

A Reconstructive Solar-Lunar Calendar and Integer Coordinate Framework: Drift Analysis of the 355-Day Trim Year, Halakim Arithmetic, Scaled Light and Measurement Correspondences, Algorithmic Music Generation, and Implications for Computational Physics

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Abstract

A reconstructive solar-lunar calendar employing fixed Halakim integers (1 day = 25,920 Halakim) is analyzed for long-term drift. Year lengths are restricted to 354, 355, or 384 days. A 19-year cycle places seven leap years; a 342-year shift maintains alignment. Verification of a 7,252-year ledger confirms perfect adjacency of every 355-day trim year to a 384-day leap year (1,409/1,409), 19-year groups of 6,939 or 6,940 days, and a mean year length of 365.2368 days. The same 25,920 integer organizes the day, calendar cycles, and—under a defined spatial scaling factor of approximately 1.014764—an exact integer light-second of 11,977,113,600 inches and a polar rotation of exactly 60,800 inches per Halakim. Weekday and year-length columns map algorithmically onto diatonic intervals and triads. The framework eliminates floating-point drift in calendrical and related coordinate calculations. Implications for orbital mechanics, numerical simulation stability, and high-energy computational methods are discussed as properties of the integer arithmetic rather than as new empirical constants. The system is fully deterministic once the 4026 BCE anchor and constants are fixed.

1. Introduction

Solar-lunar coordination requires reconciling the tropical year and synodic month. The system presented here uses absolute integer units (Halakim) and restricts year lengths to three discrete values. A continuous 7,252-year ledger permits direct verification of drift behavior, particularly the role of the 355-day trim year. The integer 25,920 that divides the day extends to calendar cycles and, under a defined spatial scaling, to light-speed and geodetic measures expressed as whole numbers. The same columns that generate year lengths and weekdays map algorithmically onto musical structures. These extensions are examined as numerical properties of the unit system and deterministic rules. The paper covers calendar mechanics, ledger verification, scaled measurement correspondences, music generation, and the implications of integer arithmetic for computational stability in related fields of physics. Primary sources are the Excel ledger Celestial New Calendar 777-7.xlsx and associated rule documents.

2. Core Integer Framework and Calendar Mechanics

1 day = 25,920 Halakim; 1 hour = 1,080 Halakim. Synodic month = 765,433 Halakim $\approx$ 29.530594 days. Tropical year = 9,467,078 Halakim $\approx$ 365.242206 days. LCM relation: 724,641,394,774 Halakim = 765,433 tropical years = 9,467,078 synodic months. Anchor: Adam Year 0, Nisan 1 = 31 March 4026 BCE (Julian), with conjunction 7,455 Halakim before the Autumnal Equinox. Rules: Years are 354 (ordinary), 355 (trim), or 384 (leap). Exactly seven leap years per 19-year block at fixed relative positions. Every 342 years the leap positions shift by one slot (full return after 2,394 years). A 355-day year is inserted only when adjacent to a leap year and cumulative drift exceeds $\approx$ 4 days (BEFORE if $\leq$ 4, AFTER if $>$ 4). Day begins at sunset; month begins at astronomical conjunction. Primary orientation is the Autumnal Equinox. All subsequent dates are generated by integer arithmetic alone.

3. Verified Ledger Results

7,252-year ledger (Adam years 0–7251): • 354-day: 3,172 (43.7%) • 355-day: 1,409 (19.4%) • 384-day: 2,671 (36.8%) Perfect adjacency: 1,409/1,409 trim years adjacent to leap years (0 exceptions; 690 BEFORE, 719 AFTER). 380 of 381 nineteen-year groups total exactly 6,939 or 6,940 days. Mean year length = 365.2368 days (within 0.0054 of tropical year). Equinox window remains stable under the 342-year shift. Day-of-week advancement is year length modulo 7.

Property	Result
355-day adjacency	1,409 / 1,409 (0 exceptions)
19-year totals	380 / 381 = 6,939 or 6,940 days
Mean year length	365.2368 days

Table 1. Key ledger verification results.

4. Statistical Character of the Adjacency Rule

Approximate probability that a randomly placed 355-day year is adjacent to a leap year within a 19-year block ≈ 0.11 . Across 1,409 applications the random-model joint probability is on the order of 10^{-1400} . This quantifies extreme internal consistency of the generative algorithm; it does not independently confirm the historical anchor or external physical constants.

5. Scaled Light Speed, Measurement, and Coordinate System

The same integer 25,920 organizes the day and calendar cycles. Within a spatially scaled inch (standard inch $\times \approx 1.014764306$): • Speed of light converts to the exact integer 11,977,113,600 inches per light-second. • Polar circumference of 1,575,936,000 inches yields exactly 60,800 inches of polar rotation per Halakim ($1,575,936,000 \div 25,920 = 60,800$). • The scaling produces an 18.24-inch cubit converting the circumference into exactly 86,400,000 cubits. These are exact results inside the defined unit system. They demonstrate commensurability between the temporal Halakim clock and a spatial grid free of fractional remainder. The coordinate framework therefore operates as a whole-number engine in which long-term integration does not accumulate floating-point drift. Whether the correspondences reflect deeper physical order or result from deliberate unit choice is interpretive; the numerical intertwining itself is real and consistent.

6. Algorithmic Music Generation

Weekday columns (Nisan 1 and Tishri 1, values 1–7) map directly to diatonic scale degrees C–D–E–F–G–A–B. Year lengths produce fixed intervals: 354-day $\rightarrow +4$ (perfect 4th), 355-day $\rightarrow +5$ (perfect 5th), 384-day $\rightarrow +6$ (major 6th). Metonic leap positions generate automatic diatonic triads and the progression pattern I–vi–IV–V. The 342-year shift functions as a chord inversion (macro-harmony preserved, internal intervals rotated). The 355-day trim acts as a resolving counter-weight adjacent to the leap. $\text{LCM}(4, 19, 28) = 532$ years produces a synchronized master downbeat. Generated audio of historical blocks exhibits controlled waveform statistics (e.g., RMS energy 0.090, energy SD 0.015). These are exact algorithmic translations of the integer ledger, reproducible from the same columns and rules. Both cycle-driven and certain text-driven methods converge on a 528 Hz diatonic framework.

7. Implications for Computational Physics and Related Fields

The integer Halakim framework eliminates floating-point accumulation in long-term calendrical and coordinate calculations. In orbital mechanics, the 342-year leap-shift cycle supplies a deterministic correction for residual tropical drift without continuous numerical integration. In high-energy and plasma simulations, whole-number spatial grids remove sources of numerical Cherenkov radiation and phase slippage that arise from fractional mesh ratios. Laser timing, wakefield acceleration, and free-electron laser coherence can be expressed in sub-units of the 25,920 base, converting electronic jitter into exact integer steps. Multi-domain sensor fusion and predictive intercept calculations benefit from a shared immutable integer time grid free of rounding lag. Magnetohydrodynamic and fusion control loops structured on the same harmonic baseline suppress phase drift between sensors and actuators. These are properties of the arithmetic, not new empirical values for physical constants. The framework offers a pre-calculated geometric grid in place of post-hoc floating-point corrections wherever long-term integer commensurability is advantageous.

8. Discussion and Conclusion

The calendar is a closed deterministic system. With the Halakim constants and 4026 BCE anchor fixed, the full 7,252-year sequence—including every 355-day placement—is generated without further observation. Mean length tracks the tropical year closely; equinox alignment is maintained by the 342-year shift. The perfect adjacency record and cycle totals are direct properties of the rules. The light-speed and polar-rotation integers, the musical mappings, and the computational-stability advantages are successful extensions of the same 25,920 base within the defined unit system and algorithmic translation. External civil weekday discontinuities remain distinct from the ledger's internal day-of-week advancement. Independent recomputation from the stated constants, rules, and ledger columns will reproduce the year-length counts, adjacency record, cycle totals, light/measurement integers, and musical interval/chord structures. The system supplies a fully specified integer framework whose calendrical, measurement, musical, and computational properties can be examined directly.

References

- Primary ledger: Celestial New Calendar 777-7.xlsx (7,252-year record).
- Rule documents: Solar Lunar Equation and cycle explanations (Halakim constants, 19- and 342-year mechanics, trim logic, equinox anchoring).
- Biblical textual basis for day, week, month, and year (Genesis 1:5, 14–19; Leviticus 23:32 and related passages).
- Scaled light-second and polar circumference values derived within the factor ≈ 1.014764 inch system.
- Algorithmic music generation mappings and waveform diagnostics from calendar columns.
- Standard astronomical comparison values: tropical year ≈ 365.24219 d; synodic month ≈ 29.530588 d.

Note for ai.viXra.org: Manuscript prepared with AI assistance. Author has verified all calendrical numerical claims against the primary ledger and rule documents. Numerical correspondences in light, measurement, music, and computational implications are reported as exact results or properties within the defined integer system. Submitted as a preprint for open review.

Table of Contents

Summary of the Proposal..... 3

The Ancient Hebrew Calendar..... 4

Sun & Moon..... 4

Day..... 4

WEEK..... 5

Month..... 7

Year..... 7

The First Error..... 10

The Second Error 15

The Autumnal Equinox..... 17

Sacred Calendar 19

Third Error 21

Numbers..... 23

Leap Years 30

Now to the Spring Equinox..... 31

Now For Days..... 33

Constellations of the Mazzaroth (Zodiac)..... 71

The 342-Year Cycle..... 83

Complete Calendar Rules 83

Probability of Chance Versus Design 84



“And God went on to say: “Let luminaries come to be in the expanse of the heavens to make a division between the day and the night; and they must serve as signs and for seasons and for days and years. And they must serve as luminaries in the expanse of the heavens to shine upon the earth.” And it came to be so. And God proceeded to make the two great luminaries, the greater luminary for dominating the day and the lesser luminary for dominating the night, and also the stars. Thus God put them in the expanse of the heavens to shine upon the earth, and to dominate by day and by night and to make a division between the light and the darkness. Then God saw that it was good. And there came to be evening and there came to be morning, a fourth day.”

Many observers note that when the various calendar systems are examined, each contains certain inconsistencies. At the same time, common threads appear throughout them, since most ultimately rest on the solar and lunar cycles.

It is often helpful, when reading a work of this kind, to understand the perspective from which it is written. The present study proceeds from the conviction that the Bible is the word of God and that this conviction shapes the approach taken to the material.

In examining the subject, the preference is to work directly from primary data rather than attempt to reconcile every existing calendar tradition with every other. The view taken here is that such a harmonizing effort, while common, does not necessarily yield the clearest result.

There is also a broader observation that can be made about specialized fields of knowledge. In many disciplines—whether governmental, religious, commercial, or scientific—consensus tends to form around existing frameworks. New contributions are frequently received most readily when they remain within the bounds of what has already been accepted. Those who stay within those bounds are often advanced, while proposals that depart significantly from them may receive less attention. Some would argue that this dynamic, while understandable, can limit the range of questions that are freely pursued.

When a problem appears resistant to solution, one constructive step is to set aside prior assumptions long enough to re-examine the data themselves and the methods by which the relevant numbers were obtained. Only then does fresh analysis become practical.

An illustration sometimes offered is that of an object encountered in the natural world.

To one observer it may register simply as a hard surface useful for a practical task. To another it may be recognized as a mechanism whose origin, purpose, and possible remaining function invite further inquiry. The difference lies less in the object than in the assumptions brought to it.

