

The Planets Testify of the Creator

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"set time" for the moon of 29.53059 days and of the sun of 365.2425 days form the basis of the (corrected) Hebrew Calendar, and both of those numbers need to be just that precise for the calendar to work perfectly for the 7,000 years of the earth's temporal existence. This article proceeds to discuss Abraham's Third Truth, proposing just what the "set times" of the other planets in the solar system are, and demonstrates that they form a series of very precise intervals like perfectly interlocking gears in a great celestial timepiece, just as the Lord revealed to

The Book of Abraham claim about planetary "set times" leads to startling evidence for design by a Creator. Planetary periods, and even some intervals between conjunctions, are multiples of two sacred time units.

In last month's article^[1] we summarized the Lord's revelation on astronomy as recorded in the Book of Abraham as Abraham's Three Truths:

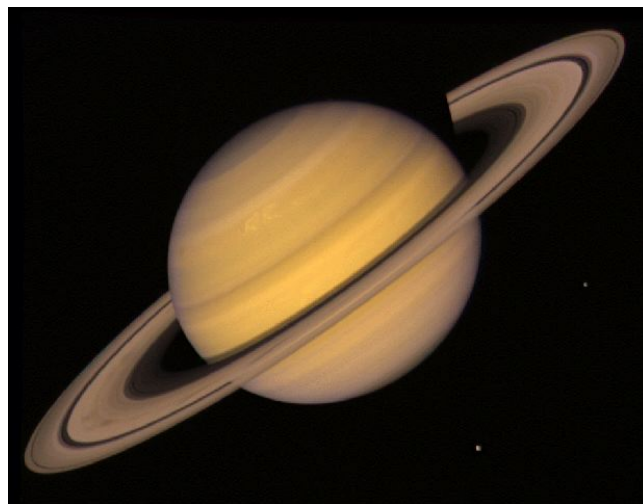
1. *One revolution of Kolob is one day unto the Lord, being 1,000 earth years.*
2. *There are set times for the earth, moon and sun which were designed to reckon time.*
3. *The planets form a progression of increasing set times, designed to reckon time, beginning with the earth and moon and ending with Kolob.*

The first two truths were discussed in detail, where it was pointed out that the precise

Abraham. The astonishing result is that the periods of the planets and even of their conjunctions are almost exactly whole number multiples of two sacred time intervals. That is strong evidence that the entire solar system was designed by a Creator.

1. Planetary Set Times

Let us begin by relating the set times of all of the major planets to the set time of the earth (the day) as described in Abraham's Third Truth and also to the year, which Abraham's First Truth tells us is tied to the revolutions of Kolob. Thus, if we measure the set times of other planets in terms of the earth's day and year, then they will also be tied to the reckoning of the Lord's time on Kolob. This is a very important point which



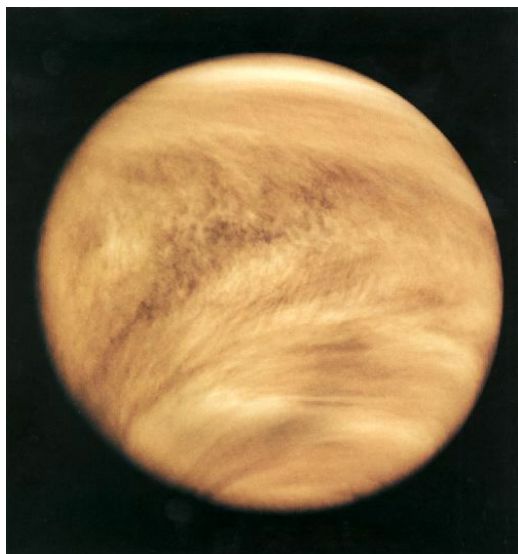
The planet Saturn.

has not occurred to modern astronomers. Anciently, unenlightened men thought that the earth was the center of the universe. Now scientists have discovered that we are far from the center of our galaxy, so it would never occur to modern astronomers to consider the possibility that our solar system was designed with the earth's mean solar day as a fundamental unit of time. But Abraham was shown that even though the center of the order of stars to which we belong is very distant from us (Abr. 3:3), yet the earth's day and year were set up according to celestial measures and hence might well serve as fundamental units for the solar system.

1.1 Synodic or Sidereal?

There are two principal orbital periods for each of the planets which are candidates to be called the "set time" for that planet. The first is the "sidereal" period, which is the one usually listed in astronomy books as the orbital period. The sidereal period is relative to the stars, meaning the average interval between successive orbital passings of the planet near the same star. The other period is called the "synodic" period. It is the period *as seen from the earth* relative to the sun rather than to a star. For example, it is the interval between successive risings of the planet with the sun. Astronomers tend to ignore the synodic period because it is earth-based. It just hasn't appeared to be of fundamental importance as does the sidereal period, which is the same as the period of the planet orbiting the sun, independent of the earth.

