Time by Design

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This article contains highly technical information for those interested who already have a thorough understanding of the original luni-solar calendar. While the Creator's calendar is simple enough that anyone may use it by mere observation, it is also accurate enough for the most exacting astronomical calculations. If this article is difficult to understand at this point, lay it aside and go on to another article. The information outlined in this article is fascinating because it reveals that the Creator's calendar contains such precision. However, it is unnecessary for those who use the true calendar by observation.

In the heavens there is nothing accidental, nothing arbitrary, nothing out of order, nothing erratic. Everywhere is order, truth, reason, constancy . . . I cannot understand this regularity in the stars, this harmony of time and motion in their curious orbits through all eternity, except as the expression of reason, mind and purpose . . . Their constant and eternal motion, wonderful and mysterious in its regularity, declares the indwelling power of a divine intelligence. If any man cannot feel the power of God when he looks upon the stars, then I doubt whether he is capable of any feeling at all.[1]

The beautifully simple words of Roman Stoic, Cicero, gives voice to his admiration for the heavens and heaven's Creator. He further observed, "When you see a sundial or a water-clock, you see that it tells the time by design and not by chance."[2]

Scripture, history and archeology agree: all ancient civilizations used luni-solar calendation.[3] The perfection of the luni-solar calendar as preserved by the Hebrews is well-summed up in the words of Joseph Scaliger as "the most ingenious and most elegant of all systems of

[1] Cicero, pp. 144-145, as quoted in Bill Cooper, *After the Flood*, (England: New Wine Press, 1995), p. 29.
[2] *Ibid*., p. 27.
[3] Egyptians, as sun worshippers, are believed to be the first to move to a purely solar calendar although originally they, too, used a luni-solar calendar.

chronology."[4] The reason the Creator's method of time-keeping is the most accurate, precise and elegant, while at the same time the "most ingenious" is because built within it are checks and balances which require no man-made manipulation to keep perfect track of time. The history of all counterfeit calendars is one of continual adjustment; not so with the true calendar of Creation.

The Creator's calendar is based on three observable facts. 1. The spinning of Earth on its axis: a day. 2. The revolution of the moon around Earth: a lunation, or month. 3. The revolution of Earth and sun: a year. Taken individually, each segment of nature's clockwork is "off" by just a little bit. The weeks do not perfectly align with the lunations; the lunar year is not quite as long as the solar year. And yet, when taken as a whole, the parts unite to provide a coordinated time-keeping system that is precise enough for the most exacting astronomical calculation, while simple enough for a child to just lift his eyes to the heavens and understand the calendar of the Creator.

Some, in studying luni-solar calendation, have supposed that prior to the flood, the planets were in perfect alignment: each month had 30 days; the years were 360 days long. Such speculation is not supported by the statements of antiquity. Much of the book of Enoch deals with lunar and solar calendation and the astronomical principles that correlate the two.

Berosus, a Chaldean historian, describes the patriarch Abraham as having great knowledge of astronomy: "In the tenth generation after the Flood, there was among the Chaldeans a man [Abram] righteous and great, and skilful in the celestial science."[5]

Before leaving Ur of the Chaldees, Abram stood as a witness for the God of Heaven.[6] He used the need to intercalate[7] the apparently irregular parts of the precise whole as proof that nature itself was not god, but there exists a Being superior to nature Who is its Creator.

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[4] Joseph Scaliger, *De Emendatione Temporum*, (Francofurt, 1593), p. 108, as quoted in "Report of Committee on Historical Basis, Involvement, and Validity of the October 22, 1844, Position, Part V," Box 2, Folder 4, of the Grace Amadon Collection, (Collection 154), Center for Adventist Research, Andrews University, Berrien Springs, Michigan.

[5] Berosus, as quoted by Josephus (c.a., C.E. 37 – C.E. 101) in *Antiquities of the Jews*, Book I, Chapter 7, Verse 2.