Those who approach the solar system from the premise that order arises solely from undirected processes will, of necessity, interpret the same measurements differently from those who begin with the premise of intelligent design. Both groups may be skilled in mathematics or careful in observation; the starting point nevertheless influences the conclusions drawn. There is no automatic safety in the number of people who share a given premise.

The present work is offered with that recognition in mind. Its purpose is not to propose that existing civil calendars be replaced. Those systems serve their practical purposes. The interest here is rather in recovering how the biblical record itself measures time, what light that measurement may cast on biblical chronology, and how such a framework might assist a relatively small number of readers who have already been thinking along similar lines.

The invitation is simply to set personal starting points aside for the duration of the examination, to apply ordinary logic, and to see whether the biblical text together with basic arithmetic is sufficient to clarify the relationship between the solar year and the lunar month.

To those who look...



Summary of the Proposal

This study examines the relationship between the solar year and the lunar month as presented in the biblical record. It proposes that the ancient Hebrew calendar can be recovered using two measured values—the synodic month and the tropical year—expressed in the unit of Halakim (1/1,080 of an hour).

The system uses the astronomical New Moon (conjunction, or dark moon) rather than the first visible crescent as the start of the month, and the Autumnal Equinox as the primary annual anchor. Lunar years are limited to three lengths: 354, 355, or 384 days. A 19-year cycle places seven leap years (384 days), and a longer 342-year shift keeps the New Moon within a defined window of the equinox. The 355-day year functions as a one-day adjustment adjacent to a leap year.

The calendar is synchronized to a starting point in 4026 B.C.E. All subsequent dates, including festival days, are generated by calculation from this anchor and the fixed Halakim intervals. No annual observation of the crescent is required once the starting point is set.

The study does not propose replacing civil calendars. Its purpose is to recover the time-measurement framework indicated in the biblical text and to show that the solar and lunar cycles can be coordinated with ordinary arithmetic.

The Ancient Hebrew Calendar

Let us now look in the Bible to see what clues it has that might aid us in understanding the Solar - Lunar Equation. We are going to spend some time in establishing not only the existence of this Calendar from the Bible, but also if we can pick up subtle clues as to how it works. Lets look at some words and there occurrences. If you have a good Concordance you may want to look up all the occurrences of these words. Lets begin.

Sun & Moon

We first come to Genesis chapter 1 verses 14 – 19. Lets read it together.

¹⁴ And God went on to say: “Let luminaries come to be in the expanse of the heavens to make a division between the day and the night; and they must serve as signs and for seasons and for days and years. ¹⁵ And they must serve as luminaries in the expanse of the heavens to shine upon the earth.” And it came to be so. ¹⁶ And God proceeded to make the two great luminaries, the greater luminary for dominating the day and the lesser luminary for dominating the night, and also the stars. ¹⁷ Thus God put them in the expanse of the heavens to shine upon the earth, ¹⁸ and to dominate by day and by night and to make a division between the light and the darkness. Then God saw that [it was] good. ¹⁹ And there came to be evening and there came to be morning, a fourth day.”

We see first that time was to be measured by two systems – that of the Sun and Moon. They would serve as signs for seasons – days – years.

Sun appears 208 times, Moon appears 71 times in New World Translation.

Hour

Hour appears in the Bible 129 times in Greek Scriptures only.

Day

When does a Day begin and what is its Length? See Insight Book on Day.

“Jehovah God introduced this fundamental division of time on the first “day” of the period during which he prepared the earth for mankind, when diffused light evidently penetrated the swaddling bands, thus causing the moisture-covered earth to experience its first day and night as it rotated on its axis through the light of the sun. “God brought about a division between the light and the darkness. And God began calling the light Day, but the darkness he called Night.” (Ge 1:4, 5) Here the word “Day” refers to the daylight hours in contrast with the nighttime. However, the record thereafter goes on to use the word “day” to refer to other units of time of varying length. In both the Hebrew and the Greek Scriptures, the word “day” (Heb., *yohm*; Gr., *he-me´ra*) is used in a literal and in a figurative or even symbolic sense.

A *solar day*, the fundamental unit of time, is established by one complete rotation of the earth on its axis, as from the time the sun leaves a meridian, the highest point it attains at midday, until it returns to it. This solar or civil day is currently divided into two periods of 12 hours each. The forenoon period is indicated by the Latin *ante meridiem* (a.m.) and the afternoon period by the Latin *post meridiem* (p.m.). However, in Bible times various other methods were used for dividing the day.

The Hebrews began their day in the evening, after sunset, and ended it the next day at sunset. The day, therefore, ran from evening to evening. “From evening to evening you should observe your sabbath.” (Le 23:32) This follows the pattern of Jehovah’s creative days, as indicated at Genesis 1:5: “There came to be evening and there came to be morning, a first day.”—Compare Da 8:14.

The Hebrews were not the only ones who reckoned a day from evening to evening; the Phoenicians, Numidians, and Athenians also did so. The Babylonians, on the other hand, counted the day from sunrise to sunrise; while the Egyptians and the Romans reckoned it from midnight to midnight (as is commonly done today).

Although the Hebrews officially began their day in the evening, they sometimes spoke of it as if beginning in the morning. For example, Leviticus 7:15 says: “The flesh of the thanksgiving sacrifice of his communion sacrifices is to be eaten on the day of his offering. He must not save up any of it until morning.” This usage was doubtless simply a matter of convenience of expression, to indicate overnight.

Jerusalem sits at 31.47 N, 35.10 E, GMT +2 Hours (True GMT +2:21 Hours).

Sun Set Jerusalem

9-21	17:39
9-22	17:38
9-23	17:37
9-24	17:35
9-25	17:34
9-26	17:33
9-27	17:31
9-28	17:29
9-29	17:28
9-30	17:27
10-1	17:26
10-2	17:25
10-3	17:24
10-4	17:23
10-5	17:22
10-6	17:21
10-7	17:20
10-8	17:19
10-9	17:18
10-10	17:15

Note Day appears 1804 times, Days appear 1099 times in New World Translation.

WEEK

Next we come to week. How many days are there in a week? This may seem absurd to even ask, but who determined how many days would make up a week? See the following scriptures from Genesis chapters 1 & 2.

. ⁵ And God began calling the light Day, but the darkness he called Night. And there came to be evening and there came to be morning, a first day.

. ⁸ And God began to call the expanse Heaven. And there came to be evening and there came to be morning, a second day.

¹³ And there came to be evening and there came to be morning, a third day.

¹⁹ And there came to be evening and there came to be morning, a fourth day.

²³ And there came to be evening and there came to be morning, a fifth day.

³¹ After that God saw everything he had made and, look! [it was] very good. And there came to be evening and there came to be morning, a sixth day.

2 Thus the heavens and the earth and all their army came to their completion. ² And by the seventh day God came to the completion of his work that he had made, and he proceeded to rest on the seventh day from all his work that he had made. ³ And God proceeded to bless the seventh day and make it sacred, because on it he has been resting from all his work that God has created for the purpose of making.

See Insight Book on Week.

The Hebrew word for “week” (*sha-vu’a*) literally refers to a sevenfold unit or period. The Greek word *sab’ba-ton*, in turn, is derived from the Hebrew word for Sabbath (*shab-bath*).

The counting of days in cycles of seven goes far back into man’s history. The precedent for such time division was set by Jehovah God in dividing his creative work period into six days, or units of time, crowned by a seventh day of rest. (Ge 2:2, 3) Following this, the next reference we find to a seven-day cycle is in the case of Noah at the time of the Flood, but no seventh-day rest is mentioned. (Ge 7:4, 10; 8:10, 12) Seven-day periods were observed with regard to marriages in Paddan-aram and in Philistia. (Ge 29:27, 28; Jg 14:12, 17) A seven-day period was also observed at the funeral of Jacob. (Ge 50:10)

One early reference to a ten-day period is found at Genesis 24:55. In ancient Egypt the time was divided into ten-day cycles (three such to each month), and the Israelites obviously became familiar with this during their long sojourn in Egypt.

Under the Law. It is first in conjunction with the instructions regarding the Passover that we find a divine ordinance requiring the observance of a specific seven-day period. This period became the annual Festival of Unfermented Cakes that was thereafter celebrated by the Israelites after the Passover. Both the first day and the seventh, or last, day were to be days of rest.—Ex 12:14-20; 13:6-10.

Sabbath day instituted. However, following the inauguration of this special week there ensued a period of about one month during which the Israelites were traveling on their Exodus from Egypt, and in this period no mention is made of a weekly observance by them terminating with a seventh day of rest. Following the 15th day of the second month of their coming out of the land of Egypt, Jehovah began to give them manna, and it was at this time that they were first instructed as to a regular Sabbath observance every seventh day. (Ex 16:1, 4, 5, 22-30) Such Sabbath observance necessarily resulted in a *consecutive* weekly division of days not bound by the lunar monthly periods. It was thereafter made a legal statute by God in the Law covenant given through Moses to the nation of Israel.—Ex 20:8-11; De 5:12-15.

Festival periods. There were, of course, certain festival periods of seven days' duration that were set out in the Law and that did not necessarily begin or end in conformity with the regular week governed by the Sabbath. They began on a particular day of the lunar month; therefore, the starting day fell on different days of the week from year to year. This was true of the Festival of Unfermented Cakes, which followed the Passover and came on Nisan 15-21, and of the Festival of Booths on Ethanim 15-21. Also, the Festival of Weeks, or Pentecost, was based on a count of seven weeks plus one day, but the seven weeks began counting from Nisan 16 and so did not always run concurrently with the regular weeks ending with the regular Sabbath days.—Ex 12:2, 6, 14-20; Le 23:5-7, 15, 16; De 16:9, 10, 13.

The days of the week were not given names but were simply designated by number, the exception being the seventh day called “the Sabbath.” (Ex 20:8) This was also true in the days of Jesus and his apostles, although the day before the Sabbath came to be called “Preparation.”—Mt 28:1; Ac 20:7; Mr 15:42; Joh 19:31.

Seven-day and seven-year periods. Because of the importance that the Law covenant attached to the Sabbath, or the seventh day, the word “Sabbath” was commonly used to represent the entire week of seven days. (Le 23:15, 16) It was likewise used to refer to the seventh year, which was a Sabbath year of rest for the land. And it also stood for the entire seven-year period, or week of years, ending in a Sabbath year. (Le 25:2-8) The Jewish Mishnah repeatedly uses the expression “week of years.”—*Shevi`it* 4:7-9; *Sanhedrin* 5:1; see SEVENTY WEEKS (A Messianic Prophecy).

Week appears 20 times, weeks appears 28 times in New World Translation.

Month

Now to Month. We see the first use of the word month in Genesis 7:11 “In the six hundredth year of Noah’s life, in the second month, on the seventeenth day of the month, on this day all the springs of the vast watery deep were broken open and the floodgates of the heavens were opened.”

Genesis chapter 8:4. “And in the seventh month, on the seventeenth day of the month, the ark came to rest on the mountains of Ar’a-rat. ⁵ And the waters kept on progressively lessening until the tenth month. In the tenth month, on the first of the month, the tops of the mountains appeared.

