the estimate would be purely subjective. Probably, the duration was exaggerated both by the trauma of the event and in the transmission of the story through time.

Despite the solid-sounding account by Gill, manuscripts which have survived to the twentieth century do not include the long day. The first mention of the long day associated with emperor Yao was by Hübner in 1733.³⁰ Although Hübner was quoted during that century, no manuscript exists today. Those manuscripts which have survived to this day differ from Hübner's in at least two ways: first, there is no mention of the ten-day day, and second, the reign of Yao is reported to be 100 years, not 90.

Although there is no mention of the ten-day long day in current Chinese accounts, there is one in the "Brahman Yast," one of the books of the *Avesta*. That reference is not, however, to a past event. Instead, it is a prophecy. The *Avesta* says that 1600 years from the date of the Persian culture (corresponding to about A.D. 1200), Hushedar will be born and, at age 30, he will command the sun to stand still for 10 days and nights. Obviously, the prophecy never came to pass; still it is strongly reminiscent of the Chinese account and may either have confused Hübner or else may reflect the actual Chinese account used by Hübner.

Joshua's Long Day in North America

Tales relating to Joshua's long day abound in North America. Almost all of the tales in North America tell of a long night. The only exceptions are those related in the chapter on Hezekiah's sign. Olcott³¹ has collected five of particular interest. 1) The Ojibways tell of a long night without any light.³² 2) The Wyandot Indians told missionary Paul Le Jeune of a long night.³³ 3) The Dogrib Indians of the Northwest tell of a day when the sun was caught at noon and it instantly became dark.³⁴ 4) The Omahas say that once the sun was caught in a trap by a rabbit that checked its traps at the break of dawn, presumably before sunrise.³⁵ (This may be Heze-

kiah's sign, too.) Finally, 5) the Bungee Indians from the Lake Winnipeg area of Canada also tell of a long night.³⁶

The preponderance of long night tales in the Americas would rule out the theory that Joshua's long day was a miracle which was local to Canaan. It also rules out the speculation that the story migrated around the world, for then it would everywhere be a long day (or a long night), but not a mixture of long days and long nights.

The Long Night in the Central and South Americas

Turning to the south, we find that Central and South America similarly experienced a long night. In the *Annals of Chauhtitlan*, the Mexican Indians tell of a long night. The Aztecs wrote of an extended period of time when the sun did not rise. According to their legend, there had been no sun for many years.

... So a conclave of the gods was called in Teotihuacan, and there it was decided that one of them should offer himself as a sacrifice that once again the world might have a sun ... The sacrificed gods had disappeared in the brazier's flames, but as there was no sign of the sun, the remaining wonder when it would first appear. At long last, the sun burst forth ... But the sun, despite his brilliant light, did not move; he hung on the edge of the sky, apparently unwilling to begin his appointed task.³⁷

Likewise, in their national book the *Popol Vuh*, (which translates into "Book of the Princes,") the Quiche- Mayans of Guatemala wrote about the people's reaction to a long night with these words:

They did not sleep; they remained standing and great was the anxiety of their hearts and their stomachs for the coming of the dawn and the day ... "Oh, ... if we only could see the rising of the sun! What shall we do now?" ... They talked, but they could not calm their hearts which were anxious for the coming of the dawn.³⁸

Now in recent years it is fashionable to assail the above translations on the grounds that they are biased towards the Judeo-Christian history of the world. For example, the Aztec god who sacrificed himself was to have the honor of becoming the sun. His condition for rising was that the gods kill themselves, which they ultimately were forced to do.³⁹ It would seem that this is a creation myth rather than an account of Joshua's long day, but the nature of Central American folk tales is very complex. For example, according to the myth there had been a sun before, and it had not risen for so long that people feared it dead. So how is it a creation account?

A similar situation exists with the *Popol Vuh*. According to some, that entire work is nothing more than one long creation myth. But the creation of man comes very late in the *Popol Vuh*, long after people have existed and had many adventures. The text quoted above from Goetz and Morley lies embedded in a lengthy section which starts with the longing and waiting for the sun, digresses into the origin of fire, and makes mention of the parting of the sea for the newly-arrived forefathers before resuming the story of the long wait for the dawn. If this is a creation account which occurred before the creation of man and which speaks of the creation of the sun, why are there many priests and tribes in existence? Why the reference to the forefathers who existed then if man had yet to be created? Such situations are typical in the literature of that region and time, and it may easily be understood in the light of the purpose of these tales: they exist to tie together salient pieces of history. So it is, too, with the Aztec tale. There was a long night, but the story has been expanded almost beyond recognition. Similarly with the *Popol Vuh* there is evidence of changes in the tale even over the last few centuries.

As for the charge that early translators were biased, are the anti-Christian translators not equally biased for their view? The fact remains, there is a reference here to a long night, exactly as would be expected if the various accounts around the world of Joshua's long day were true.

Besides the accounts of a long night in North and Central America, there is also at least one story of a long night in Peru. According to Montesinos, the collector of the tale, the sun was hid-

den for nearly 20 hours in the third year of the reign of Titu Yupanqui Pachacuti II because of sin in the land.⁴⁰ Titu Yupanqui Pachacuti II ruled about 1400 B.C.

The Long Sunset

Stories of a long day and stories of a long night: are there any stories of a long sunrise or a long sunset? There may be some uncollected stories of a long sunrise in Africa, but none have surfaced. There is, however, a story of a long sunset in the Fiji Islands. J. G. Frazer tells of a tradition on the island of Lakomba in the eastern Fiji Islands where there is a hillside with a patch of weeds on it. The story goes that natives will tie the weeds together in order to keep the sun from going down. It is said that the sun did, indeed, stop from setting at one time.⁴¹

Although there are several other traditions of stopping the sun, most are remotely, if at all, connected to Joshua's long day. In Australia, for example, if a native wanted to stop the sun he would place a piece of sod in the fork of a tree. Similar traditions exist in Africa and in Central America. A tradition of that nature in Japan meant nothing more than the belief that a man's friends would await dinner for him if he was going to arrive home late. Still, underlying all but the last of these traditions is the idea that the sun can, and by implication, did stop at least once upon a time.

The Extra-Long Night

A small handful of long day and long night tales do not seem to fit. The Hawaiian tale of Maui's capture of the sun is one, for it implies an arrest of the sun at sunrise. It is similar to the myths from other Polynesian Islands peoples, and those similarities serve to tie it to Peru's Hezekiah's sign accounts, not Joshua's long day.

Three peoples have a tale of a night which lasted several months: the Japanese, an ancient tribe in Lithuania, and the Cherokee Indians of North America. The Cherokee and Japanese tales

are virtually identical and seem to stem from the same source. Both have the sun hiding in a cave for a long time and being tricked out of the cave.⁴²

The account from Lithuania was collected by Jerome of Prague when he visited the “heathen” of the area in the early 15th century. There he discovered a tribe which had migrated from the east and which also told tales of a night lasting several months.

There are two possible reasons for these accounts. All could be related to the Japanese account and could reflect either a volcanic eruption which darkened the sky over Japan and Siberia for months on end or else, it could be a tale of the long Arctic night, almost six months long at the pole. A two-month night is experienced about the latitude of Point Barrow, Alaska. Perhaps the accounts relate to these natural events. In any case, they stand in stark contrast with the other long day and long night tales from around the world.

Joshua's Long Day and the Computers

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*.⁴³ 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.

A Newspaper reporter in Spencer, Indiana [Mary Kathryn Bryan in 1970] 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.⁴⁴

Many have correctly pointed out that computers do not stop “and put up a red flag.”⁴⁵ 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. It has also been suggested that Hill had based the story on Totten’s book,⁴⁶ but Hill claims not to have known of the Totten book at the time.⁴⁷ However, the main problem with Hill’s story is that it would require an independent date for some event such as an eclipse of the sun prior to Joshua’s long day. The most ancient of these observations does not go back as far as 1,000 B.C., let alone 1,500 B.C. Still, Hill’s story raised quite a bit of interest.

A 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 had 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 the same as that of Rand who was mentioned earlier in this chapter. 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*.⁴⁸ The comment by the author of the quoted paper, 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 for the Ugaritic astronomer; it would not have gone “down in daytime.”

Related Verses

Joshua 10:13 does not stand alone in the Bible. There are several similar verses. One of those is found in Habakkuk 3:11 which states:

The sun and moon stood still in their habitation: at the light of thine arrows they went, and at the shining of thy glittering spear.

Now Habakkuk 3:11 is a double reference: in the first instance, it refers to a future event foreseen by Habakkuk; and in the second instance, it refers back to the taking of Canaan, back to Joshua's long day. As such, we may consider it as a unit with Joshua 10.

An apparent prophetic reference to Joshua's long day is found in Job 9:7 which seems to foretell the events described in Joshua 10. It is evident that Job was most likely a contemporary of Abraham or, at least, Job lived no later than Joseph or his sons.⁴⁹ The verse reads as follows:

[God] commandeth the sun, and it riseth not; and sealet up the stars.

The Date of Joshua's Long Day

We noted that the entry into the promised land was early April of 1448 B.C. Can we ascertain the month and day of Joshua's long day with any degree of certainty? It turns out that we can come close.

When the Israelites entered the promised land it was the tenth day of the first month (Joshua 4:19), shortly before the time of the

Passover which is at the time of the full moon. Now in 1448 B.C. the new moon and the first day of spring closely coincided, the first day of spring being March 19.5 at the time;⁵⁰ so we can date the very entry into the promised land as Thursday, March 29, give or take a day.

The events, which are described between the Passover and the battle at Gibeon all, took time. The Passover celebration itself took a week; the fall of Jericho took seven days; the fall of Ai took at least four days; the construction of the altar on mount Ebal and the copying of the law probably took a week or more; the trickery of the Gibeonites took still more time; the communication of that trickery to the Gibeonites' neighbors and the subsequent formation of an alliance, not to mention their march to Gibeon, all took time. It is not unreasonable to assume that over a month passed between the celebration of the Passover and Joshua's long day. This is entirely consistent with the geometry of sun and moon presented in Joshua 10 where the moon seems to be west of the sun and both visible in daylight. Given that the time for the event was 9:00 a.m., the moon was most likely near or after its last quarter. More specifically, then, it appears that Joshua's long day happened somewhere between May 8 to May 15 of 1448 B.C.

The Commentators Concluded

It should be painfully clear by this time that not only was Joshua's long day a real miracle, but also it presents man with a great problem: either God writes what he means and means what he writes, or he does not. Most Christian scholars over the centuries have been of the opinion that God needs them to make his truth known, that God is incapable of explaining certain matters to man without that help. This is why most churches hold tradition over the authority of the Bible. Joshua 10:12-14 strikes at the heart of this heresy.

In the twelfth verse it can be argued that when Joshua spoke, he was simply ignorant of the rotation of the earth and thus accused the sun and moon of moving. Hence he spoke geocentrically. This

would not introduce an error in the Bible since this is a direct quote. All that inerrancy requires is that the quote must be an accurate quote. That's fine and well for Joshua, but what of the thirteenth verse? Who is the writer who reports that the "sun stood still, and the moon stayed?" The Bible says that God is its author through the Holy Ghost (2 Timothy 3:16). Verses 13 and 14 of Joshua 10 present us with the point of view of the author, and the author is God himself. God cannot lie, so this point of view must be true. If the perspective is not true, then either God is lying or someone else inspired the wording. If the author is not God then who is he? And just what is that person doing putting words in God's mouth? If this verse cannot be trusted, then how can we trust any other Bible passage? Could not the same shadow of doubt be cast onto any other particular passage of scripture? And what, then, becomes of the Bible's witness of itself in such passages as 2 Timothy 3:16-17? Or if the commentator is God himself, is he speaking phenomenologically or anthropocentrically? Or is that impossible?

For the moment, let us assume that God is speaking either anthropocentrically or phenomenologically. Let us further suppose that this is not the only place in the Bible where God does so but that, in particular, he does so in all geocentric passages. Then what does that mean? Just what does it mean to speak *anthropocentrically* or *phenomenologically*?

Anthropocentrism literally means "man-centeredness." In this view God puts himself in man's place and speaks from a human perspective. Given that the Word became flesh and dwelt among us, this is not at all far-fetched, but does this really excuse the God of Truth, who is the Truth, from writing the whole truth and nothing but the truth? God forbid! Note how simply God could have avoided the contradiction between heliocentrism and geocentricity if instead he had started the thirteenth verse with: "And the earth stopped its turning" God does not go out of his way to avoid difficult wording just for the sake of simplicity (Proverbs 1:22). Nor does He express the science of the Bible in simple terms. Take Job chapter 38, for example, where two or three "puzzling" and "poetic" passages have in recent years been found to be literally

true; yet most of the chapter is completely above man's comprehension. Simply put, God does not speak anthropocentrically because God is not a man.

Phenomenology is a science which deals with appearances rather than with actual existence (the study of the latter is called *ontology*). Phenomenology is based on the observation that appearances can be deceiving. Thus when one claims that Joshua 10:13 is *phenomenological*, one effectively claims that God is not presenting the situation as it *actually* is but only presents it as it *appears to be*. If the appearance is not the same as actual fact, then in the final analysis God is not relaying accurate information about the situation. For the sake of "convenience," God wrote an untruth. God presented the appearance of the situation as the truth rather than presenting the truth as the truth: this is what one means when one says that the Bible speaks *phenomenologically*.

Phenomenological or anthropocentric: either the sun stood still or the earth stood still; either God inerrantly inspired the wording or He did not; either the Bible is trustworthy or it is not. There is no middle ground. There is no room for compromise. After all, both the anthropocentric theory of inspiration and the phenomenological-language theory are forms of *accommodation* where God is said to accommodate his wording to the understanding of the common man. Good though that may sound on the surface, accommodation still maintains that God goes along with the accepted story even though he really does not believe it.

The whole issue would be moot if, as the liberals and infidels claim, the Bible was written by men and not God. Belief in the human authorship of Bible earmarked the Sadducees in Christ's day and still earmarks their spiritual descendants, the liberals, today. The Pharisees recognized the truth about the authorship of the Bible but failed to live up to that fact. When confronted by the truth of their hypocrisy they became enraged rather than repentant. Today's Pharisee is no different, reacting with violent rage when confronted by these matters. Still, let God be true and every man a liar.

Putting it all Together

When it is all put together, we know more about Joshua's long day than we know of most other events recorded in the Bible. The best date seems to be within four or five days either side of May 12, 1448 B.C., sometime between 8:30 and 9:30 a.m. This we may conclude from plotting all of the long day, long night, and the long sunset accounts on a globe. Such extensive observations preclude the conclusion that the event was an optical illusion restricted to the land of Israel. It also disallows the notion that Joshua's long day is fictitious, for the testimony of the peoples around the world is entirely consistent with its reality. That some peoples have tales of a long night while others tell of a long day while none have both a long day and a long night tale signifies that Joshua's long day is not one account, originating in the mid-East, which has migrated all over the world; for if such were the case, then all nations would tell of a long day and none would tell of a long night, let alone a perfectly-placed long sunset. So we must conclude that Joshua's long day was a real, historical event and not some fiction.

Why, despite the testimonies of various peoples around the globe to the reality of an extremely long day or night, and despite the geographic consistency of the data in terms of day and night, why should the majority of scholars dismiss this wealth of evidence as mere superstition? How could there be more substantial evidence? On the other hand, we shall have occasion to document examples where modern science has accepted the testimony of one individual of dubious integrity. Actually, the heliocentric/geocentric debate is not new, nor is it secret, but the stakes are high and rarely mentioned; for authority is itself at stake. Just who is authoritative and in what? If doubt can be cast on the Bible as an authority in the area of science, then that leaves scientists as the final authority in that area. All too often science is merely another form of politics with little regard for truth if the truth be not expedient. Thus it can be said quite literally that today's science is tomorrow's superstition. That was as true in the sixth century B.C. as it is true today.

Witness Galileo Galilei, an early and vocal proponent of heliocentrism and regarded by many as the first true physicist. In 1613

he wrote in a letter to Castelli why Joshua's long day should not be believed:

And first I ask the adversary if he knows by what motions the sun is moved? If he does know, he must reply that it is moved with two motions, that is, an annual motion from west to east and an opposite diurnal motion from east to west. Hence, in the second place, I ask if these two movements, so diverse and almost contrary to one another, both belong to the sun and are equally its own? They are forced to answer no; that one alone is its own and particular motion, which is the annual, while the other is not the sun's at all, but that of the highest sky, called the Prime Mobile, which sweeps along with itself the sun and the other planets and also the starry sphere, constraining them to make one revolution around the earth in 24 hours, with a motion (as I said) almost contrary to their natural and proper motions.

So I come to the third question, and ask them by which of these two motions the sun produces day and night, that is, by its own or from the Prime Mobile? It is necessary to respond that day and night are the effects of motion of the Prime Mobile, while from the proper motion of the sun not day and night, but the different seasons, and the year itself are produced.

Now if the day depends not on the sun's motion, but on that of the Prime Mobile, who can fail to see that in order to prolong the day it is necessary to stop the Prime Mobile, and not the sun? ... It being therefore absolutely impossible, in the arrangement of Ptolemy and Aristotle, to stop the motion of the sun and to lengthen the day, as the Scripture affirms to have happened.⁵¹

In his challenge Galileo sets up a straw man and thus exemplifies the ignorance of the Bible which is so characteristic of humanity. True, if one ascribes the annual motion to the sun and the diurnal (daily) motion to the stars, then Galileo's argument is correct; but the Bible does not fall into such simple traps.

The Bible clearly indicates that the sun is to rule the day. This means that the daily motion is unique to the sun and has nothing to do with the annual motion. The sun's period is exactly 24 hours. The stars' daily motion nearly matches the sun's period, being about 3 minutes 56 seconds less than the sun's period. Over the course of one year this amounts to one extra revolution about the earth, namely, the annual effect. (The north-south annual motion of the sun can be shown to be due to the difference between the sun's period of revolution and the rotation rate of the rest of the universe.) When viewed from that perspective, Galileo's argument falls flat on its face. Both motions are from east to west, but the sun's motion is roughly 1/365th slower than that of the cosmos. Thus the motions are not "almost contrary" but are almost identical. Yet no theologian has ever come up with a better argument against Joshua's long day than has Galileo at this one point.

Conclusion

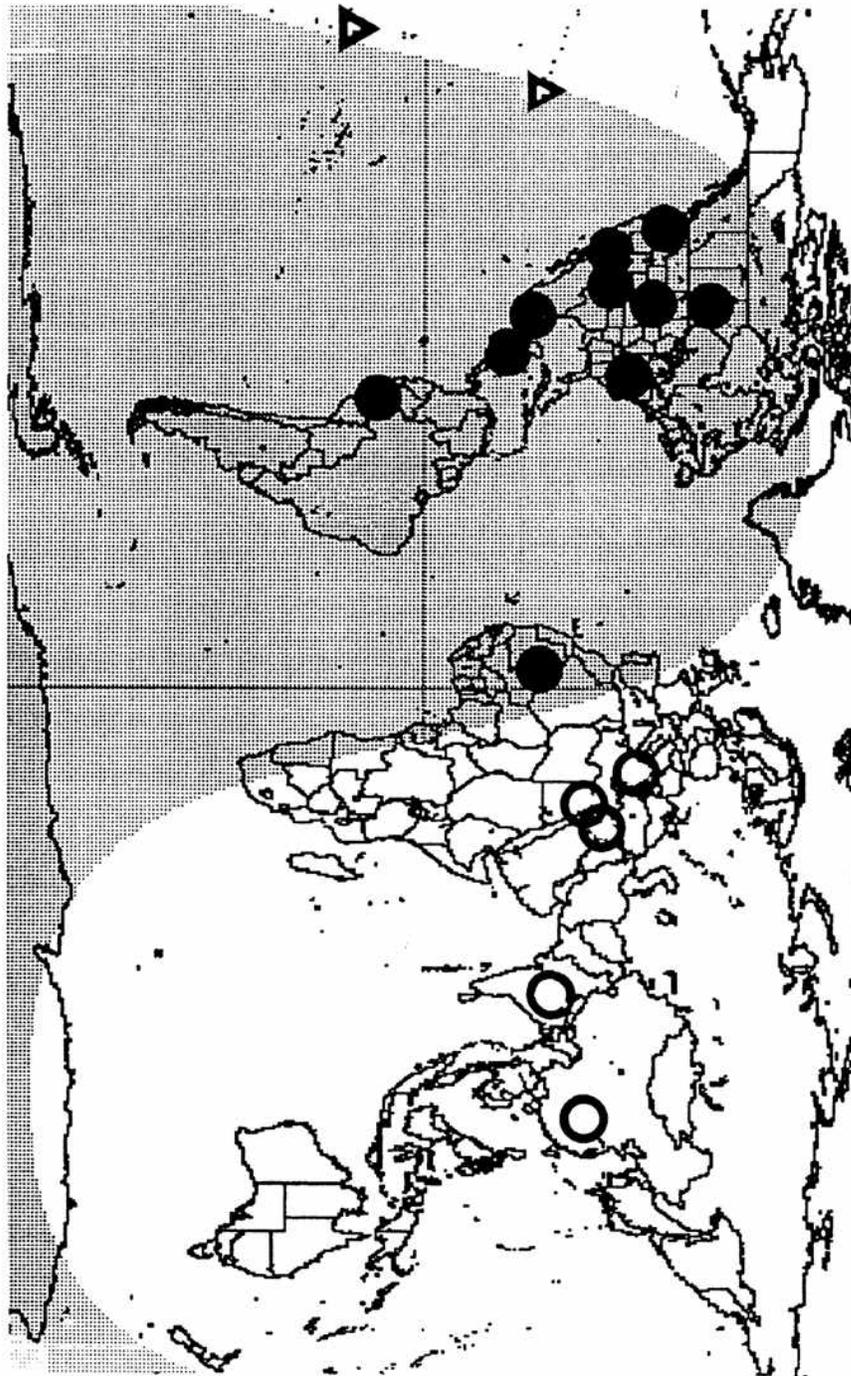
The upshot is that there appears to be solid evidence from the Bible and from folklore around the world that there was one day which, depending upon geographical location, presented the inhabitants of the earth with an unusually long span of daylight or night. Attempts to explain this phenomenon by naturalistic means have all failed because no mechanism known to physics can absorb the earth's spin energy and momentum (or the universe's from a geocentric point of view) in such a short period of time without causing great upheavals such as the oceans spilling over the continents. Agnostic or atheistic scholars choose not to deal with the ancient witnesses. Such a phenomenon as Joshua's long day can only happen with divine intervention. But then science does not claim to have all the answers: its authority is found wanting. Is the Bible, then, the final authority after all? Not if God said that the sun stopped when it was *actually* the earth which ceased to rotate. And that brings us to the heart of the matter.