[6] The Chaldeans, influenced by Nimrod, had already apostatized from the worship of the Creator God. In turning from their Creator to the creation, the city of Ur had taken for its patron god, the moon god, Sin (called Nanna by the Sumerians. The moon god was the father of the sun god). Josephus states:

> He [Abram] was a person of great sagacity [wisdom], both for understanding all things and persuading his hearers, and not mistaken in his opinions; for which reason he began to have higher notions of virtue than others had, and he determined to renew and to change the opinions all men happened then to have concerning God; for he was the first that ventured to publish this notion, that there was but one God, the Creator of the universe; and that, as to other [gods], if they contributed anything to the happiness of men, that each of them afforded it only according to his appointment, and not by their own power. (Josephus, *Antiquities of the Jews*, Book I, chapter 7, Verse 1.)

[7] Intercalation: inserting extra days or months to align the shorter lunar year to the longer solar year.

> This his opinion was derived from the irregular phenomena that were visible both at land and sea, as well as those that happen to the sun and moon, and all the heavenly bodies, thus:– "If [said he] these bodies had power of their own, they would certainly take care of their own regular motions; but since they do not preserve such regularity, they made it plain, that in so far as they co-operate to our advantage, they do it not of their own abilities, but as they are subservient to Him that commands them; to whom alone we ought justly to offer our honour and thanksgiving."[8]

Luni-solar calendation was used by all ancient civilizations because it was the method brought down from before the flood by Noah and his descendents. Historical artifacts and records reveal that Sumer, the first post-flood civilization, possessed the largest and most accurate body of antediluvian knowledge. The applied mathematics of Sumer with their measurement of the heavens is still in use today!

In grade school, my fifth-grade teacher announced to the class that we all had to learn the metric system because the United States would soon be changing to that system of measurement: "The rest of the world is ahead of the U.S. in adopting the metric system and we need to catch up. The Imperial system of inches, feet, yards, miles, etc., is clumsy, irrational and makes no sense." Well, that did not make any sense to me! *I* knew how long a foot was. I knew how long it took to drive the 35 miles into school. I did *not* want to learn a new method of measurement! The fact that Canada was lauded for changing to the metric system did not inspire me in the least. Fortunately for me, the United States still has never converted to the metric system although the belief that the Imperial system is an awkward, out-moded, primitive system still exists.

However, nothing could be further from the truth! The metric system is simple to understand (for most minds!) because it is based on ten. The Imperial system is just as scientific because it is based on astronomy. Sumerian astronomers, looking at the sky, saw a circle from horizon around to horizon. They assigned 360 degrees of equal distance to this measurement and today the same degree of calibration is used for circles, geometry and angles (even by those who use the metric system!) The earth is measured with latitude and longitude, the time zones are laid out, all using the universal 360˚. This system, the sexagismal system, is based on 60.[9] It is from the sexagismal base of 60 that there are 12 inches in a foot and three feet in a yard. Without the sexagismal system, a right-angle would not be 90 degrees or a straight line 180 degrees.

[8] *Ibid.*

[9] Genesis 10:25 states: "Unto Eber were born two sons: the name of one was Peleg; for in his days was the earth divided," or measured. It was not measured using the metric system with its base of ten! Rather, the sexagismal system, their standard unit of measure, was likely what was used.

Time measurement itself uses the sexagismal base of 60. There are 60 seconds in a minute; 60 minutes in an hour; and 12 hours in a day (2 x 12 in a complete 24 hour period). Both 12 and 60 are factors of 60. The sexagismal system even solves the mystery of why the prophetic year is 360 days long. (6 x 60 = 360.) The prophetic year of 360 days is actually a metaphor for luni-solar calendation. A solar year consists of 365.24 days. The lunar year is 354.37 days long. Add these numbers together, round to 720 full days, then average, dividing by two. The answer is 360. Contrary to what some have assumed, the antediluvian year was *not* 360 days long. Rather, a 360-day year is solar and lunar time *averaged*.

