

On the Caution about the 360-Day Year

Editor,

In his paper, “Was the Year Once 360 Days Long?” (Faulkner, 2012, pp. 100–108), creationist astronomer Danny Faulkner rejects that the earth was created with a 360-day year. The paper begins, “There is a belief among many recent creationists that the year once had 360 days and that the month was 30 days long.” This paper does not mention any proponents or Walt Brown’s hydroplate theory. Dr. Brown is the only leading creationist who presents historical and biblical evidence that the earth’s year was originally 360 days *and* whose Flood model provides a mechanism for speeding up the earth’s rotation. (The same mechanism, if true, also explains how the moon’s orbit was slowed down.)

Dr. Faulkner also recently authored “An Analysis of Astronomical Aspects of the Hydroplate Theory” (Faulkner, 2013, pp. 197–210). That article did not deal with Dr. Brown’s claims about the adding of five days to the year or of the slowing of the moon’s orbit.

In his calendar paper, Dr. Faulkner never denies that (astronomically astute) ancient cultures used a 360-day calendar and his argument is that a 360-day year, including in the Bible, is a rounding convention. Outlining Dr. Faulkner’s paper:

- The first third defines many astronomical terms and is at best neutral (see below) regarding the matter.
- Biblically, the paper argues for 360 as a rounding convention.
- Historically, aside from minor clarifications, the paper never denies that ancient man used a 360-day calendar.
- Regarding the hydroplate theory’s physical mechanism for changing the earth/moon orbital measurements, surprisingly, the paper says nothing. Instead it says:

Ultimately, one must change both the length of the month and alter

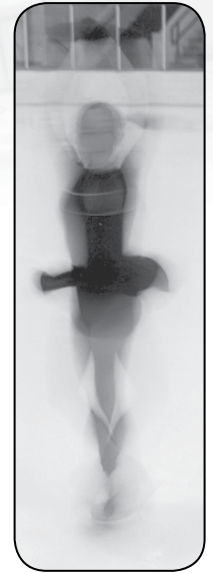
the number of days in a year. It is possible to do this several ways, so it is difficult to criticize the exact mechanism that might be employed (until someone actually suggests such a mechanism). If and when such a model is proposed, then it may be possible to assess whether this is a physical possibility that does not require too much energy (Faulkner, 2012, p. 107).

Dr. Brown’s popular theory (Brown, 2008) proposes exactly such a mechanism. It is true that Walt’s 300-page hydroplate theory (HT) has not been peer-reviewed, yet Dr. Faulkner had just addressed Dr. Brown’s theory at length in his previously accepted paper. It appears that Dr. Faulkner was limiting his consideration to his own field, looking for what he acknowledges would have to be an unrealistic *astronomical* mechanism, whereas a terrestrial mechanism is the one that has been proposed.

Hydroplate Theory Mechanism for Changing the Calendar

When the fountains of the great deep broke open (producing the globe-encircling mid-oceanic ridge), ejected rock and water severely cratered the moon, especially on what is now the near side, and especially when it was moving “retrograde.” (That severe cratering, sometimes called the Late Heavy Bombardment, is not seen on Earth because our planet was the source of the projectiles, and those falling back to Earth crashed into Floodwaters covering sedimentary layers that were still being formed.) The fountains breaking forth also launched rocks and water that gravity later merged to become comets and asteroids, and they melted much of the inner Earth as the Atlantic floor rose and the Pacific sunk. The melting reduced the earth’s volume, with gravitational

settling reducing the earth’s rotational moment of inertia, and like a figure skater conserving angular momentum, as it shrunk, the earth rotated more quickly.



In his other paper that did address the HT, Dr. Faulkner wrote, “It is left to others to judge the merits of the geological arguments of the hydroplate theory” (2013, p. 197). Thus Dr. Faulkner, an astronomer, overlooked the terrestrial mechanism of inner Earth melting to increase the earth’s spin rate. Of course, the Flood did not split itself up into our academic specialties like astronomy, engineering, and geophysics.

Introduction

“I propose here a very simple model of how [the year could have changed] and I show that the energy involved is unrealistically high” (Faulkner, 2012, p. 100). The actual proposed HT mechanism is based on the law of the conservation of angular momentum. While Dr. Faulkner’s proposed mechanism, he admits, is unrealistic, Dr. Brown points to melting in the inner Earth, which is likely, as discussed below, not a result of the perfect Creation but a result of judgment.