Attempts to phenomenize Joshua's long day or to make it allegorical thus fail. Christians and Jewish people are presented with a real historical event in Joshua 10:12-14. The central issue from

their perspective is that of inerrancy of the Bible. God wrote in verse 13 that the “sun stood still and the moon stayed.” God either meant what he wrote, or he did not. There is no excuse for God because he is the God of truth; therefore all things he says and does must reflect that fact. So God cannot utter an untruth and we must conclude that the Bible teaches, in Joshua 10:13 and elsewhere, that the universe rotates around the earth once per day, carrying the sun, moon and stars with it, regardless of what introductory astronomy texts may say. We shall see later that the advanced texts belie the introductory texts on the matter of the rotation of the earth. For the time being, the choice is either the Bible or the introductory astronomy texts: which do you believe?

Figure 2: (next page) *Joshua’s long day around the world.*

Open circles map accounts of a long day
Dark circles map accounts of a long night
The triangle locates the account of a long sunset.



A similar figure can be constructed for Hezekiah's sign (see page 32). The locations not only show the time of day, but even the time of year for Hezekiah's sign. The time of year is ascertained within a week. Clearly, neither Hezekiah's sign nor Joshua's Long Day can be dismissed as events local to Israel. They are demonstrably global events.

The story of Christianity tells about a plan of salvation centered upon a particular people and a particular man. As long as someone is thinking in terms of a geocentric universe and an earth-deity, the story has a certain plausibility.

— A. J. Burgess¹

6

CHRISTOLOGICAL SUN PASSAGES

The scriptures speak of the promised Messiah, the Christ, the Anointed One who is to come to earth to redeem a people unto himself. The Bible leaves no room for doubt but that the Messiah is Jehovah incarnate. The Bible uses several symbols for the Messiah such as the “Branch” and the “Lamb of God.” The Messiah is also referred to as the “Sun” or the “Sun of righteousness.” In this chapter and the next, we consider those verses which tie the sun and Messiah together. But first, let’s examine the significance of the issue.

The Significance of Geocentricity to Christology

The chapter quote by Burgess touches the issue which was crucial in the humanists’ fight for heliocentrism and against the churches during the sixteenth and seventeenth centuries. Burgess later expounds on it by continuing with:

As soon as astronomy changes theories, however, the whole Christian history loses the only setting within which it would make sense. With the solar system no longer the center of

anything, imagining that what happens here forms the center of a universal drama becomes simply silly.²

Thus the vanquishing of the geocentric theory in favor of heliocentrism is perceived by many as the death knell of Christianity; and is it any wonder? For the earth is truly central in the purpose of the mind of God throughout the scriptures. Furthermore, of the symbols used to represent the “particular man” who is the focus of history, some of those symbols are geocentric and none are heliocentric. If these symbols are in error, then how may one trust the framework of scripture?

Consider Psalm 84:11 for an example of a passage where Christ is identified with the sun:

For the LORD God is a sun and shield: the LORD will give grace and glory: no good thing will he withhold from them that walk uprightly.

Many there are who hold that Jesus Christ is not the LORD God and that this verse, as a result, is not Christological; but besides this verse, the Messiah is called *The Mighty God* in Isaiah 9:6 as well as several other places such as Revelation 1:8. (Note verse 18 there – when did the Almighty die if Christ was not the Almighty?) Thence we must include this passage as Christological.

Psalm 19

One crucial geocentric Christological sun reference occurs in the first six verses of Psalm 19.

¹ The heavens declare the glory of God; and the firmament sheweth his handywork.

² Day unto day uttereth speech, and night unto night sheweth knowledge.

³ There is no speech nor language where their speech is not heard.

⁴ Their line is gone out through all the earth, and their words to the end of the world. In them hath he set a tabernacle for the sun,

⁵ which is as a bridegroom coming out of his chamber, and rejoiceth as a strong man to run a race.

⁶ His going forth is from the end of heaven, and his circuit unto the ends of it: and there is nothing hid from the heat thereof.

The first four verses speak of the heavens while verses 4b through 6 speak of the sun in heaven. These correspond respectively to verses 7 through 10, which speak of the scriptures and with verses 11 through 14, which speak of Jesus in the scriptures. The heavens are associated with the scriptures and the sun is associated with Jesus. Note that it is the sun that moves about the earth (verse 6).

Although too many commentators maintain that the nineteenth Psalm is actually a fusion of two unrelated psalms, note that the Lord Jesus Christ is the connecting thread throughout the Psalm. At least one of his attributes is reflected in every single verse of the Psalm. In the first verse he is present as the Creator, in the second as the Revelator, in the third as the Word, in the fourth as the Light, in the fifth as Bridegroom, in the sixth as the Judge, in the seventh as the Lawgiver, in the eighth as Healer, in the ninth as the Eternal One, in the tenth as the Pearl of Great Price for the believer, in the eleventh as Prophet, in the twelfth as the Atonement for sin, in the thirteenth as Savior, and in the fourteenth as Redeemer. If this Psalm is errant in any way, then can there be a perfect salvation? Even the seventh verse testifies that “the testimony of the LORD is pure”; and we know that God’s word is eternally settled in heaven (Psalm 119:89).

The sixth verse is eminently Christological. The motion of the sun is there linked to the emergence of the bridegroom. Furthermore, the reference to the sun’s heat speaks of the judgment. The Authorized Bible starts the verse with the personal pronoun, “his,” thus reinforcing the type of the bridegroom and also the Christology of the verse. Modern versions start this verse with

“its” and thus deny the person of Christ as being evident in this verse and so deny that the sun is a type of Christ in this passage. The sun’s circuit (verse 6) takes it around the zodiac, yearly tracing the gospel as told in the stars: starting from the nativity (Virgo) to the sacrificial death, resurrection, and final triumph as the Lion of Judah which is reflected in the constellation of Leo, the lion.

Ends of Heaven

Because of the evident Christology of Psalm 19, we should expect it to receive more than the usual amount of criticism. In verse six the second and third English words are “going forth.” This is actually one Hebrew word, *motsa*. Modern versions use the word “rising” instead of “going forth” even though *motsa* is never used to mean “rise.” *Motsa* always means “go forth.” The closest that *motsa* ever comes to meaning “rise” is to “well up” like a spring or fountain. It is never used for a sunrise anywhere or anytime.

Psalm 19:6 starts with the clause: “His going forth is from the end of the heaven.” Ofttimes commentators are confused by this phraseology because to many, it appears to mean that the sun has to traverse from one spatial end of heaven to the other. This affords the liberal reinforcement for his idea that the Bible envisions a small universe with a sun, circling the earth, fastened to or moving along a perimeter or “end” of heaven. But there is more to the universe than space, for there is also time. Indeed, the simple reading of the phrase would indicate that time, not space, is meant; for how else can one measure the “going forth,” especially since heaven is here described as having more than one end and a circle has no end? But note how Psalm 19:6 ties in with the end of the heaven as foretold in Revelation 6:14 where we read:

And the heaven departed as a scroll when it is rolled together; and every mountain and island were moved out of their places.

The significance of this departure of the heaven is given in the seventeenth verse:

For the great day of his wrath is come; and who shall be able to stand?

Revelation 6:14 thus speaks of the end of the heaven, one of the very ends of which Psalm 19:6 speaks. Indeed, the going forth of the Bridegroom is exactly heralded by the end of the heaven as described in Revelation 6:14. The other end of heaven would, by contrast, be its beginning or the end of its creation which corresponds to the creation of the sun on the fourth day.

The word “circuit” as it appears in verse six can mean one of two things in English. First, it can mean a *closed* path and second, it can designate an area of legal jurisdiction. The same two meanings are tied together in the Hebrew word here translated as “circuit” in the Authorized Bible. Hence, the verse refers to both meanings and insofar as it speaks of judgment, we find the next clause, “and there is nothing hid from the heat thereof,” to be in agreement with the New Testament teaching that the present universe will be destroyed with fervent heat.

Circuit of the Sun

The geocentric import of Psalm 19:6 lies in the fact that the sun, not the earth, is described as moving. More specifically, the sun is said to be moving in a circuit, not circuits. The word “circuit” means a real or imaginary line described in going around any area. Heliocentrists have argued that since the distance from earth to sun is relatively small in comparison to the size of the universe, the circuit referred to here could not possibly refer to the motion of the sun around the earth since such a short distance cannot be described as anywhere approaching the size indicated by the “ends” of heaven. Now we have just dealt with that issue, but heliocentrists further maintain that the motion of the sun about the galactic center (the center of the Milky Way) is what is being referred to in verse six by the word “circuit.” But this ignores the fact that the orbit of the sun about the galactic center, relative to the scale of the

universe, is not much larger than the earth-sun distance they objected to earlier. One cannot escape the geocentricity of the verse by any such argument of scale.

If, however, one assumes the heliocentrists' interpretation that Psalm 19:6 refers to the motion of the sun about the center of the Galaxy, then a new set of problems arises. First, the passage refers to the circuit of the sun; and according to the dictionary, a circuit is a closed path. In order for the path of the sun about the galactic center to be referred to as a "circuit," the universe must be old enough to allow for its closure. Thus either these are the last days and the universe is at least 250 million years old (the time it takes the sun to orbit the galactic center once); or we are 6,000 years into a 250-million-year journey before the return of Christ. This is a special problem for those who insist both that the universe is about 6,000 years old and who proffer a galactocentric interpretation for Psalm 19:6.

A second problem with the galactocentric interpretation of Psalm 19:6 lies in the fact that the sun's orbit about the galactic center is not closed. Because of that, the sun's path about the center of the Milky Way cannot be referred to as a "circuit." The pretty picture of all the planets orbiting the sun in paths that close upon themselves works somewhat for planets, but it does not at all work for stars in a galaxy. Figure 3 illustrates a typical orbit for a star in a galaxy. As seen from above, the orbit appears to be closed although neither elliptical nor circular in shape; but in actual fact, the sun also bobs up and down out of the plane of the galaxy with a period of about 32 million years that is not the same as the 250-million-year period of revolution. Hence when the path appears to cross, the sun is at different heights relative to the galactic plane (above or below the paper). So the sun's galactic orbit can never be said to "enclose an area" and could never be considered to be a "circuit." And so the Bible is either wrong in using "circuit," or the Bible is referring to some motion other than that of the sun about the galactic center.

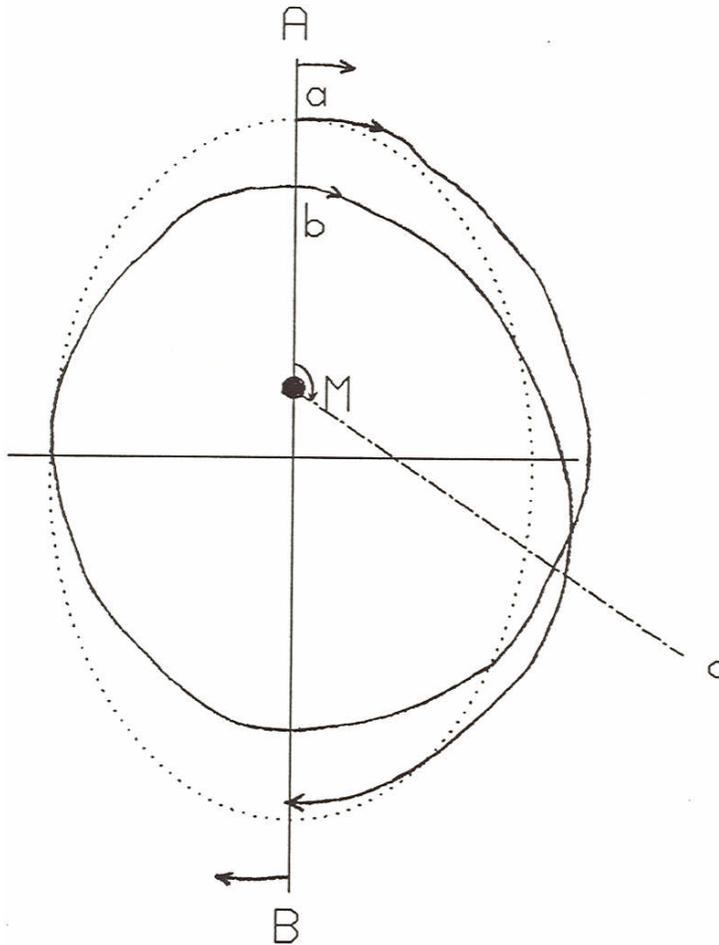


Figure 3: *Galactocentric orbit*

The dotted line traces out a standard 250-million-year orbit about the center of the Milky Way, *M*. In actuality, if the sun were to start at *a*, it follows a path more like that traced by the solid line. Technically, the orbit is complete at *b*, but note there that the sun has not described a closed path and so has not completed a “circuit.” This is so for two reasons: first, the line *AB* rotates (to point *c* during the sun’s orbit) and also the sun “bobs” up and down out of the plane of the galaxy with a period of 32 million years. Additionally, the sun’s path varies erratically as it has “close” (several light years) encounters with neighboring stars and passes through the mass-concentrations of the spiral arms and clouds of dust and gas.

To illustrate the third problem we ask, “What is so special about the galactic center as a reference frame?” The heliocentrist must answer: “Nothing.” As far as modern astronomy is concerned, the galactic center is every bit as arbitrary a frame of reference as is the placement of the sun (or earth) at the center of the universe. Furthermore, it would seem that the Galaxy is itself orbiting some as yet vaguely recognized point in a local group of galaxies. Why not pick that center? But this obscures the word “circuit” even more.

Now an astute reader may already have objected that by the same token the sun’s daily motion about the earth may not necessarily close upon itself either, so that the term “circuit” would be equally inapplicable in the geocentric case. It is indisputable that the distance from the earth to the sun varies through the course of the year. For about six months of the year, the sun moves away from the earth; and for the remainder of the year, it moves toward the earth. The size of this to-and-fro motion is about three million miles, but the diameter of the sun is 886,000 miles which is less than one third the size of the overall to-and-fro motion. Since all this motion happens in a time span of 12 months, it takes six months to cover 3 million miles. In a geocentric sense where the sun goes around the earth once a day, we see that there is plenty of overlap; that at least a fifth of the volume of space the sun is currently passing through will also be inside the sun 24 hours from now. So the variability of the earth-sun distance cannot be said to deny the validity of the word “circuit” in Psalm 19:6 if the diurnal motion of the sun about the earth is meant by the text.

The sun’s to-and-fro motion relative to the earth is not the only geocentric motion which the sun describes, however. Throughout the course of the year, the sun also moves in a path from north to south and back again (Figure 4). The sun moves a 23.5-degree span in the course of a quarter year or about 91 days. When crossing the equator the sun is moving at its fastest rate in the north-south direction. At that time it is moving northward (or southward) at 0.37 degree per day. This is very close to the angular diameter of the sun which is 0.48 degree. Yet, when we take into account

both to-and-fro motion as well as the north-south motion, we find that the sun's path (or *world-line*) overlaps at least 17 percent between successive diurnal passages. In other words, even under the most adverse conditions, of all the space through which the sun passes at a particular instant, 17 percent of that same space will be found within the sun 24 hours later and a different 17 percent would have been found within the sun 24 hours earlier. This means that **only** in a geocentric system is the daily motion of the sun about the earth describable by the term "circuit," since only in a geocentric framework, where the earth is not moving through space, is the orbit of the sun "closed." Thus the term "circuit," as used in Psalm 19:6 is only strictly true if the sun goes around the earth once in a day; otherwise God made another poor, unfortunate choice of words in Psalm 19:6.

All things considered, no one has yet come up with a scientifically and hermeneutically "acceptable" apologetic for Psalm 19:6 in a heliocentric framework. The passage remains both Christological and geocentric.³

Isaiah 13:10

The nineteenth Psalm is not the only place in scripture where Christ is compared to the sun. Another such passage is Isaiah 13:10 where we again encounter the phrase "his going forth" with reference to the sun:

For the stars of heaven and the constellations thereof shall not give their light: the sun shall be darkened in his going forth, and the moon shall not cause her light to shine.

The setting of this verse is the time of the judgment. It describes a time when the Lord shall hide himself in thick darkness. The sun, in consistent typology, is also darkened. It is the time when "he who now letteth" will be taken out of the way (2 Thessalonians 2:7).

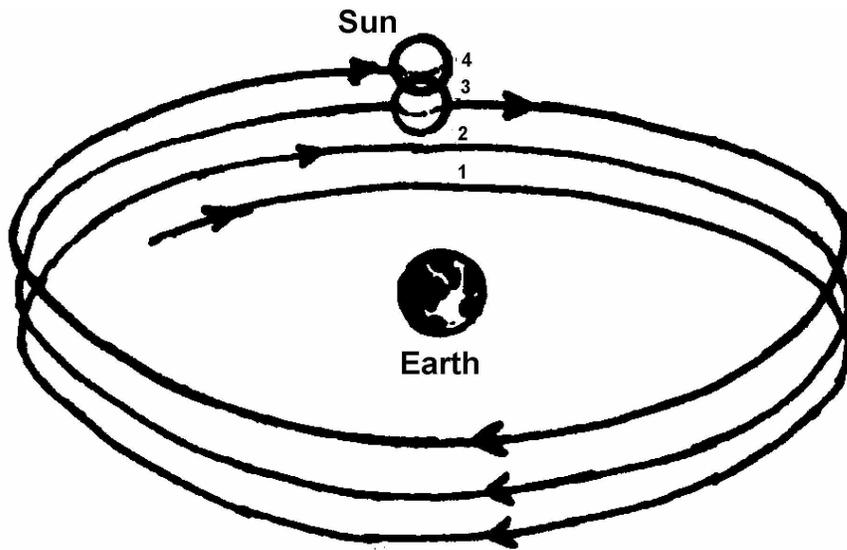


Figure 4: *The sun's daily circuit spiral*
Shown over the course of three days

One may argue that Isaiah 13:10 refers to the course of the sun through space, and certainly if this passage stood alone one could not refute such an argument. But we must keep in mind that this passage does not stand alone; contextually, it goes along with other passages such as Psalm 19:6. The point is that this verse describes the sun as moving and indicates that the sun's motion has been going on for some time. Again, given the Christology of the verse, Revelation 6:14 comes to mind. (See Revelation 7.) It should also be borne in mind that if Christ came in undimmed glory, the intensity of that infinite Light would consume the earth with its very heat (Psalm 19:6).

Judges 5:31

Still another biblical reference to the "going forth" of the sun is found in Judges 5:31 where we read:

So let all thine enemies perish, O LORD: but let them that love him be as the sun when he goeth forth in his might.

This verse is found in the song of Deborah and Barak and has obvious Christological overtones. The pronouns “him,” “he,” and “his” all refer to Christ. Here, too, the point is that the sun is described as moving. One could, of course, argue that Deborah and Barak are speaking from a human perspective and thus speak phenomenologically. This argument would appear to do no particular violence to God’s literary prowess since he would simply be reporting the facts, namely, quoting what the two judges of Israel said without endorsing the truth thereof. Questions about inspired quotes and allied Christology aside, this argument does not work with the narrative voice such as found in Isaiah 13:10.

Malachi 4:2

The final Christological sun passage which we shall consider is the one that is most obviously Messianic in import and that is Malachi 4:2—

But unto you that fear my name shall the Sun of righteousness arise with healing in his wings; and ye shall go forth, and grow up as calves of the stall.