> There can be no true substitute for the governing principles of luni-solar time, which mark out to the minute the exact time and place of beginning of the moon's new year. These laws were established by the Creator from the very origin of time and they will last throughout eternity. If they seem useless and impractical to us, *it is because we do not understand them*.[10]

It is time for knowledge of the Biblical calendar to be restored and understood. If at first it seems difficult to grasp, it is merely because it is a new concept. Unfamiliarity does not, by definition, prove something is in error. Even the Gregorian calendar has rules that are unfamiliar to most people, such as the rare occurrence of eight years between leap years. If the technical aspects at first bog you down, *skip to the article!* You can always come back later. The subject becomes easier to understand as one grows more acquainted with the rules of luni-solar calendation.

Day

Scripture establishes three types of worship days: seventh-day Sabbaths,[11] New Moons,[12] and annual feast Sabbaths.[13] The annual feast days, as the most important Sabbaths, had the most sacrifices specified for those days.[14] Interestingly, considerably more sacrifices were required on New Moons than even for the weekly Sabbaths![15] The New Moons were a day to consecrate oneself to God for the up-coming month and were days on which no commerce was to be conducted. These three types of worship days were all calculated by the luni-solar calendar.

New Moons and Sabbaths are frequently linked in scripture with no evidence that they are to be calculated using different calendars. Likewise, there is no evidence in scripture that the calendar

[10] Grace Amadon, "Brief Review of the New Views Regarding Millerite Chronology," Box 2, Folder 4, Grace Amadon Collection, *op. cit.*, emphasis supplied.
[11] Genesis 2:2, 3; Exodus 20:8-11; Exodus 31:13-17; Isaiah 66:23, etc.
[12] Isaiah 66:23; Ezekiel 46:1; Amos 8:5.
[13] Leviticus 23
[14] See Numbers 28 and 29.
[15] Compare Numbers 28:9, 10 with Number 28:11-15.

used to calculate the yearly feasts was different than that which was used to calculate the weekly Sabbaths and New Moons. Scripture clearly reveals that both new moons and seventh-day Sabbaths will be observed as worship days throughout all eternity.[16] Prophecy also foretells that at least the Feast of Tabernacles will be observed in eternity.[17] Consistency demands that the same calendar be used to calculate the weekly Sabbath as is used to calculate New Moons and yearly feasts.

Week

The one aspect of the Biblical calendar that is the hardest to wrap one's mind around at first is the difference in the weekly cycle. The Gregorian calendar, like the Julian calendar before it, has a continuous weekly cycle. The Biblical calendar does not. Because time itself is continuous, this may seem contradictory. However, it creates a very user-friendly calendar. Every *date* of every month always falls on the same *day* of the week.

> The week of seven days was connected with the lunar month, of which it is, approximately, a fourth. The quadripartite division of the month was evidently in use among the Hebrews and other ancient peoples; but it is not clear whether it originated among the former. It is unnecessary to assume, however, that it was derived from the Babylonians, for it is equally possible that observations of the four phases of the moon led the Hebrew nomads spontaneously and independently to devise the system of dividing the interval between the successive new moons into four groups of seven days each. . . . The emphasis laid on the requirement [Leviticus 23:15] that the weeks of Pentecost should be "complete" ("temimot") suggests that weeks might be reckoned in such a way as to violate this injunction.[18]

The above quote highlights an interesting point: the emphasis in the count to Pentecost being on *complete* weeks does infer that the weekly cycle in use would not automatically provide that.

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[16] "And it shall come to pass, that from one new moon to another, and from one Sabbath to another, shall all flesh come to worship before Me, saith the LORD." (Isaiah 66:23.)

[17] In the context of the new earth, prophecy foretells: "And it shall come to pass, that every one that is left of all the nations which came against Jerusalem shall even go up from year to year to worship the King, the LORD of hosts, and to keep the feast of tabernacles." (Zechariah 14:16.)

[18] Emil G. Hirsch, "Week: Connection with Lunar Phases," www.JewishEncyclopedia.com. This quote clearly supports a weekly cycle restarting with each new moon. The author mistakenly believed that the first day of the work week was the first date of the month. However, this cannot be the case as proven by the scriptural dates for the seventh-day Sabbath, which always occurred on the 8th, 15th, 22nd, and 29th. Thus, First Day of the first week, is always on the second (date) of the month.

Month

The month begins the day after the first visible crescent is observed.