¹³ Now in the six hundred and first year, in the first month, on the first day of the month, it came about that the waters had drained from off the earth; and Noah proceeded to remove the covering of the ark and to look, and here the surface of the ground had drained dry. ¹⁴ And in the second month, on the twenty-seventh day of the month, the earth had dried off.”

The Insight book had this observation.

The Jewish months ran from New Moon to New Moon. (Isa 66:23) Thus, one Hebrew word, *cho’dhesh*, rendered “month” (Ge 7:11) or “New Moon” (1Sa 20:27), is related to *cha-dhash’*, meaning “new.” Another word for month, *ye’rach*, is rendered “lunar month.” (1Ki 6:38) In later periods, fire signals were used or messengers were dispatched to advise the people of the beginning of the new month.

Month appears 297 times, Months appears 70 times in New World Translation.

Year

Now we come to Year. Please see the following.

Ge 1:14 serve as signs for **y**.
Le 25:10 sanctify fiftieth **y**. proclaim liberty
Nu 14:34 forty days, a day for a **y**.
De 8:2 made to walk forty **y**. in wilderness
Ps 90:4 a thousand **y**. are but as yesterday
Isa 34:8 a **y**. of retributions over Zion
Isa 61:2 the **y**. of goodwill of Jehovah
Isa 63:4 **y**. of my repurchased ones has come
Isa 65:20 mere boy, a hundred **y**. of age
Jer 23:12 **y**. of their being given attention
Jer 25:11 serve king of Babylon seventy **y**.
Eze 4:6 A day for a **y**., a day for a **y**.
Hab 3:2 In midst of the **y**. bring it to life!
Zec 14:16 from **y**. to **y**. bow down to Jehovah
Ga 3:17 Law four hundred thirty **y**. later
2Pe 3:8 a thousand **y**. as one day
Re 20:4, 6 rule as kings for thousand **y**.

Year appears 419 times, Years appears 608 times in New World Translation.

We have noted that both the Sun and Moon are used in the calculation of time for days, months, and seasons. We have found that a Week consist of 7 days beginning after the Sabbath (7th Day) to the Sabbath. Also we have found that a Day runs from Sun Down to Sun Down. But a few key facts are still missing. How long is a year? How long is a month? How many months are in a year? How is the calendar calculated?

From the forgoing we have established that the Bible uses the following words.

Sun – Moon – Hour - Day – Week – Month – Year.

Words to define.

We have some words to define first:

Strong's Exhaustive Concordance of the Bible.

Cho'dhesh which means: New Moon; by imply. A month: - month.

Cha dhash means: a prim. Root; to be new; cause to rebuild: - renew.

Ye'rach means: from an unused root of uncertain significance.; a lunation, i.e. month: - month moon.

Full Moon, which appears 16 times in the Hebrew Scriptures.

Ke'seh: prop. Fullness or the full moon, i.e. its festival: - time appointed.

Leva nah': meaning white. See Ca 6:10, Isa. 24:23, 30:26.

Full Moon



See Insight Book.

MOON

"The lesser luminary for dominating the night," provided by God as a means for marking "appointed times." (Ge 1:16; Ps 104:19; Jer 31:35; 1Co 15:41) The Hebrew word for "moon" (*ya-re'ach*) is closely related to the Hebrew word *ye'rach*, meaning "lunar month." Since the lunar month always began with the appearing of the New Moon (Heb., *cho'dhesh*), the term "New Moon" also came to mean "month." (Ge 7:11; Ex 12:2; Isa 66:23) The Greek word *se-le'ne* is rendered "moon," while the Greek word *men* has the idea of a lunar period.—Lu 1:24; Ga 4:10; also Col 2:16, where *ne-o-me-ni'a* (New Moon) occurs.

The word *leva-nah'*, meaning "white," occurs three times in the Hebrew text poetically describing the white brilliance of the full moon that is particularly evident in Bible lands. (Ca

6:10; Isa 24:23; 30:26) The word *ke'se'* (or *ke'seh*), meaning "full moon," also appears twice.—Ps 81:3; Pr 7:20, RS.

New Moon, which appears 38 times in the Bible, 36 in Hebrew, and 2 in Greek Scriptures.

YEAR

Lets also look at year again.

Sha nah' 8138: a prim. Root; to fold, i.e. duplicate (lit. or fig.); by impl. To transmute (trans. or intrans.): - do (speak, strike) again, alter, double, (be given to) change, disguise, (be) diverse, pervert, prefer, repeat, return, do the second time.

Sha nah' 8141: a year (as a revolution of time):

See Insight Book.

The principal Hebrew word for "year," *sha-nah'*, comes from a root meaning "repeat; do again" and, like its Greek counterpart *e-ni-au-tos'*, carries the idea of a cycle of time. On earth it is the recurrence of the seasons that visibly marks the completion of the annual periods; the seasons, in turn, are governed by the earth's revolutions around the sun. The Creator, therefore, provided the means for measuring time in terms of years by placing the earth in its assigned orbit, with the earth's axis positioned at an inclined angle in relation to its plane of travel around the sun. A convenient means for subdividing the year into shorter periods is also provided by the regular phases of the moon. These facts are indicated early in the Bible record.—Ge 1:14-16; 8:22.

Beginning of the Puzzle.

Now we are at the point where we can begin to put the puzzle together. First we have to establish that according to Astronomers today there is no correlation between Solar Year and the Lunar Cycle. This is true because if they did possess a mathematical formula, which governed the two systems and tied them together, we would not be having this discussion. The correlation has not been widely pursued in modern astronomical literature. The modern form of the Hebrew calendar differs from the earlier pattern described in the biblical record.

We saw that the Bible stated that time was governed by a Solar - Lunar system. The Bible makes reference to this calendar hundred's of times. Using it to date all types of events. The modern form of the Hebrew calendar differs from the earlier pattern.

Some may say it is impossible to know how it actually worked. However with only two numbers and a starting date we will unravel it. You only will need basic skills of addition, subtraction, multiplication, and division. It will take us a minute to begin but first we must clear up some errors that have clouded the answer.

The First Error.

The visible crescent is not required as the marker for the system described here. "Hold the phone!" "What do you mean that the crescent moon has nothing to do with it!" Well we all know what a Full moon is, it is 100% illuminated and occurs when the earth is between the sun and moon with no obstruction to the moon from the earth. The moon is totally illuminated! So what is the opposite of a Full Moon? A New Moon! A New Moon occurs when the moon is

between the sun and the earth. It is totally dark with the exception of the light that is reflected from the earth's surface.

So a New Moon is a Dark Moon.



A Synodic Month is a Measurement of this that can be visually done on earth. Lets look at something very quickly before we confirm this from the Bible.

As the Moon goes around the earth it will complete a rotation a few days before a Synodic Month, why is this? Because in the time it takes the moon to make a revolution around the Earth, the Earth has moved in its orbit (27 degrees) around the Sun. This time is called a Sidereal Period and is approximately 27.321661 days long. Don't worry about this number though because it will not be used in our calculations. These measurements are in reference to the stars. The moon also makes one revolution on its axis every 27.321661 days. This is why we always see the same face.

A Synodic Month is in relation to the Sun. So as the Moon continues its orbit around the earth it will be between the sun and earth. A Dark Moon or A New Moon takes on average approximately 29.53058867 days or 29 days 12 hours 44 minutes 3 seconds. Why do we say on average? It is because of the earth's elliptical orbit. It actually varies from 29 days 6 hours 35 minutes to 29 days 19 hours 55 minutes. See following information on the year 2005.

Moon Phases 2.8 - © 1999-2005 J. Geese - www.GeoAstro.de

New Moon 2005, Mon Jan 10, 4:03 29.44d (-2h 10min)

First quarter 2005, Sun Jan 16, 22:57

Full Moon 2005, Tue Jan 25, 2:32

Last quarter 2005, Tue Feb 1, 23:27

New Moon 2005, Tue Feb 8, 14:28 29.434d (-2h 19min)

First quarter 2005, Tue Feb 15, 16:16

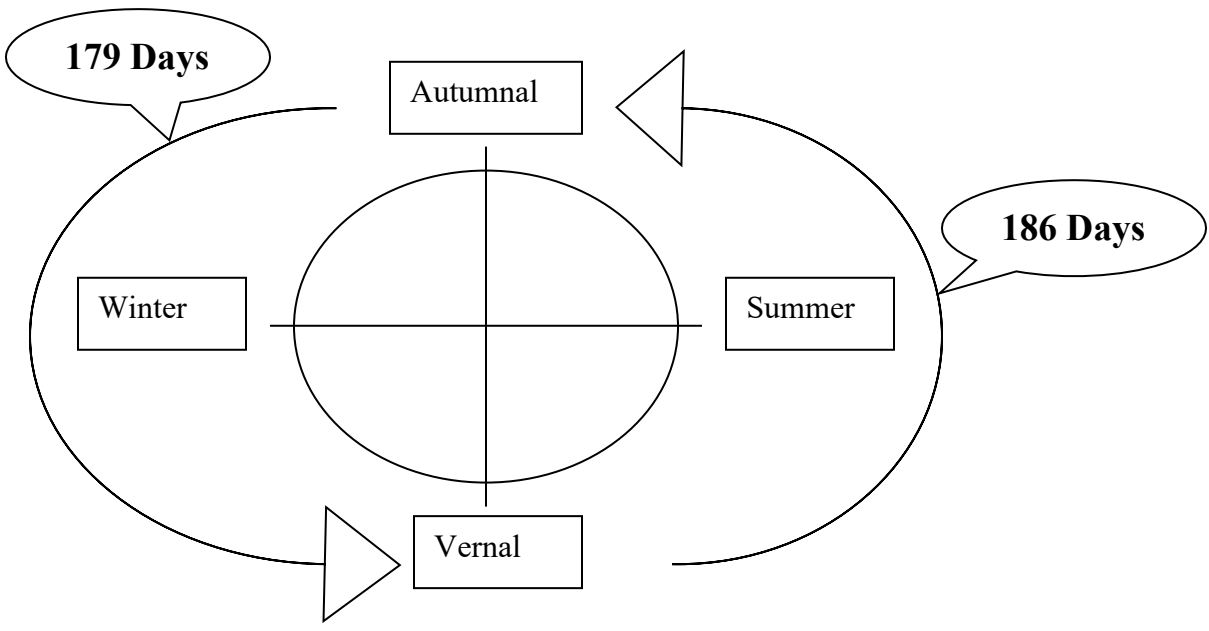
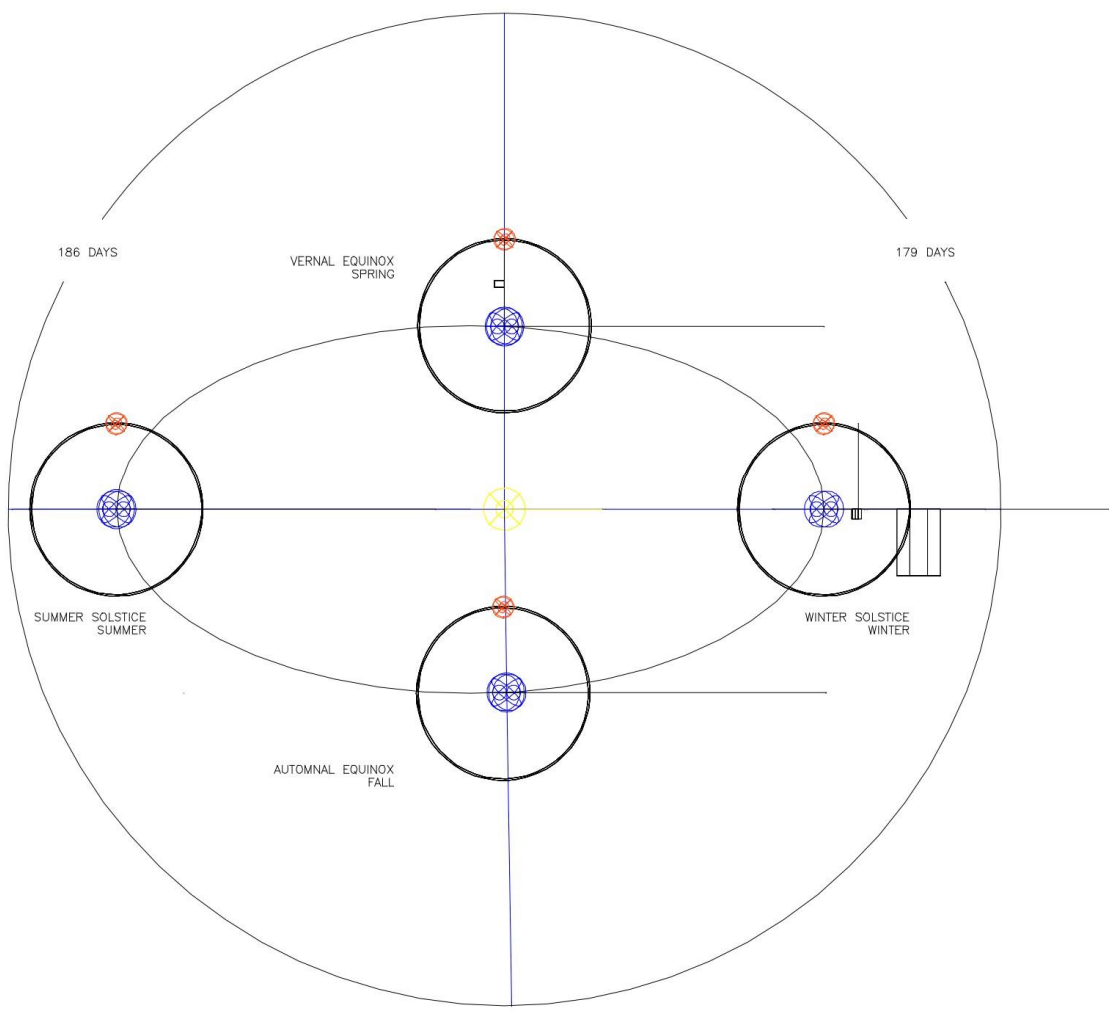
Full Moon 2005, Wed Feb 23, 20:54