The context is the destruction of the wicked at the time of the judgment of believers. The verse itself points to the start of the millennium; to the first resurrection as opposed to the second resurrection which occurs at the end of the millennium. But there is an even broader implication in the verse.

In Malachi 4:2 the Sun is said to do the rising, not the earth doing the turning toward the sun as modern astronomy would have it. This reflects Christ’s resurrection from the tomb at sunrise Jerusalem time. And so it is that if the sun does not truly “rise” (that is, move), that the typology is destroyed in both Malachi 4:2 and

Psalm 19:6. It makes the resurrection only “apparent” or “phenomenological.” The typology of the sun as moving fits perfectly with the biblical teaching that Christ came and will come again and that we do not go to him. In short, if the Bible speaks phenomenologically or figuratively when it says that the sun “arose,” then how can we, as believers, require that it presents a literal truth in reporting that the Son “arose”? To challenge the validity of the word “rise” in any part of scripture is to challenge its validity in all parts, most particularly in the resurrection.

Is Geocentricity Figurative in the Bible?

Finally, although it has no direct bearing upon the geocentricity of the verse, we must consider the reference to the wings of Christ as present in Malachi 4:2. Heliocentrists have widely argued that if the motions of the sun are to be taken literally in the Bible that things like God’s face, hands, arms, feet, legs, breast, and wings must also be taken literally. Augustine went so far as to utterly condemn all those who believe that God has actual hands and feet. Yet in the Old Testament God’s wings alone are referred to no fewer than ten times, not to mention numerous references throughout the Bible where God is said to have human features. Take John’s description of the Almighty in Revelation 1:8 as an example. Can there be room for doubt that God has a man-like figure when the Bible reports “one like unto the Son of man”? The thirteenth verse equates that man-like form with the Almighty God. Those who argue that it is blasphemy to believe that God has hands and feet, let alone wings, maintain this position on the grounds that John 4:24 teaches that God is a spirit and then add, without biblical support, that a spirit has no form. In particular they claim that in Luke 24:39, Jesus says that a spirit does not have flesh and bones. Jesus does not say that a spirit has no form but on the contrary, the very wording he chose (“a spirit hath not flesh and bones as ye see me have”) indicates that a spirit does have form and hence, by implication, has hands and feet. In 1 Samuel 28:14, too, the spirit of

Samuel is not only recognizable as the form of an old man; but he is even described as covered with a mantle.

Zechariah 12:1 explicitly teaches that a spirit has form for there it is recorded that:

The burden of the LORD for Israel, saith the LORD, which stretcheth forth the heavens, and layeth the foundation of the earth, and formeth the spirit of man within him.

Clearly, if God “forms” man’s spirit, then man’s spirit must have a form or else the text is useless.

Given these arguments and passages, how can anyone assume that a spirit has no form? Likewise, given the wealth of references to God’s bodily parts, how can one maintain that God does not have hands and feet or even wings? Is anything too hard for the Lord? Most assuredly, God has hands and feet. His hands and feet bear the nail prints of Calvary. As for his wings, Malachi 4:2 tells that these will only be seen by believers, those that “fear my name,” those who have the Holy Ghost dwelling within them. After all, doves have wings, don’t they?

... and he saw the Spirit of God descending like a dove, and lighting upon him (Matthew 3:16).

Can there be any doubt as to the nature of the “healing in his wings”?

Conclusion

The Bible makes a special point to use the sun as a type for Jesus, the Messiah. In every case, the sun does the moving as a type of Christ moving from heaven to earth for our sakes. But if we are to assume, as heliocentrists insist, that the word “rise” when applied to the *sun* is not to be taken literally, then how can we insist that the application of the same word to the *Son* must be taken literally?

Thus we are forced to the conclusion that to cast doubt on the geocentric biblical model for the universe, is to cast doubt upon the very resurrection of the Lord Jesus Christ.

The sun was risen upon the earth
when Lot entered into Zoar.

— Genesis 19:23

7

SUNRISE AND SUNSET

By far the most numerous passages overtly speaking of the daily motion of the sun about the earth are those which refer to sunrise or sunset. Embedded in these very words is the idea that the sun does the rising and the setting and that the earth is but a passive participant in the process. We shall not examine these passages in any great detail. There is no need for that. The geocentricity implicit in the words “sunrise” and “sunset” is universally acknowledged.

Statistical Occurrences

All the occurrences of the words “sunrise” and “sunset” can be grouped into five categories.

The first of the five categories lists 26 references where the sun is referred to as either “going down” or “setting.”

In the second category there are 30 references. Each of these refers to the sun as “rising.”

The third category is not overtly geocentric in nature. It includes those verses which speak of the sun as “being down” but which do not speak of the sun as having moved in order to be

down. We include these because it is explicit in the first two cases that the sun does the moving and the third case states the result of that motion.

Likewise, the fourth category does not directly mention the sun as moving. It lists all the verses where the sun is referred to as “being up.”

Finally, the fifth category speaks of the position of the earth relative to the sun. In a sense, this category is strictly geocentric for geocentricity only secondarily involves the immobility of the earth, but it primarily means that the earth is located at the reference center of the universe. This means that the cardinal directions, including up and down, must refer to the earth. Category five thus lists all those Bible passages which use the phrase “under the sun.” Given that the sun moves around the earth once a day, the phrase “under the sun” of necessity dictates that the earth is located at the origin of God’s frame of reference; that is, in a central position and thus indicative of geocentricity.

Statistically, the phrase “under the sun” occurs 30 times in the Bible, all of them in the book of Ecclesiastes. The word “sun” appears 159 times in addition to 10 occurrences of the word “sunrising.” Of these 169 references, 30 occur in the aforementioned phrase, “under the sun.” Of the remaining 139 solar references, 57 are overtly indicative of the motion of the sun and another 9 indirectly point to the sun’s diurnal motion. Additionally, there are those verses, like Psalm 19:6 which we referred to earlier in chapter 6, which speak of the sun as “going forth.” These have not been tallied in the sunrise/sunset passages. All in all, well over half the references to the sun are geocentric in nature.

Key Verses

As an example of one of the sunrise/sunset passages, we consider Psalm 104:19 which is particularly strong as well as scientifically puzzling:

He appointed the moon for seasons: the sun knoweth his going down.

The Christology is evident since the Bible makes it clear that the Son (as typed by the sun) knows his “going down.” Of course, this refers not only to his imminent return but to his birth in a Bethlehem stable as well as his burial and subsequent descent into hell. The scientific impact of this passage lies in the pronouncement that somehow the sun “knoweth his going down.” It is inadvisable to dismiss this reference as poetic and thus without truth (for poetry is every wit as truthful as prose) since, as man’s knowledge increases, the number of such “poetic” passages in the Bible is steadily decreasing. For the time being, however, the scientific connotation of the verse must remain a mystery. In any case, how can the sun know his going down if he is not “going down” but if the earth, instead, is turning?

There is a second sunrise/sunset passage which we shall consider simply because it occupied a central place in the Renaissance debates between geocentricity and heliocentrism. That passage is the fifth verse in the first chapter of Ecclesiastes:

The sun also ariseth, and the sun goeth down, and hasteth to his place where he arose.

In Ecclesiastes 1:5 we encounter the same reference to the burial and resurrection of Christ that we earlier encountered in Psalm 104:19. The verse is quite explicit in claiming that the sun is moving, for it even adds that he “hasteth.” Certainly this verse is not literally true if heliocentrism is true. Again, if the passage is not true then in the final analysis, either God did not inspire it or else God is a liar. Claiming that God did not inspire it makes him out to be a liar anyhow for he claims authorship of all of these passages in the context of 2 Timothy 3:16-17, which see.

Now there are those who claim that since the passages surrounding Ecclesiastes 1:5 cannot be taken literally, that Ecclesiastes 1:5 should not be taken literally either. This argument is actually a leftover from the sixteenth and seventeenth century debates for

heliocentrism and it is now mindlessly parroted, for in the intervening centuries science has learned that these verses are literally true. We shall examine them if for no other reason than that said examination will serve as an example of the statement made earlier about the declining number of “poetic” passages in scripture.

The first verse is certainly literal enough:

The words of the Preacher, the son of David, king in Jerusalem.

The second verse is likewise literally true although its truth may not be immediately apparent:

Vanity of vanities, saith the Preacher, vanity of vanities; all is vanity.

The theological problem here lies with the term “all.” Originally, the objection was that the word “all” if taken literally, would include the Lord God himself; but today we know that to be false. Mathematically, there is no such thing as “the set of all sets.” That means that the set of all sets follows different rules than the individual sets making up that set of all sets. In other words, the infinite God is not part of the “all” referred to in Ecclesiastes 1:2. So mathematical understanding exempts God from being included in the “all” of the verse and thus he is not there branded as “vain.” We do not have to speculate, as some have, as to whether or not Solomon was in or out of the “will of God.” The second verse, in writing that all is vanity, writes a literal truth.

Next comes the third verse:

What profit hath a man from all his labor which he taketh under the sun?

Except perhaps for “under the sun,” which is the point at issue, the question is quite literal and can be answered in a literal way.

The fourth verse was already discussed in Chapter 3:

One generation passeth away, and another generation cometh: but the earth abideth for ever.

That generations come and go seems literal enough. The only problem one might have is with the earth “abiding for ever,” but that was covered before in Chapter 3.

Since the first four verses are literally true, then on that basis there should be no problem with the truth of the fifth verse. But what of the sixth verse? Perhaps the figurative part starts there:

The wind goeth toward the south, and turneth about unto the north; it whirleth about continually, and the wind returneth again according to his circuits.

Not until the twentieth century did man finally come to realize this verse is also literally true. In the northern hemisphere’s temperate zone (where most of the world’s people live), the prevailing winds blow from west to east. In addition to this the wind moves from north to south on a slower but also much grander scale. Along the surface of the earth’s northern hemisphere the wind has a north-to-south component while several miles above the ground it goes from south to north. Additionally, depending upon whether the air is massed into a high-pressure area or a low-pressure area, air circulates in counter-clockwise or clockwise direction. Termed *cyclones* and *anticyclones*, these circulating masses of air all attest to the literal truth of this verse even though the rotational directions are reversed in the southern hemisphere. Now the wind is a type of the Holy Ghost and that typology is evident in the sixth verse where “his circuits” alludes to Christ, the Holy Ghost being available only through Christ’s sacrificial death on the cross and his resurrection.

We could go on to show the literal truth of every verse in the chapter, but we shall conclude with the seventh verse which is also of scientific import:

All the rivers run into the sea; yet the sea is not full; unto the place from whence the rivers come, thither they return again.

At the time that Solomon penned these words it is doubtful that man knew much about convection, condensation, and evaporation; yet here we have a scientifically accurate description of the water cycle. Rivers flow into the ocean and the water of the ocean evaporates only to be precipitated as rain, dew, hail, or snow upon the land. There the waters flow together into rivers which flow back to the ocean, starting the cycle all over again. Clearly, the seventh verse is a literal truth.

Contrary to the unthinking heliocentrists' claims, we see that Ecclesiastes 1:5 is surrounded by verses which are literally true. So the fifth verse cannot be shrugged off so easily as to suggest that it is embedded in verses which are all figurative and not literal.

At the Judgment

We now consider two more examples of sunrise/sunset passages. There are a number of biblical passages which deal with the state of the sun during the great tribulation and judgment. Job 9:7 is one such reference. In it we read that God:

commandeth the sun, and it riseth not; and sealeth up the stars.

The prior verse gives the context as the time of God's wrath. The point here is that it is the sun, not the earth, which is commanded to stop. If the earth rotated then the earth should be commanded to stop, not the sun.

The second of the sunrise/sunset examples involving the tribulation and judgment is Habakkuk 3:11. The fifth through ninth verses set the stage for the eleventh verse which reads:

The sun and moon stood still in their habitation: at the light of thine arrows they went, and at the shining of thy glittering spear.

This refers to an incident of which Joshua's long day is a type. Regardless of when one may wish to place this event, the fact remains that the sun and moon are described as standing still in their habitation, that is, in heaven (Psalm 19:4). Admittedly, this could be taken to mean that the sun's motion about the center of the Galaxy ceased (or will cease) as well as the moon's motion about the earth; but in light of all the previous passages which speak directly of the motions of the sun and moon around the earth, the geocentric interpretation is by far the most likely.

Linguistic Considerations

Finally, we look at the liberals' defense of heliocentrism versus the biblical doctrine of geocentricity. Evolutionary apologists have for centuries maintained that the words "sunrise" and "sunset" are the product of the evolution of language. They suppose the languages of the earth all stem from grunts and groans emitted in the remote past. Gradually, they claim, the languages became more and more complex. But this is not the view of the Bible. The scriptures teach that the world's languages came from one common language (probably Hebrew) which was *confounded* (not *confused*; there is a great difference between the two terms!) at the tower of Babel's construction site (Genesis 11:1-9).

Suffice it to say that the Bible's account seems far more realistic than the evolutionists' on the grounds of both the second law of thermodynamics (that things will degenerate in time) as well as historical observation; for we see the world's languages becoming *less* sophisticated in time, not more. Take English as an example. The subtle distinction between the words "throughly" and "thoroughly" has long been forgotten, yet the difference was considered crucial four hundred years ago.¹ Anyone who would take the trouble to find out just why the Authorized Bible used "odd" phraseology at times would soon be amazed at how much detail, explicitness, and fine structure the English language has lost in the last four hundred years. There is no language in the world which is naturally or evolutionarily improving. True, more and more words may be hybrid-

ized or absorbed from one language into another, but the sentence structures and parts of speech are fast losing distinctiveness.

If God, as the Bible teaches, created Adam's language as well as confounded the languages at Babel, then why did he not "naturally" accommodate them to accept the "truth" of heliocentrism? He gave us an innate capacity to understand things like colors and shapes; why could he not have done the same for the relative motions of the earth, sun, and stars? It would appear that the heliocentrists not only make God out to be a clumsy grammarian and sloppy in his typology, but he either cannot or will not even create a true language, a language which does not succumb to appearances over truth. God could have created and confounded the languages to accommodate the truth of heliocentrism, if truth it be.

Consider this example to show how very simple it would have been for God to have structured the English language so that it naturally includes heliocentrism. It may sound jarring to our ears, but the word "sunrise" would "more correctly" be "tosun," which would acknowledge that the rotation of the earth would carry one toward the sun at sunrise. Likewise, sunset could be called "fromsun" since at that time one moves away from the sun in a heliocentric framework. This is no more cryptic or unusual than, say, the word "replenish" which, though it is commonly thought to mean "refill," actually means "to fill in an already-existing environment, background or backdrop," especially with some divine intervention such as the newly created flora and fauna as we find in Genesis 1:28 or supernaturally-quickly-grown flora such as was found after the flood in Genesis 9:1. When it comes to the issue of heliocentrism, God either made the languages of the world to be phenomenological or else the sun really does go around the earth.

Conclusion

The Bible verses which speak of the rising of the sun and its setting afford us the largest bulk of passages directly supporting the biblical doctrine of geocentricity. Again the issue boils down to the same point we've noted in previous chapters. Either God meant

what he wrote or he did not mean what he wrote and would, presumably, revise his original writing as well as write differently if he were to write today. And if he would recant today, then where is the truth?

The heliocentric theory, by putting the sun at the center of the universe, ... made man appear to be just one of a possible host of wanderers drifting through a cold sky. It seemed less likely that he was born to live gloriously and to attain paradise upon his death. Less likely, too, was it that he was the object of God's ministrations.

— Morris Kline¹

8

THE THRONE

When the news of Copernicus' promotion of the belief that the earth orbits the sun reached the ears of the Reformers, they expressed their disapproval of the idea. Most notable of those was Martin Luther who expressed some anxiety about possible consequences of the theory if it should ever be accepted as true. Throughout the history of the debate between geocentricity and heliocentrism, Christian and Jewish theologians expressed a moral uneasiness about the decentralization of the earth.

Timing the Effects of Changes in Morality

After less than a couple of decades of heliocentrism, the heliocentrists started to argue that since no moral upset seemed in the offing, that the Biblicists must be wrong in their voicing of moral reservations against heliocentrism. But in that they were premature. Heliocentrism did not become the dominant opinion until about 1650, one hundred years after the publication of Copernicus'

book which triggered the shift from geocentrism. Furthermore, history shows that it takes at least a generation for the long-term effects of a change in morality to manifest themselves. Changes in mores do not have immediate full impact on populations. Thus, to gauge the effect of heliocentrism we must look beyond the first generation which completely adopts it. We must look after 1650 to evaluate the impact of heliocentrism on morality. Only then can we see if the Reformers were correct in their moral trepidations about heliocentrism.

Just how such moral degeneration could result from such a subtle shift in worldview is not intuitively obvious. Nevertheless, the concern of the Reformers and other Christians has proven to be well founded; for heliocentrism directly spawned the view that man is but a mere machine, a cosmic accident. Heliocentrism is widely acknowledged as the foundation of the impersonal, mechanistic, materialistic universe and the existentialist view that human life is purposeless and thus, by implication, worthless. How this shift in moral outlook developed historically will be discussed in Part II of this book, but we have already noted its foundation in the quote by Burgess which heads Chapter 6, who correctly notes that Christianity without geocentricity is just plain “silly.”

To understand the Reformers’ uneasiness about heliocentrism we start at Isaiah 66:1 where we are told that the earth is the Lord’s footstool:

Thus saith the LORD, The heaven is my throne, and the earth is my footstool: where is the house that ye build unto me? and where is the place of my rest?

The theme of the earth as footstool is extended in Acts 7:49 (which is not a quote of Isaiah 66:1 but an elaboration):

Heaven is my throne, and earth is my footstool: what house will ye build me? saith the Lord: or what is the place of my rest?

Note that the two places mentioned, heaven and earth, were the first things created (Genesis 1:1).

Moral Relativism

It is usual for thrones and footstools to be at rest relative to each another. As Professor James Hanson has put it: “Footstools are not footstools if they are moving.” It is also usual for there to be some space between them. The Bible refers to the “room” in which these two items are found as a “habitation” and it does so on two occasions. The first of these is Psalm 89:14 where it is mentioned that:

Justice and judgment are the habitation of thy throne: mercy and truth shall go before thy face.

The second occasion is Psalm 97:2 which adds:

Clouds and darkness are round about him: righteousness and judgment are the habitation of his throne.

There are thus three things which the Bible singles out as constituting the habitation of the throne of God and those three are justice, judgment, and righteousness. The throne is not moving relative to these so these three elements of the throne’s habitation are constant; they are absolute; they never change. Likewise, by the analogy of the footstool, these three elements are also not moving with respect to the earth if the earth is at rest relative to the outer heaven (God’s throne). This means that the space between footstool and throne, the middle heaven, (outer space), must do the moving.

Notice what happens if we regard the earth as moving. Through the word of God, the earth sees the same three elements of the habitation of the throne; but since the earth is viewed as moving, the concepts of justice, judgment, and righteousness can be viewed as moving with it. Now this affords two conclusions. Ei-

ther there are absolute moral standards which are universally true and which are not affected by the earth's motion so that they would only "appear" to accompany the earth in its dizzying path, or the standards can be viewed as part of the earth since they share its motions. This latter concept of morality makes moral precepts to be just another earthly fixture, like a mountain or a building. This is the twentieth century moral view. It allows one to conclude that the biblical moral norms are not absolutes but are culturally defined standards. From there it is only a small step to the conclusion that all morality is relative and that there are no moral absolutes. In other words, the modern existential concept of moral relativism is an inference drawn from belief in the earth's motion.

Now many may wish to invoke the omnipresence of God in order to reconcile a stable throne with a moving footstool, but those who do so must also confront the fact that God speaks in overtly geocentric tones throughout the entire Bible. And they must also confront the fact that God cannot lie, even for convenience's sake; for if God did ever utter a lie, then the creative power of His Word is so great that the "lie" would immediately come to pass.

The above reasoning relating heliocentrism to the philosophical concept of *moral relativism* may seem far-fetched to most, but there is additional support for the inference besides the comments of the Reformers. We shall explore this additional evidence in the final chapter of this book.

All this is not to say that there were no moral relativists before Copernicus, for clearly there have been such throughout all of history; but it is to say that moral relativists can claim less scientific support for their views from a geocentric framework than from a heliocentric world view.

The Plumbline²

If the earth is rotating, let alone the profusion of other superimposed motions, a plumbline at the Temple from the mercy seat would seldom, if ever, point to God's throne with New Jerusalem. Such a line, when seen from the throne, would aimlessly flail about. But in scripture, this line points to God's throne, thus showing the

fixity of the earth with respect to the third heaven. That God's third heaven is fixed, we shall have to take at his word, for only God the creator can supply the reference. The plumbline, in turn, holds the *plummet*, a lead ball. In Isaiah 28:17³ this plumbline over Jerusalem connects Jesus (verses 9-13) with the righteous on earth. In Amos 7:7⁴ the LORD shows Amos the plumbline of Isaiah 28 and prophesies that the promised tribulational desolation (verse 9) "will not again pass by them any more." The "wall" of verse 7 upon which stands the LORD must be the temple wall showing the cosmological heavenly alignment of the place where God puts his name. Zechariah calls attention to this plumbline when prophesying the rebuilding of the temple (Zechariah 4:10). He associates the plummet with the cosmic events of Revelation 1 through the seven candles, "...for they shall rejoice, and shall see the plummet in the hand of Zerubbabel with those seven; they are the eyes of the LORD, which run to and fro through the whole earth."