> The month was a unit of time closely tied to the moon. The Hebrew word for "month" also meant "moon" . . . The reason for the connection between the month and the moon is that the beginning of a month was marked by a new moon. The moon was carefully observed by the people of Bible times. When it appeared as a thin crescent, it marked the beginning of a new month.
>
> The lunar month was about 29 days long. Therefore, the first crescent of the new moon would appear 29 or 30 days after the previous new moon. At times the crescent was not visible because of clouds. But this was allowed for with a rule that the new moon would never be reckoned as more than 30 days after the last new moon. This prevented too much variation in the calendar.[19]

Astronomers refer to the conjunction as the new moon. The conjunction is when the earth, moon and sun are all in alignment and the moon cannot be seen from earth. This is also referred to as the black, or dark moon. The month began on New Moon day, the day after the crescent moon was observed in the evening sky. In fact, the word calendar comes from the word *calends* which means to call or proclaim (announce the month had begun).[20]

Various lunar Sabbatarians differ in their understanding of precisely what is the "new moon."[21] Some believe that it is the *last* visible crescent, while others believe that it is the astronomical new moon, or conjunction. The overwhelming weight of archeological[22] and scriptural evidence, however, establishes that originally the *first* visible crescent (after conjunction) was considered the new moon.[23] The word *chôdesh* means to renew. It is translated both as "month" and as "moon." The phrase "new moon" refers to the first visibly seen moon, as it is re-lighted, or renewed, after the dark phase. In order for the moon to be renewed or seen, there must actually be something there to *be* seen. In the following quote, notice the emphasis on the changing light

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[19] *Nelson's Illustrated Bible Dictionary*, Thomas Nelson Publishers, 1986.

[20] *The Concise Oxford Dictionary of English Etymology*, T. F. Hoad (ed.), (Oxford: Oxford University Press, 1996).

[21] Difference of opinion during the process of rediscovery should by no means be taken as "proof" that the belief is error. Rather, truths long buried under the rubble of error and assumption are being dug out. Everyone should have the freedom to pursue truth and be granted the religious liberty to follow his/her convictions.

[22] Clay tablets and stele still extant reveal that all ancient civilizations originally began their months with the observation of the first visible crescent.

[23] Ecclesiasticus, written in the first century B.C.E. refers to the light reflecting on the moon: "And then the moon, ever punctual to mark the times, an everlasting sign: It is the moon that signals the feasts, a luminary that wanes after being full. The month derives its name from hers. She waxes wonderfully in her phases, banner of the hosts on high, shining in the vault of heaven." (Ecclesiasticus 43:6-8, c.a. 190-180 B.C.)

of the moon as a sign to be seen. When the moon is in conjunction, there is nothing to be seen, and thus it is not a sign.

> He made the moon also to serve in her season for a declaration of times, and a sign of the world. From the moon is the sign of feasts, *a light that decreaseth* in her perfection. The *month is called after her name, increasing wonderfully in her changing*, being an instrument of the armies above, *shining* in the firmament of heaven; The beauty of heaven, the glory of the stars, an ornament *giving light* in the highest places of the Lord. At the commandment of the Holy One they will stand in their order, and never faint in their watches.[24]

The crescent moon is sighted above the Western horizon after sunset. The moon appears at different angles and positions depending upon one's location on earth. The following graphics show what the first visible crescent looks like for different points on earth.

Northern Hemisphere: 

Equator: 

Southern Hemisphere: 