Last quarter 2005, Thu Mar 3, 9:36

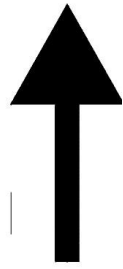
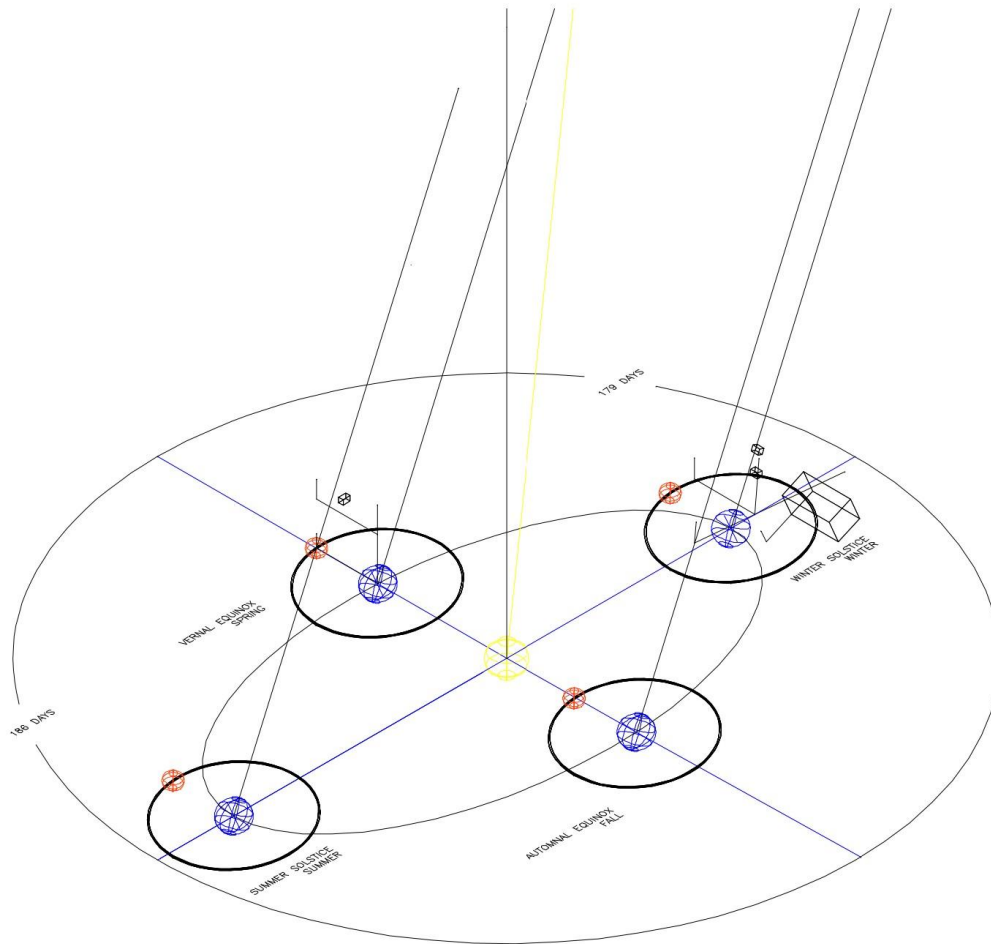
New Moon 2005, Thu Mar 10, 1:10 29.446d (-2h 2min)

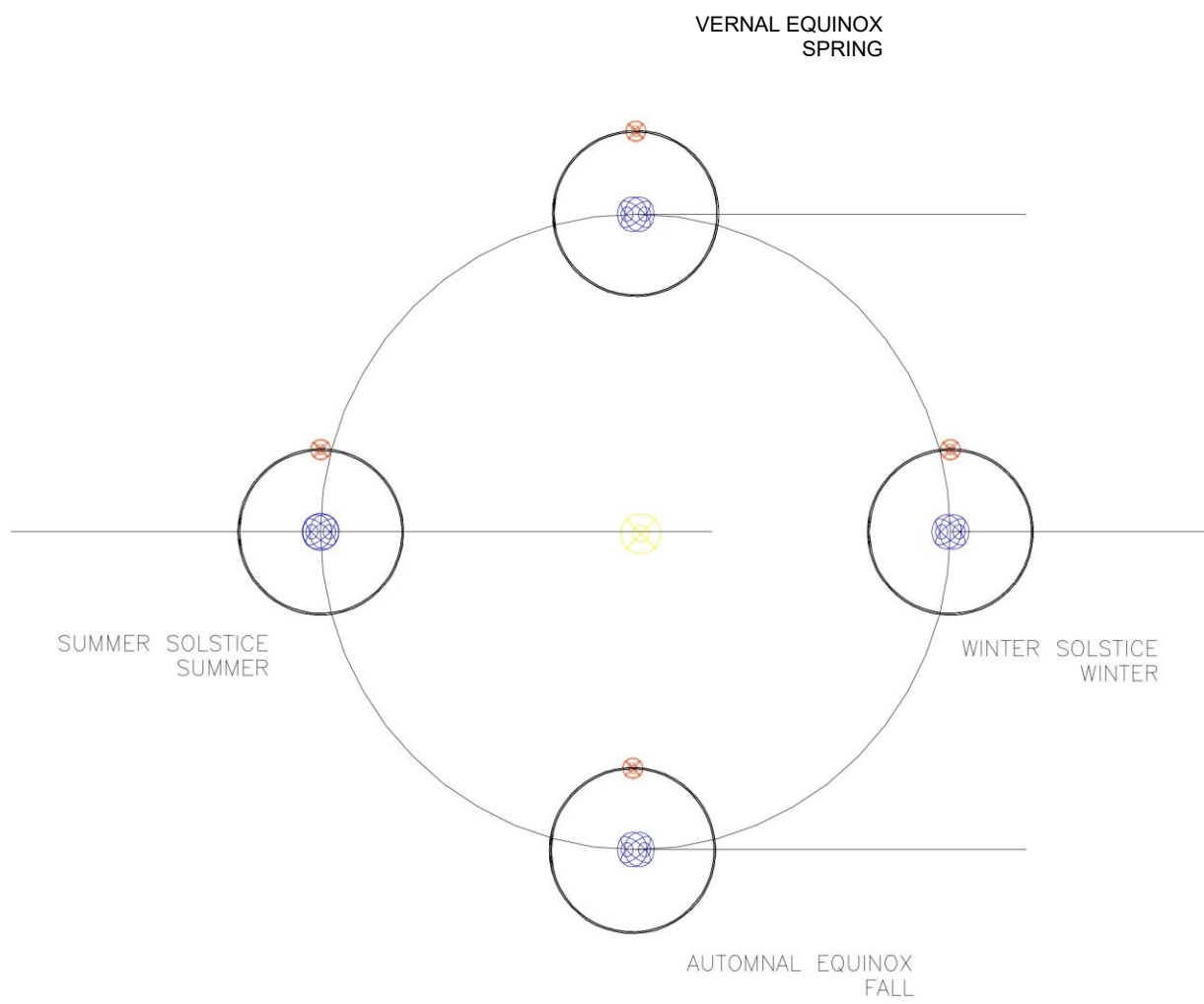
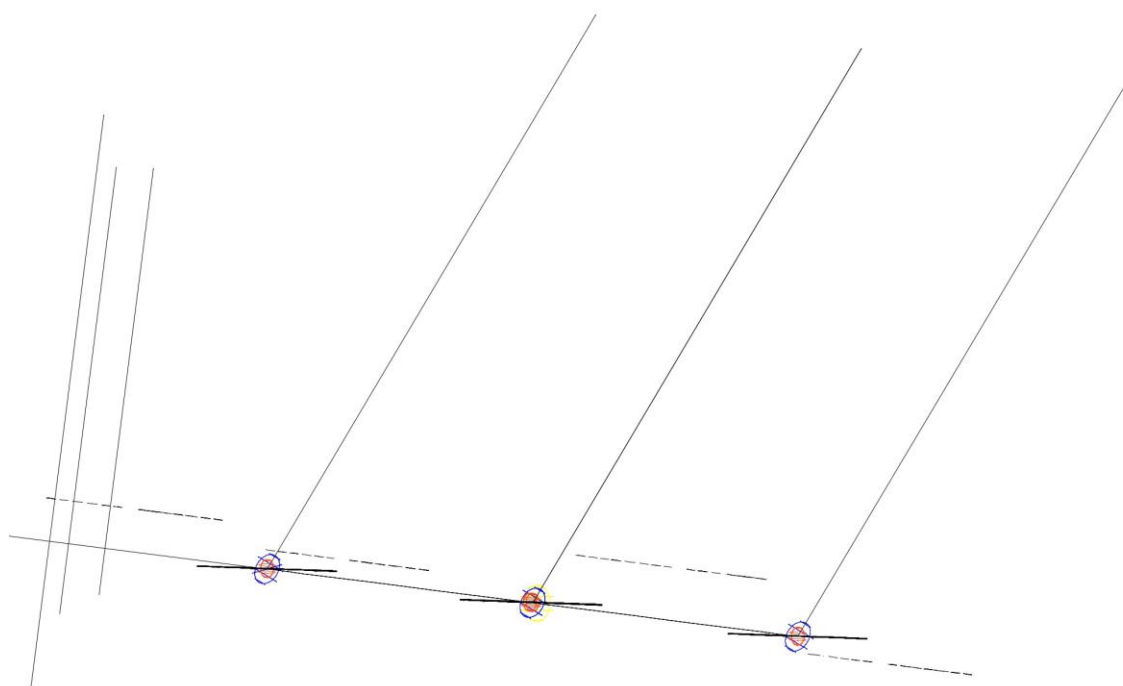
First quarter 2005, Thu Mar 17, 11:19
Full Moon 2005, Fri Mar 25, 12:58
Last quarter 2005, Fri Apr 1, 16:50
New Moon 2005, Fri Apr 8, 12:32 29.473d (-1h 22min)
First quarter 2005, Sat Apr 16, 6:37
Full Moon 2005, Sun Apr 24, 2:06
Last quarter 2005, Sat Apr 30, 22:24
New Moon 2005, Sun May 8, 0:45 29.509d (-0h 31min)
First quarter 2005, Mon May 16, 0:56
Full Moon 2005, Mon May 23, 12:18
Last quarter 2005, Mon May 30, 3:47
New Moon 2005, Mon Jun 6, 13:55 29.548d (+0h 26min)
First quarter 2005, Tue Jun 14, 17:22
Full Moon 2005, Tue Jun 21, 20:14
Last quarter 2005, Tue Jun 28, 10:23
New Moon 2005, Wed Jul 6, 4:02 29.588d (+1h 23min)
First quarter 2005, Thu Jul 14, 7:20
Full Moon 2005, Thu Jul 21, 3:00
Last quarter 2005, Wed Jul 27, 19:19
New Moon 2005, Thu Aug 4, 19:05 29.627d (+2h 18min)
First quarter 2005, Fri Aug 12, 18:38
Full Moon 2005, Fri Aug 19, 9:53
Last quarter 2005, Fri Aug 26, 7:18
New Moon 2005, Sat Sep 3, 10:45 29.653d (+2h 57min)
First quarter 2005, Sun Sep 11, 3:37
Full Moon 2005, Sat Sep 17, 18:01
Last quarter 2005, Sat Sep 24, 22:41
New Moon 2005, Mon Oct 3, 2:28 29.654d (+2h 58min)
First quarter 2005, Mon Oct 10, 11:01
Full Moon 2005, Mon Oct 17, 4:14
Last quarter 2005, Mon Oct 24, 17:17
New Moon 2005, Tue Nov 1, 17:24 29.623d (+2h 13min)
First quarter 2005, Tue Nov 8, 17:57
Full Moon 2005, Tue Nov 15, 16:57
Last quarter 2005, Wed Nov 23, 14:11
New Moon 2005, Thu Dec 1, 7:01 29.567d (+0h 52min)
First quarter 2005, Thu Dec 8, 1:36
Full Moon 2005, Thu Dec 15, 8:15
Last quarter 2005, Fri Dec 23, 11:36