The plumbline shows that salvation comes down, as in Psalm 19, to the earth; note the symbolism of the plummet, being made of lead which is considered the basest of metals, residing closest to the earth, representing man who cannot save himself (Ephesians 2:8-9). The plumbline points from earth to heaven (Jesus being the plumbline and our way to heaven,) and it also points from heaven to earth, bringing judgment upon Jerusalem, as we see in 2 Kings 21:13.⁵ Note that the word "line" in 2 Kings 21:13, Psalm 19, and many other places is a geocentric notion in that it is the geocentric, diurnally-rotating heavens that produce the lines.

The Effects Delineated

Yet there are other moral degeneracy effects involving heliocentrism. Take the occult practice of astrology, for example. Heliocentrists believe that the sun, moon, and planets all affect the earth in one way or another. Most particularly, it is held that the gravity of the sun, moon, and planets to varying degrees perturbs the earth and its creatures. A geocentric worldview will not permit the gravity of other celestial bodies to directly affect the earth.

Thus it is that geocentricity provides even less “scientific” grounds for astrology than does heliocentrism; for if gravity is allowed to affect the earth, then one could postulate all sorts of subtle, hitherto unsuspected effects of the astral bodies upon the human soul. Indeed, astrologers do exactly that. In geocentricity, the only physical effect that heavenly bodies can have upon the earth and its inhabitants are influx (that is, shooting stars, incident radiation, cosmic rays, etc.) plus those effects due to the knowledge of their existence.

As further support for the link between heliocentrism and astrology, let it be noted that in the several Mideast locations where mosaic floors of the zodiac have been found, every one of them pictures the sun (in the form of Apollo riding a flaming chariot) and not the earth at the center of the zodiac. Thus they place the sun at the very center of the starry sky. All these factors point to a link between heliocentrism and astrology.

Conclusion

In summary, what disturbed the Reformers about heliocentrism and why they tried to combat it was that they recognized however dimly, that moral relativism and superstition would have a more favorable climate to grow in a heliocentric culture than in a geocentric one. The Reformers foresaw that heliocentrism would weaken man’s perception of the Bible as the authoritative Word of God.

It turneth itself...

— Job 38:14, *Young's Literal Translation*

9

ALLEGED HELIOCENTRIC VERSES

Over the last 400 years several Bible passages have been presented as promoting heliocentrism. This is done exclusively by heliocentric Christians in their zeal to make the Bible more palatable for the atheist and agnostic who seem to have so little difficulty in accepting the obvious geocentricity of the Bible.

Despite the insistence of these heliocentrists, no passage has gained wide (let alone universal) acceptance. There is not even agreement among heliocentrists as to which references support heliocentrism. The entire foundation for heliocentrism is modern “science.” This is not the case for geocentricity where there is not only scientific support but also scriptural support. Since there is no universal agreement among heliocentrists on one single heliocentric verse in scripture, can we conclude anything else but that the proposed verses are primarily due to flights of fancy on the part of their advocates?

A passage once held to promote heliocentrism, though now largely abandoned, is Job 38:14.¹ This verse is embedded in a moderately complex tapestry of pronouns so that the surrounding verses, twelve through fifteen, should be quoted in order to ascertain the meaning of the fourteenth verse:

¹² Hast thou commanded the morning since thy days; and caused the dayspring to know his place;

¹³ That it might take hold of the ends of the earth, that the wicked might be shaken out of it?

¹⁴ It is turned as clay to the seal: and they stand as a garment.

¹⁵ And from the wicked their light is withholden, and the high arm shall be broken.

A few heliocentrists point to the phrase “It is turned” and conclude that this refers to the turning of the earth. Let’s look at that more closely.

That the dayspring is a type of Christ we know from Luke 1:78 and 79 where Zacharias praises God for the Christ child, whose coming he refers to with the words:

⁷⁸ ... whereby the dayspring from on high hath visited us,

⁷⁹ To give light to them that sit in darkness and in the shadow of death, to guide our feet into the way of peace.

Notice the wording. Both the visitation by the dayspring as well as the commanding of the morning have inherent in them the notion that it is the dayspring which moves. Thus the twelfth verse is actually a geocentric reference embedded in the supposedly heliocentric verse. The dayspring knew his place, not only here on earth but also at the right hand of the Father.

An analysis of the pronouns reveals that it is indeed the earth that is turned as clay to the seal and that the “they” of the fourteenth verse refers to both the morning and the dayspring. When it comes to the word “turned” in “it is turned as clay to the seal,” the heliocentric apologist refers to some ancient signet rings that have been found. Now a signet ring is used to seal and in this case, the rings presumably sealed clay tablets. The heliocentrism maintains, without support of any kind, that the tablet was rotated under the ring and that it is that rotational motion which is referred to in the fourteenth verse. Actually, there seems to be no proof that either ring or tablet were ever rotated to form a seal, it would be too easy to counterfeit as the pattern would be a mess; never be the same.

So the analogy is circumstantial at best, supported only by a private interpretation of the word “turn” in verse fourteen.

It is no secret that in English the word “turn” need not always mean, “rotate.” We say that milk *turns* sour, for example but milk does not start to spin as it “turns” sour, nor does it spin faster and faster as it gets more and more sour. So it need surprise no one that the Hebrew word used here, *haphak*, is rarely if ever used in any overt sense of turning. *Haphak* is generally used in the sense of *turning* from one’s prior lifestyle or the *turning* of the hand in order to help someone. Its most active form is found in Judges 7:13 where *haphak* is used to describe a cake of barley tumbling into the Midianite camp. The other Reformation translations are no help to the heliocentrists here either since their corresponding languages lack the ambiguity of the English word “turn.” Diodati, in the Italian, reads “*mutti in diverse forme*” which literally means “mutated into diverse form.” The Dutch *Statenbijbel* reads “*verandert*” which is roughly equivalent to the English word “changed” and literally means, “to be othered.” Thus all the Reformation translations are totally consistent with the English Authorized Bible and they are totally at odds with the interpretation of the heliocentrists.

Other objections, too, could be raised against a heliocentric interpretation of Job 38:14. First, there is the presence of the conditional, “might,” which appears twice in the thirteenth verse and which, coupled with the fact that the reference is to the judgment, means that the dayspring is not presently shaking the wicked out of the earth and that thus the earth is not now being “turned as clay to the seal.” Secondly, the use of the expression “is turned as clay to the seal” indicates a constant expenditure of energy in order to keep the turning going. This is contrary to Newton’s first law of motion which states that a moving (or turning) body will keep moving (or turning) as long as there are no forces imposed upon it. Newton’s laws, of course, are the very cornerstone of the heliocentrists’ “proofs” for the alleged motions of the earth. If the verse is heliocentric in nature then it would appear to violate Newton’s first law. This is what Young has done in the chapter quote where he maintains that the earth “turneth itself.” To be heliocentric and still be scientifically correct, the verse should read “it is turning as clay to

the seal.” Thirdly, all Reformation translators had the word “rotate” at their disposal, yet none were led to use it in connection with this verse; not even the Holy Ghost himself in the Hebrew.

What, then, is the true meaning of the verse? There is an obvious meaning which could not be expressed more clearly than in the present wording. As a seal is pressed on clay or wax, the clay moves to fill in the grooves built into the seal. In so doing, the clay wells up in a convection-like motion, a turning motion, and fills in the seal’s grooves. This interpretation is entirely consistent with the Bible. Although most modern versions read “changed” instead of “turned,” the motion of the clay under a seal is more accurately defined as “turning” since the clay remains clay and does not “change” into anything else. Such a turning motion of the earth could be responsible for uncovering the graves of the wicked at the last resurrection which is consistent with the context of the verse. A “change” will not uncover the graves and thus is not at all consistent with the context.

Even in this present world there is abundant evidence of such a type of “turning” on the part of the earth. There are rock beds which have been folded and bent as if they were pushed aside by tremendous weight. These are especially prevalent in mountain regions where some of the more severely disturbed are commonly referred to by geologists as having been “overturned.” Such phenomena could also have occurred at the continental split of Peleg’s day.

Conclusion

The heliocentrists’ attempts to promote Job 38:14 and other passages as indicative of the rotation and motion of the earth makes God out to be either a clumsy grammarian or a poor scientist, ignorant of Newton’s first law of motion. No alleged heliocentric verse has withstood the test of time.

Thy will be done in earth as it is in heaven.

— Matthew 6:10

10

ORDINANCES OF HEAVEN

Job 38:33 introduces what most heliocentrists consider to be the bastion of heliocentrism in the Bible; the ordinances of heaven:

Knowest thou the ordinances of heaven? canst thou set the dominion thereof in the earth?

Heliocentrists believe that the bands of Orion and the sweet influences of Pleiades mentioned in Job 38:31 refer to gravitation. When the Bible mentions “ordinances of heaven,” again the heliocentrists immediately read “the laws of gravity.” In other words, heliocentrists believe that the biblical references to the ordinances of heaven refer to the principles of physics as those principles are taught in the twentieth century.

It is not at all difficult to show that such cannot be the interpretation of Job 38:33. Note especially that God asked Job if he, Job, could “set up the dominion” of the ordinances of heaven in the earth. This phraseology implies that the ordinances of heaven are not currently in effect in the earth. Now since gravity is presently effective in the earth, gravity cannot be considered as one of the “ordinances of heaven” to which God is referring as he addresses Job. After all, if the ordinances of heaven are already in effect here below, then instead, should God not have said, “hast thou set the dominion thereof in the earth?”

One may object that this line of reasoning is weak, but there are other indications in scripture that imply that the ordinances of heaven referred to in Job 38 do not have dominion in the earth today. Take our chapter quote, Matthew 6:10 for example:

Thy kingdom come. Thy will be done in earth, as it is in heaven.

Why pray for God's will to be done in earth if it is already being done? And are the ordinances of heaven not part of God's will, especially when they are used to symbolize the permanence of God's covenant in Jeremiah 33:20, 21, 25 and 26? These verses read:

²⁰ Thus saith the LORD; If ye can break my covenant of the day, and my covenant of the night, and that there should not be day and night in their season;

²¹ Then may also my covenant be broken with David my servant, that he should not have a son to reign upon his throne; and with the Levites the priests, my ministers. . . .

²⁵ Thus saith the LORD: If my covenant be not with day and night, and if I have not appointed the ordinances of heaven and earth;

²⁶ Then will I cast away the seed of Jacob, and David my servant, so that I will not take any of his seed to be rulers over the seed of Abraham, Isaac and Jacob: for I will cause their captivity to return, and have no mercy on them.

Note that in Jeremiah 33:25 the Lord draws a distinction between the ordinances of heaven and the ordinances of earth, as if to say that these two sets of ordinances are not the same. This supports the conclusion we drew earlier from Job 38:33.

Such a distinction between the things of earth and the things of heaven is also drawn in 1 Corinthians 15:40-41 where Paul wrote:

⁴⁰ There are also celestial bodies, and bodies terrestrial: but the glory of the celestial is one, and the glory of the terrestrial is another.

⁴¹ There is one glory of the sun, and another glory of the moon, and another glory of the stars: for one star differeth from another star in glory.

To claim that these verses merely refer to the different brightness of the sun, moon, and stars is to ignore both the context of 1 Corinthians 15:40-41 as well as the fact that the celestial bodies are contrasted with terrestrial ones; the contrast is not celestial with celestial.

All of the aforementioned verses point to a difference between things celestial and things terrestrial. These differences are also inherent in the ordinances of heaven and the ordinances of earth. Thus the ordinances of heaven cannot be restricted or equated to what is popularly called the “laws of physics.” Actually, the so-called “laws of physics” are not “laws” at all; for if they were then God would break the “law” every time that he performed a miracle. Take the “second law of thermodynamics,” for example. One of the implications of the “second law” is that the dead cannot be resurrected; nevertheless, Jesus resurrected Lazarus and others and thus violated the “second law.” When Jesus ascended into heaven, he violated both the law of gravity and Newton’s second law, which states that for every action there must be an equal and opposite reaction. When God spoke the universe into existence, he violated the first law of thermodynamics which states that energy (or matter) can neither be created nor destroyed. Thus the “laws” of physics are “laws” only in the traditions of men. They are not God’s inviolable laws or ordinances.

Some of the ordinances of heaven and earth are explicitly stated in the Bible. Among the ordinances of earth is Genesis 8:22:

While the earth remaineth, seedtime and harvest, and cold and heat, and summer and winter, and day and night shall not cease.

It has been argued that because of this verse Joshua's long day could only have been an optical illusion at best.¹ The argument is that if Joshua's long day and Hezekiah's sign are not optical illusions local to Israel, then day and night shall have ceased and so God would have violated his promise to Noah, that is, the promise of Genesis 8:22. But read the verse carefully. It says that day and night shall not cease; it does not say that they shall all be of exactly the same duration. Nor does the scripture say that they cannot pause. A day does not "cease" simply if it is lengthened.

Finally, it is written in Daniel 2:21 that God:

. . . changeth the times and the seasons . . .

If Joshua's long day violates God's promise to Noah, then does this verse also contradict the promise to Noah? Of course not. Clearly, then, there is no inconsistency between the "ordinances of heaven" as mentioned in the Bible and the doctrine of geocentricity as also clearly taught in scripture. Nor for that matter do variations in the length of the day nor in the length of seasons contradict Genesis 8:22. After all, day and night, as periods of light and darkness, are each six months long at the earth's poles, but only about 12 hours long at the equator.

Jeremiah 31:35-36 specifies some of the ordinances of heaven, particularly those of the sun, moon, and stars:

³⁵ Thus saith the LORD, which giveth the sun for a light by day, and the ordinances of the moon and of the stars for a light by night, which divideth the sea when the waves thereof roar; The LORD of hosts is his name:

³⁶ If those ordinances depart from before me, saith the LORD, then the seed of Israel also shall cease from being a nation before me for ever.

Here the ordinances include how light is produced and for what purpose. Nothing is said about any ordinances involving motions or lack of motions on the part of celestial bodies.

The ordinances of the sun, moon, and stars were specified at the time of their creation in Genesis 1:14-15, where we read:

¹⁴ ...to divide the day from the night; and let them be for signs and for seasons, and for days, and years:

¹⁵ And let them be for lights in the firmament of heaven to give light upon the earth...

Genesis 1:16 adds that the sun is to rule the day and that the moon and stars are to be co-regents over the night. These, then, are the ordinances of heaven which are referred to in Jeremiah 33 and Job 38.

In connection with the ordinance that the sun is to rule the day while the moon and stars are to rule the night, physics Professor Harold Armstrong made a very pertinent observation. In a letter to the author dated 19 March, 1977, Professor Armstrong writes:

Genesis 1:16 says that the greater light, which everybody, I think, grants to be the Sun, was to rule the day. The Hebrew word is the ordinary one to state that e.g. a king rules over a country; ... But what, in this context, is the day? According to 1:5 it is the light. In other words, it is day wherever it is daylight; and that applies to interplanetary space. Even out beyond Pluto it is daylight; the light from the Sun there is still much stronger than full moonlight here on Earth.

How, then, does the Sun rule this territory? To rule a territory could mean to control what happens in it. The Sun, then, controls what happens in interplanetary space, *viz.*: the motions of the planets. It controls also the motions of the irregular or occasional objects there, *viz.*: comets and meteoroids, and nowadays an occasional rocket. In other words, the motions of these things are ordered to the Sun, and (although it is now hindsight) that could have been deduced from Scripture. So their motion, with respect to the Sun, could well be the same as it is by the heliocentric theory (which can be called Newtonian, not Copernican or Ke-

plerian); consequently nothing about those motions can serve as evidence against the [geocentric] Tychonic theory.

However, these arguments could not give Scriptural support to a completely heliocentric theory. For the lesser light, which, I think, almost everyone takes to be the Moon, was to rule the night. Now according to the heliocentric theory, and the interpretation adopted, the Sun would be ruling both day and night; for in controlling the motion of the Earth it would be controlling the motion of the dark side as well as that of the light one. But the Tychonian theory does not encounter any such difficulty.

The point that Professor Armstrong is making is this: the night is that cone of darkness, the shadow of the earth, which is ruled by the moon; the moon occasionally even enters the shadow but is never completely darkened by it. Such an event is popularly called an “eclipse of the moon.” Any place where the sun’s light would fall would be part of the day; any place the sun’s light would not fall is part of the night. Consider the night to be only the cone of darkness which is the earth’s shadow. Then in the heliocentric system the shadow, along with the earth, orbits the sun and so is controlled or “ruled” by the sun. The scripture would then be wrong in insisting that the moon and not the sun rules the night (Figure 5).

Conclusion

In summary, we noted that the Bible isolates the following ordinances of heaven: first, that the sun is a light for the day; second, that the moon and stars are for lights at night; third, the ordinances include the means by which said light is produced; fourth, the celestial bodies are for signs; fifth, they are also to be for seasons and that the seasons as well as day and night (as periods of light followed by darkness) shall not cease until the end of the earth shall come. As was noted in the chapter on Joshua’s long day, said day is a type of a long day which is yet to come. As such it and Hezekiah’s sign are signs to Israel. Thus the two events (Joshua’s

Long Day and Hezekiah's Sign) both conform to the "ordinances of heaven" since one of those ordinances is that the sun, moon and stars are to be for signs; but regularity of planetary and satellite motion or rotation is definitely not a biblically-supported ordinance of heaven. These are the ordinances of heaven which the Bible identifies for us. God's question to Job would appear to indicate that there are others of which we are presently ignorant. Yet here, too, we found not a shred of evidence for heliocentrism.

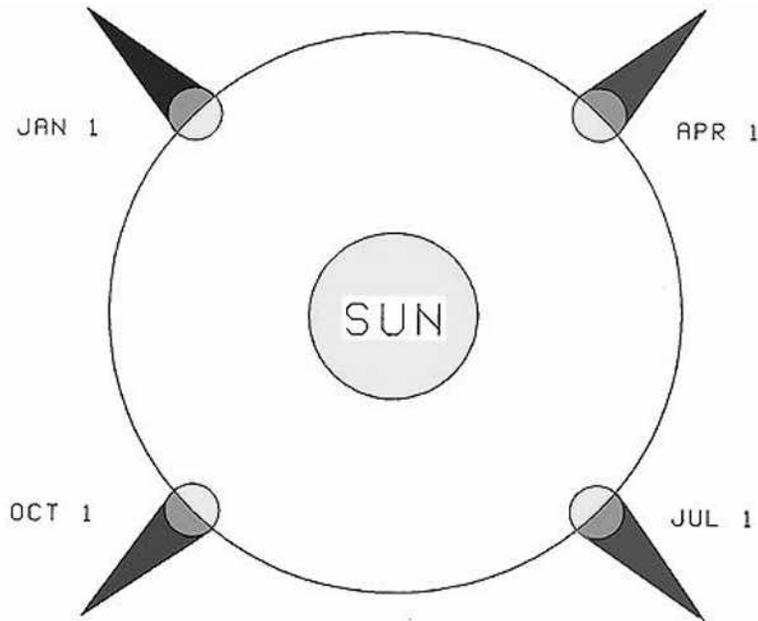


Figure 5a: *The sun rules the night*

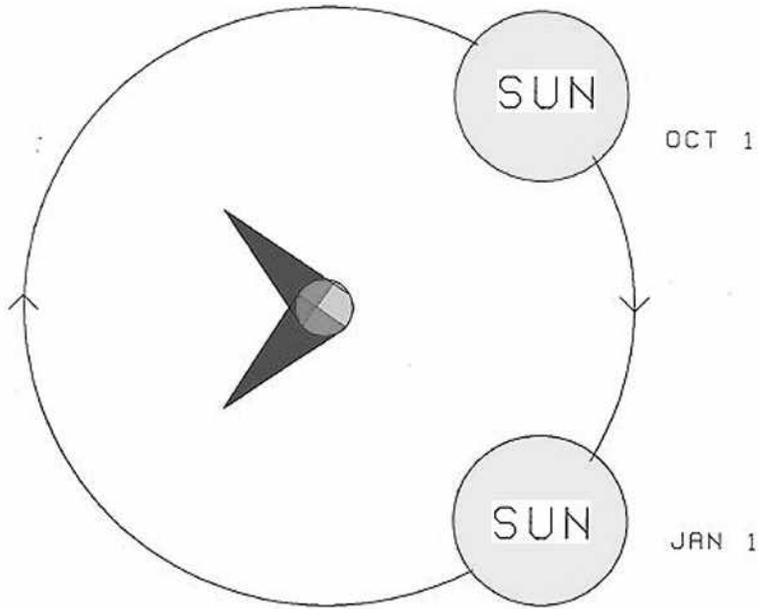


Figure 5b: *The sun does not rule the night*

In the heliocentric system the night, along with the earth, orbits the sun. This violates the Bible's principle of the separation of the powers of darkness and light. On the other hand, in the geocentric system the night orbits the earth with a period of one day and the separation of powers is maintained.