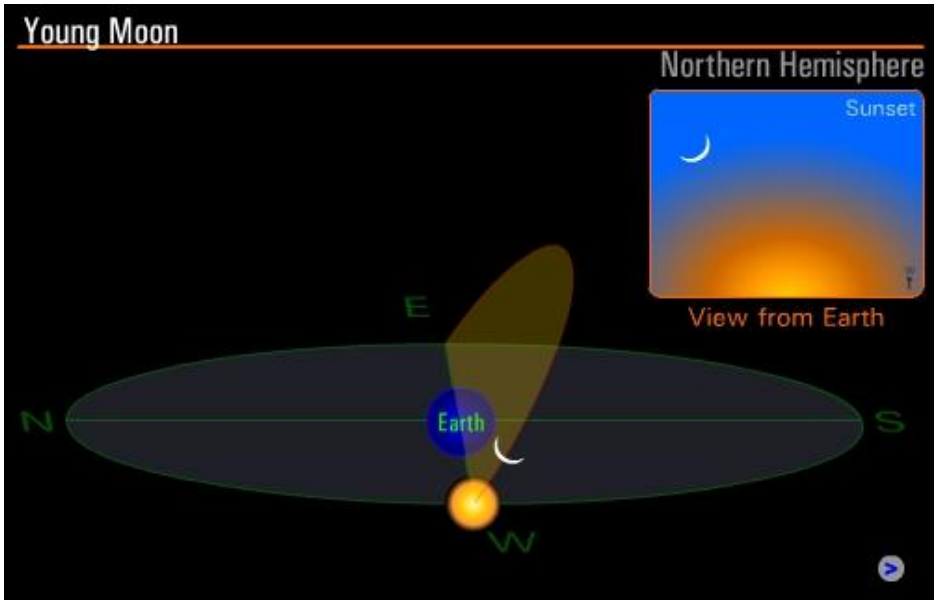
The points of the new moon are called "horns." These point to the pathway of the setting sun. Depending upon one's latitude, the distance away from the path of the setting sun will be plus or minus 5˚. At arm's length, the width of one finger is 1.5 degrees. The furthest away from the sun's pathway that the crescent ever appears, will be approximately four fingers. If one is at the equator, the moon will appear to set directly over where the sun set.

The further North or South one goes, the more degrees away from the sun's path the moon will appear. The following graphics[25] show the position of the crescent in relation to that of the sun.

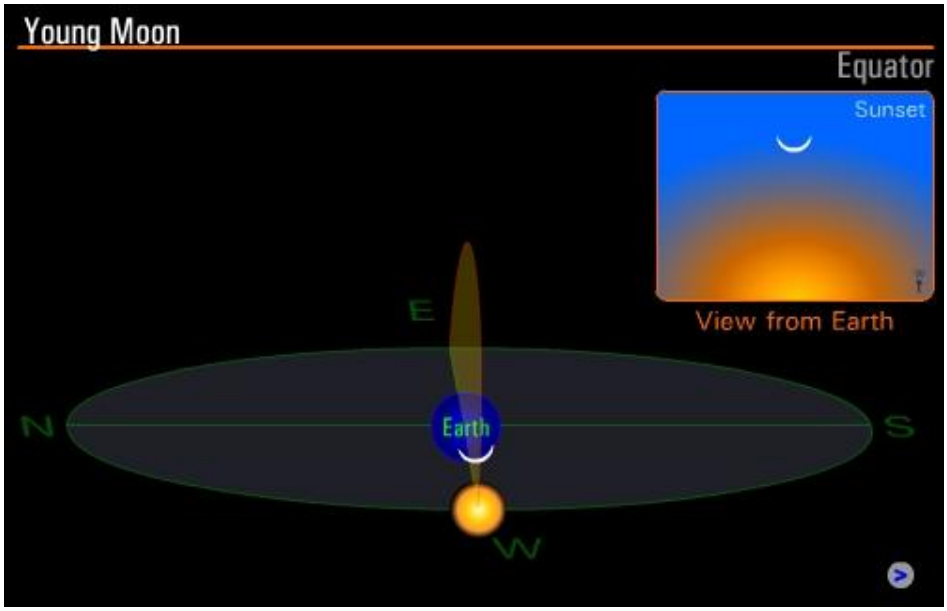
[24] Ecclesiasticus 44:6-10

[25] Graphics: © Nick Strobel, www.astronomynotes.com.