These two periods can be very different. For example, consider the planet Venus. It orbits the sun 13 times while the earth orbits the sun 8 times, that is, in 8 years. Thus, its sidereal period is $8/13$ of a year, or about 225 days. But suppose we ask, "How many times will Venus appear to rise with the sun in those 8 years?" The answer is that as we orbit the sun 8 times, Venus must pass us 5 times in order for it to finish its 13 orbits. Thus, it will appear on earth that Venus passes the sun 5 times in 8 years and its synodic period is $8/5$ of a year, or about 584 days. In case you don't follow that reasoning, the main point is that the sidereal period of 225 days is very different from its synodic period of 584 days.



The planet Venus.

Which planetary period makes the most sense to be what the Lord called the "set time" for each planet? There are reasons for choosing either, so we need to consider this point. The planets can be divided into two groups: the inner and the outer planets. The planets Mercury and Venus are nearer to the sun than is the earth and hence are called "inner" planets. Because they must always stay near the sun, they can only be seen shortly after sunset or before sunrise. Hence, they are both called evening and morning "stars." (Note that throughout the Book of Abraham and also in this paper, the words "star" and "planet" are used almost

interchangeably). Venus often can be seen in the twilight before stars are even visible. Thus, for the inner planets, as for the moon, the synodic period relative to the sun seems to be the more important, and will be used for their set times.

On the other hand, it can be argued that the more important period for the outer planets is the sidereal period because they are usually only visible at night when the stars are visible. The way the "star clock" works is that the principal stars in each of the twelve zodiac constellations are like the twelve numbers on the face of a clock, and the planets are like "hands" on the clock face which move around the clock at different rates to tell time. Thus, the more important period for those planets is that relative to the stars, so it seems more likely that the "set time" of the outer planets is their sidereal period.

Before considering each of the planets in order, we need to say a word about the celestial yardsticks used to design the solar system intervals. As stated above, the earth's average solar day is taken to be the basic unit. The 7-day week seems to be the principal yardstick of Abraham's Second Truth, concerning the sun-earth-moon

system for two reasons. First, both the lunar month and the solar year come out nearly even in weeks, and second, the Enoch and Hebrew calendars are both based on the week. But other intervals appear to be those used when the Lord "laid the foundations of the earth" and of the heavens (Job 38:4).

1.2 The Veintena, Trecena and Novena

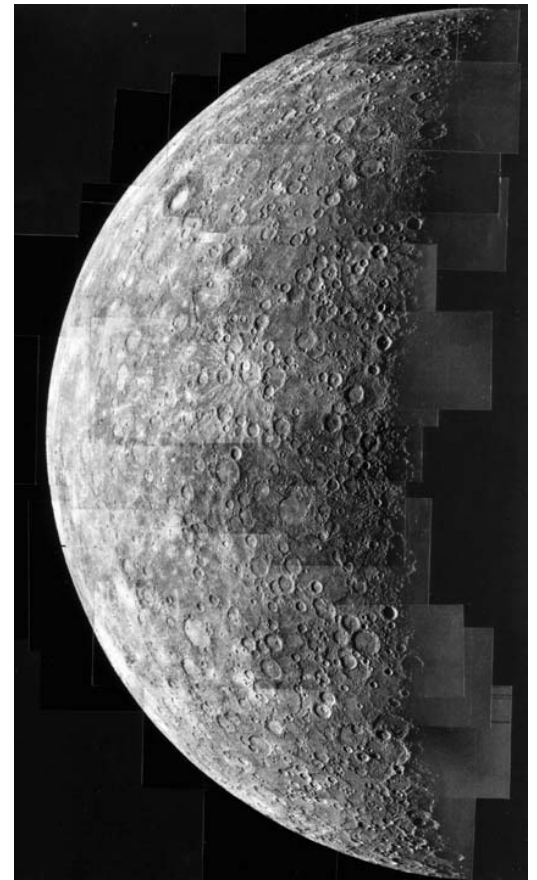
Abraham's Third law, which concerns the rest of the solar system, seems to use other units of time measure than the week. The basic unit is still the earth's day, but there are three other yardsticks apparently used for the orbital periods of the planets. Two of them we have encountered in my earlier articles: the 13-day *trecena* and the 20-day *veintena* of the Native American calendar.^[2] Now it is time to introduce another needed piece of their calendrical system. The 13-day count was said to refer to the thirteen "Lords of the Day" but there was also a lesser known 9-day count for the nine "Lords of the Night" called the *novena*.^[3] Each day in the novena is assigned a number from 1 to 9 in repeating succession, similar to how the week can be thought of as an continuous repetition of days numbered from 1 to 7. These 9 "lords" may have originally referred to the Moon, Mercury, Venus, Sun, Mars, Jupiter, Saturn, Uranus, and Neptune, even as our seven-day week is associated with the first seven in that series.^[4] Pluto, the other so-called planet, is one of several small bodies in the solar system which is not a "major planet" and does not appear to be part of the Lord's timepiece. But even though Neptune is not visible to the unaided eye, it is definitely one of the hands on the great celestial clock.