In the first place inanimate nature is, after all, part of the world, so that any philosophy of the world claiming to be truly comprehensive must take notice of the laws of inanimate nature; and in the long run such a philosophy becomes untenable if it conflicts with inanimate nature. I need not here refer to the considerable number of religious dogmas to which physical science has dealt a fatal blow.

— Max Planck¹

GEOCENTRIC MODELS

Heretofore we have looked at the theological issues of the Copernican Revolution, but in the realm of science we have confined ourselves to a criticism of heliocentrism without presenting more than a promise of geocentricity. We have examined scientific observations which, when taken at face value, proclaim the universe to be geocentric. We have also noted that absolute proof of either heliocentrism or geocentricity is lacking unless one accepts the testimony of the Bible as such an absolute proof. Since the time of Copernicus and Kepler, modern science has geared itself to decoding the universe; so we cannot expect it to accept the Bible as any sort of authority whatsoever, let alone to acknowledge the Bible's God. Thus we must deal with the issue of whether or not there are any valid geocentric models.

Ptolemaic Model

Historically, the first geocentric model is the one commonly known as the Ptolemaic model (Figure 6). It is usually represented as the quintessential geocentric model, and much is made of its demise at the hands of Galileo Galilei. Even astronomers and his-

torians who should know better claim that Galileo's discovery that Venus exhibits moon-like phases disproved the Ptolemaic model. All that Galileo's observations actually meant insofar as the Ptolemaic model was concerned, was that the radii of the epicycles (Figure 7) were much larger than had previously been suspected; and all that Kepler's elliptical orbits meant to the Ptolemaic model was that two of the epicycles could be combined into one ellipse (Figure 7). But by the time of Galileo, the Ptolemaic model had for too long been associated with a category of Greek models which embodied the philosophy of *geocentrism*. Geocentrism is the belief that the universe was made up of impenetrable, concentric spheres (Figure 8). Galileo's observations of the phases of Venus and the satellites of Jupiter (as well as the spots on the sun, for that matter) were fatal to geocentrism; but they need not have been fatal to the Ptolemaic model *per sé*, and they have nothing against geocentricity.

Advanced Potential Models

Modern geocentric models start in 1898 with a paper by the German physicist, Paul Gerber.² Gerber was able to show that if the universe rotates around the earth once per day, that then the usual so-called proofs of heliocentrism (the bulge of the earth's equator, the stationary satellite, the Foucault pendulum, etc.) would be present just as we see them. Gerber's model was crude by comparison with modern geocentric models partially because his was a pioneering work and partially because in order to prove his point, he assumed an advanced gravitational potential. The latter assumption basically reverses cause and effect. For example, the usual explanation for earthquakes is that they are due to stress build-up along cracks in the earth. When the stress reaches the breaking point, the earthquake happens and the spin of the earth is affected. In an advanced potential, the earthquakes are due to stresses and strains within the rotating universe which causes a corresponding strain build-up in the earth. Once the universe's strain snaps, the earth slips and the earthquake happens (usually along a weak point like a fault), and the universe adjusts its rotation rate accordingly.

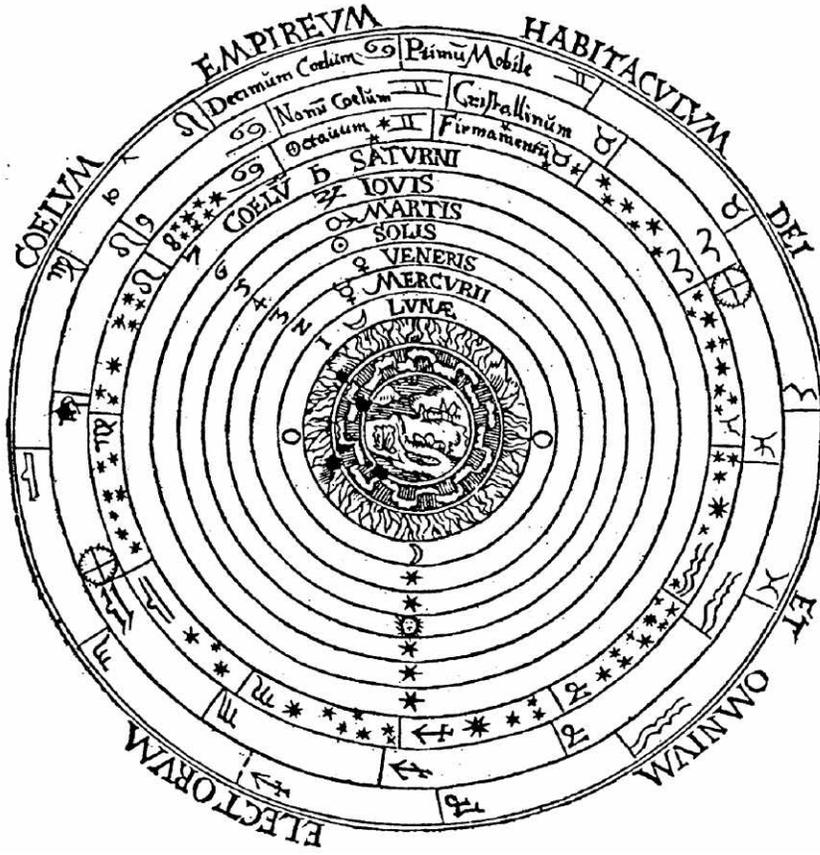


Figure 6: The Ptolemaic System

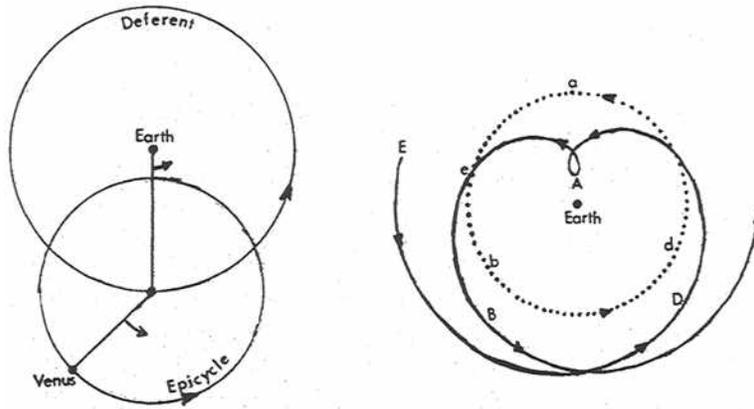


Figure 7: *Epicycles*

Left: The Ptolemaic system modeled the motions of the planets by the use of epicycles which are circles whose centers lie on the circumference of another circle. The *deferent* and *epicycle* of Venus are shown. Right: When the two circular motions are combined, the cycloid (solid line) is obtained. The dotted line shows the sun's path about the earth and capital and lower-case letters respectively show the relative positions of Venus and the sun in their orbits. Note: in the Ptolemaic system the earth was not truly at the center of the deferent but was slightly offset. Ptolemy did not know the distances to the planets, had he known them the path of the sun about the earth would be the deferent with the sun at the epicycle's center and the epicycle's radius equal to the distance between the sun and the planet.

If the reader finds an advanced potential too mystical or unsatisfying, consider another example. Mathematical solutions of field emissions (for example, the mathematics describing the emission of radio waves) require that a signal come in from infinity before the same signal can be transmitted out into space. In other

words, when a radio transmitter sends out radio waves, the waves can be mathematically described by trigonometric sines and cosines; but such a wave traveling through space cannot just start in the middle: that would be like an ocean wave suddenly forming as a sheer vertical cliff of water – it just doesn't happen. For the math to work in the radio transmitter example, there must be a corresponding radio wave coming in from infinity to generate the signal. This *advanced signal*, as the signal coming in from infinity is called, is generally dismissed as unphysical, being merely a mathematical artifact. An advanced potential works much the same way. Effectively it acts as if the universe anticipates the position of a planet or anticipates changes in any and every body in the universe.

In the case of the earthquake, the advance potential can be said to “cause” the earthquake. In that case the earthquake registers the earth's response to the advanced potential. That response changes the shape of the earth, and that change in shape is transmitted back to the universe. In turn, the universe shifts its rotation rate, starting at the surface of the earth and radiating out into space at the speed of light. That is the idea behind Gerber's advanced potential. One sees theological overtones of God's control versus the universe's here, and such are not necessarily far-fetched. However, such questions are beyond the scope of this book.

Thirring's Models

Gerber's model is interesting because there may be something to an advanced potential, especially since it is indistinguishable from the usually-assumed retarded potential; but Gerber's model is also limited. With the advent of the special and general theories of relativity in 1905 and 1916, a new emphasis was placed on Mach's principle and the principle of equivalence. In 1918 the German physicist Hans Thirring³ wrote a paper in which he examined the behavior of bodies inside a rotating shell. His model tried to solve the puzzle of what happens if the universe were a rotating shell:

how would pendulums, satellites, winds, and so forth behave near the earth?

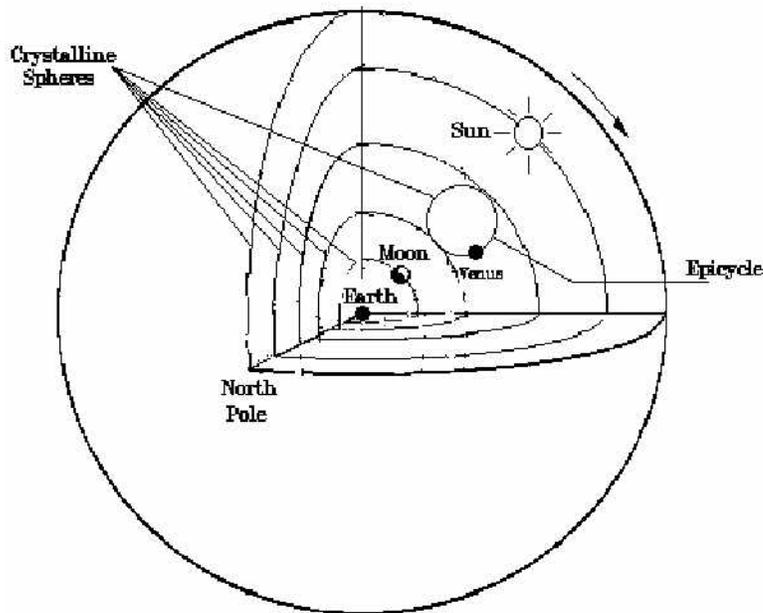


Figure 8: *Crystalline spheres*

The crystalline sphere version of the Ptolemaic universe had the planets confined to rolling along transparent glass spheres. To account for epicycles, smaller spheres rolling between the spheres were invoked (see “Venus”).

Thirring discovered that they would behave pretty much as we see them behave, although not exactly. The mismatch he took to be due to incompleteness of his model. Nevertheless, what Hans Thirring discovered was that the gravitational field inside the shell was not zero, as expected in Newton’s gravitational model, but that there arose certain forces inside the shell away from the center. These forces are analogous to the centrifugal and Coriolis forces. Now here is a telling distinction: in classical, heliocentric, relativistic physics, the centrifugal and Coriolis forces are technically not

forces at all but are termed “fictitious forces” or “effects”; but what Thirring demonstrated was that in a geocentric system, these are no longer “fictitious forces” but real forces. Even more specifically, in a geocentric framework the centrifugal and Coriolis forces are identifiable as *gravitational forces*. This means that the so-called proofs for the rotation of the earth, the Foucault pendulum, the earth’s equatorial bulge, the stationary satellite, and so on are not proofs at all, being equally explained by Thirring’s geocentric analysis. In fact, since the geocentric model encompasses the entire universe and has no fictitious forces, one could say that the alleged proofs for heliocentrism actually prove geocentricity instead.

Later that same year, Thirring published a second paper with Lense.⁴ Lense and Thirring obtained pretty much the same result as Thirring had achieved in his earlier paper, but they did so using a different model: instead of assuming the universe to be a rotating sphere, they modeled it as a rotating disk. Lense and Thirring further discovered that the rotation of a body should have a gravitational effect on other bodies. For example, when the Voyager spacecraft flew by the planet Jupiter it followed a certain path. If the satellites of Jupiter were to rotate more slowly or more swiftly, or if the length of Jupiter’s day were to change, Voyager would have followed a slightly different path. This effect, called the *Lense-Thirring effect*, is not yet detectable; but physicists hope to improve their measuring capabilities enough in the next couple of decades to be able to detect it and to see if Lense and Thirring’s analysis is correct. The papers by Lense and Thirring set the stage for another look at the so-called proofs of the rotation and orbital motions of the earth; for those “proofs” started looking less and less sure.

Thirring’s is not the only geocentric analysis nor is it the best. In 1952 Møller published a text on relativity in which he arrives at the same conclusion as Thirring but by assuming the universe to be a ring instead of a shell. His model is akin to looking at the effect that would be due to the Milky Way, or the average effect of the solar system rotating about the earth; whereas Thirring’s is more representative of the effect the universe has as a whole.⁵ This section was omitted in Møller’s second edition (1972) for certain

metaphysical reasons, not because of an incorrect initial analysis: we shall say more on those metaphysical reasons later.

Other Geocentric Models

There have been other mathematical expositions showing that the physics of the geocentric universe is the same as the heliocentric. Birkhoff⁶ has taken an approach in which he combined the Coriolis and centrifugal forces to be part and parcel of the definition of gravity. G. Burniston Brown⁷ arrived at geocentric solutions from Newtonian gravity and used a purely classical approach. Moon and Spencer⁸ took a classically-oriented look at Mach's principle and arrived at a geocentric model. Nightingale⁹ has also derived a non-relativistic geocentric model. Rosser¹⁰ expanded on the Lense and Thirring papers explaining how the outer reaches of the universe could not only be moving many, many times the speed of light, but also how the universe would not fall apart, even if it were rotating trillions of times per second. All of these physicists (and there is not a geocentric Christian in the bunch) conclude that there is no detectable, experimental difference between having the earth spin diurnally on an axis as well as orbiting the sun once a year or having the universe rotate about the earth once a day and possessing a wobble centered on the sun which carries the planets and stars about the earth once a year. In none of these models would the universe fly apart, nor would a stationary satellite fall to earth. In every one of these models the astronauts on the moon would still see all sides of the earth in the course of 24 hours, the Foucault pendulum would still swing exactly the same way as we see it in museums, and the earth's equator would still bulge. In other words, each of these effects is due to either the centrifugal force, Coriolis force or some combination of the two and can be totally explained in any geocentric model.

Barbour and Bertotti's Model

The best mathematical, as opposed to geometric such as Tycho's geocentric model (p. 117), to date is that of Barbour and Bertotti.¹¹ Barbour and Bertotti's model is extremely fruitful, though incomplete. Starting with the fact that energy can neither be created or destroyed, they formulate that statement in a particular way called a *Hamiltonian*. From that Hamiltonian, Barbour and Bertotti develop a set of equations describing motion in general throughout the universe. Eventually they derive Kepler's and Newton's laws, the perihelion precession of Mercury, a "critical velocity" which is the speed of light, and electrostatic effects. They also derive certain relativistic effects without ever invoking relativity. They discover that the laws of physics for the universe as a whole are different than those for small systems; the former they call *protophysics*, the latter is called *local physics*. Barbour and Bertotti further find that by assuming the universe to be rotating – by assuming that it cannot matter to physics and geometry whether the earth rotates or the universe rotates – that then a lot of different and heretofore unrelated physics falls into place into a coherent whole. In other words, their geocentric model is more general and potentially more fruitful than the current heliocentric (acentric) model. In short, the geocentric model reflects reality better than does the heliocentric model.

Barbour and Bertotti's physics is not complete, but it can be made complete with more effort. Lest one be tempted to fault them for a not-yet-complete model, remember that the Copernican model has a three-hundred-year head start of intensive mathematical development. Barbour and Bertotti's approach promises to be able to integrate much if not all of physics into a single theoretical framework. That is the philosophy inherent in geocentricity.

So it is that we find that time after time, in respected physics journals, papers have been published which show that the geocentric and heliocentric models are equally valid. Theoretical physicists know that this has to be the case because otherwise, the laws of physics would depend on one's location in the universe. If heliocentrism can be proven, then the laws of physics should be different on the moon than in an airliner, and different again on the surface of the earth. We are reminded that the only way one could

ever prove heliocentrism or geocentricity is to go outside the universe and to take a look around out there.

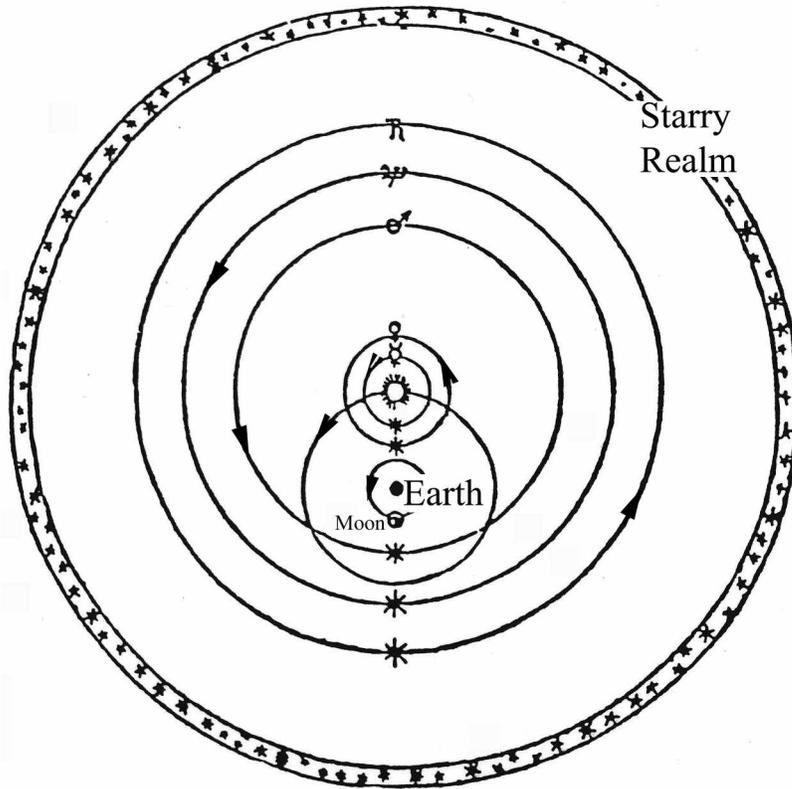


Figure 9: *The Modified Tychonic Model*

The model explains all observed phenomena. The sun is at the center of the circle representing the starry realm or the firmament. The shell is stylized, being actually billions of light years thick in the model. Irregularities in the distribution of stars in the firmament causes a one-year vibration of the entire universe so that the sun follows the circle running through it and centered on the earth. The planets orbit the sun, and the sun sees the earth as if it orbited it. We are looking at this model from the third heaven. If we were in the model there is no way we could tell the difference between this model and the model we were all taught in school.

⁶ God said, Let there be a firmament in the midst of the waters, and let it divide the waters from the waters.

⁷ And God made the firmament, and divided the waters which *were* under the firmament from the waters which *were* above the firmament: and it was so.

⁸ And God called the firmament Heaven. And the evening and the morning were the second day.

— Genesis 1:6-8

THE FIRMAMENT MODEL

In previous chapters we have referred to phenomena designed to test for or demonstrate both earth's revolution around the sun and rotation. While experiments designed to test for the rotation of earth do show such relative rotation, experiments designed to detect the orbital motion directly do not. Both sets of experiments were designed to reveal the motion of the earth relative to a light-bearing medium called the æther. Yet in the twentieth century, relativity, the theory proposed to explain the lack of evidence for the motion of the earth through the æther, has reportedly done away with the æther. In recent years, however, the concept of the æther is coming back in vogue, albeit in a different form. We shall examine that next.

The Plenum

Historically there have been two versions of the æther. The older of the two views the æther as a *plenum* – an infinitely dense medium. In the nineteenth century, the theory of the *luminiferous*

æther was developed. That *æther* is an extremely rarefied, vacuous one which was thought to carry light waves in much the same way as air carries sound waves and water carries water waves. Presently the evidence is stacked against the luminiferous *æther*, although in a sense one could view gravitational and other fields as rare *æthers*. In any case, doing so still does not match the concepts of the luminiferous *æther* envisioned in the last century. For example, the Michelson-Morley experiment could be explained if the medium bearing the light was dragged by the earth around the sun. If that is so, however, then the *æther* should also be dragged along with the earth's rotation, which it evidently is not. The luminiferous *æther* is not nearly as fruitful to physics as is the plenum *æther*.