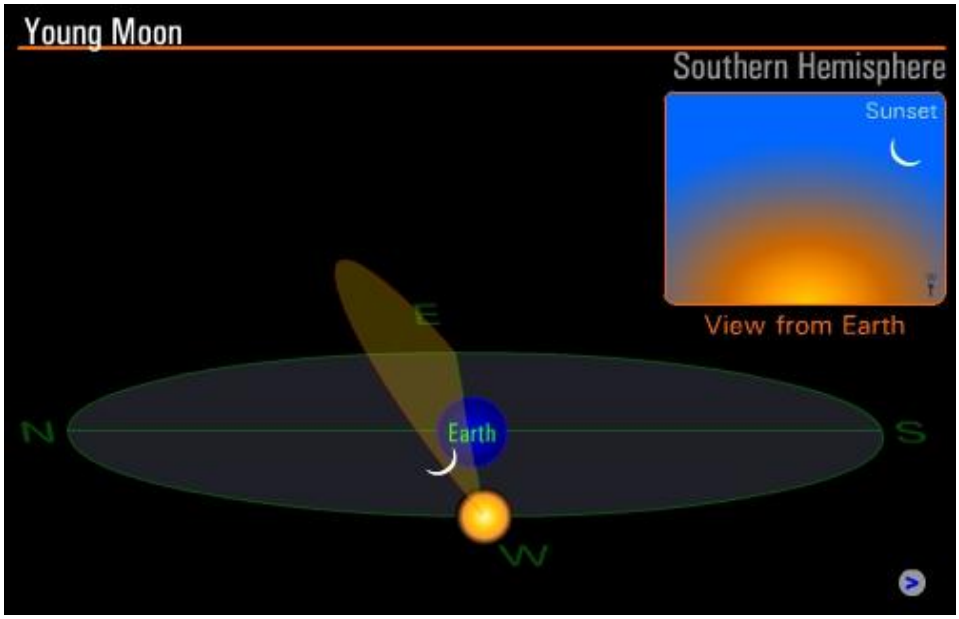
Northern Hemisphere:



Equator:



Southern Hemisphere:



Like the sun, the moon also rises in the East and sets in the West. The time of day the moon rises, determines whether or not it will be seen, and how much of it will be seen. Following is a listing of times the moon rises according to its phase. The moon follows approximately the same pathway as the sun and always rises approximately 50 minutes later each 24-hour period.

Moonrise times:

Conjunction – sunrise (The moon rises with the sun and thus cannot be seen.)
First Quarter – noon.
Full moon – sunset.
Last quarter – midnight.

Because the weekly cycle started over with each new moon, the days of each month were numbered "according to the moon."[26] In other words, "the days of the month were the same as the days of the moon."[27] Each New Moon (first of the month), was followed by the six work days. The seventh-day Sabbath thus fell on every 8th, 15th, 22nd, and 29th of the lunar month.

[26] Josephus, *Antiquities of the Jews*, (Whiston, tr.), Cincinnati, 1844, p. 75, as quoted in "Report of Committee on Historical Basis, Involvement, and Validity of the October, 22, 1844, Position," Grace Amadon Collection, *op. cit*.
[27] *Ibid*.

The format of the calendar was like this:

	New Moon day #1
Six work days (dates 2 thru 7)	Sabbath # 8
Six work days (dates 9 thru 14)	Sabbath # 15
Six work days (dates 16 thru 21)	Sabbath # 22
Six work days (dates 23 thru 28)	Sabbath # 29
Translation day, 30th, if needed	

In modern calendar format, every month appears thus:

1st	2nd	3rd	4th	5th	6th	7th
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
(30)						

The 30th of the month, like the first of the month, was not part of the weekly cycle. However, it was counted and did have a date as an account must be made of all time.

Year

All calendars require some form of intercalation. The solar Gregorian calendar has two rules for intercalation:

- Every fourth year, one extra day is intercalated on February 29.
- Centurial years are leap years *only* if they are equally divisible by 400. For this reason, 2000 was a leap year, but 1900, 1800 and 1700 were not.

The luni-solar calendar has a leap *month* instead of a leap *day*. A solar year of 365 days is longer than a lunar year by 10 days, 21 hours and 121 parts. As this extra time accrues, every two to three years a 13th month is intercalated. Various pagan cultures used the vernal equinox, the summer solstice, the fall equinox or the winter solstice to tie the shorter lunar year to the longer solar year. The Creator wanted to remind His people of His loving watch care over them so He

anchored the beginning of His calendar to the barley harvest. This was a constant reminder that their prosperity depended on their Maker as He provided the harvest for their needs.