1.3 The Merc

All three of the intervals of the veintena, trecena and novena are apparently fundamental to the design of the solar system. Moreover, there are three larger intervals formed by taking pairs of these three fundamental day counts, two of which are clearly important in solar system design. The trecena and veintena have their first days coincide every $13 \times 20 = 260$ days, forming the sacred round, which has been discussed at length in my articles relating to holy days. In this article we will see that several solar system periods come out even when measured in sacred rounds. Another important unit is formed when the novena and trecena counts both

begin on the same day. To my knowledge, that $9 \times 13 = 117$ -day period has not yet been recognized, so I will call it the "merc" for reasons which will become clear in the next section. It appears to be even more important than the Sacred Round in solar system measurements. The third period of $9 \times 20 = 180$ days is doubled to form the 360-day "prophetic year" of the Mayan long-count,^[5] which does not currently appear to me to be part of solar system design.

Work in Progress. It is important to note that this entire subject is one of current research and discovery. I have delayed some two decades to publish parts of what is in this article, awaiting further confirmations. The work on Mercury and Venus is now becoming mature, but I have barely scratched the surface for the outer planets. One note that occurs to me as I write this article is that the 9-day count may be more important for the sidereal (night) periods and the 13-day count may be more important for the synodic (day) periods. In fact, I am not even sure of when the first day of a novena occurs, so I tentatively adopt the same one used by the Mayans.^[6] Now let us look at each of the planets in order to see how their set times form a set of interlocking intervals, designed according to these yardsticks of the merc and the sacred round.



The planet Mercury.

2. One Planet Above Another

Let us now proceed to consider each of the proposed planetary set times, in order of increasing length, "one planet above another," as the Lord told Abraham (Abr. 3:9).

2.1 Mercury

After the moon, the next shortest planetary period in our solar system is that of the planet Mercury. The average synodic period of Mercury over historical times is nearly 116 earth days (115.87754 days^[7]), which is here proposed to be the "set time" of Mercury. It is because this period nearly equals the above described period of 117-days that I dubbed it the "merc." We will see that in many ways, the merc is

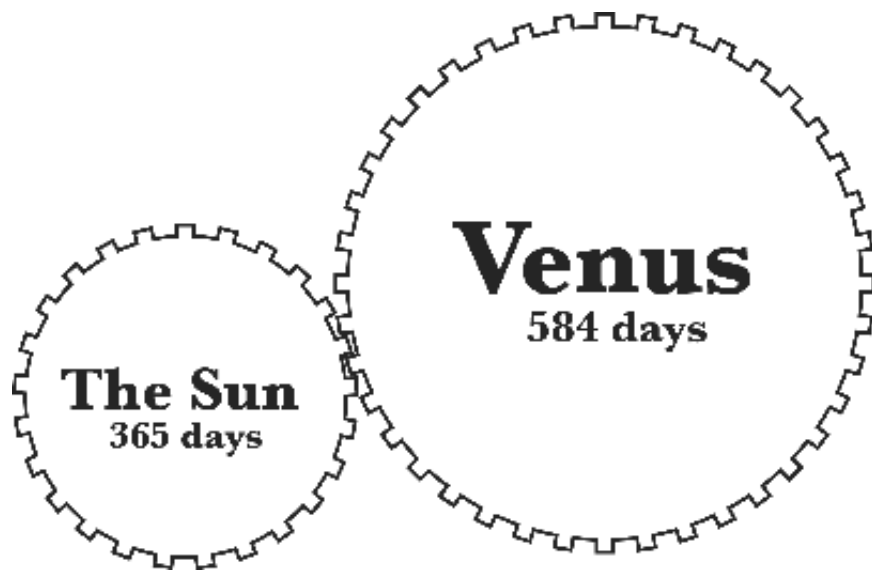
the fundamental unit of time for the solar system.

Because I have already discussed the role of Mercury in some details in my articles, just one example should make it clear that the Lord is using the merc as a unit of measure. The date proposed in my articles for the birth of Christ is Wed 5 Apr 1 BC pm* (after sunset), and for his resurrection is Sun 3 Apr AD 33 am* (before sunrise).^[8] That interval between what are arguably the two most important dates in the history of mankind is 12,051 days. In my earlier papers, I have discussed how that interval is equal to exactly 104 cycles of the planet Mercury ($104 \times 115.8775 = 12,051.26$). On the Mercury calendar, both the Savior's birth and Resurrection occurred on the holy day "1 Creation," which is the first day of the Mercury cycle.^[9]

What has this got to do with the merc? That interval happens also to be exactly equal to 103 mercs ($103 \times 117 = 12,051$). First, this is offered as an indication that the Lord is using the merc as an interval of time measurement. Moreover, it also demonstrates how an interval which is only approximate (such as one Mercury cycle differing by more than a day from a merc) can be made to fit precisely to the very day by dropping or adding an entire cycle when needed ($103 \text{ mercs} = 104 \text{ cycles}$).