The paper’s goals include evaluating “the time at which the bases for calendars allegedly changed” (Faulkner, 2012, p. 100). This seems only indirectly related to the topic. The more relevant

question is: Did the ancient world use a 360-day calendar? As widely discussed, intense social inertia caused societies to retain unworkable calendars. But what would have caused sophisticated cultures to adopt a 360-day calendar in the first place?

The new creation book, *The Genius of Ancient Man*, celebrates the brilliance and astute astronomical insights of ancient civilizations, rejecting “the evolutionary ‘monkey to caveman’ paradigm” and stating that “all over the world there are similar findings of ancient religions ... world travel, advanced astronomy” (Landis, 2012, p. 5). “Starting at Babel, astronomy has almost always been connected to the ancient religions of the post-Flood world ... they were skilled in astronomical studies ... They used the stars practically, for time-keeping and travel ... There are some astonishing examples ... Accurate charts and perfectly aligned monuments testify to careful study of the night sky. There is even evidence from many structures to show that ancient man had the advanced knowledge of astronomical movements, including the process of precession ... many of their structures are aligned with these movements in mind ... this precession knowledge is found everywhere [among] the ancient peoples” (Landis, 2012, pp. 47–49). Egyptian astronomers calibrated their religious calendar with the heliacal rising of Sirius (Clagett, 1995, p. 2). Ancient Rome’s Antikythera mechanism, with dozens of gears, tracked the sun, moon, and constellations. When the Mayans recognized a 365-day year, Landis notes that they were able to calculate its accuracy to better than 365.242 days. This goes to a concern about the Faulkner paper. Landis laments that the church has mostly ignored the records of ancient civilizations, even though these are an evolutionist’s “nightmare.” History severely contradicts Darwin’s grunting caveman caricature. Dr. Landis’s work is a benchmark, not regarding calendars

but in assessing the technology and sophistication of ancient man, and Dr. Faulkner’s paper highlights the need for a creationist repository of authoritative information on ancient calendars. For, if in different hemispheres astute ancient civilizations used a 360-day calendar, especially considering the difficulties that imposed, that historical evidence would reinforce the most literal interpretation of the biblical material.

Definitions

In his Definitions section (Faulkner, 2012, pp. 100–102), Dr. Faulkner explains many terms toward helping the reader understand the difficulty of understanding the calendar and its history. Faulkner defines the sidereal year, tropical year, vernal equinox, ecliptic, celestial equator, autumnal equinox, precession, precession of the equinoxes, anomalistic year, perihelion, perihelion precession, sidereal month, synodic month, nodal month, the beginning of a month on the Hebrew calendar, lunar calendar, Islamic calendar, the beginning of the year on ancient calendars, intercalary month, Metonic cycle, Babylonian calendar, Jewish calendar, Roman calendar, leap days, 1582 Gregorian calendar reform, century years, Hebrew calendar, Jewish New Year, religious calendar, day, solar day, and sidereal day. These many definitions are presented to help understand the history of mankind’s extreme confusion in simply attempting to have a functional calendar. Worse than being neutral toward an original 360-day year (as shown below), this section unintentionally argues that something has gone horribly wrong since the original Creation, as evidenced by man’s strained efforts to merely track days, seasons, and years.

“The years 1700, 1800, and 1900 were leap years,” should read, “were *not* leap years” (Faulkner, 2012, p. 102).

The statement “1600 and 2000 were not” (Faulkner, 2012, p. 102), should read, “were leap years.” The calendar is

truly so convoluted that even astronomers get confused.

Dr. Faulkner implies that the “mismatch between lengths of ... months and years” might not be real but merely *apparent* (Faulkner, 2012, p. 102). This entire definitions section seems to backfire, though, making it clear that the mismatch is not apparent but real. Removing the unhelpful words, “what appears to be,” however, seriously weakens the leading argument in the next *Reasons* section.

Dr. Faulkner speaks of the “many ... ways that one could reconcile what appears to be a mismatch between lengths of the days, months, and years, and ... *there is not a single, uniquely satisfying way to do this*” (Faulkner, 2012, p. 102; emphasis added). This contradicts a claim Dr. Faulkner makes later and also goes to the biblical evidence *in favor of* an initial 360-day year. Dr. Faulkner dismisses, inexplicably, the argument that a 360-day year would provide for an easier-to-use calendar. The night sky would thereby tell everyone around the world when each month began. Young-earth creationists frequently point out that old earthers overlook God’s description of the original creation as “very good,” for the fossil record of extinctions show the geologic column to be a result of the Fall and the Flood and certainly NOT “very good.” Likewise, God’s judgment at Babel confused tongues so that language was no longer the understandable, cohesive, and unifying resource for mankind that God had given to us in the beginning. Likewise, the Creation model would never predict the extreme confusion regarding something as basic as a calendar. What has gone awry?