The notion that the *æther* is an infinitely dense medium was first proposed by Greek philosophers. Eventually they concluded that if the medium in which we are thus embedded were infinitely dense, that then there would be no such thing as motion. Their argument was that one could not move if one were encased in lead, and lead isn't even infinitely dense. However, a careful analysis reveals that the plenum model is not so easily dismissed. God, for example, is omnipotent, infinite, and omnipresent. One cannot cut a region of space so small that God's power therein is not infinite. Hence God is a plenum. Yet, as Acts 17:28 records: "in him we live, and move, and have our being." The proper analogy is not one of being encased in lead: instead, a more fitting analogy is found in the air around us. There are fifteen pounds of air pressing on each square inch of our bodies, yet we are not crushed by this weight because there is an equal pressure inside our bodies which negates the crushing weight of the atmosphere. Similarly, the restriction against motion in a plenum is only against straight-line (rectilinear) motion, but cyclical or wave-like motion makes the plenum *æther* a viable model again.

So in a plenum motion in a perfectly straight line is not allowed; but circular, elliptical, rotational, or undulatory motions are allowed. Furthermore, as if to underscore the point, straight-line motion has never been observed anywhere in the universe — no, not by any experiment ever conducted by man. It is this fairly recent discovery that a plenum, as long as it is eternal and uncreated, will

allow closed-path motion, that has given University of Cambridge professor Harold Aspden the impetus to re-examine the æther as a plenum.¹ With his plenum-æther model, Aspden is able to explain a number of phenomena, such as ball lightning, which have thus far eluded explanation by physics. It is Aspden's view that rotation of parts of the æther gives those rotating parts the properties of mass, gravitation, and electromagnetism. His model easily derives some of the "relativistic" effects which otherwise take very complicated mathematical contortions to obtain; and Aspden does so from purely classical considerations. Aspden's model of the æther is not at all radical or new. He perceives the æther in a classical sense: that certain electromagnetic phenomena result from taking the *curl* (a mathematical operation) of the æther. But his view of the æther as a plenum is rather innovative and his is the first fruitful plenum-based æther model in several centuries.

A plenum-æther solves many of the objections which were raised against the rare-æthers over the last century-and-a-half. Because of the Greek dismissal of the plenum, scientists envisioned the æther as a rare, thin medium, much like air but even thinner. That kind of æther must obey the rules of very small numbers. A plenum, by contrast, follows the rules of infinite numbers. For example, any portion of the plenum, no matter how small, must be infinite. In particular, this means that there is an infinite amount of plenum-æther inside the earth. Furthermore, any arbitrarily-sized volume of the æther must contain the same amount of plenum-æther as any other arbitrary volume, namely, an infinite amount. Hence, there is as much plenum-æther inside the earth as there is in the rest of the universe. As such, it is meaningless to imagine the relative masses of earth and cosmos to *necessarily* be significant in terms of their relative motions. That this is so can be seen by the successes of the geocentric models presented in the previous chapter.

But the plenum-æther cannot fully account for all that is observed. Nor is it entirely consistent with the Bible. We must modify Aspden's æther to bring it in line with both physical and scriptural evidence. We shall not be concerned here with any mathematical derivations.²

Ex Nihilo

We start at the beginning with absolute nothing. The tendency is to treat “nothing” as a “thing,” but its name, “no-thing” belies that. “Nothing” cannot have any properties or attributes. In particular, “nothing” cannot have length, volume, time, or intelligence. It can have neither beginning nor end. It cannot have an origin, and it cannot be a thing. In short, it cannot have the property of existence and so cannot exist. Since it is true that “absolute nothing” cannot exist anywhere at any time, then its inverse must also be true that “absolute everything” must exist always and everywhere. Now do not confuse *absolute everything* with *absolutely everything*. This absolute existence must have all the inverse properties of nothingness. Whereas the nothing has no size, its inverse must be infinite in extent or omnipresent. Whereas nothing has no knowledge, its inverse must be omniscient. Whereas nothing has no existence, its inverse must have infinite existence. Whereas nothing has no power, its inverse is omnipotent. These are precisely the characteristics of God as presented in the scripture. (Note that these characteristics require God to have a character or personality also.) Thus we have arrived at the necessity for the existence of God as inferred from the very existence and order built into the universe. This observation also illuminates the error of the big-bang hypothesis, namely, that the big-bang-produced universe is too small and too uncharacteristic to be realistic.

So there was nothing at all before God, and God came from nowhere because there is nowhere God could come from. Hence God is reasonable and he even invites us to reason with him, for he says: “Come now, let us reason together” in Isaiah 1:18. For God to truly be omnipresent and omniscient he must be a plenum in the fullest sense of that word; but God is more than the material plenum of the Greek philosophers and Aspden. God is intelligent, creative, and all-powerful. As is taught in Romans 1:20a:

For the invisible things of him from the creation of the world are clearly seen, being understood by the things that are made, [even] his eternal power and Godhead.

It is God's eternal power and Godhead that undergirds the creation and that provided the "stuff" of which the creation is made.

Given a plenum æther, how can the universe be finite and created? In looking at nature, we do not see that it exists with the properties of a plenum; that is, the properties of God, although pantheists claim the contrary. The key to this puzzle lies in understanding how a created, finite æther can be made to look indistinguishable from an uncreated infinite æther insofar as material objects (protons, electrons, neutrinos, photons, etcetera) are concerned. The key to that understanding is to be found in the firmament of Genesis chapter 1.³

The Firmament

At the start of the second day of creation the earth was still formless and void in the deep; but during the second day God removed the deep from off the surface of the earth. He did this by creating the firmament, which God called "Heaven."

Much has been written on the firmament, most of it pure speculation. It has been suggested that the firmament was a metal shell surrounding the universe. Others have suggested that it was a canopy of water, or water vapor, or water ice surrounding the earth. The problem with the latter interpretation is that the sun, moon, and stars are placed *inside* the firmament on the fourth day; whereas, the canopy model requires them to be on the *outside*. A discussion of whether or not there ever was a canopy is beyond the scope of this book. Here our position is that evidence for a canopy cannot be adduced from Genesis 1.

Of the above two models for the firmament, the former seems most consistent with the scripture; but is it really? If the stars are created inside the shell surrounding the universe, then one could most definitely say that they are inside the firmament. After all, we

say that there is air *inside* a balloon, don't we? This is no different. The problem arises when we discover that "God called the firmament Heaven." If the shell model is correct, then the Scripture should have said: "God called the interior of the firmament Heaven." Yet all agree that the heaven mentioned here relates to "outer space" as opposed to the atmosphere mentioned in the first verse of Genesis. Can it be that the firmament is the vacuum of space? Then why would God imply it to be "firm?"

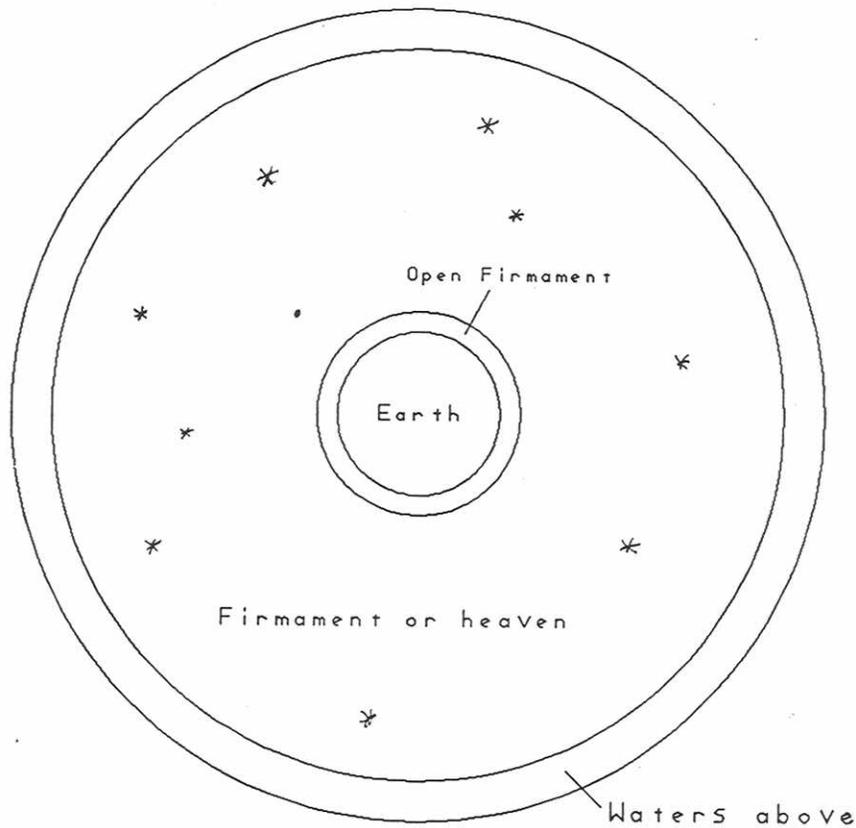


Figure 10: *The firmament according to the Bible*

In order to see the firmness of space, we must look very closely at it. The question is ultimately one of whether or not space has a fabric, a substance. We all know that in looking through a microscope we see smaller and smaller things until eventually we see molecules which consist of atoms. Individual atoms have been seen in microscopes, but beyond that, we must use a mathematical microscope. Through the theoretical microscope, we “see” that the atom consists of electrons, protons, and neutrons. The neutron is made up of an electron plus a proton plus a neutrino. Other particles have been “seen” for short times in various particle accelerators. Now the density in the nucleus of an atom is very dense indeed, amounting to about 2×10^{14} gm/cm³. This means that a collection of nuclear particles the size of a sugar cube (one cubic centimeter) would weigh 200,000,000 tons! Firm though that is, such cannot be the firmament because the space between nuclei seems to be empty. Indeed, a chunk of the universe the size of a sugar cube, on the average, weighs in at only about 10^{-29} or 0.000,000,000,000,000,000,000,000,001 ounce: hardly firm. So to find the firmament we must continue looking further through our theoretical microscope.

Planck Particles

The size of the atom is about 10^{-13} cm.⁴ The size of the nucleus is about a thousandth of that. As we proceed to smaller and smaller scales, nothing interesting seems to be happening until we get to a scale of about 10^{-33} cm. At that size called a *Planck length*, fascinating things happen; for it is there that we truly hit the fabric of space. To appreciate just how small a Planck length is, let us note that if we increased its size to that of a man, then man would be the size of 100,000,000 universes laid side-by-side!

At a scale of the order of 10^{-33} centimeters, we find that the warp and woof of heaven comes into focus. Physics attempts to derive relationships between the different properties of objects. Such relationships typically involve certain constants: values which

are generally assumed not to change over time. The speed of light is such a constant. So is the gravitational constant. It turns out that there are relationships among these constants themselves, and those relationships all express themselves to specifics at the Planck length. For example, the Planck length itself, L^* , relates Planck's constant (a unit of angular momentum or spin-energy), h , the speed of light c , and the gravitational constant G to give a length of 1.616×10^{-33} cm. By the same token, the constants give us a fundamental unit of mass M^* , called the *Planck Mass*, which is 2.177×10^{-5} gm. The corresponding basic unit of time, the Planck time, t^* , is 5.391×10^{-44} sec. Lastly, the fundamental unit of temperature T^* can be derived by introducing Boltzmann's constant, k , and it gives a temperature for the firmament of 1.417×10^{32} K; a most fervent heat not observed anywhere in the universe.

Modern science is not certain as to the meaning of these numbers, but the most popular explanation at present is that they signify particles which pop into existence, exist for about 10^{-44} second, and then pop out of existence again. These particles, called *Planck particles*, form the basis for various cosmological theories such as strings, superstrings, 10-dimensional space, and so on.

One of the interesting properties of a Planck particle is that it has the same size as both its deBroglie wavelength and its black-hole (Schwarzschild) radius for its mass. For most of the twentieth century it has been known that particles do not move in straight lines. Instead, particles such as protons and electrons move in waves. Those waves, called *deBroglie waves*, vary inversely with mass, that is, the lighter the particle the longer its wavelength. Hence an electron is "larger" than a proton, although the latter is much more massive. This is attested to by the observation that the electron "orbits" or "surrounds" the proton when the two are combined in the form an atom. The deBroglie wavelength for a particle of mass M^* is L^* . As for the black-hole radius, if matter is squeezed into a smaller and smaller volume, eventually its gravitational field is so packed that light cannot escape from it; hence the term "black hole," as one cannot see it. The size to which a mass M^* has to be compacted before becoming a black hole is L^* .

Properties of the Firmament

So it seems that we are engulfed in a sea of Planck particles. The particles can be viewed as constituting a pervasive medium which acts like an ideal fluid (meaning that there is no friction). The density, R , of that fluid is an astounding 3.6×10^{93} gm/cm³. To appreciate how dense that is, let us return to our sugar cube model. Recall that if the sugar cube was filled with nuclear matter, that then it would weigh 200,000,000 tons. Let us try to envision such a cube made up of Planck particles. The numbers are incomprehensible. For example, the mass of the entire universe is estimated to be about 2×10^{54} gm. Packing everything in the universe into the cube would only give us a density of 2×10^{54} gm/cm³, far short of the Planck medium's 3.6×10^{93} gm/cm³. That means that one would have to pack 2×10^{39} , (that is: 2,000,000,000,000,000,000,000,000,000,000,000) universes into the cube to arrive at the appropriate density! If this doesn't qualify for the name of "firmament," then what does?

A medium of such a high density as the firmament has some interesting properties. One would think, for example, that it would be impossible to move in such a medium, just as one could not move if encased in iron — even if one were made of solid iron! Normally this is true, but the deBroglie wavelengths of nuclear particles are so long compared to that of the Planck particles that firmament is transparent to them. This is similar to why light can travel through a "dense" medium such as glass instead of being stopped cold on impact. So we have our first prediction of the firmament model: motion through the firmament will be effortless as long as we are not dealing with nuclear particles approaching a mass of M^* or, more particularly, energies of M^*c^2 . The firmament will not allow elementary particles to approach that energy without absorbing them. Has such been observed? Not yet; for physics labs have not come anywhere near creating particles that massive.

Should they ever succeed, however, we can expect the particle to disappear in t^* seconds.

In order to hide its finite properties from the material in the universe, the firmament, as this created medium is called, could not be allowed to reveal its true age, or density, nor allow the determination of absolute positions within it. In this way, time and position would be kept *indeterminate*. The indeterminacy of position and time (or energy and momentum) is popularly called the *Heisenberg Uncertainty Principle*. The truth of this principle has been demonstrated by numerous experiments. In short, this means that the firmament is an underlying medium. The atoms and galaxies of our universe are merely tiny, insignificant disturbances in the firmament. Because of the Heisenberg Uncertainty Principle, matter is totally unaware of the firmament's existence. If it were not for scripture, we would be equally unaware of it. Only on extremely small scales, distances of the order of a Planck length, does the firmament show through the warp and woof of space.

Now the question arises whether or not the firmament is stable. In particular, such stability is called *mechanical equilibrium*. A body is in mechanical equilibrium when its energy is evenly distributed between the rotational and gravitational energies. Ozernoy⁵ has derived the equation for mechanical equilibrium of rotating bodies. For the firmament there is a natural frequency of 10^{47} cycles per second (Hz). Normally one would expect this to be the rotational speed, but the radius of the firmament does not appear in the expression for its angular velocity, so the value could also be interpreted as a simple frequency, such as the rotational frequency of the Planck particle. (The number is not exact, but its dependence on the size of the universe allows for great uncertainty.)

The Firmament Found

The firmament which God created on the second day is an extremely massive structure. Its properties are manifold and in a very literal sense, it determines the very physics of the universe. It was

either superimposed on already created atoms, or else the atoms were created throughout it as it was formed. Geocentrists are currently searching for a dependence on the properties of the firmament and its daily rotation. With the waters removed to above the firmament, the light now was suspended in the firmament which carried it about the earth once a day. The firmament itself dictates the frame of reference for the light and all the particles in the universe. The speed of light was thus, and still is, defined with respect to the firmament.

From the perspective of modern science, the firmament as put forth in Genesis chapter one is a very viable scientific option. It is a super-dense, created medium which mimics a plenum. It does so both by keeping absolute position and time indeterminate within it (Heisenberg Uncertainty Principle), as well as allowing only wave motions and disallowing absolutely straight-line motion. The firmament reacts instantly to any changes within it (in about 10^{-44} sec). Material objects can only become vaguely aware of its existence on extremely large scales (of the order of the size of the universe) and on extremely small scales (of the order of sub-nuclear particles). None of these phenomena are new, all have been noted before in the scientific literature.

We know that the difference between a heliocentric theory and a geocentric theory is one of relative motion only, and that such a difference has no physical significance.

— Sir Fred Hoyle¹

13

THE GEOCENTRIC VIEW

Sir Fred Hoyle, the author of the chapter quote, was one of the world's foremost and outspoken cosmologists. If anyone should know whether or not science has proven heliocentrism, it would be someone of Hoyle's stature. Yet, as is evident by the quote, Hoyle disclaims any such proof. Bouw has collected numerous statements from physicists, all of whom concur with Hoyle.² Unfortunately, it is sometimes in the "best interest" of a science not to present the whole truth in introductory texts, and the alleged proofs of heliocentrism constitute one such case. The only time a student might hear differently is in advanced courses such as those on relativity, and even there, it may be "hidden between the lines." In general, the higher the degree a man has earned in physics and astronomy, the more likely he will recognize the truth of Hoyle's statement.

So it is that there are many people who, having had one or two courses in physics or astronomy, scream bloody murder about the geocentric ignoramuses who want to throw science back into the Dark Ages. Characteristic of those people is a perverted view of authority: they deem science a greater authority than the clear wording of the Bible. "After all," they claim, "if the geocentrists are correct, then according to the Bible, trees have hands." They fail to see that every normal person since Adam has had no difficulty recognizing the figurativeness of the verse; whereas from Adam until Copernicus, no one knew or had any inkling that the

Bible's geocentric verses were not to be taken literally. After all, if the truths of the Bible are timeless, then we can't have new, external revelations overruling old ones. Particularly, this means that some new scientific "revelation" called "evolution" cannot overrule the plain sense of the word "day" in Genesis 1: neither can the scientific "revelation" of heliocentrism overrule the plain sense of the passages presented in earlier chapters. Because of this, and the aforementioned deception of introductory physics, astronomy, and science texts, we must address some particulars which, although already covered in the broad scope of the material presented heretofore, must be dealt with in greater detail. First, though, we need to clear up some common misconceptions.

Common Misconceptions

It is generally believed, without evidence, that in the geocentric model the sun, moon, planets, and distant stars all *orbit* the earth once per day. There is no orbiting involved. What is happening is that the firmament is rotating. Now the nature of the firmament is such that it defines all the physics of the universe, both the local and the universal, protophysics (Chapter 11, page 116). This means that all the "laws" of physics are part and parcel of the firmament and that the firmament acts like a medium for the laws of science. So it is that in a geocentric model the sun, moon, and stars do not gravitationally orbit the earth daily any more than that a molecule in a top gravitationally orbits the center of the top. In the case of the spinning top it is the fibers and material of the top which carry the molecules around the axis of the top. By the same token, in the geocentric model it is the fabric of the firmament which carries the universe about it.

A second common misconception is related to the first and that is that the geocentric universe requires that the sun orbit the earth once per year. Again, this is not the case. In a geocentric universe Newton's (or Einstein's) laws must be fulfilled just as in a heliocentric universe. Newton's law of gravity states that from the sun's perspective, the earth must be seen to revolve about it once per

year. It matters not to the sun whether the earth actually does so or appears to do so; remember that we are talking about relative motion, not absolute. If the firmament were to possess a wobble (about which we will say later) which carries the sun, planets, and stars about the earth once a year in such a way that the earth seems to describe an orbit around the sun, then the sun and the universe are content that the law of gravity is being satisfied. Remember, the physics of the universe which specify the law of gravity is fastened to the firmament, not the earth or sun.

A third misconception is that the speed of light cannot be exceeded. This argument means that if the stars and planets are further away than Saturn, they would be moving faster than the speed of light in their daily motion about the earth. There are two problems with this statement. First, the daily motion is one of rotation, and relativity (which dictates that the speed of light is a speed limit) is said not to apply to rotation. This is claimed because relativity cannot account for the Sagnac effect, an effect which violates relativity's postulate that the speed of light cannot be exceeded. More practically, though, relativists maintain that in a spinning universe the gravitational field increases as one goes further and further from the axis of rotation. Relativity allows that it is the gravitational field which dictates the speed of light in any part of the universe. Thus the further one goes from earth, the faster the speed of light in a rotating universe. But the true resolution is this: the laws of physics, including any laws about a speed limit, are defined relative to the firmament.

It is not the case that the universe is rotating once per day inside the firmament. On the contrary, the firmament does the rotating and the bodies of the universe seldom go much faster relative to the firmament than a few hundreds to a few thousands of miles per second, far, far below the speed of light. Hence, if the speed of light (3×10^{10} cm/sec or 186,272 miles per second) is a speed limit in the universe, it is so only relative to the firmament. Because of its tremendous mass and density compared to the material universe, it is a small thing for the firmament to rotate once a day. For rotation, there is no problem with violating the speed of light, even at the most remote edge of the universe.