2.2 Venus

The average synodic period of Venus is its evening and morning star cycle of nearly 584 days (583.92166 days). Five mercs is equal to $5 \times 117 = 585$ days, so, like Mercury, its cycle only differs from an exact number of mercs by slightly more than a day. Is that a significant coincidence? After all, we noted in last month's



5 Venus cycles equals 8 years.

article that sometimes the ratio of planetary periods occur in whole numbers, caused by the gravitational effects of one planet on another.^[10] But that is not the case here. These are the *synodic* periods as *viewed from the earth*, not the periods of revolution around the sun. Those sun-centered periods are not in any simple ratio.^[11] Thus, as stated in the last article, the system was designed to be viewed from the earth, and the simple ratios don't appear in the sun-centered numbers. Thus, as we see that the

set time of each planet can be measured in whole numbers of mercs or sacred rounds, it is important to remember that modern astronomers assume that these periods are essentially random, so the response of the atheist must be that it is just by chance that these values come out so close to exact numbers.

Eight Years. Venus, besides having nearly exactly five times the synodic period of Mercury, is also closely tied to the length of the year on earth. The relationship is very simple: there are almost exactly five Venus cycles every eight years. To show the accuracy, note that 8×365 days exactly equals 5×584 days. The period of eight years also realigns the moon. Thus, if a child is baptized on her eighth birthday on our Gregorian calendar, she will be "reborn" near her birthday on both the Hebrew Calendar, and also the Venus calendar. This relationship is shown in the illustration by gears with 25 teeth for the earth, and 40 for Venus.

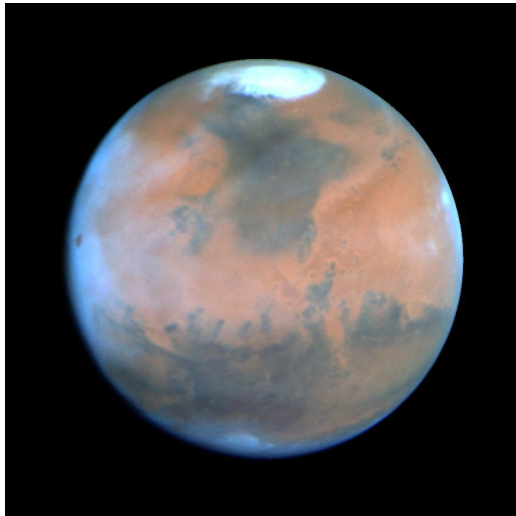
Forty Years. An excellent realignment interval of all three set times of Mercury, Venus, and the year occurs after forty years. Forty years of 365 days = 25 Venus cycles of 584 days and also completes 126 Mercury cycles. As noted in my previous articles, some of the periods of forty years mentioned in the scriptures apparently occurred when these cycles aligned with the holy days on the Hebrew Calendar. [\[12\]](#)

The Venus Calendar. It might be constructive here to note how the cycles of Venus form a miniature of all history, because this again shows the design to the solar system. The period of Venus is about $583 \frac{11}{12}$ days, so after 12 cycles, it comes out approximately even: 12 Venus cycles equals nearly exactly 7,007 days. Using the 13-day trecena as the unit of time for the Venus calendar, one can count 11 cycles of exactly five mercs (585 days) each followed by one cycle of 572 days, for a total of 7,007 days. That way, every cycle begins at the start of a trecena.

A Miniature of History. It turns out that 7,007 days is exactly seven periods of 1,001 days, each of which is in turn divisible by 7 ($1,001 = 7 \times 143$). Evidence for design is suggested when the intervals divide exactly into units which the Lord seems to prefer. For example, we have been told the temporal existence of the earth will be 7,000 years, or 7 days of the Lord (D&C 77:6). We also know that the Lord divides periods into 12 parts, such as 12 hours in a day (John 11:9) or 12 months in a year. We know that all of history is also divided into 12 "hours" and that we are living in the eleventh hour (Mat. 20:6-9, D.C. 33:3). [\[13\]](#) Thus, the earth's temporal history of 7,000 years is divided into 12 periods, just as are the cycles of Venus.

This is the kind of order which argues most strongly that the solar system was created to be a precise timepiece. The atheist can continue to claim that all such

alignments are chance coincidences, but such a posture becomes extremely unlikely, and much harder to believe than simply accepting that it was designed.



The planet Mars.