God’s eyewitness account: Dr. Faulkner’s paper omits both the HT mechanism and also the primary biblical evidence, that is, the Genesis 1 verse that indicates an original creation of good heavenly timekeepers:

“Let there be lights in the firmament of the heavens... and let them be for

signs and seasons, and for days and years."

"And God saw that it was good."

Today, regarding the timekeeping of seasons, days, and years, Dr. Faulkner acknowledges that "there is not a satisfying way to do this." If biblical creationists attribute the extensive confusion inherent in the world's calendars to God's Creation itself, we then lose the high ground from which we criticize progressive creationists for attributing to the Creation all the dysfunction inherent in the fossil record. If God wanted to, He could create the solar system with a relationship between the sun, moon, and earth that would provide a simple, world-unifying calendar (the kind that ancient civilizations seemed determined to cling to). Thus, a glance at the moon would help mankind remember what day of the month it was. Jupiter's four largest moons were likely created with perfect harmonic orbital synchronicity that probably was disturbed by interfering comets. Creating the earth's moon with twelve 30-day orbits synchronized with a 360-day year would give us a very good calendar.

Reasons for Belief in a 360-Day Year (Bible)

Dr. Faulkner begins this section by repeating his earlier incorrect characterization that the mismatch in months and years is only apparent. "Some are motivated by *what appears to them* to be a cumbersome mismatch between the lengths of the day, month, and year" (Faulkner, 2012, p. 102; emphasis added). The complication and confusion presented throughout his Definitions section demonstrates that the mismatch is not merely apparent but real.

Dr. Faulkner then describes those who point out that the "mismatch" is not "very good" as "a bit presumptuous," asking, "Is it not a bit presumptuous to dogmatically assert that the current relationship between our timekeepers is somehow not 'very good?'" (Faulkner,

2012, p. 102). But he had just admitted that "there is no satisfying way to do this, or else there would not be such diversity" (p. 102). It is special pleading to suggest that the current timekeeping by the moon's and earth's rotations and orbits is "very good."

Regarding the "many recent creationists who think that the tropical year once consisted of twelve 30-day months," Dr. Faulkner presents an invalid theological argument. He claims that "proponents ... do not make this case" but "ought to postulate that the mismatch in timekeepers must have happened at the Fall, not at some later catastrophe" (Faulkner, 2012, p. 102). But no creationist has ever proposed that all consequences of sin (like Adam's physical death and the prohibition of the union of close relatives) manifested themselves immediately at the Fall.

Dr. Faulkner correctly points out regarding bankers that "some interest calculations are figured on a 360-day basis" (Faulkner, 2012, p. 103). This rounding convention, however, does not create the enormous societal confusion and religious conflict seen throughout history by the shifting of months, seasons, years, and holy days, and as seen in what could almost be called the *calendar wars*. Thus, a rounding convention that creates no crisis does not explain persistent and unnecessary rounding that created serious confusion.

A surprising claim is, "There is nothing natural or obvious as to why we use base-ten mathematics" (Faulkner, 2012, p. 103). Undoubtedly, billions of people have counted on their fingers, and there are good reasons why the metric system is dominating the world. (Negative corroboration that our ten fingers point to the preferential base ten comes from the minority of cultures that used base eight because they count the spaces *between* their fingers, and from those efficiency-minded peoples who, with one hand tied behind their backs, used base four or base five.) The English word "digit"

and its counterpart in many languages is also a term for fingers (and toes). Claiming that using base ten is not natural or obvious is a way of minimizing the extraordinary factors that must have led to the Babylonian's use of base 60 and their dividing the ecliptic, and all circles, into 360 degrees. Evolutionists dismiss observations of design preferences (like the conservation of the shapes of leaves) so that they can claim that any particular pattern is as expected as any other to evolve and to remain over eons. Likewise, by dismissing base ten as the Creator's design preference, it could be argued that nothing special was required for the mathematically and astronomically astute Babylonians, and the Sumerians before them, to overlook the use of base ten in order to adopt base 60.