The last misconception we shall look at now is the one which claims that the laws of physics should be different in a geocentric universe than in a heliocentric universe. Time and time again this has been shown to be false. What this misconception claims is that phenomena such as the Foucault pendulum, the stationary satellite, the flight of ballistic missiles, indeed, the very equations on which the space program is based must be different in a geocentric universe. This is the very misconception which Ernst Mach tried to counter in the late nineteenth and early twentieth centuries.

To understand this, think of it this way. Imagine a non-rotating coordinate system fastened to the center of a spinning globe in the middle of a room. Imagine that somewhere in the room there is a basketball player standing, dribbling a ball. Initially, even though the globe is spinning, the coordinate system is not spinning and we describe the motion of the ball mathematically in terms of the coordinate system attached to the globe. Now imagine that the coordinate system starts spinning with the globe. It should be intuitively obvious that the behavior of the basketball and player is not affected by whether or not the coordinate system is spinning. In other words, just because some imaginary coordinate system is spinning, one cannot claim that the ball should bounce back up, away from the player's hand. This is the case claimed by Mach and the geocentrists. Geometry is an imaginary concept and cannot be allowed to dictate the physics as a function of the coordinate system.

Yet there are those who insist that a geocentric universe must give a different physics. Unwittingly they argue that the behavior of the basketball is different in a spinning coordinate system than in a non-spinning one. Those subject to this misconception have assumed that the coordinate system, the geometry, is the ultimate reality instead of a language used to describe reality. This is the ultimate reality of Plato, but is wrong and borders on idolatry.

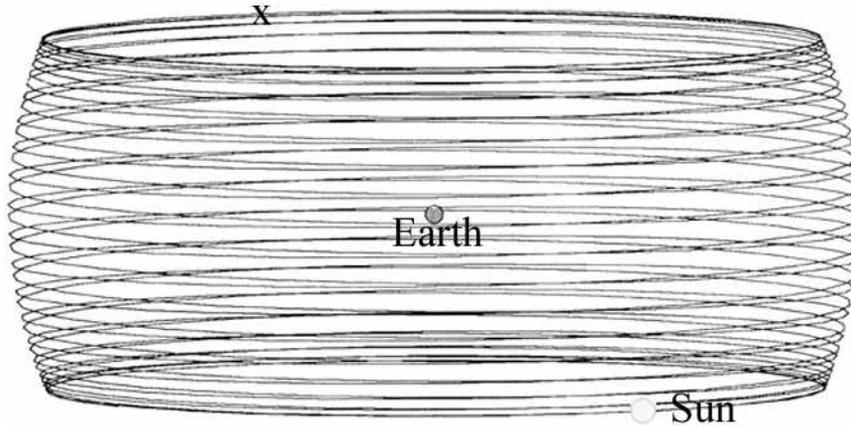
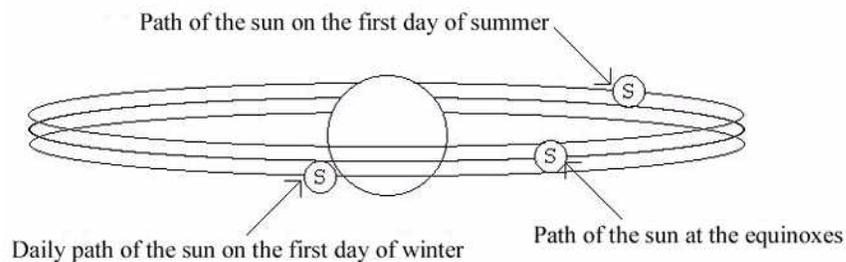


Figure 11: *Geocentric explanation of the seasons*

The sun traces out the indicated path in the course of the year. Each adjacent layer in the helix represents one day. The sun's position is at its lowest point, on the first day of winter. The sun spirals upward, one rotation per day, until it reaches its northernmost point, marked by the X. It then starts a down-ward spiral, again crossing the equator and back to its southernmost point where it started from. Each spiral is actually about ten days, so the figure shows a year of 36 days. North is up, so it is clear that the sun shines most on the northern hemisphere in summer (at the X) and most on the southern hemisphere in winter ("Sun"). The figure below shows only the first day of summer (top), the first days of spring and fall (center), and the first day of winter (bottom). (The earth's size is greatly enlarged.)



Daily versus Yearly Motion

There are two primary motions which we will consider in this chapter. Additionally, we could account for the motion about the center of the Milky Way, the motion relative to the center of the Virgo cluster of galaxies, and numerous other motions. Ultimately, all we need to consider is the motion of the earth relative to the universe. We have seen elsewhere that any attempt by a body or force to move or twist the earth will be resisted by the universe and that the latter will restore the earth to its central position. Such forces include those of the moon, artificial satellites, earthquakes, and so forth. The mechanism behind this is that the behavior of the firmament is indistinguishable from a plenum. The universe is so light compared to the firmament that its effect on the firmament amounts to less than the effect a single electron has on the entire universe! Then, too, the firmament defines the laws of physics. This means that it is no violation of the laws of physics that the firmament spins about the earth once per day, that it has a wobble of a year, plus one of about 28,000 years, plus whatever motion may be necessary to specify the laws of physics. One could view this relationship between the firmament, the earth, and the universe as if the fact that the earth is located at the center of the universe means that there are certain “cracks” in the firmament, which “cracks” (which are technically called *coupling constants* in physics) specify at least the local physics if not the protophysics. The daily rotation is easy to picture, but it is harder to see the yearly motion. We shall look at some of the yearly effects next.

The Yearly Motion

An oft-asked question is how the seasons are described in a geocentric framework. Much the same as in the heliocentric model. The key to understanding the geocentric approach is to understand that in the course of a year we reckon 365 days (366 if a leap year). During that time the stars are seen to rotate about the earth 366 times (367 if a leap year). In addition, the sun travels in a north-

south pattern in the course of a year, resulting in a spiral motion when viewed from the earth or the outside of the universe (Figure 11). On the first day of summer (called the *summer solstice*), the sun is as far north as it is going to go; and on the first day of winter (*winter solstice*), the sun reaches its southernmost point. The first days of spring and fall mark the times that the sun crosses the equator. Geocentricity allows the sun that north-south motion as it is carried by the firmament in a north-south motion due to either irregularities in how the matter is distributed throughout the universe or else to forces imposed from outside the universe. Figure 11b shows the seasons from a geocentric perspective.

Figure 9, pg. 117, illustrates the wobble in the universe which describes the yearly motion of the sun, planets, and stars about the earth. It is important to the understanding of the model that one realize that the yearly motion is not a rotation but a to-and-fro motion which describes an elliptical path the size and shape of the earth-sun “orbit,” the circle about the earth on which the sun is located, see Fig. 9. All the planets and stars participate in that motion, including the laws of physics because the motion is an inherent property of the firmament. The result is that parallax, aberration, the annual Doppler shift, precession of the equinoxes, and perihelion precession are all accounted for by the model.

The View from the Moon

One proof of heliocentrism which is becoming increasingly popular is the claim that astronauts, looking from the moon, have seen the earth rotate. This claim is subject to a very subtle error. Imagine our astronauts sitting on a horse on a carousel. As they go round and round on the carousel, they look toward the center where the engine and supports are bolted to the ground. To them, however, the engine seems to be turning on its axis while they stand still. Now, according to the heliocentrists who argue this way, the engine has been proven to rotate and the platform of the carousel has been proven to stand still because the astronauts, from their carousel horses, saw all sides of the central engine as it turned.

Likewise, the astronauts see a rotating earth because the platform they are on is rotating in the opposite direction.

Retrograde Motion

As seen above, one of the most complicated phenomena in geocentric geometry is the annual motion of the sun around the earth. Much of the confusion about annual phenomena stems from an erroneous or incomplete picture of what is involved in the geocentric geometry: and it is merely a matter of geometric perspective. In this and the next two sections we shall look at how the annual motion of the sun around the earth can account for a phenomenon called *retrograde motion*.

The outer planets, which are all planets except for Mercury and Venus, normally move from west to east against their starry backdrop; but at certain times, they exhibit a phenomenon known as *retrograde motion*. At those times, they reverse their motion and travel east to west for some time before resuming their normal eastward travel. The original explanations for the effect were geocentric. Ptolemy introduced the idea of epicycles to explain the phenomenon; so it is not as if retrograde motion is impossible to explain in a geocentric framework. But before we delve into the geocentric explanation, let us present the heliocentric explanation.

Heliocentric View

The heliocentric explanation of retrograde motion is depicted in Figure 12. In that figure, let us assume that the earth is traveling along the inner orbit and that the outer orbit is that of Mars. Since the earth travels faster in its orbit than does Mars, the earth overtakes Mars. As the earth passes Mars, Mars seems to be going backwards among the stars (points 3, 4, and 5 against the background). The explanation is simple enough.

Nevertheless, many insist that the geocentric model will not explain the retrograde motions of the outer planets. Figure 13 shows that such is not the case.

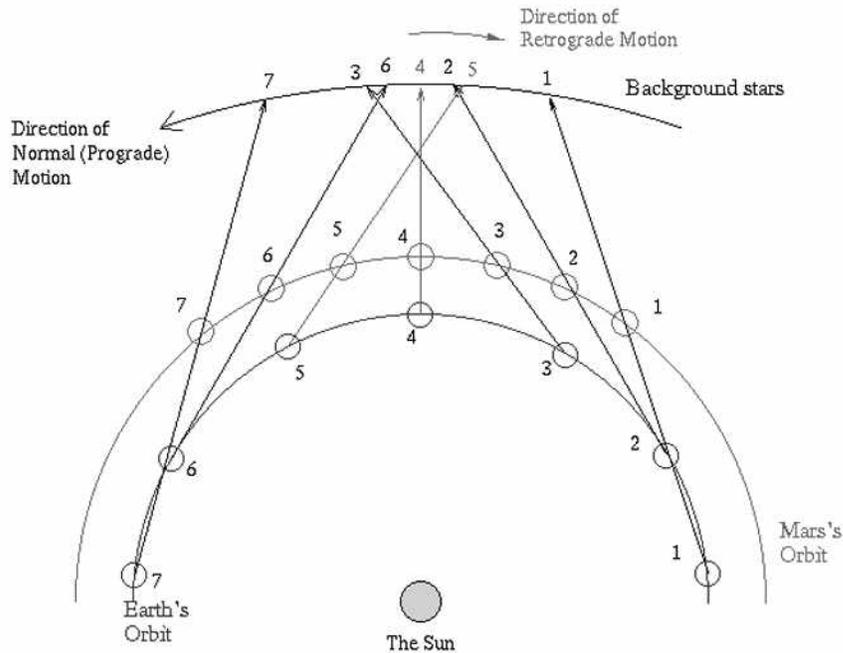


Figure 12: *Heliocentric view of the retrograde motion of Mars*

The Geocentric View

In order to understand the retrograde motion of the exterior planets from a geocentric perspective, we need to understand that in a geocentric model, the yearly motion of the sun around the earth is not made by a turning or rotation of the universe. The motion is due to a cycloidal motion, somewhat like a vibration. The reader can see this by turning to the figure of the modified Tychonic model (page 117) and then sliding the sun, planets and stars along the circle on which the sun is located while keeping the book right-side up. Doing so gives us Figure 13. You'll notice that the motion of Mars along the starry background is the same as in the heliocentric explanation.

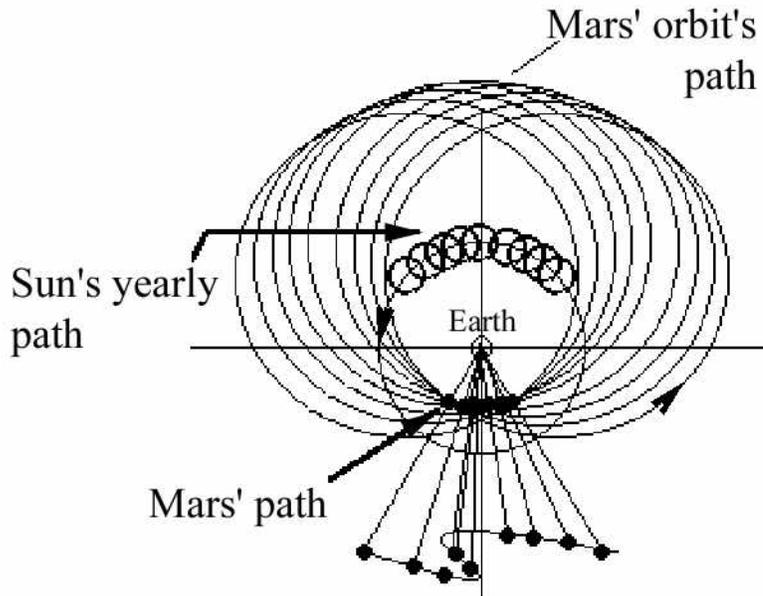


Figure 13: *Composite geocentric retrograde motion diagram:* The earth is at the “cross-hairs” in this diagram. The sun’s nine positions are shown along the upper part of the earth-centered circle. Mars’ nine positions are pointed to by “Mars’ Path.” The large slinky-like structure centered on the sun is the nine positions of Mars’s orbit as it accompanies the sun in its yearly circuit about the earth.

Illustrative Geocentric Models

Several models have been devised by members of the Association for Biblical Astronomy (formerly the Tychoian Society) to illustrate the behavior of a geocentric universe and its equivalence to the heliocentric model. The first such model was published by Richard Elmendorf and was called the *Celestial Motion Illustrator*. The *Celestial Motion Illustrator* was simple to construct and illustrated a lot, serving to illustrate both geocentric and heliocentric models. More recently, Elmendorf has constructed a geocentric version of an orrery (a mechanical model of the solar system), but because all his supports are underneath the stars and planets,

Elmendorf's model is limited in its motion. A third model was proposed by Bouw in 1984. A 1992 refinement guarantees that his model does not suffer from the same limitation (Figure 14).

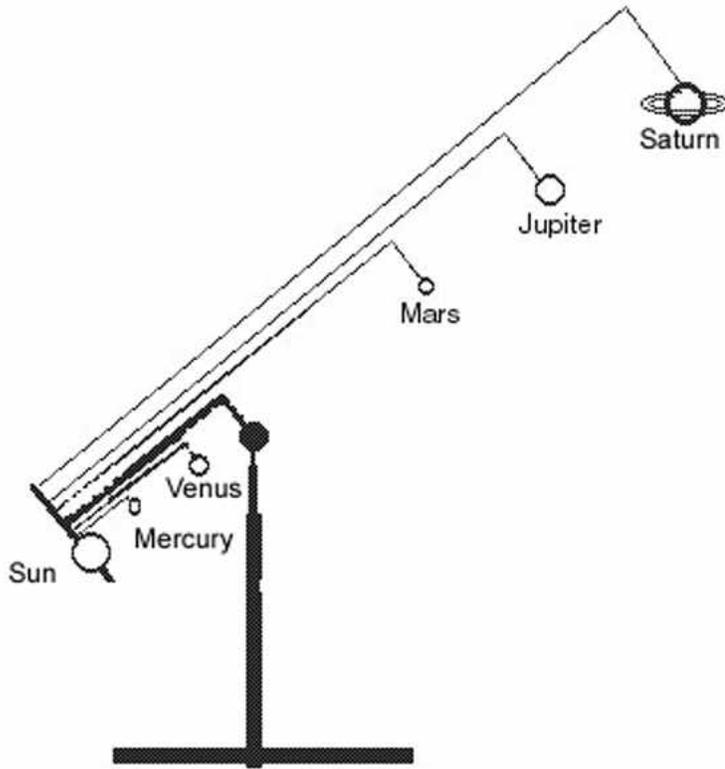
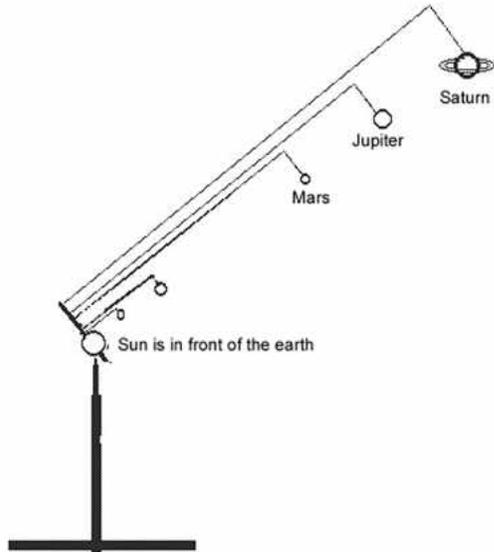
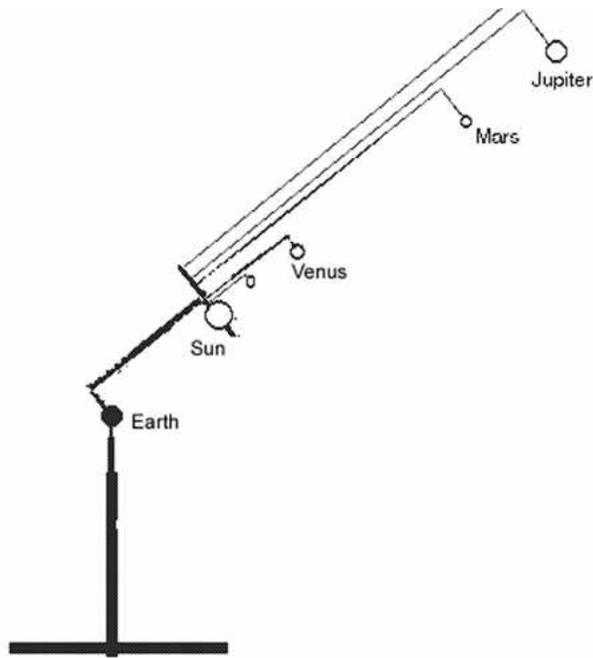


Figure 14: *A geocentric orrery on the first day of winter*

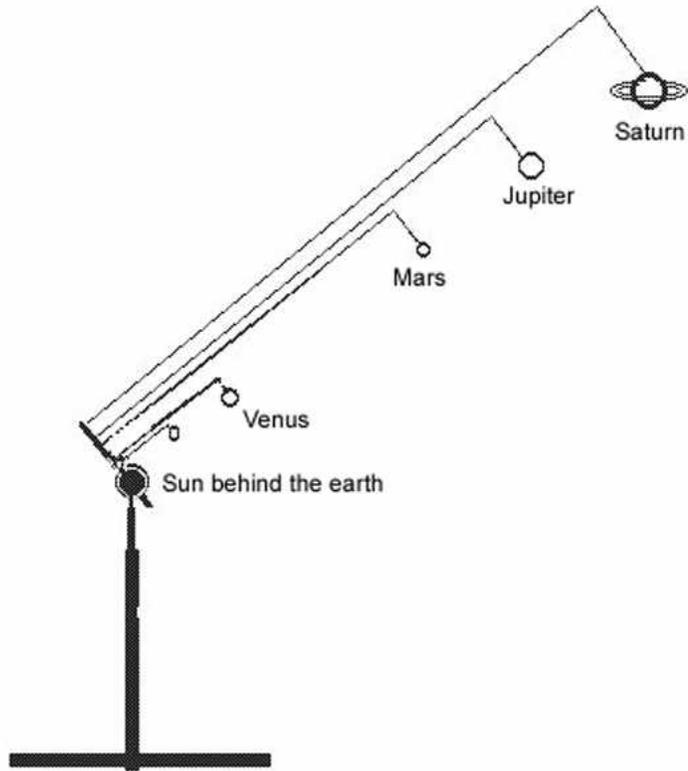
The daily rotation can be added by turning the vertical shaft on which the earth (black ball) is perched clockwise as seen from above. The following figures show the seasons. The planetary motions are ignored, so that the planets effectively follow the same path as do the distant stars.



The first day of fall: the sun is crossing the equator northward.



The first day of summer: note that the sun shines on the North Pole



The first day of autumn. The sun is behind the earth descending across the equator. Note that the planets keep the same orientation throughout the year, just as do the stars.

Let us hear the conclusion of the whole matter:
Fear God, and keep his commandments: for
this is the whole duty of man.

—Solomon, Ecclesiastes 12:13

14

CONCLUSION: THE MORAL EFFECTS OF HELIOCENTRISM

In the chapter quote, Solomon truly summarizes the conclusion of our study. We have examined criticisms of the Bible which have been mindlessly applied since the Reformation and found them wanting. The Bible does not use phenomenological or vulgar speech in describing the motions of the sun, moon, and stars. We noted that to question the truth of the application of the word “rise” to the sun in scripture is to cast the same shadow of doubt on the word “rise” when it is applied to the resurrection of our Lord Jesus Christ from the dead. Because of the Copernican Revolution, there has been a steady devaluation of mankind and man’s place in the universe and of Scripture in the minds of men.