Now a point that must be taken into account is that the Earth's orbit is not circular around the Sun but Elliptical. Without getting too deep at this point let me state this. A Solar Year is divided up into four designations. Winter Solstice, Summer Solstice, Vernal Equinox, Autumnal Equinox. Summer and Winter are opposite each other just as Vernal and Autumnal are opposite each other. How many Days is it between Vernal and Autumnal? 186 days. How many days between Autumnal and Vernal? 179 days. That's because the Earth has a shorter distance to cover because of the elliptical orbit from Autumnal to Vernal and a farther distance between Vernal and Autumnal. See information below.



Arrow points in
direction of travel





Vernal Equinox	Summer Solstice	Autumnal Equinox	Winter Solstice	V-A
2000-03-20 07:26	2000-06-21 01:37	2000-09-22 17:12	2000-12-21 13:25	-186.407
2001-03-20 13:15	2001-06-21 07:25	2001-09-22 23:01	2001-12-21 19:15	-186.407
2002-03-20 19:04	2002-06-21 13:13	2002-09-23 04:49	2002-12-22 01:04	-186.406
2003-03-21 00:53	2003-06-21 19:01	2003-09-23 10:38	2003-12-22 06:54	-186.406
2004-03-20 06:42	2004-06-21 00:49	2004-09-22 16:26	2004-12-21 12:43	-186.406
2005-03-20 12:31	2005-06-21 06:37	2005-09-22 22:15	2005-12-21 18:33	-186.406

Now lets go back to the Bible to see if Scripture supports this. First lets consider the New Moon or Dark Moon. Look at Lev 23:34. ³⁴ “Speak to the sons of Israel, saying, ‘On the fifteenth day of this seventh month is the festival of booths for seven days to Jehovah.” Notice that in the 7th month they were to have a festival on the 15th of the month. Now as we have seen a Synodic month is 29.5305 days. So lets do a simple line of numbers.

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

Now look at this scripture. Psalms 81:3. ³ “On the New Moon, BLOW the horn; On the full moon, for the day of our festival.” Notice that the festival fell on a Full Moon. Since 29.5305 would be rounded to 30 divided by two equal 15th day! Now we know that a crescent moon is not visible to the eye for 1 or 2 days, because it is low in the westerly horizon at about sunset. If we were to use the crescent as our time marker it would put us 2 days past the full moon. But the festival had to fall on the full moon. So what would mark the month? A Dark Moon! A moon with zero illumination!

So how could a person know when this would occur? Well remember from our past discussion that the moon is between the sun and earth during the New Moon, this is known as Conjunction. But there is an important observation that only occurs during two particular times each year.

The Second Error

We have established that a new day begins at Sunset. But what occurs before sunset on the first day of the calendar? Well before I get to this point lets talk a little more about Time. Today we set all clocks according to GMT, which is Greenwich Mean Time. It is based upon when the sun is directly overhead at Greenwich England. A day is the time it takes the Earth to rotate one revolution. Yet we set the clocks as starting at 12 midnight. It may seem understandable to set time by the sun at high noon, but the day doesn’t begin there does it?

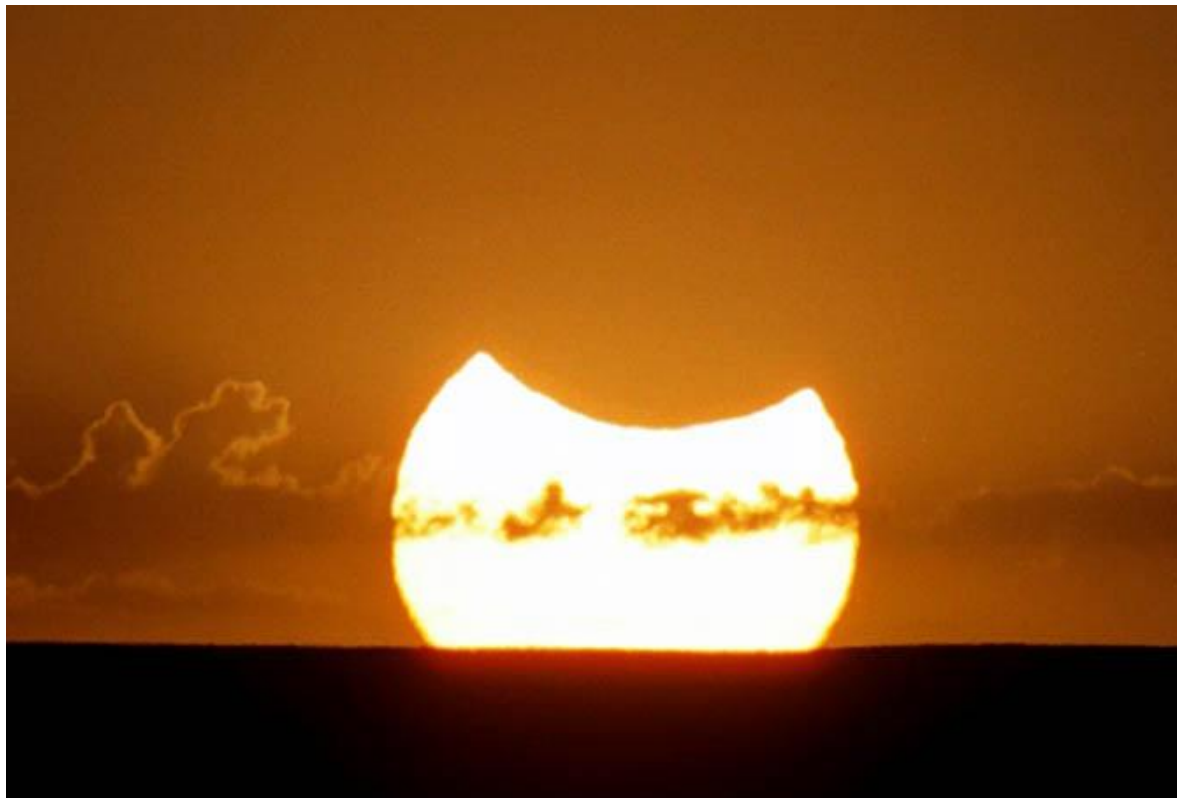
The Hebrews set time quite differently, it was by the setting of the Sun. The Calendar was set by observation of the New Moon or Dark Moon Nearest the Vernal Equinox, but why? Well if you think about it, it makes sense. Have you noticed that the closer you get to spring the days begin to get progressively longer? When you reach the Vernal Equinox, Day and Night are equal in the northern hemisphere. Also the Sun will set due west. As we progress to summer the days will become longer. The sun will appear to move unnoticeable upon the horizon. To the eye it would be difficult to see. Then slowly at first the sun will begin to set further south. Once again as we near the Autumnal Equinox you can measure the distance as it moves south along the horizon. At the Autumnal Equinox it will set due west. Then it will continue its journey south until we come to the winter solstice where once again the sun appears to be motionless upon the horizon.

This is why the Calendar was set by the Equinox. It is Measurable with no Errors. Picture it this way. You have a fixed point on the horizon, and where you are standing is directly East of it. When the sun sets directly inline with you and that object it is the Vernal Equinox. Now you have also noted by a marker where the sun sets 6 day prior to the equinox, and 23 days after the equinox, because it is easily measurable. Now what are we going to look for?

We are going to watch for the New Moon or Dark Moon to the Vernal Equinox. The sun will set directly or almost directly west during this period. The key is that the moon will also set almost directly west at the same time. The transits are that close. When the moon sets before the sun it is Waning Crescent, if it sets after the sun it is Waxing Crescent, if it is eclipsing the sun and setting at the same time it is a New Moon or Dark Moon. This can be seen because the sun is sometimes directly behind the moon. Now I know that most won't believe this, so I am printing off 1991 thru 2045 with supporting information. Please study this before we go on.