Leading into his discussion of Daniel, and the Babylonian use of 60 and 360, Dr. Faulkner implies that this was not based on any ancient Near Eastern 360-day calendar. Instead, he gives a reasonable but not especially satisfying explanation that "360 is a very nice, round number, so it works *very well* in estimating time" (Faulkner, 2012, p. 103; emphasis added). But it does not work very well, as shown by the confusion far beyond even that which Dr. Faulkner so well documented. Anciently, in addition to Babylonia, India also (as preserved in their Rigveda) divided the circle into 360 degrees. Dr. Faulkner asserts this would be done by multiplying base 60 by 6. However, the reverse could easily be true. The Babylonians may have originally selected the rather unusual base 60 because they had a calendar of 360 days, thereby making it easier for them to perform astronomical and chronological calculations. Twelve original 30-day months would reinforce such a selection and help explain the ancient Egyptian and Near Eastern division of days into 12- and 24-hour periods and the eventual further division of hours into 60 minutes and into 3,600 seconds. God's mathematical brilliance is everywhere

manifest in nature and the physical laws. Giving mankind a synchronized calendar would have been wonderfully convenient also because the number 360 is a highly composite number (HCN), being divisible by every number from 1 to 10 except for 7, with a total of 24 divisors, including numbers especially relevant to calendars and timekeeping: 2, 3, 4, 6, 12, 24, 30, 90, and 180. One useful application of this divides the world into 24 time zones of, nominally, 15° each, to match the 24-hour day.

Dr. Faulkner suggests the Bible, including Daniel, is merely rounding to an apparent 360-day year. The book of Revelation (11:3; 12:6) explicitly indicates a year of 360 days. Like Revelation, Daniel idiomatically references three and a half years (Dan. 7:25; cf. Rev. 12:14) and then marks off 1,290 and 1,335 days, implying an additional month, and two and a half months. Daniel's 3.5 years parallels Revelation's "42 months" (Rev. 11:2; 13:5) and "1,260 days" (Rev. 11:3; 12:6). Dr. Faulkner does not address the Revelation passages and attempts to explain Daniel's calendar by considering which ancient Babylonian calendars were or were not then in use. These are prophecy books, however, and the Apocalypse is the Revelation of Jesus Christ, i.e., the Beginning and the End, bringing readers from "the beginning of the creation" to the "new earth," for, "the first heaven and the first earth had passed away." In that context, if God in fact had created a 360-day year, it could explain why He would return to that measurement in a prophetic countdown.

Noah's 150 Days: Dr. Faulkner says it is possible to interpret the following verses from Genesis 7 and 8 such that they may not indicate a 30-day month:

...in the second month, *the seventeenth day of the month*, on that day all the fountains of the great deep were broken up, and the windows of heaven were opened. And the rain was on the earth forty days and forty nights. ... And the waters prevailed

on the earth *150 days*. And the waters receded continually from the earth. *At the end of the 150 days* the waters decreased. Then *the ark rested in the seventh month, the seventeenth day of the month*, on the mountains of Ararat.

These passages indicate a timekeeping relationship between the day, month, and year. As the Bible writers (along with much of the ancient world) used 12 months to represent a year, "the second month" indicates the start of a year, and "the seventeenth day" indicates both the start of a month and the start of a day. The natural reading of this, which Dr. Faulkner agrees appears "to be sound," indicates that these were five 30-day months, exactly 150 days. Henry Morris wrote, "The implication is that the primeval year contained twelve months of thirty days each" (Morris, 1995, note at Gen. 7:11). Dr. Faulkner suggests that there may have been some time between the last two sentences above, and that although the 150 days are emphasized by repetition, he says they may have been an approximation. (The Bible does sometimes give approximations, including perhaps with the repeated use of the period of "forty years.") Summarizing, Revelation is explicit and the rest of the biblical material is highly consistent with a 360-day year.

Reasons for Belief in a 360-Day Year (History)

Dr. Faulkner never denies that early civilizations used 360-day calendars. Of the many examples that could have been offered, the Mayan *Baktun* equals 144,000 days (exactly four hundred 360-day years), and their *tun* was a year of 360 days made up of eighteen 20-day cycles, with 20 *tun* equaling a *katun* of exactly 7,200 days. Similarly, the Aztecs added five days to their 360-day calendar. Faulkner does acknowledge what all of scholarship knows, that "earlier calendars ... had failed to properly account for the true length of the tropical

year." As to whether 360-day calendars were actually used, the first editor of the journal *Nature*, the astronomer who co-discovered helium, described the difficulty Egypt encountered from their use of a 360-day calendar and the "first law" of the Pharaoh's to—of all things—never change the calendar (Lockyer, 1894, pp. 243–248).