The Birth of Higher Criticism

The unabridged edition of *Geocentricity* traces the pagan foundations of modern philosophy, and heliocentrism in particular, from its early Pythagorean inceptions through the pagan-classical reasoning of Copernicus and his early followers. In the early seventeenth century, the concept of *revolution* obtained a different shade of meaning than it had thitherto. The concept of revolution, as then

applied to celestial bodies, ended up with a much broader, social meaning, changing not only in meaning, but value and significance as well. It was subsequently applied to the areas of politics and theology. This came about not so much because of the upset of the Ptolemaic world view but because Copernicus had succeeded in making a clearly heretical teaching palatable to not only the Roman Catholic Church, but to Protestantism as well. Copernicus and Galileo had succeeded in discrediting the Bible as an authority in the realm of science. This called into question the authority of the Bible in all other areas, too.

Kepler picked up the Copernican idea and worked on it to the point that philosophers and historians both acknowledge him the father of the modern mechanistic, Godless worldview. It was Kepler who envisioned the creation, man included, as pure machine. As such, life loses all meaning and value. Galileo, though forbidden to promote the ideas of Copernicus, succeeded in flaunting the obvious heresy in the face of the Roman Inquisition.

After the Galileo affair, the Bible was no longer considered authoritative in the realms of science, philosophy, and day-to-day reality. Less than 200 years after surrendering the Bible's authority in the realm of physical science, man surrendered its spiritual authority at the hands of the German school of higher criticism, a way of criticizing the Bible which supposedly is based on natural revelation, that is, upon "scientific" principles. Consequently, the Bible became viewed as merely "containing the word of God," that is, a mixture of God's words and man's words. Once it had been received as the very words of God. Now men claim without fear or thought that the Bible is only inerrant in what it claims about "salvation," but that its scientific and dietary claims are quite errant. Others maintain that the Bible "*is* inerrant only in its *original autographs*" which "original autographs" no longer exist anywhere on earth. They do not realize that it is an error to say "**is** inerrant" about the originals in the first place since the word "is" maintains that they still exist. This latter claim obviously denies both the inerrancy of the currently existing Bible as well as denying the preservation of the Bible.

Of the former critical view we find Galileo who stated that “Scripture teaches men how to go to heaven, not how the heavens go.” Protestant and Catholic alike echoed “Amen!” The subsequent dismissal of the Bible as authoritative in the natural realm established two priestly castes: the *interpreter-critic* caste, who either tell Believers what God *meant* to say or who will graciously condescend to teach Believers what the long-lost-and-certainly-never-seen-by-him “originals” say; and the *interpreter-scientist* priestly caste who read from the fabled *Book of Nature* to “correct” the errors in the written word.

So it was that with all sound theology summarily dismissed, science opened itself to every crackpot idea under the sun. The occultist, Swedenborg, regularly had spiritual communication with the inhabitants of the moon, stars, and planets who told him that the solar system originally started out as a collapsing cloud of gas and dust which subsequently split into rings and fell together to form the sun, moons, and planets.¹ Laplace plagiarized Swedenborg’s revelation, made some minor modifications, and to this day, under the name *Nebular Hypothesis*, it remains the standard superstition of how the solar system formed, despite that physics has again and again shown it to be an unworkable model.

The Revolutions

The revolution of the sciences spilled over into the political realm. Both the American and French Revolutionary wars stemmed more or less directly from the Copernican Revolution. Great Britain had its revolutions, too, but they had been comparatively bloodless. In frustration certain early nineteenth century parties thirsted for the bloody revolution to come to Britain as it had come to France; a revolution which would make Britain safe for the “free thinking” humanist. “Free thinking,” by the way, is a euphemism for foul-mouthed, bigoted, intolerant, narrow-minded, superstitious, name-calling railers who oppress all who feel free to think about and conclude for the existence of God. (See any publication put out by any officially atheistic group.) The nineteenth century Brit-

ish case will serve us well to illustrate the morality of modern science and the rationale behind its beliefs.

In the first half of the nineteenth century, the British monarchy still ruled by the *divine right of kings*, the idea that since God appoints rulers, the king rules in God's stead. This idea, which is not at all scriptural, was defended by William Paley (1743-1805) in his work popularly known by the title *Paley's Natural Theology*. The divine right of kings had sometimes been interpreted to mean that the king could do no wrong and was thus free to exercise any of his whims without having to account to anyone. Paley claimed that the Bible was on his side, even though the word "natural" in the title of his book should have given him away. Paley simply abused certain scripture passages and ignored Romans 13:1 which clearly teaches that the king is ultimately responsible to God. Pointing out this very simple fact should have been enough to discredit the divine right of kings when that right was used as a license for evil.

But the political party which was out of power in early nineteenth century Britain had no use for God and his Bible. Under the auspices of the London Geological Society a young lawyer named Charles Lyell (1797-1875) published a three-volume work entitled *The Principles of Geology*. In an effort to promote his work, Lyell asked a fellow radical, Charles Babbage, for his endorsement of the book. Babbage's response, dated May 3, 1832, has a strange ring to it:

I think any argument from such a reported radical as myself would only injure the cause, and I therefore willingly leave it in better hands.

What of the cryptic reference to "the cause?" As Grinnell phrased it, Lyell's work was:

...in support of political liberalism – although ostensibly it was an objective work in science free from any political implications. In his letter of May 3 to Lyell, Babbage was explaining why he would not write a favorable review of the book. Quite wisely, the Whig scientists, like Babbage,

Lyell, Scrope, Darwin and Mantell, did not want the public to know that that which was being promoted as objective truth was little more than thinly disguised political propaganda.²

In his book, Lyell proclaimed his *uniformitarian principle*: that the “present is the key to the past,” as being the only true scientific principle. This principle now undergirds all theories of evolution even though it is more and more falling into disrepute. Yet for Lyell it was a way to deny the authority of scripture by attacking the reality of the Noachic Flood. The flood had up to then been held as the explanation for the deposition of sediments and fossils; and to that end, it is still more than adequate today. But in order to discredit the divine right of kings and so to set the stage for revolution, Lyell determined to undermine the supposed biblical foundation for the divine right of kings by discrediting the Bible.

Lyell made it possible for the theory of evolution to come out of its hiding place in sociology into the natural sciences. In 1859 Lyell encouraged Charles Darwin (1809-1882) to write his book on evolution (which some claim was plagiarized from a manuscript written by A. R. Wallace and sent to Darwin for review). Darwin was no stranger to evolution. He had learned it from the writings of his grandfather, Erasmus Darwin (1731-1802), who was ever the avowed enemy of God and the Bible. By making man out to be the end result of countless cosmic accidents occurring over millions of years, any vestige of purpose or meaning for human life that might have survived the mechanization of Kepler’s universe, was now gone. After Darwin and Lyell, man was demoted to nothing more than a machine, and at that a cosmic accident.

After Darwin’s book was published, the superstition of evolution banned God ever further from man’s study for truth. With God excommunicated from the “natural sciences,” Karl Marx was able to write his book, *The Communist Manifesto*, which quickly became the chief political instrument in the dehumanization and mechanization of man in this the twentieth century. In the 1920s Lenin expressed his indebtedness to Copernicus for making the world safe for Marxism and Communism.

Applied Evolution

Not long after Darwin and Marx, the German philosopher Nietzsche combined their evolutionary, sociological notions into one concept and concluded that man must be evolving into superman. Nietzsche was anything but a great thinker and he was not nearly as bright as his admirer, Adolf Hitler, who correctly reasoned that there can be no such thing as evolution into a superman but that the evolutionary end-product must be a “super race.” What people like Hitler, Stalin, Amin, and Mao TseTung each have done to achieve his idea of a “super race” is history. It is applied evolution, complete with the survival of the fittest.

Murphy, Boltzman and the Second Law

We’ve all seen copies of Murphy’s Law and its corollaries. Usually Murphy’s Law is stated as “If anything can go wrong, it will go wrong”; but true to Murphy’s Law, the statement was not made by Murphy. Who was Murphy and whence his law?

Edward Aloysius Murphy was a U. S. Air Force Captain working on the rocket sled project back in 1949. One day he noted that a technician was installing accelerometers backward on a rocket sled. As a result, Captain Murphy’s law was born as: “If there’s more than one way to do a job and one of those ways will end in disaster, then someone will do it that way.” Later the rocket sled driver, then Major John Paul Stapp, framed Murphy’s Law into its current wording. So you see, Murphy was an optimist!

Now consider the case of Ludwig Boltzman, born 14 February, 1844, who was a famous Austrian physicist. Ludwig was among the staunchest advocates of “Murphy’s Law” in the early twentieth century. He believed it so much that he committed suicide because of it at Duino on 5 September 1906.

It seems that as Boltzman pondered the philosophical meaning of the second law of thermodynamics (commonly called “entropy”), he got so depressed by the hopelessness of “it all,” that he killed himself. Now don’t get the wrong idea; Boltzman was not some

poor deluded ignoramus on the matter. It was he who generalized the second law and took it out of the realm of thermodynamics and into the realm of information theory and statistical mechanics. In that sense he is most famous for deriving the current formula for entropy as " $S = k \ln w$."

Anyhow, before his suicide, Boltzman lamented that his work on the second law would neither be appreciated nor believed. He realized that such is actually a consequence of the second law itself. Boltzman's understanding of the second law lead him to the conclusion that man has no hope of saving himself because the second law dooms the universe. Nowadays, "everyone" says Boltzman was wrong, that all physicists believe the second law. But do they? If scientists believe the second law then why, in 1976, did they award the Nobel prize to Ilya Prigogine for his *unsuccessful* efforts to circumvent the second law so as to allow for the theory of evolution?

Unfortunately for Boltzman, although he was correct in concluding that his law would not be believed by scientists, he did not realize the extent to which he, himself, would disbelieve the second law. Think about it: could death create death? Could chaos create chaos? In short, could the second law create the second law? Thus there must be a Creator God if anything is to exist!

How do these stories relate to geocentricity? The simple connection is this: one of the predictions of the second law is that the truth is less likely to be believed than is fiction. God is less likely to be believed than the Devil's lies, and the Bible is less likely to be believed than the fantasies of deluded scholars. One more example will serve to make the point.

Relativity and Moral Relativism

Whether advertently or inadvertently, relativity has contributed much to the moral dilemma facing modern man. Einstein and his followers proclaimed that relativity was not and is not a theory about morality: that relativity has noting to do with moral relativism, the ancient idea that an action may be moral in one context but

immoral in another; that there are no moral absolutes.³ The promoters of relativity claim that such a connection between moral relativism and relativity is the result of faulty understanding, that relativity does not at all say that all physical knowledge is relative and that Einstein held certain things as absolute in his theory. For example, Einstein claims the speed of light as an absolute speed limit for physical objects. Still others say that there is indeed a connection between moral relativism and relativity. Among these is Dean Turner who writes:

Without uniform time or cosmic moment, the notion of any universally binding distinction between past, present, and future would be logically and empirically inconceivable. ... And as a consequence, there could be no universally valid ideals for making binding moral distinctions, i.e., that are clearly applicable to *everyone everywhere* at a *given* time. ... In fact, I encounter several students in my classes every year who invoke Einstein's theory to justify their anti-moralism.⁴

This conclusion was indirectly corroborated by no less a personage than the agnostic philosopher, Bertrand Russell:

The collapse of the notion of one all-embracing time, in which all events throughout the universe can be dated, must in the long run affect our views as to cause and effect, evolution, and other matters. For instance, the question whether, on the whole, there is progress in the universe, may depend upon our choices of a measure of time. If we choose one out of a number of equally good clocks, we may find that the universe is progressing as fast as the most optimistic American thinks it is; if we choose another equally good clock, we may find that the universe is going from bad to worse as fast as the most melancholy Slav could imagine. Thus optimism and pessimism are neither true nor false, but depend upon the choice of clocks.⁵

To these statements one can only conclude that good and bad are relative and that they depend upon one's perspective; and this is precisely what Turner has encountered in his students and, I might add, Turner is not alone in his observation.

So modern man faces the prospect that there is no purpose to life, that morality is actually relative and that what is morally right today may be wrong tomorrow or *vice-versa*. Is there then no absolute? Logically it can be shown that there must be at least one absolute. To see this, consider the statement: "There are no absolutes" and note that it is self-contradictory; for if there are no absolutes then it is **absolutely** true that there are no absolutes and the statement itself becomes an absolute. The usual escape to this is to claim that there are no absolutes except for the fact that there are no absolutes. But this leads to what is called a *self-referral paradox* and leaves one with two absolutes, the absolute fact that there are no absolutes save one, and the statement of that fact. Hence there must be at least one absolute.

With such a logically contradictory philosophy and associated life-styles, is it any wonder that this is the age of despair? Such contradiction means that man is not dealing with reality but only with an imaginary world of his own making. Modern psychiatry calls that "psychotic." The modern philosophy, existentialism, only has questions; it has no answers. The Reformers had an inkling of the consequences of the Copernican Revolution and had warned against it. The warning had gone unheeded, becoming a point of ridicule instead. Now we do not claim that heliocentrism is primarily responsible for man's moral dilemma today, but its acceptance did pave the way for a world view which denigrated absolute moral authority to be subservient to man's limited, fallible mind. Heliocentrism's removal of the Bible as absolute authority paved the way for the acceptance of the political lies of evolution and Marxism into man's worldview. The result gave man a lower view of himself and forced him to frame for himself ill-structured questions which can have no answers. Such is the legacy of modern heliocentric science.

In Summary

Looking at the history of heliocentrism, we found that there never has been a sound, logical reason for assuming heliocentrism over geocentricity. We saw that the early Greek philosophers advocated heliocentrism either on erroneous grounds, incomplete analysis, or for philosophical reasons; and not because the evidence ever dictated such. We saw that the same was true for the advent of heliocentrism during the Renaissance. We traced heliocentrism back to its astrological foundation and discovered that the sun, so central in the worship of the Babylonians, is still central in the world's worship services today where altars, more often than not, contain an image of the sun.

In this condensed book, we did not examine most the alleged proofs of heliocentrism; we note simply that they have fallen away into disrepute as man's knowledge of the physical universe increased. We noted that the best that modern science can say is that heliocentrism can only be proven as long as we assume that there is nothing beyond the universe and we select our coordinate system to be (arbitrarily, I might add) fixed on the "fixed" galaxies (the stars are no longer "fixed" enough). All alleged proofs are usually said to have fallen with the advent of relativity; but we noted early on that the modified Tychonic universe readily absorbs most, if not all of them. Furthermore, heliocentrists have, themselves, freely admitted that geocentricity is as good an explanation for the motions of the cosmos as heliocentrism and furthermore, heliocentrists have also constructed mathematical models showing the equality of geocentricity and heliocentrism as physical models for the kinematics of the universe.

It was noted that certain observations belie the cosmological principle and that both direct and circumstantial evidence points to the centrality or near-centrality of the earth in the universe. We have presented the key to understanding geocentricity to be a more complete definition of the æther than has hitherto been formulated, and we have pointed to some of its mathematical properties and capabilities.

But by far our main conclusion is this, that criticism of the Bible on the grounds of heliocentrism are unfounded. The Bible ever has been, and still remains, inerrant with no evidence against it. Any “errors” in the Bible exist only in manuscripts or versions based on “current” human understanding or have been deliberately altered or forged.

We have cited example after example of cases where the scientific “proofs” of one generation fall by the wayside in the next generation. Truly the scientific theories change almost as much as the fashions. Yesterday’s science is tomorrow’s superstition. The scientific material the unabridged version of this book will eventually go out of date, even as Wilkins’ scientific “proofs” against the Bible—namely that it cannot be believed because it says in Psalm 19 that the sun is hot whereas it’s been scientifically “proven” that the sun is nothing but a mirror reflecting the light from the lake of fire—went out of date. Yet the Bible will stand and the general scientific principles will remain. No absolute proof of heliocentrism is possible. An absolute proof of geocentricity as presented here is also impossible.

All in all, the *Book of Nature* has proven to be a most fallible revelation when it comes to absolute truth; yet it consistently bears witness to the truth of the Bible and confounds those who have attempted the formulation of a theology based in whole or in part on natural revelation. Much bloodshed and sorrow, famine and birth defects, disease, infection, suicide and mental anguish have come to pass because man does not heed his Creator’s command to love his neighbor as himself; and heliocentrism has proven to be the cornerstone for the philosophies which allow man to do so. These things all serve to illustrate the wisdom of Paul’s admonition in Ephesians 4:14; that the believer cleave to the words of God, and that “we henceforth be no more children, tossed to and fro, and carried about with every wind of doctrine, by the sleight of men, and cunning craftiness whereby they lie in wait to deceive.”

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CHAPTER 2

- 1 ⁶ The words of the LORD are pure words: as silver tried in a furnace of earth, purified seven times.
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CHAPTER 4

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CHAPTER 7

- 1 Both thoroughly and thoroughly mean "fully, completely, perfectly." Thoroughly has a sense of "in a way that penetrates, that goes right through. It is thus ori-

ented to coming from the outside in. Thoroughly is interior. It has a sense of “through the whole thickness” and so works from the inside out to the surface. A key distinction in some passages lies in the fact that “thoroughly” has also a sense of “from beginning to end, for the whole length of time.” This brings the lifetime of the object into play with thoroughly which is not the case with thoroughly.

CHAPTER 8

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- 3 Judgment also will I lay to the line, and righteousness to the plummet: and the hail shall sweep away the refuge of lies, and the waters shall overflow the hiding place.
- 4 Amos 7:7-9—Thus he showed me: and, behold, the Lord stood upon a wall made by a plumbline, with a plumbline in his hand. And the LORD said unto me, Amos, what seest thou? And I said, A plumbline. Then said the Lord, Behold, I will set a plumbline in the midst of my people Israel: I will not again pass by them any more: And the high places of Isaac shall be desolate, and the sanctuaries of Israel shall be laid waste; and I will rise against the house of Jeroboam with the sword.
- 5 And I will stretch over Jerusalem the line of Samaria, and the plummet of the house of Ahab: and I will wipe Jerusalem as a man wipeth a dish, wiping it, and turning it upside down.

CHAPTER 9

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CHAPTER 10

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CHAPTER 11

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CHAPTER 12

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- 3 G. D. Bouw, 1987. "A New Look at the Æther," in *Progress in Space-Time Physics*, J. P. Wesley, ed. (Benjamin Wesley Publishers.: Weiderdammstrasse 24, 7712 Blumberg, West Germany). Pp. 104-108. Also: G. D. Bouw, 1987. *Bulletin of the Tychonian Society*, #43, pp. 11-20. The most rigorous treatment is in G. D. Bouw, 1992, *Proceedings of the 1992 Twin-Cities Creation Conference* (Twin-Cities Creation Science Association: Minneapolis), p. 23.
- 4 For the remainder of the article, the reader who has no sense of the size of a centimeter should bear in mind that a centimeter is a bit under half an inch. Given the nature of the calculations and the uncertainties in the mass of the universe and its size, in what follows, that reader may read "inch" instead.
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CHAPTER 13

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CHAPTER 14

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The topic of geocentricity—the belief that the earth is fixed in space near or at the center of the universe—is a poorly-understood, much-maligned theory among Christian Fundamentalists, Evangelicals, Jewish people, and Roman Catholics. But the Pope's recent apology to Galileo serves to illustrate both how fundamental the issue of geocentricity really is as well as its relevance to modern theology; otherwise, why bring up the matter?

This book has been an abridged edition of Dr. Bouw's second book, *Geocentricity*, published in 1994. The current volume examined on a popular level, the significance of the Copernican revolution in the light of biblical and scientific evidence. Along the way, the reader will find a worldwide collection of little-known accounts of Joshua's long day and Hezekiah's sign.

Dr. Bouw has had a long-standing interest in astronomy, so much so that he earned a Bachelor of Science in astrophysics from the University of Rochester, Rochester, New York (1967), and an M.S. (1971) and Ph.D. (1973) in astronomy from Case Institute of Technology (now Case Western Reserve University) in Cleveland, Ohio. His intense interest in cosmology led him to a spiritual birth in 1975. Today he is one of the world's foremost experts in biblical astronomy and geocentricity, having written articles on the Star of Bethlehem, the missing mass of the universe, cosmic isotropy, geocentricity, astrophysical evidence for a young universe, the Pleiades, and the fabric of space and time. Dr. Bouw is also the first astronomer to document evidence that the huge clusters of galaxies rotate. He is the director of the *Biblical Astronomer*, as well as the editor of its quarterly which is the first and still the only creationist magazine devoted to astronomy.

In addition to his interest in astronomy, Dr. Bouw is an ardent defender of the inerrancy and preservation of the Holy Bible. To that end he was written a book entitled *The Book of Bible Problems* which is the first treatise treating the major so-called contradictions in the Bible without recourse to copyist errors. The book is available from the Biblical Astronomer office.

Dr. Bouw teaches computer science as a full Professor of Mathematics and Computer Science at Baldwin-Wallace College in Berea, Ohio. (The College does not necessarily share Dr. Bouw's views of the Bible and science.) In addition to his astronomical and astrophysical degrees, he has also earned an M.C.I.S. degree from Cleveland State University. Dr. Bouw married Elisabeth O'Keefe in 1979 and they have two children.