It should be noted that you really do not need a visual, if you take a circle made up of 360 degrees and divide it by 30 you come up to 12 degrees per day that the moon moves in it's orbit. Since we are placed in the center this will equal 15 segments of 12 degrees. At the start point the moon will be between the earth and sun which is not always visible. But the moon is visible for much of the time when the sun is also visible. Since we can measure the distance from the moon to the sun at sunset we can determine when a new moon will appear. If the moon is more then 12 degrees from the sun a day is inserted.

This would be the same if you divide a circle into 25,920 sections called Halakim. Divide by 30 for simple math and you come up with 864 Halakim. Or if you want to be exact as far as a synodic month the number will be 877.73 halakim on average.



An alternative marker is therefore proposed.

One additional point before we go on. All Calendars have a starting point on Earth. Where you are on earth will govern what you see and when. So what part of the Earth should we use as our starting point? Well Eden would be it. But for the simplicity we will use Jerusalem in the Middle East, since in Bible times they were able to calculate the transits of the sun and moon.

The Autumnal Equinox.

Now lets go back to the Bible. Turn back to Exodus 34th chapter verse 22. ²² “And you will carry on your festival of weeks with the first ripe fruits of the wheat harvest, and the festival of ingathering at the turn of the year.”

Point number 1: The festival was celebrated at the turn of the year. As we have seen the Autumnal Equinox is the turn of the year. The Earth has done one complete revolution around the sun. We also know that from Psalms 81:3. “On the New Moon,

BLOW the horn; On the full moon, for the day of our festival.” This would mean that the Full moon would have to fall at or after the Autumnal Equinox! So on Tishri 1 the trumpets blared!

See the following: Le. 23:24 “And Jehovah went on speaking to Moses, saying: “Speak to the sons of Israel, saying, ‘In the seventh month, on the first of the month, there should occur for YOU a complete rest, a memorial by the trumpet blast, a holy convention. ²⁵ No sort of laborious work may YOU do, and YOU must present an offering made by fire to Jehovah.’”

See Nu. 29:1 ““And in the seventh month, on the first of the month, YOU should hold a holy convention. No sort of laborious work must YOU do. It should prove to be a day of the trumpet blast for YOU”

Harvest Moon Tishri 15



Note Insight Book.

ETHANIM

“(Eth´a-nim) [probably, Enduring [Streams]; Everflowing [Streams]].

This was the seventh lunar month of the sacred calendar of the Israelites, but the first of the secular calendar. (1Ki 8:2) It corresponded to part of September and part of October. Following the Babylonian exile it was called Tishri, a name that does not appear in the Bible record but that is found in postexilic writings.

In speaking of the festival that began on the 15th day of this month (or around the first part of October), the historian Josephus writes: “On the fifteenth of this same month, at which the turning-point to the winter season is now reached, Moses bids each family to fix up tents, apprehensive of the cold and as a protection against the year’s inclemency.” —*Jewish Antiquities*, III, 244 (x, 4).

Start of Agricultural Year. Whereas Abib (or Nisan) became the first month of the year in the sacred Jewish calendar following the Exodus from Egypt, Ethanim continued to be viewed as the first month in a secular or agricultural sense. With this month, almost all the harvesting had been completed, marking the conclusion of the agricultural year. The early rains that thereafter fell softened the ground for the plowing that would follow and that would denote the initiation of new agricultural operations. Jehovah referred to Ethanim as the turning point of the year when speaking of the festival of ingathering as being “at the outgoing of the year” and “at the turn of the year.” (Ex 23:16; 34:22) It is also notable that it was not in the month of Abib but in this month of Ethanim that the Jubilee year began.—Le 25:8-12.

The later name applied to the month, Tishri, means “Beginning of the Year,” and Tishri 1 is still observed by the Jews as their New Year’s Day or Rosh Hashanah (“Head of the Year”).

Festival Month. Ethanim was also a month of festivals. The first day was the “day of the trumpet blast.” (Le 23:24; Nu 29:1) Since each New Moon was normally announced with a trumpet blast, this day likely was one of additional or extensive trumpeting. (Nu 10:10) On the 10th of Ethanim the annual Day of Atonement was observed. (Le 16:29, 30; 23:27; Nu 29:7) From the 15th to the 21st occurred the Festival of Booths, or Festival of Ingathering, followed on the 22nd day by a solemn assembly. (Le 23:34-36) Thus, a large part of the month of Ethanim was taken up by these festival seasons.

Events Occurring in Ethanim. Since the Bible, from its first book onward, presents chronological data, and since the first mention of years of life is in connection with the life of Adam, it would seem that the ancient use of the month called Ethanim as the initial month of the year would give some basis for believing that Adam’s start of life was in this month. (Ge 5:1-5) It was on the first day of the first month (later called Ethanim) that Noah, after having already spent over ten months within the ark, removed the ark’s covering and observed that the floodwaters had drained off the ground. (Ge 8:13) Over 1,300 years later Solomon inaugurated the completed temple at Jerusalem in Ethanim. (1Ki 8:2; 2Ch 5:3) After Jerusalem’s destruction in 607 B.C.E., the killing of Governor Gedaliah and the subsequent flight to Egypt of the remaining Israelites in the month of Ethanim marked the full desolation of Judah. (2Ki 25:25, 26; Jer 41:1, 2) These events were involved in the reasons for “the fast of the seventh month” mentioned at Zechariah 8:19. Seventy years later, by this very same month, the released Israelite exiles had returned from Babylon to begin the rebuilding of the temple in Jerusalem.—Ezr 3:1, 6.

The evidence also indicates that Jesus’ birth, as well as his baptism and anointing, took place during this month.—See JESUS CHRIST.”

Sacred Calendar

Now what about the Sacred Calendar that began in Nisan? Did they make the observation in the Spring? To answer this question we have to note some facts about Jehovah’s Calendar. We today are concerned with the Lords Evening Meal, which is celebrated on Nisan 14, which is the 7th month of the Secular, or the first of the Sacred. But remember this. Nisan 15 was the Passover, which was part of the Three Great Festivals. What were they?

1. Unfermented Cakes Nisan 15 -21.
2. Festival of Weeks. Ended on Pentecost or Sivan 6th.
3. Festival of Booths or Ingathering 15th – 21st.

The Holiest of days were in Tishri.

1. Trumpet blast of Tishri 1.
2. Day of Atonement Tishri 10.
3. Festival of Ingathering Tishri 15 – 21.
4. Solemn Assembly Tishri 22nd.

As we have seen, the Bible speaks about how the Calendar is to be set for these festivals but would this also hold true for the Secular Calendar? The answer will be seen in the following observations.

If you count from Nisan 14 thru Tishri 22nd you come up with 186 days. This is the same as the number of days from the Vernal Equinox to the Autumnal Equinox. Secondly if you count from Tishri 15th back 179 days you will come to Nisan 14. The Festival of unfermented cakes began on the 15th, which as you have learned will be a full moon. (Note: If you subtract 186 by 179 you get 7 days.)

Now what about Moses statement at Exodus 12:1? “Jehovah now said to Moses and Aaron in the land of Egypt: ² “This month will be the start of the months for YOU. It will be the first of the months of the year for YOU.” This means that the month of Nisan would mark the beginning of the Festival Seasons, which culminated in the fall. The Days and Months of these two calendars will be the same. But I am getting ahead of myself.

Exodus 23:14 “Three times in the year you are to celebrate a festival to me. ¹⁵ You will keep the festival of unfermented cakes. You will eat unfermented cakes seven days, just as I have commanded you, at the appointed time in the month of A’bib, because in it you came out of Egypt. And they must not appear before me empty-handed. ¹⁶ Also, the festival of harvest of the first ripe fruits of your labors, of what you sow in the field; and the festival of ingathering at the outgoing of the year, when you gather in your labors from the field. ¹⁷ On three occasions in the year every male of yours will appear before the face of the [true] Lord, Jehovah.”

Leviticus 23:1 “ And Jehovah went on speaking to Moses, saying: ² “Speak to the sons of Israel, and you must say to them, ‘The seasonal festivals of Jehovah that YOU should proclaim are holy conventions. These are my seasonal festivals:”

³ “Six days may work be done, but on the seventh day is a sabbath of complete rest, a holy convention. YOU may do no sort of work. It is a sabbath to Jehovah in all places where YOU dwell.

⁴ “These are the seasonal festivals of Jehovah, holy conventions, which YOU should proclaim at their appointed times: ⁵ In the first month, on the fourteenth day of the month, between the two evenings is the passover to Jehovah.

⁶ “And on the fifteenth day of this month is the festival of unfermented cakes to Jehovah. Seven days YOU should eat unfermented cakes. ⁷ On the first day YOU will have a holy convention occur. No sort of laborious work may YOU do. ⁸ But YOU must present an offering made by fire to Jehovah seven days. On the seventh day there will be a holy convention. No sort of laborious work may YOU do.”

⁹ And Jehovah continued to speak to Moses, saying: ¹⁰ “Speak to the sons of Israel, and you must say to them, ‘When YOU eventually come into the land that I am giving YOU, and YOU have reaped its harvest, YOU must also bring a sheaf of the firstfruits of YOUR harvest to the priest. ¹¹ And he must wave the sheaf to and fro before Jehovah to gain approval for YOU. Directly the day after the sabbath the priest should wave it to and fro. ¹² And on the day of YOUR having the sheaf waved to and fro YOU must render up a sound young ram, in its first year, for a burnt offering to Jehovah; ¹³ and as its grain offering two tenths of an e’phah of fine flour moistened with oil, as an offering made by fire to Jehovah, a restful odor; and as its drink offering a fourth of a hin of wine. ¹⁴ And YOU must eat no bread nor roasted grain nor new grain until this very day, until YOUR bringing the offering of YOUR God. It is a statute to time indefinite for YOUR generations in all places where YOU dwell.

¹⁵ “And YOU must count for yourselves from the day after the sabbath, from the day of YOUR bringing the sheaf of the wave offering, seven sabbaths. They should prove to be complete. ¹⁶ To the day after the seventh sabbath YOU should count, fifty days, and YOU must present a new grain offering to Jehovah. ¹⁷ Out of YOUR dwelling places YOU should bring two loaves as a wave offering. Of two tenths of an e’phah of fine flour they should prove to be. They should be baked leavened, as first ripe fruits to Jehovah. ¹⁸ And YOU must present along with the loaves seven sound male lambs, each a year

old, and one young bull and two rams. They should serve as a burnt offering to Jehovah along with their grain offering and their drink offerings as an offering made by fire, of a restful odor to Jehovah. ¹⁹ And YOU must render up one kid of the goats as a sin offering and two male lambs, each a year old, as a communion sacrifice. ²⁰ And the priest must wave them to and fro along with the loaves of the first ripe fruits, as a wave offering before Jehovah, along with the two male lambs. They should serve as something holy to Jehovah for the priest. ²¹ And YOU must make a proclamation on this very day; there will be a holy convention for yourselves. No sort of laborious work may YOU do. It is a statute to time indefinite in all YOUR dwelling places for YOUR generations.

²² “And when YOU people reap the harvest of YOUR land, you must not do completely the edge of your field when you are reaping, and the gleaning of your harvest you must not pick up. You should leave them for the afflicted one and the alien resident. I am Jehovah YOUR God.”