Dr. Faulkner critiques only a couple of relatively insignificant particulars from the admittedly imaginative Immanuel Velikovsky's 40 pages of material in which he provides both questionable and strong support for his claim that a 360-day calendar was used by the Persians, Incas, Egyptians, Chinese, Chaldeans, Assyrians, Babylonians, Hebrews, Greeks, Hindus, Romans, Aztecs, Mayans, and Peruvians. Consider, if there is a biblical explanation for otherwise inexplicable Egyptian use of a 360-day calendar, not the Egyptologists but the creationists would discover it. Thus the perplexing calendars of the Egyptians are imminently understandable if, in fact, God created original 30-day months.

Aside from the secondary sources Dr. Faulkner mentions, for my critique of his paper I have begun to look at authoritative original sources. Marshall Clagett documents that various original Egyptian calendar sources, such as the *Ebers Papyrus* (c. 1550 BC) and the astounding astronomical ceiling (1200s BC) of Pharaoh Ramesses II's memorial temple simply did not contain the five days, called epagomenal days, that by practice were added annually to Egypt's twelve 30-day months. In his *Ancient Egyptian Science: A Source Book: Volume II—Calendars, Clocks, and Astronomy*, Clagett, speaking of both the "Ebers calendar" and "the astronomical ceiling of the Ramesseum," writes, "The epagomenal days here as elsewhere are not counted as part of the 'year'" (Clagett, 1995, p. 196). Also, of the Egyptians he writes, "In the third millennium B.C. ... a new [non-lunar] calendar was invented. ... it

is a great achievement of theirs to have invented a calendar year divorced from lunar movement” (p. 3).

Grunting cavemen would understandably blunder into a dysfunctional, lunar-based first calendar. Biblically, though, intelligent ancient man’s time-keeping struggles make sense as a result of an original 360-day year. Switching then to a simple tropical-year calendar would have averted centuries of tremendous seasonal confusion. However, whereas secular scholars would never come upon the biblical explanation for the 360 days, they do commonly acknowledge the intense social inertia that explains the continued use of a dysfunctional calendar. Thus, a created 360-day year explains the genius of ancient man with many centuries of unnecessary struggle with an outmoded calendar.

Dr. Faulkner quotes an Egyptian translator, Sharpe, to contradict a Velikovsky passage, even though both explicitly speak of “the five days which were afterwards ordered to be added.”

Illustrating Dr. Faulkner’s theme in this section, regarding Velikovsky’s quote from an eighth-century Zoroastrian text, Danny wrote, “Notice that his quote doesn’t actually state when or why the practice of adding five extra days each year began” (Faulkner, 2012, p. 106). This is somewhat off the more relevant topic. Whether ancient or modern writers correctly perceived “when or why” is not as relevant as “whether or not.” Did the ancients use a 360-day calendar?

As described by Velikovsky and now documented separately by Faulkner, even when the Persian Zoroastrians began counting 365 days, they persisted in presenting a 360-day calendar, tacking on, almost as an afterthought, an additional five days.

The passages Dr. Faulkner quotes from that same eighty-century-AD Bundahis text seem evidently anachronistic. The Zoroastrians brag about anciently using a “three hundred and sixty-five”

day calendar with “six additional hours” which “make up one day for four years ... Again the commencement of the year has been fixed by great kings from the first day of the year from the beginning of creation. ... ‘The creatures of the world were created by me complete in three hundred and sixty-five days,’ ... completed in a year” (Faulkner, 2012, p. 106). If the Bundhis text were the Word of God, then by this the case would be settled against Walt Brown. On the other hand, as bragging is evidenced without exception by all of ancient history, Dr. Faulkner’s excerpts seem easily explainable as a late pagan fabrication attributing modern knowledge back into a period in which it did not exist.