> In ancient times, the law commanded Israel that a handful of the first fruits of the land should be presented to the priest for an offering at Passover time before any bread, parched corn, or green ears should be eaten by the people. This was to be a statute forever throughout their generations in all their dwellings. (Lev[iticus] 23:10-14.) By this law the ancient Jewish year was regulated, and the full moon of barley harvest marked the first month of the year, which was called Abib, signifying the new fruits or "green ears." (Deut[eronomy] 16:1.) Consequently, the sickle became the sign of the first month, and the paschal season.[28]

> The aim of the Mosaic [barley harvest law] command was to regulate the months according to the course of the moon, and the whole year in accordance with the course of the sun – by assigning as a starting point the lunar month coinciding with the beginning of a determined solar season.[29]

Meton of Athens claimed to be the first to discover that every 19 years the sun, earth and moon come back to the same location relative to each other. Called the Metonic Cycle, this is basic astronomy.

> The barley-harvest law, when applied to a continuous series of years, is the same in its performance as the law of the 19-year cycle. The moon dates themselves follow the same law, and periodically, in harmony with the 19-year cycle principle, the extra moons are interpolated that bring the lunar year into harmony with the solar. Every 19 years, the barley-harvest moon dates repeat within a day. The embolismic years follow the same cycle number indefinitely, and the cycle can be numbered from any year in the series.[30]

There are seven leap years within the 19-year cycle. "This order of common and Veadar [13 month] years never changes in barley-harvest reckoning, and the embolismic [leap] month is always in the spring."[31] The pattern of common and **embolismic/leap** years is as follows:

1 2 **3** 4 5 **6** 7 **8** 9 10 **11** 12 13 **14** 15 16 **17** 18 **19**

[28] Grace Amadon, *Ancient Jewish Calendation*, Box 1, Folder 9, Grace Amadon Collection, *op. cit.*, p. 15
[29] David Sidersky, *Étude Sur L'Origine Astronomique De La Chronologie Juive*, "Mémoires présentés par divers savants à l'Académie des Inscriptions et belles-lettres de l'institut de France," Erna Borm (tr.), (Paris, 1913), Vol. 12, part 2, p. 615, as quoted in Grace Amadon Collection, *op. cit.*
[30] Grace Amadon, *Ancient Jewish Calendation*, *op. cit*., pp. 8-9.
[31] *Ibid.*

Notice that there are never two embolismic years in a row, nor any more than two common years before there is another leap year.

WARNING!

If your brain is getting weary of the details, go to another article and come back later. It is only unfamiliarity with the topic that makes it difficult to grasp at first.

It is in the method of intercalation that the genuine calendar of the Creator shines forth as superior to all counterfeits. The various segments that appear to be "off" when considered individually in actuality account for the moon's various anomalies and provide an extremely accurate and predictable calendar. While the technicality of these principles may make your eyes begin to glaze, in practice it is so simple anyone need only watch the heavens to know *when* it is.

The *simplicity* of the genuine calendar is such that everyone on earth can use it by observation. The *precision* of the Creator's calendar can be seen in the following chart which reveals how the different common and embolismic years account for the moon's varying anomalies. (Because lunar months are 29.5 days long, the months typically alternate between 29 and 30 days long.)

The following chart starts with the seventh month, when the Israelites started counting their regnal years, or the years of their kings' reigns. According to Exodus 12:1 and 2 the new year actually began in the spring, Nisan or Abib being the first month of the year.

Common Years				**Leap Years**			
Month	**Deficit**	**Reg.**	**Full**	**Month**	**Deficit**	**Reg.**	**Full**
Tishri	30	30	30	Tishri	30	30	30
Heshvan	29	29	30	Heshvan	29	29	30
Keslev	29	30	30	Keslev	29	30	30
Tebet	29	29	29	Tebet	29	29	29
Shebat	30	30	30	Shebat	30	30	30
Adar	29	29	29	Adar	30	30	30
V'Adar	—	—	—	V'Adar	29	29	29
Nisan/Abib	30	30	30	Nisan/Abib	30	30	30
Iyar	29	29	29	Iyar	29	29	29

Sivan	30	30	30	Sivan	30	30	30
Tammuz	29	29	29	Tammuz	29	29	29
Ab	30	30	30	Ab	30	30	30
Elul	29	29	29	Elul	29	29	29
Totals	353	354	355		383	384	385

V'Adar simply means Adar II. It is the 13th month added only in leap years.