2.3 Mars

The sidereal period of Mars is 687 days (686.99576 days) and the synodic period is 780 days (779.93651 days). As stated above, the set time for the inner planets seems clearly to be the synodic period, and for the outer planets to be the sidereal period. But Mars is somewhat of a transitional planet, and there are arguments that the set time of Mars could be either. For the purposes of this article, and to show the design of the solar system and planetary progression, let us use the synodic

period as the set time of Mars, but this is only a tentative proposal at this point.

The synodic period of Mars is nearly exactly three sacred rounds of 260 days ($3 \times 260 = 780$), which fact argues strongly for the set time of Mars to be the synodic period. An even the slight discrepancy eventually comes out to be exact. That is, the set time is $779 \frac{59}{63}$ days, so after 7×9 years, the orbital period comes out to be exact in days.

The synodic period of Mars is in a 4:3 ratio with Venus. When the 585-day approximation to Venus' synodic period is used, then it is exact: $3 \times 780 = 4 \times 585 = 2,340$ days. This also is exactly the period on the Mayan calendar when the cycles of the veintena, trecena and novena all realign: $20 \times 13 \times 9 = 2,340$ days. These coincidences add greatly to the arguments for the design of the solar system, as well as supporting the Mayan belief that the solar system was created according to the calendar and not the other way around.

2.4 Jupiter

The sidereal period of the planet Jupiter is nearly 12 years (11.86 years = 4,332.8486 days). Similarly, the earth's year is about 12 lunar months. The ancient sky was divided into twelve zodiac constellations, which are like the 12 numbers in fixed positions on the face of clock. The planets move clockwise in the circle of these constellations and can be thought of as hands of a clock. Even as the sun spends about one month in each zodiac constellation, so also does Jupiter spend

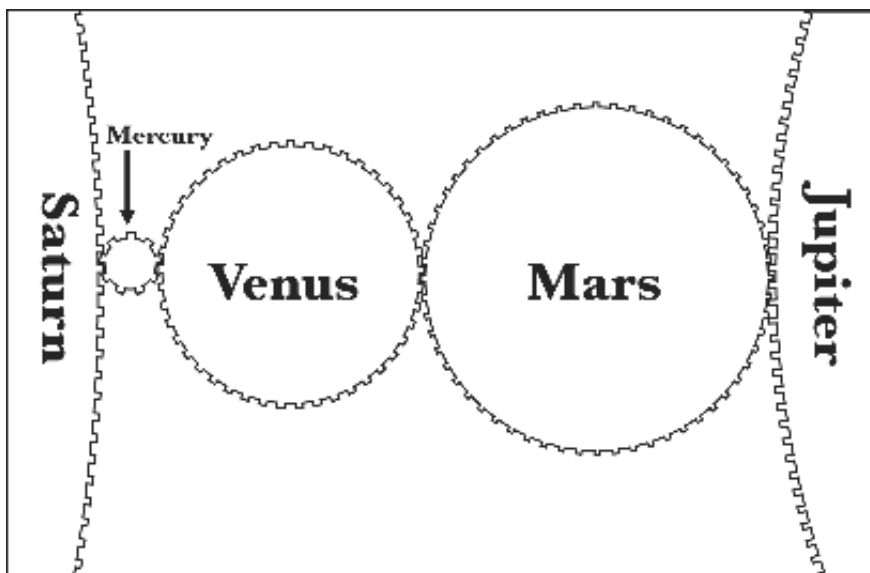
about one year in each.

The set time of Jupiter is within four days of being exactly 37 mercs ($37 \times 117 = 4,329$ days). Again, that is surprisingly close to an exact number of mercs for such a large orbit. But the orbital period also comes out even more exactly in sacred rounds: $50 \times 260 = 13,000$ days, which is three orbits of Jupiter of 4,333.33 days each. So the orbit can be thought of as measure both in mercs and sacred rounds.

The merc is an ideal unit for tracking Jupiter. Jupiter's period is a little less than 12 years, so Jupiter spends a little less than a year in each zodiac constellation. Three mercs = $3 \times 117 = 351$ days, which is also a little less than a year. Thus one could create a calendar on which Jupiter moves to the next constellation in intervals of three mercs. After one full cycle of Jupiter around the twelve constellations of the zodiac, it would have taken $12 \times 3 = 36$ mercs. At that time one more merc could be inserted for a total of 37 mercs which corrects it to within four days. So the merc is especially well suited to track Jupiter's orbit.

2.5 Saturn

The sidereal period of Saturn is about 29.5 years (10,764.44 days). As already mentioned in other articles, the Lord has explicitly stated that he sometimes counts one day to a year.^[14] The moon's cycle of phases takes approximately 29.5 days, and the orbital period of Saturn is about 29.5 years. Thus, *Saturn is counting in years as the moon is counting in days*, in the same way that the Lord says he reckons. Taken by itself, it appears to be a chance coincidence, because there is no obvious reason that the moon should be calendrically related to Saturn. The argument against this merely being chance is that there is a long series of such coincidences that form a pattern.