Mechanism to Change the Days in a Year

Dr. Faulkner writes, “The most straightforward change would be in the orbital period of the earth. That is, an impact or some other catastrophe moved the earth farther from the sun and thus increased the orbital period. This is fraught with problems” (Faulkner, 2012, p. 107). He then easily knocks this down. But that is not the proposed mechanism that “many” young-earth creationists have been convinced of. From the 8th edition of *In the Beginning* and online:

When the flood began, the year likely had 360 days ... If so, either earth’s spin rate or its orbital period around the Sun increased during the flood. Increasing earth’s orbital period requires a large, unknown energy source; increasing the spin rate does not. Therefore, the spin rate probably increased (Brown, 2008, pp. 163–164, note 35).

Dr. Faulkner once gives a veiled acknowledgment of the hydroplate mechanism: “An alternate way to lengthen the year would be to shorten the day. This could be accomplished either by applying a torque that speeds the earth’s rotation or by decreasing the earth’s momentum of inertia, perhaps by shrinking the

earth in size” (Faulkner, 2012, p. 107). Torque is not in consideration. What has been widely proposed, however, is the melting of part of the inner Earth to shrink the planet sufficiently to speed up its rotation to add five days in a year.

The hydroplate mechanism explains that the fountains of the great deep eroded away much of the crust that was on top of what is today the Atlantic Ocean. With the crust there being removed, gravity over the remainder of the globe forced the floor of the subterranean chamber to rise, becoming the floor of the Atlantic (thus the qualitative differences between the two, with 40,000 volcanoes and ocean trenches congregating in the Pacific). If the Pacific sunk to compensate for the rising of what became the floor of the Atlantic, this helps to explain the “startling” announcement in 2007 in ScienceDaily that “thousands of square kilometers” of the “Earth’s Crust [are] Missing in the Mid-Atlantic” (ScienceDaily, 3/2/2007). The movement of rock through the inner earth toward the rising Atlantic created enough frictional heat to melt much of the planet’s interior. Below a certain depth, melting rock decreases in volume by about half. As could be said regarding the dangers to mankind from earthbound radioactivity, the original “very good” creation would not have had tectonic instability either. Even after Eden, it is very possible that the pre-Flood world had no earthquakes. Regarding the millions of earthquakes in the millennia since the Flood, however, the melting of rock is a deeper and likely a more significant cause of earthquakes than most geologists realize. So like a figure skater pulling in her arms to spin more quickly, the melting rock decreased the earth’s radius sufficiently to increase the rotation speed to add five days to the year.

Dr. Faulkner writes, “This leaves the difficulty of changing the length of the month. This must happen by decreasing the moon’s angular momentum ... This

is the reverse of the scenario just mentioned about raising the earth's orbit. Ultimately, one must change both the length of the month and alter the number of days in a year" (Faulkner, 2012, p. 107). The hydroplate theory claims that the fountains of the great deep ejected water and rock with enough velocity to escape Earth's gravity and put much of it into various orbital planes around the sun. Some of the lower velocity debris would have been in orbit near the earth and going in the same direction around the sun. This could explain something that Dr. Faulkner has observed previously: that the moon has been struck mostly from one direction. As the moon was repeatedly in its retrograde phase while orbiting the earth, it would have experienced intense, head-on collisions with this orbiting debris. While traveling prograde, the fewer impacts would have had less energy. After massive, high-velocity bombardments primarily on the side of the moon facing the orbiting ejected matter, the gravitational tug of the earth rotated the moon 90 degrees to bring this high mass concentration on the moon to face the earth. Today we can see these impact areas with the naked eye, and the added mass from the impacts explicitly explains why the near side is now the near side. NASA's 2012

GRAIL lunar gravity mapping has authoritatively shown that the moon's areas of greater-than-average gravity overlay the large craters and maria. (Perhaps a computer simulation could calculate backward in time the near side of the moon's rocking back and forth to provide an independent method of dating the Flood.) Thus Dr. Brown's hydroplate theory provides a claimed mechanism that explains these interesting lunar anomalies and the earth's increased rotation rate that added five days to the tropical year, and it explains how these impacts slowed the moon's orbit (i.e., decreasing its angular momentum) around the earth, thus lowering its orbit and bringing about a new moon about a half day sooner each month as compared to before the Flood.

Conclusion

"Proponents of an original 360-day year ought to produce their models of how the change might have happened so that we can assess the energy input. Until such models are produced and examined, recent creationists are cautioned against advocating an original 360-day year" (Faulkner, 2012, p. 108).

There are significant challenges from creationists for hydroplate theory proponents to respond to, including

in Dr. Faulkner's astronomy critique (Faulkner, 2013). However, I think Dr. Faulkner has not justified his caution against the possibility of an initial 360-day year.