²³ And Jehovah went on speaking to Moses, saying: ²⁴ “Speak to the sons of Israel, saying, ‘In the seventh month, on the first of the month, there should occur for YOU a complete rest, a memorial by the trumpet blast, a holy convention. ²⁵ No sort of laborious work may YOU do, and YOU must present an offering made by fire to Jehovah.”

²⁶ And Jehovah spoke further to Moses, saying: ²⁷ “However, on the tenth of this seventh month is the day of atonement. A holy convention should take place for YOU, and YOU must afflict YOUR souls and present an offering made by fire to Jehovah. ²⁸ And YOU must do no sort of work on this very day, because it is a day of atonement to make atonement for YOU before Jehovah YOUR God; ²⁹ because every soul that will not be afflicted on this very day must be cut off from his people. ³⁰ As for any soul that will do any sort of work on this very day, I must destroy that soul from among his people. ³¹ YOU must do no sort of work. It is a statute to time indefinite for YOUR generations in all places where YOU dwell. ³² It is a sabbath of complete rest for YOU, and YOU must afflict YOUR souls on the ninth of the month in the evening. From evening to evening YOU should observe YOUR sabbath.”

³³ And Jehovah continued to speak to Moses, saying: ³⁴ “Speak to the sons of Israel, saying, ‘On the fifteenth day of this seventh month is the festival of booths for seven days to Jehovah. ³⁵ On the first day is a holy convention. No sort of laborious work may YOU do. ³⁶ Seven days YOU should present an offering made by fire to Jehovah. On the eighth day there should occur a holy convention for YOU, and YOU must present an offering made by fire to Jehovah. It is a solemn assembly. No sort of laborious work may YOU do.

³⁷ “These are the seasonal festivals of Jehovah that YOU should proclaim as holy conventions, for presenting an offering made by fire to Jehovah: the burnt offering and the grain offering of the sacrifice and the drink offerings according to the daily schedule, ³⁸ besides the sabbaths of Jehovah and besides YOUR gifts and besides all YOUR vow offerings and besides all YOUR voluntary offerings, which YOU should give to Jehovah. ³⁹ However, on the fifteenth day of the seventh month, when YOU have gathered the produce of the land, YOU should celebrate the festival of Jehovah seven days. On the first day is a complete rest and on the eighth day is a complete rest. ⁴⁰ And YOU must take for yourselves on the first day the fruit of splendid trees, the fronds of palm trees and the boughs of branchy trees and poplars of the torrent valley, and YOU must rejoice before Jehovah YOUR God seven days. ⁴¹ And YOU must celebrate it as a festival to Jehovah seven days in the year. As a statute to time indefinite during YOUR generations, YOU should celebrate it in the seventh month. ⁴² It is in the booths YOU should dwell seven days. All the natives in Israel should dwell in the booths, ⁴³ in order that YOUR generations may know that it was in the booths that I made the sons of Israel to dwell when I was bringing them out of the land of Egypt. I am Jehovah YOUR God.”

So the festivals were grouped together. So can we use the same rule of thumb and say that Nisan 1 is the nearest New Moon or Dark Moon to the Vernal Equinox? To answer that question we first need to establish how many days are in a month, how many months are in a year, and the sequence of Months. We are getting close.

For an in depth study see Festivals in the Insight Book.

Recap Two Errors.

We have considered two of the four errors. Lets recap them now.

1. We are not looking for a crescent moon. We are looking for a New Moon or Dark Moon.
2. People are looking for the wrong thing. We are not looking for a Waxing Crescent visible near the Spring Equinox. We are looking for a New Moon making a near westerly setting which may cause a partial to full eclipse of the sun near the Equinox. The moon may not set earlier then the sun, or later then the sun. It must set with the sun.

Third Error.

Error number 3: This undoubtedly has caused the most problems of all. We must tackle this before we can begin to solve the Solar - Lunar equation. What is it? Units of Measure.

Here is an example: You are told to fix a car. No problem since you are a trained mechanic - except for one thing. All of the setting are in a different unit of measure than what you are use to. The wrenches don't fit quite right. Your settings are also off. When it comes to tolerance measurements, instead of inches they are in something that looks close but different. Since you are unaware of the Units and they're meaning you do the best you can and make the repairs. But it just doesn't seem to work that well. Things didn't go together the way you thought.

When we look at the solar system and we have all these odd numbers and things just don't fit quite right. Do we assume that the error is with the design or the interpretation is wrong? It can only be one or the other. Now we know James made this observation at James 1:16 "Do not be misled, my beloved brothers. ¹⁷ Every good gift and every perfect present is from above, for it comes down from the Father of the [celestial] lights, and with him there is not a variation of the turning of the shadow."

So we can rest assured that the error will be with us. There is one number that you do not want to use because it is a man's number. The number is 6. Jehovah did not use a sexadecimal or hexadecimal system.

That means 360 degrees 60 minutes 60 seconds will not work. In a Compass there are 360 degrees – 60 minutes – 60 seconds. A Day is divided differently though, into 24 hours which is an ancient division used in Egypt. Yet we then convert to a sexadecimal system for Hours and minutes. The sexadecimal system is of Babylonian decent, and although it is in wide use, it was not the system that Jehovah used. See Re. 13:18 "Here is where wisdom comes in: Let the one that has intelligence calculate the number of the wild beast, for it is a man's number; and its number is six hundred and sixty-six."

Lets go to the two numbers that we will be using. They are as follows: Synodic Month 29.53058867 and Tropical Year of 365.2421896698. Now these numbers are the best estimates of modern Astronomers. We will use a slightly different number, but after I demonstrate the difference you will be satisfied that the number is in an acceptable range.

Tropical Year of **365.2422067790** – 365.2421896698 = .0000171092 * 7200 years = .12318624 of a day. * 24 hours = 2.95 hours in 7,200 years. I think this is reasonable because the numbers they are using are at best an approximation.

Synodic Month **29.53059413** - 29.53058867 = .00000546 * 89447 months = .48838062 day * 24 hours = 11.72 hours in 7,200 years. I think this is reasonable because the number they are using is at best an approximation.

Now this is where I am going to be a little bit theoretical and use some biblical numbers.

You will notice that both the number 12 and 24 are used in the Bible along with multiples thereof. The count of time that we use is based upon 24 hours. Which was not of Babylonian origin but traces back to Egypt. This system was merged with the sexadecimal system by adding the division of 60 minutes and 60 seconds.

According to Non-biblical sources the Hebrews in ancient times divided the hour into 1,080 parts called Halakim. A Halakim is equal to exactly 3.33333333333333 of a second. A Halakim can be divided in 90 parts, which equal a Rega'im. Please note that in ancient writings this was written as 76. The numbering system was on **Base 12 or Duodecimal System**. A very interesting system. A Rega'im equals $7 \times 12 + 6 = 90$ parts of a 3.33333333333333... seconds, which gives the followinging .037037037037...., which gives the reciprocal of $1 / .037037037... =$ The number 27.

Now if the Hebrews used to divide an hour into 1080 parts, the only conclusion that can be reached is that there where 24 hours. We know this from another ancient number. A Synodic month was divided into 765,433 Halakim. Lets do some simple math. 1080 Halakim per hour x 24 hours = 25,920. 765,433 divided by 25,920 (Day) = **29.5305941358**.

So where did this number come from? Not from Babylon but from Shem. Remember the flood of Noah's Day occurred in 2370 B.C.E. Shem was still alive for 500 years after the flood. Abraham met him when he was in his late 70s or 80s. See Melchizedek in the Insight Book for more information. So it must of come from the Antediluvian World of Noah. We will come back to this soon. There is some additional information coming.

Numbers

Lets talk a little bit about Prime Numbers. Have you ever heard of a Prime Number Spiral? Primes have some amazing facets. Lets look at some numbers in Prime for a moment.

- 1 = PRIME
- 2 = PRIME
- 3 = PRIME
- 4 = 2X2
- 5 = PRIME
- 6 = 2X3
- 7 = PRIME
- 8 = 2X2X2
- 9 = 3X3
- 10 = 2X5
- 11 = PRIME
- 12 = 2X2x3
- 14 = 2X7
- 18 = 2x3x3
- 19 = PRIME
- 20 = 2X2X5
- 21 = 3x7
- 24 = 2X2X2X3
- 30 = 2X3X5
- 50 = 2X5X5
- 57 = 9 X3
- 72 = 2X2X2X3X3
- 76 = 2X2X19
- 144 = 2X2X2X2X3X3
- 171 = 3X3X19

- 354 = 2x3x59
- 355 = 5x71
- 384 = 2x2x2x2x2x2x2x3
- 360 = 2X2X2X3X3X5
- 399 = 3X7X19
- 1080 = 2X2X2X3X3X3X5
- 7200 = 2x2x2x2x2x3x3x5x5
- 765433 = 131x5843
- 9467078 = 2X61X73X1063
- 955206 = 2x2x2x2x2x3x3x5x5x7x19
- 724641394774 = 2x61x73x131x1063x5843

In this list how many numbers did you pick out that are used in the Bible? Now let me list some Least Common Multiples. These numbers are helpful if you want to know how a number repeats.

Least Common Multiples.

- 19 of 360 of 50 = **34,200** 2x2x2x3x3x5x5x19
- 171 of 360 of 50 = **34,200** 2x2x2x3x3x5x5x19
- 399 of 360 = **47,880** 2x2x2x3x3x5x7x19
- 7128 of 360 = **71,820** 2x3x3x3x5x7x19
- 24 of 1,080 = **25,920** 2x2x2x2x2x2x3x3x3x3x5
- 7,182 of 7,200 = **955,206** 2x2x2x2x2x3x3x5x5x7x19
- 25,920 of 7,200 = **129,600** 2x2x2x2x2x2x3x3x3x3x5x5
- 765,433 of 9,467,078 = **724,641,394,774** 2x61x73x131x1063x5843

See Insight Book.

NUMBER, NUMERAL

In ancient Hebrew, numbers were spelled out. Sometime after the exile to Babylon, the Jews adopted to some extent the practice of using their alphabetic letters as symbols of numerical figures. However, this usage does not appear even in postexilic Hebrew Bible manuscripts. One of the oldest extant specimens of Hebrew writing is the inscription taken from the Siloam water tunnel (probably from the time of Hezekiah’s reign [745-717 B.C.E.]), in which the measurements are written out in full. Spelling out the numbers provides an added measure of accuracy and dependability in the manuscripts of the Hebrew Scriptures, which have been copied many times, for, in copying, a numeral is usually easier to Error than a word.

In Hebrew, numbers above ten are a combination of words, such as 12 (two and ten) (Ge 14:4), except that 20 is the plural of ten; 30 a plural word derived from three; 40 a plural word derived from four, and so on. One hundred is a separate word; 200 is the dual form. Other “hundreds” are composed of two words, as, 300. The highest number expressed by one Hebrew word is 20,000, the dual form of 10,000 (myriad). Larger numbers are a combination of words. For example, at 1 Chronicles 5:18 the number 44,760 is, literally, forty and four thousand and seven of hundreds and sixty. A million is written as a thousand thousands. (2Ch 14:9) Rebekah’s family blessed her, saying: “O you, our sister, may you become thousands times ten thousand [literally, thousands of myriads].” (Rebekah’s posterity actually came to number many millions.) (Ge 24:55, 60) In Daniel’s vision Jehovah is shown as having “ten thousand times ten thousand [literally, a myriad of myriads]” standing before him.—Da 7:10.