Planetary periods are designed like precise interlocking gears. Mercury has 9 teeth, Venus 45, Mars 60, Jupiter 333 and Saturn 828. Each tooth represents 13 days.

The orbital period of Saturn is almost exactly 92 mercs ($92 \times 117 = 10,764$). I shall

not attempt to calculate the odds against all these periods being measured so well in mercs, but by this time it appears to be out of the question that it is caused by blind chance.

2.6 Uranus

The planet Uranus is not usually considered to be one of the visible planets, but it can in fact be seen by a trained observer with the unaided eye in a dark sky. It currently has an orbital period of 84.0139 years (30685.4 days). Because $84 = 12 \times 7$, this means that Uranus spends 7 years in each of the twelve zodiac constellations. That is exactly how the Lord told Israel to count years: by sevens (Lev. 25:1-4). The orbital period is so close to being exactly 84 years that it serves to count weeks of years all through history with no corrections needed.

The sidereal period of Uranus is within 6 days of 118 sacred rounds ($118 \times 260 = 30,680$). So again, this long period is within a few days of being an exact number of sacred rounds. But there is something special about this particular number of sacred rounds.

Years in Sacred Rounds. One can ask, "What number of years most nearly equals an exact number of sacred rounds?" The answer is that 42 years very nearly equals 59 sacred rounds ($42 \times 365.2425 = 15,340.185$ days and $59 \times 260 = 15,340$ days). Twice that is 84 years, so if one approximates the orbit period of Uranus to be exactly 118 sacred rounds, then one automatically is counting by exactly 84-year periods. Thus we see that even the year comes out even in sacred rounds, and that happens when it exactly matches the orbit of another planet. By this time it is hopefully clear to the reader that both the sacred round and the merc we used in designing the solar system.



The planet Uranus.

2.7 Neptune

When I began this research it was not obvious to me whether the planet Neptune should be included as a hand on the celestial clock, because it is not visible to the unaided eye. But as the work progressed, it became clear it is to be included. For example, the sidereal period of Neptune is 164.8 years, or 60,189.4 days. That again follows the pattern because 60,190 days equals exactly 231.5 sacred rounds. Thus,

Neptune follows the same pattern as the other planets, in that ALL of the set times are nearly whole number multiples of only two sacred units of measure, the sacred round and the merc. The results, with the amazingly small errors are summarized in Table 1. All intervals are nearly whole number multiples of either the sacred round of 260 days, or the merc of 117 days.

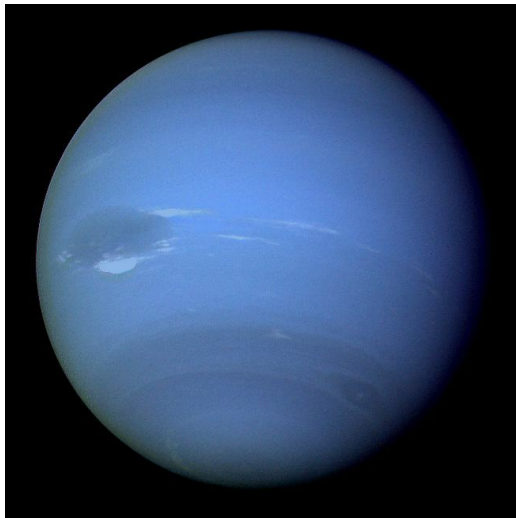
Planet	Period (days)	Approximate Period	Error
Mercury	115.87754	117 = 1 merc	.01 merc
Venus	583.92166	585 = 5 mercs	.01 merc
Mars	779.93651	780 = 3 sacred rounds	.0002 sr
Jupiter	4,332.8486	4,329 = 37 mercs	.03 merc
Saturn	10,764.44	10,764 = 92 mercs	.004 merc
Uranus	30,685.4	30,680 = 118 sacred rounds	.02 sr
Neptune	60,189	60,190 = 231.5 sacred rounds	.008 sr

Table 1. Planetary "Set Times."

3. Conjunctions

Yesterday, on Easter Sunday, I was reviewing this article and attempted to drop Neptune from the presentation, claiming that more research was necessary. The reason was that I could see no obvious use for it such as the other planets have. That is, Jupiter moves through one constellation per year, Saturn counts years as the moon counts days, and Uranus marks sabbatical years. But as I tried to delete that section, suddenly my head was flooded with ideas, one of which I cannot refrain from including.

There is an entire field which I have ignored up until this point, and that is the importance of conjunctions. A conjunction means that two objects are near each other in the sky, such as when a planet passes another planet or a star. In the case of considering planets to be hands on a clock, it means that two of the hands are aligned, pointing in the same direction. On our usual clock, the most important time that occurs is at noon and midnight, because both hands are also pointing at a number. But at the ten other places on the clock where the two hands align, they are not pointing to an exact number, but in between. Thus, I had felt that the times of aligning hands was less important than when they align with a number. I have been postponing any research on conjunctions, but that has just been changed because of Neptune.