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Response to Bob Enyart

I thank my friend, Bob Enyart, for writing in response to my article on the hypothesis that the year originally was 360-days long and that the month was 30 days (Faulkner, 2012). This gives me the opportunity to clarify a few issues and make two corrections. Bob pointed out that I had incorrectly stated that the years 1700, 1800, and 1900 were leap years and that the years 1600 and 2000 were

common years; of course, the reverse is true, as my discussion would clearly indicate. I regret that that slipped past my multiple proofreadings and several reviewers.

Bob also pointed out that Walt Brown (2008) has proposed a mechanism for a change in the amount of days in the month and year at the time of the Flood, something that I failed to

acknowledge and even implied was not the case. Bob was puzzled about this, as I had a critical review of Brown's work in the next issue of the *CRSQ* (Faulkner, 2013a). Even though my 360-day-year article appeared prior to the Brown article, I had written the Brown article much earlier. In fact, in my study of Brown's book, I saw that he supported the idea of an original 360-day

year, which encouraged me to write the article on that subject. Brown's proposal is found in the technical notes, a sort of appendix to his book. I had read Brown's proposal in preparing my analysis of his work, but I omitted discussion of this topic in my Brown paper, with the intention of mentioning it in the 360-day-year paper. When I later consulted Brown's book (especially p. 163) in preparing for the 360-day paper, I overlooked Brown's proposal in his technical notes. I apologize for this omission; perhaps I will address this particular proposal in the future.

Bob expressed his surprise that I had stated that there is nothing natural or obvious about base-ten mathematics, and he went on to discuss the numbers of fingers and toes that we have. However, my statement was immediately followed by an acknowledgement that the number of digits that we have on our extremities probably did influence the choice of base-ten. My primary point was that base-ten is not the best system for computation. Despite our input of base-ten into electronic devices, those electronic devices do their computations in binary. There is much to be said for base-two and base-three and multiples of those bases, because they are divisible by so many numbers and hence make nice fractions. Without a mechanical or electronic computation device, multiplication and division is much simpler using fractions rather than using long division and long multiplication. Even our divisions of the day into 24 hours, the hour into 60 minutes, and the minute into 60 seconds are a reflection of that reality. By the way, the French, after their revolution, used decimal time measurements for about a decade. Their calendar consisted of a 360-day year with five to six extra holidays thrown in to bring their calendar back into reality. Their months were 30 days, each with three ten-day weeks. The day was divided into ten decimal hours, each with 100 decimal minutes contain-

ing 100 decimal seconds. While most of the rest of the metric system established then was maintained, the new time standards proved to be so unpopular that Napoleon abolished them in 1805.

In complaining about the complexity of so many definitions in my paper, Bob appears to argue that a 360-day year would have eliminated the need for most of those terms, but that isn't the case. I mentioned the anomalistic year, nodal month, and perihelion precession only for completeness—they have nothing to do with our normal timekeeping, and so I could have omitted them. Even with the 360-day-year hypothesis, we'd still need to discuss the solar and sidereal days and the synodic and sidereal months. Some recent creationists think that initially the earth's axis had no tilt, but that is a separate issue from the possibility of a 360-day year. Assuming that the earth's axis had some tilt, we'd still need to discuss the sidereal and tropical years, the ecliptic, the celestial equator, the equinoxes, and precession of the equinoxes. The other terms dealing with various calendars, such as the Metonic cycle, the Babylonian, Jewish, Roman, Julian, and Gregorian calendars, don't address confusion but merely express different ways of measuring time. Man has developed many different standards of measurements, such as for weight, length, area, and volume, so it isn't surprising that we've done the same with time measurements. Furthermore, arguing that the perceived complexity of the terms in my discussion is evidence for an alleged simpler 360-day year is begging the question.

In my paper I divided the arguments for an original 360-day year into three categories.

- That the current arrangement doesn't fit the Genesis 1:31 description of the creation being "very good."
- That certain biblical passages, such as Genesis 8:3–4, Daniel 7, 9, and Revelation 11–12, imply 30-day months and a 360-day year.

- That ancient historical records show widespread use of a 360-day year.