Precisely speaking, a lunar month is 29 days, 12 hours and 793 parts. As a result, the lunar month is roughly 45 minutes longer than the official given length of a lunar month which is 29.5 days. To account for this discrepancy, two methods are used:

1. The eighth month, Heshvan, had 30 days in certain years, rather than the typical 29 days.
2. The ninth month, Keslev, had 29 days some years rather than the usual 30.

Heshvan and Keslev are the only months which are adjusted. They bring the lunations back into balance, working independent of each other. All time must be accounted for, which is why Gregorian calendation, once every 100 years or so, has eight years without leap years. For a calendar that is based on observation, this may appear overly technical. However, it is the very exactness of lunar motion that allows for such calculations.

> During the century preceding the destruction of Jerusalem, the *Sodhaïbour* or "Secret Council for Intercalation" appointed by the Sanhedrin, fixed each year of the Jewish calendar by means of astronomical calculations based on certain regulations kept secret for a long time, which in the end transpired [via Hillel II] to the outer world. The direct observation of the new moon on the evening of the 29th day of the month, and the statements of witnesses – observers to be received with the customary formalities by a tribunal designated by said Council – *were used merely to confirm the astronomical calculations, and, above all, in order to surround with mystery, the deliberations of the Council behind closed doors*.[32]

[32] Sidersky, *op. cit.*, p. 625.

The various combinations of embolismic years and common years, along with the moon's anomalies, provide six possible lengths of the year.

Regular Common year	= 354 days	(12 months x 29 or 30 days)
Deficient Common year	= 353 days	(Keslev [8th month] with 29 days)
Full Common year	= 355 days	(Heshvan [9th month] with 30 days)
Regular Leap year	= 384 days	(13 months x 29 or 30 days)
Deficient Leap year	= 383 days	(Keslev [8th month] with 29 days)
Full Leap year	= 385 days	(Heshvan [9th month] with 30 days)

Because a lunation is 29.5 days long, six lunar months are exactly 177 days. Abib 1 to the last day of the sixth month is always 177 days. It was this precise astronomical principle that was used by the Millerites of the 1840s to calculate in advance Day of Atonement on October 22 in 1844.[33]

These numbers provide a reliable means of calculating the year in advance. After the Molad (new moon) of Tishri is found, the Molad of the next year's Tishri is calculated. The length of the year is simply the number of days in between those two points. The number of days reveals into which of the six possibilities that year falls, and thus, how many days are in Heshvan and Keslev.

The luni-solar calendar is the only calendar which has roots in the Bible. It was established by God at Creation. All other calendars are grounded in paganism. The Creator Himself designed

[33] In 1844, the Jews kept Day of Atonement on September 23. This was based on the adjustment to the calendar made by Hillel II, which tied the beginning of the year to the spring equinox. The Millerites rejected the Rabbinical "perversion" of the Biblical calendar and instead used the barley harvest law of Moses for determining the New Year. From this they calculated the Day of Atonement (tenth day of the seventh month) by using the 177-day count. "It can be briefly stated that the September Yom Kippur in 1844 was based upon modern Jewish calculation, while the October 22 date was computed in ancient Jewish time, in harmony with the calendar of Moses." (Grace Amadon, "Millerite Computation of the October 22 Date," Box 2, Folder 4, Grace Amadon Collection, *op. cit.*) See also L. E. Froom, *Prophetic Faith of our Fathers*, Vol. 4, p. 796; also, Vol. 2, pp. 196-199.

the time-keeping system His creatures are to use for worshipping Him. The Sabbath, as a memorial of Creation, must be kept using the calendar established at Creation!