The planet Neptune.

3.1 Uranus-Neptune

One can calculate that conjunctions of Uranus and Neptune will occur on the average every 171.393 years (62,599.5 days) ^[15] Three reasons suggest that these conjunctions might have been designed for time reckoning. First, there was a conjunction between them right at Regulus, the "12 o'clock star," ^[16] just before the "Beginning of Mortality" of the earth. ^[17] If that doesn't sound like the two big clock hands at midnight I don't know what does.

Secondly, such a conjunction at that place is very rare indeed. That is because Neptune has an orbit requiring 164.8 years to get back to that place, in which time Uranus will have nearly completed two orbits (168 years). Thus they will meet only a little further away (after 171.4 years), so the place of the conjunction will still be in the constellation of Leo. It takes 4,285 years for the conjunctions to cycle through the entire zodiac to return to Regulus. Thus, these two hands together form a great long-term time marker. And third, the period between conjunctions again comes out even in mercs ($535 \times 117 = 62,595$). Thus, one can reckon by these conjunctions to the very day by counting 535 mercs, and that will have sufficient accuracy for 7,000 years not to need correction. If the reader is not impressed that the interval comes out nearly even in mercs, then I suggest an exercise for the atheist student: Design a clock where not only the periods for each hand are whole numbers but also the interval of the hands aligning.

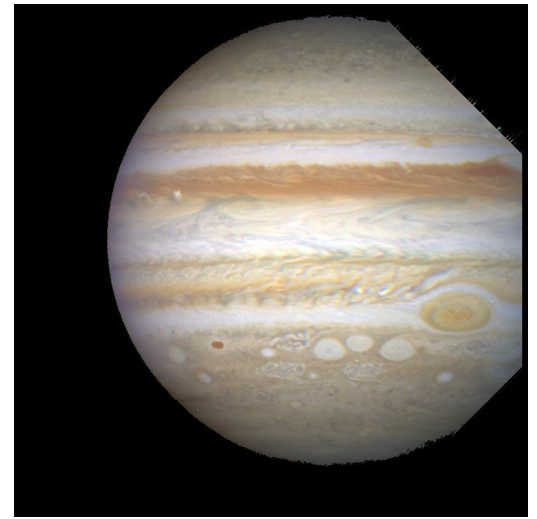
This discovery opens up the field of conjunctions between other planets, and I cannot now refrain from at least a preliminary investigation. After all, if this conjunction interval really was designed, then conjunctions between some other planets should follow the same pattern and also come out even in celestial time units.

3.2 Jupiter-Saturn

Jupiter-Saturn conjunctions have long been considered important time markers. The period between such conjunctions is about 19.85 years (7,251.81 days). ^[18] Checking to see if this period comes out even in celestial units yields the amazing result that it again does so in mercs: $62 \times 117 = 7,254$. To me, this makes it clear that the system was designed with conjunctions of the planets in mind.

3.3 Mars-Jupiter

Now I have to check Mars-Jupiter conjunctions and sure enough, we have another winner. They occur every 816.45 days, [\[19\]](#) and 819 days is equal to 7 mercs ($7 \times 117 = 819$). The period of 819 days was already known to me as the period when the 7-day week realigns with the novena and trecena ($819 = 7 \times 9 \times 13$), but it had never occurred to me that this period might equal the interval between Mars-Jupiter conjunctions. Table 2 summarizes these results.



The planet Jupiter.

Planets	Interval	Merces (117 days)	Error
Mars-Jupiter	816.45	819 = 7 mercs	.02 mercs
Jupiter-Saturn	7,251.81	7,254 = 62 mercs	.02 mercs
Uranus-Neptune	62,599.5	62,595 = 535 mercs	.04 mercs

Table 2. Intervals between conjunctions of planets are also measured in mercs.

4. Conclusion

Abraham's Third Truth states that the set times of the planets form a succession of increasing periods which were designed to reckon time. The results of this article show that the periods of the planets all are nearly whole numbers of either of two different celestial measures: the sacred round of 260 days or the "merc," defined herein to be 117 days. Both of those units are derived from the Native American calendar. Moreover, it was also discovered that at least three pairs of planets have conjunction intervals of whole numbers of mercs. Until now it has been assumed by astronomers that these periods have been essentially random numbers. To have so many of them be multiples of the merc and sacred round strongly indicates that the solar system was designed to reckon time. Moreover, the Native American tradition is vindicated that the solar system was designed to fit their calendar rather than vice versa. Future astronomers may come to view the Book of Abraham as unlocking the key to the design of the solar system.