Bob didn't spend much time discussing the first argument: that the calendar as it now exists doesn't appear to be "very good." Lee Anderson (2013) and I (Faulkner, 2013b) have in submission companion papers that discuss this topic more fully. For a long time many recent creationists have equated the "very good" of the creation with perfection, but is this warranted? There are three possible meanings of this "very good": completeness, purpose, and moral perfection. Six times in the Genesis 1 Creation account, God proclaims what He has made as "good," followed by the pronouncement at the end of the Creation Week that it was "very good." This gives the sense of completeness in that God had accomplished what He set out to do. It fulfilled its purpose in that nothing conflicted with God's intended order. Since sin had not yet entered the world, moral perfection also was present in the world. But does this perfection extend to physical perfection, such as perfect crystals and no second law of thermodynamics? This is doubtful. The problem is that we equivocate and use the word "perfect" in the moral and physical (and the abstract) sense to mean different things. Further compounding the problem is that while we can agree on what moral perfection means, physical and abstract perfection is far from certain. In these matters, it appears that perfection is in the eye of the beholder, for two people will have two different opinions as to what is perfect and what is not.

As for the second argument concerning the biblical texts put forth for a 360-day year, I can't say much here without repeating what I previously wrote. In using Genesis 8:3–4 to prove the 30-day-month thesis, one must insist that those two verses refer to coincident events with the same precision. I believe that in my paper I admitted that that is a possibility, but it isn't required by the text. That is, one can properly and faithfully under-

stand that passage differently. Daniel and Revelation are prophetic books. As such, they contain much apocalyptic imagery, including imagery with respect to the use of numbers. This is especially true of Revelation, with the numbers 4, 6, 7, 12, and 24 being most prominent. I see no problem in using 360-days to approximate a year in this context. Furthermore, even supporters of the 360-day year must admit that when Daniel and John prophesied, the year had been 365 days long for millennia. And it's not at all clear that supporters of this idea think that the year will revert back to 360 days prior to the Judgment, so what practical purpose an exact 360-day year has in these contexts is a mystery to me. That is, Daniel and John used years of a length that had not been used for a very long time and likely won't be, if ever, for a very long time. How this proves a 360-day year as part of the original creation escapes me. There also is the hermeneutic challenge of imposing later revelation on an earlier text.

As for the third argument—that many ancient cultures used a 360-day year but were forced by some change to alter their calendars—in my paper I examined the original source of this claim, Velikovsky's *Worlds in Collision*. There I clearly showed that Velikovsky either misunderstood or misrepresented ancient texts that supposedly supported this claim. Bob noted that I never denied that ancient cultures used a 360-day calendar. Many ancient cultures did have a 360-day year, but that's not the entire story. Most of them, like the French of two centuries ago, added five or six extra days (most often at the end of the year) to bring their calendars into line with

the reality of the year's true length. The reason for the 360-day year is unknown, so to insist that it must be because the year actually was that long in the distant past is unwarranted. Again, most of these alleged 360-day calendars were about two millennia after the supposed change in the length of the year. If left uncorrected, the discrepancy between a 360-day calendar and reality amounts to nearly two months in just a decade, so it is insulting to the sophisticated ancients to suggest that they struggled with this for two millennia. Recently on his radio show, Bob told me that he was assembling many other ancient texts beyond those cited by Velikovsky to show that many more ancient cultures observed a 360-day year. I look forward to examining those when he is finished.

I will close with an illustration of what I find is wrong with this entire line of reasoning concerning the 30-day month and 360-day year. I find irrational numbers to be far from perfect. The fact that mathematicians have chosen the term "irrational" to describe these numbers as opposed to the more perfect rational numbers is evidence that I am not alone in this belief. Therefore, in the perfect world of the original creation, there could not have been any irrational numbers. The value of pi, the ratio of the circumference of a circle to its diameter, is an irrational number, so prior to the Fall pi had some other value. Since nothing could be more perfect than a whole number, I propose 3. For scriptural support for this value of pi, I note that 1 Kings 7:23 records that a basin at the temple was 10 cubits in diameter and had a circumference

of 30 cubits. This yields a value of pi of exactly 3. For years skeptics have used 1 Kings 7:23 as an argument that the Bible contains errors. And for years Christians have concocted all sorts of explanations for this problem, when the most obvious solution is that the value of pi has changed. Now, if I could find a reference from ancient secular sources for this value of pi, I will have established the truth of my proposition. Of course, I am facetious about this proposal, but I see no difference in my reasoning here and that of those who insist that the year originally was 360-days and that the month originally was 30 days.

I'm encouraged by Bob's interest in this issue. I had hoped that my paper would stimulate discussion.

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