Notes

1. Pratt, John P., "[Abraham's Three Truths of Astronomy](#)," *Meridian Magazine* (9 March 2004).
2. Pratt, John P., "[Venus Resurrects This Easter Sunday](#)," *Meridian Magazine* (27 Feb 2001) and "[A Native American Easter](#)," *Meridian Magazine* (28 Mar 2001).
3. The "Lords of the Night" are listed by Anthony Aveni, *Skywatchers of Ancient Mexico* (Austin, Texas: U. of Texas Press, 1980), p. 157, 162. The names veintena, trecena, and novena are taken from Munro Edmonson, *The Book of the Year* (Salt Lake City: U. of Utah Press, 1988), p. 5.
4. The order of the days of the week derives from taking those seven planets, with each of those "lords" as reigning for one hour of 24, beginning with Saturn, going from the last to the first. Each day is named for the lord reigning during the first hour. This yields the order Saturn (Saturday), Sun (Sunday), Moon (Monday), Mars (Tuesday), Mercury (Wednesday), Jupiter (Thursday), and Venus (Friday).
5. The Mayan long count groups eighteen 20-day veintenas together to form the 360-day prophetic year. It has not been mentioned much in my articles because I have not yet determined whether it is part of the Lord's sacred calendars at all. It may have just been a Mayan invention. The Sacred Round, which groups twenty 13-day trecenas together, is at least a thousand years older than the Mayans, and is clearly a sacred calendar of God. The merc most likely is a group of thirteen 9-day novenas, and is clearly part of the same system as the Sacred Round.
6. One assumes that the Mayan long count prophetic year of 360-days begins on day 1 of the novena because 9 divides evenly into 360. The glyphs associated with each day are numbered from that point, being called G1 through G9 (for "Glyph 1"). On my calendrical conversions pages (for example, <http://www.johnpratt.com/items/calendar/calcalc/datelist.html>), I use the notation "1 Light 1" where the first "1" refers to the day of the trecena, "Light" is the day of the veintena, and the final "1" is the day of the novena.
7. The planetary orbital periods from Mercury to Saturn are taken from Stahlman, W.D. & Gingerich, Owen, *Solar and Planetary Longitudes for Years -2500 to +2000*, (Madison, U. of Wisconsin, 1963). They are average values over that historical period and hence differ from current values. The value for Saturn differs much more from the modern value than the others and is suspect, but it does not appear to be a misprint. The values for Uranus and Neptune are the current values, taken from C.W. Allen, *Astrophysical Quantities* (London: Athlone Press, 1976), p. 140.
8. Pratt, John P., "The Restoration of Priesthood Keys on Easter 1836, Part I: [Dating the First Easter](#)," *The Ensign* (June, 1985), pp. 59-68 proposes the Resurrection date, and "[Passover: Was it Symbolic of His Coming?](#)" *The Ensign* (Jan, 1994) pp. 38-45, proposed the birth date.
9. Pratt, John P., "[A Native American Easter](#)," *Meridian Magazine* (28 Mar 2001), Table 2.
10. An excellent example is the first three large moons of Jupiter, which have sidereal periods of 1.76914 days (Io), 3.55118 days (Europa), and 7.15455 days (Ganymede). The ratio of the first two periods is 2.007, and of the last two is 2.015. (Allen, p. 146).
11. The sidereal period of Mercury is 87.969 days and of Venus is 224.701 days, which

have a ratio of 2.554.

12. The 40-year realignment cycle is discussed in Pratt, John P., "[Exodus Date Testifies of Christ](#)," *Meridian Magazine* (7 Oct 2003), section 3.3.
13. Note that we are not currently in the last hour, because there are twelve hours in a day.
14. The day-year pattern is discussed in Pratt, John P., "[Enoch Calendar: Another Witness of the Restoration](#)," *Meridian Magazine* (5 Aug 2002), section 1.
15. The calculation is easy: Simply calculate the rate of one planet moving around the clock relative to the other, which gives the rate of the faster hand crossing the slower. In this case the rate is $(1 \text{ rev})/(\text{Conj. Period}) = (1 \text{ rev})/(30,685.4 \text{ days}) - (1 \text{ rev})/(60189.4 \text{ days})$. Exercise for the student: Do you see why the hands on a clock only align in 11 places rather than 12?
16. The four principal stars are Regulus = 12 o'clock, Antares = 3 o'clock, Fomalhaut = 6 o'clock, and Aldebaran = 9 o'clock. See Pratt, John P., "The Lion and Unicorn Testify of Christ, Part II: [The Four Royal Stars](#)," *Meridian Magazine* (5 Dec 2001).
17. Pratt, John P., "[Venus and the Beginning of Mortality](#)," *Meridian Magazine* (9 July 2003).
18. $1/P = 1/4332.8486 - 1/10764.44$
19. $1/P = 1/686.99576 - 1/4332.8486$