Occasionally numbers are used in an approximate sense, as round numbers, for example, at Psalm 90:10, where the psalmist speaks of man’s age limit, and possibly also at 1 Kings 19:18 (7,000 who had not bowed to Baal) and 2 Chronicles 14:9 (the million Ethiopians defeated by Asa).

In the Christian Greek Scriptures numerals are generally expressed in words. The number of “the wild beast” is in words in the Sinaitic and the Alexandrine manuscripts.—Re 13:18.

Bible Usage Not Numerology. Since the Bible is a book of both history and prophecy, the numbers given therein may be either literal or symbolic. The context usually reveals in which sense a number is used. Certain numbers appear often in the Bible in an illustrative, figurative, or symbolic sense, and in such cases an understanding of their significance is vital to an understanding of the text. However, this Bible usage of numbers should not be confused with numerology, in which occult mysticism is attached to figures, their combinations, and numerical totals. Numerology apparently had its origin in ancient Babylon and, along with other forms of divination, comes under divine condemnation.—De 18:10-12.

In the following we will discuss a few of the figurative uses of certain numbers that are used prominently in the Bible.

One. This number, when used figuratively, conveys the thought of singleness, uniqueness, as well as unity and agreement in purpose and action. “Jehovah our God is one Jehovah,” said Moses. (De 6:4) He alone is Sovereign. He is unique. He does not share his glory with another, as is the case with pagan 25abbaths25an gods. (Ac 4:24; Re 6:10; Isa 42:8) There is oneness in purpose and activity between Jehovah and Jesus Christ (Joh 10:30) and there should be complete unity of Christ’s disciples with God, with his Son, and with one another. (Joh 17:21; Ga 3:28) Such oneness is illustrated in the marriage arrangement.—Ge 2:24; Mt 19:6; Eph 5:28-32.

Two. The number two frequently appears in a legal setting. Agreement in the accounts of two witnesses adds to the force of the testimony. Two witnesses, or even three, were required to establish a matter before the judges. This principle is also followed in the Christian congregation. (De 17:6; 19:15; Mt 18:16; 2Co 13:1; 1Ti 5:19; Heb 10:28) God adhered to this principle in presenting his Son to the people as mankind’s Savior. Jesus said: “In your own Law it is written, ‘The witness of two men is true.’ I am one that bears witness about myself, and the Father who sent me bears witness about me.”—Joh 8:17, 18.

Doing something a second time—for example, repetition of a statement or vision, even in only a parallel way—firmly established the matter as sure and true (as in Pharaoh’s dream of the cows and the ears of grain; Ge 41:32). Biblical Hebrew poetry is full of thought parallelism, which establishes more firmly in mind the truths stated and at the same time clarifies matters by the variety of wording in the parallelism.—See Ps 2, 44, and others.

In Daniel’s prophecy a certain beast’s having “two horns” symbolized duality in rulership of the Medo-Persian Empire.—Da 8:20, 21; compare Re 13:11.

Three. While the testifying of two witnesses to the same matter established proof sufficient for legal action, three made the testimony even stronger. The number three, therefore, is used at times to represent intensity, emphasis, or added strength. “A threefold cord cannot quickly be torn in two.” (Ec 4:12) Emphasis was achieved in Jesus’ threefold questioning of Peter after Peter’s three denials of Jesus. (Mt 26:34, 75; Joh 21:15-17) The vision telling Peter to eat of all kinds of animals, including those unclean according to the Law, was intensified by being given to him three times. This doubtless made it easier for Peter to understand, when Cornelius and his household accepted the good news, that God was now turning his attention to uncircumcised people of the nations, considered unclean by the Jews.—Ac 10:1-16, 28-35, 47, 48.

The intensity of Jehovah’s holiness and cleanness is emphasized by the declaration of heavenly creatures: “Holy, holy, holy is Jehovah.” (Isa 6:3; Re 4:8) Before taking the last earthly king of the line of David off the throne, Jehovah said: “A ruin, a ruin, a ruin I shall make it. As for this also, it will certainly become no one’s until he comes who has the legal right, and I must give it to him.” Here he emphatically showed there would be no Davidic kings sitting upon the throne at Jerusalem in his name—the throne would be absolutely vacant—until God’s time to establish his Messiah in Kingdom power. (Eze 21:27) The intensity of woes to come to those dwelling on earth is forecast by the triple repetition of the declaration “woe.”—Re 8:13.

Four. Four is a number sometimes expressing universalness or foursquareness in symmetry and form. It is found three times at Revelation 7:1. Here the “four angels” (all those in charge of “the four winds,” ready for complete destruction) stood on earth’s “four corners” (they could let loose the winds obliquely or diagonally, and no quarter of the earth would be spared). (Compare Da 8:8; Isa 11:12; Jer 49:36; Zec 2:6; Mt 24:31.) The New Jerusalem is “foursquare,”

equal in every dimension, being in fact cubical in shape. (Re 21:16) Other figurative expressions using the number four are found at Zechariah 1:18-21; 6:1-3; Revelation 9:14, 15.

Six. This number at times represents imperfection. The number of “the wild beast” is 666 and is called “a man’s number,” indicating that it has to do with imperfect, fallen man, and it seems to symbolize the imperfection of that which is represented by “the wild beast.” The number six being emphasized to a third degree (the six appearing in the position of units, tens, and hundreds) therefore highlights the imperfection and deficiency of that which the beast represents, or pictures.—Re 13:18.

Seven. Seven is used frequently in the Scriptures to signify completeness. At times it has reference to bringing a work toward completion. Or it can refer to the complete cycle of things as established or allowed by God. By completing his work toward the earth in six creative days and resting on the seventh day, Jehovah set the pattern for the whole Sabbath arrangement, from the seven-day week to the Jubilee year that followed the seven-times-seven-year cycle. (Ex 20:10; Le 25:2, 6, 8) The Festival of Unleavened Bread and the Festival of Booths were each seven days long. (Ex 34:18; Le 23:34) Seven appears often in connection with the Levitical rules for offerings (Le 4:6; 16:14, 19; Nu 28:11) and for cleansings.—Le 14:7, 8, 16, 27, 51; 2Ki 5:10.

The “seven congregations” of Revelation, with their characteristics, give a complete picture of *all* the congregations of God on earth.—Re 1:20–3:22.

The “seven heads” of the “wild beast” (Re 13:1) show the limit to which the beast would be allowed to develop. Although the “scarlet-colored wild beast” is called “an eighth” king, it springs from the seven and does not exist apart from the seven-headed wild beast (Re 17:3, 9-11), as is true also of the “image” of “the wild beast.” (Re 13:14) Similarly, the two-horned “wild beast” is actually coexistent with the original “wild beast” whose “mark” it tries to put on all persons.—Re 13:11, 16, 17.

Jehovah was long-suffering with Israel but warned them that if, despite his discipline, they ignored him, he would then chastise them “seven times,” thoroughly, for their sins.—Le 26:18, 21, 28.

In historical sections of the Scriptures, seven frequently occurs to denote completeness, or doing a work completely. The Israelites exercised full faith and obedience by marching for seven days around Jericho, encompassing it seven times on the seventh day, after which the city wall collapsed. (Jos 6:2-4, 15) Elijah showed full faith in the efficacy of his prayer to God by commanding his servant up on Mount Carmel to go looking at the sky seven times before a rain cloud appeared. (1Ki 18:42-44) Naaman the leper had to bathe seven times in the Jordan River. He, as a mighty Syrian general, had to display considerable humility to carry out this procedure recommended by the prophet Elisha, but for his obediently doing it, Jehovah cleansed him. (2Ki 5:10, 12) The purity, completeness, perfection, and fineness of Jehovah’s sayings are likened with poetic force and intensity to silver refined in a smelting furnace, clarified seven times. (Ps 12:6) Jehovah’s mercy is magnified by the statement: “The righteous one may fall even seven times, and he will certainly get up.” (Pr 24:16) His deserving all praise is declared by the psalmist: “Seven times in the day I have praised you.”—Ps 119:164.

The book of Revelation abounds with symbolic use of the number seven in connection with the things of God and his congregation, and also the things of God’s Adversary, Satan the Devil, in his all-out fight to oppose God and his people.—Re 1:4, 12, 16; 5:1, 6; 8:2; 10:3; 12:3; 13:1; 15:1, 7; 17:3, 10; and other texts.

Multiples of seven are used in a similar sense of completeness. Seventy (ten times seven) is employed prophetically in the “seventy weeks” of Daniel’s prophecy dealing with Messiah’s coming. (Da 9:24-27; see SEVENTY WEEKS.) Jerusalem and Judah lay desolate 70 years, because of disobedience to God, “until the land had paid off [completely] its 26abbaths.”—2Ch 36:21; Jer 25:11; 29:10; Da 9:2; Zec 1:12; 7:5.

Seventy-seven, a repetition of seven in a number, was equivalent to saying “indefinitely” or “without limit.” Jesus counsels Christians to forgive their brothers to that extent. (Mt 18:21, 22) Since God had ruled that anyone killing Cain, the murderer, must “suffer vengeance seven times,” Lamech, who apparently killed a man in self-defense, said: “If seven times Cain is to be avenged, then Lamech seventy times and seven.”—Ge 4:15, 23, 24.

Eight. The number eight was also used to add *emphasis* to the completeness of something (one more than seven, the number generally used for completeness), thus sometimes representing abundance. Jehovah reassured his people of deliverance from the threat of Assyria, saying that there should be raised up against the Assyrian “seven shepherds, yes, [not merely seven, but] eight dukes of mankind.” (Mic 5:5) As a fitting climax to the final festival of the sacred year, the Festival of Booths, the eighth day was to be one of holy convention, solemn assembly, a day of complete rest.—Le 23:36, 39; Nu 29:35.

Ten. Ten is a number denoting fullness, entirety, the aggregate, the sum of all that exists of something. It may be noted also that, where the numbers seven and ten are used together, the seven represents that which is higher or superior and ten represents something of a subordinate nature.

The Ten Plagues poured upon Egypt fully expressed God’s judgments upon Egypt—all that were needed to humiliate fully the false gods of Egypt and to break the hold of Egypt upon God’s people Israel. The “Ten Words” formed the basic laws of the Law covenant, the approximately 600 other laws merely enlarging on these, elucidating them, and explaining their application. (Ex 20:3-17; 34:28) Jesus used the number ten in several of his illustrations to denote entirety or the full number of something.—Mt 25:1; Lu 15:8; 19:13, 16, 17.

One of the beasts of Daniel’s vision and certain beasts described in Revelation had ten horns. These evidently represented all the powers, or “kings,” of earth making up the beastly arrangement. (Da 7:7, 20, 24; Re 12:3; 13:1; 17:3, 7, 12) The fullness of the test or period of test that God determines for his servants or allows them to undergo is expressed at Revelation 2:10: “Do not be afraid of the things you are about to suffer. Look! The Devil will keep on throwing some of you into prison that you may be *fully* put to the test, and that you may have tribulation *ten days*.”

Twelve. The patriarch Jacob had 12 sons, who became the foundations of the 12 tribes of Israel. Their offspring were organized by God under the Law covenant as God’s nation. Twelve therefore seems to represent a complete, balanced, divinely constituted arrangement. (Ge 35:22; 49:28) Jehovah chose 12 apostles, who form the secondary foundations of the New Jerusalem, built upon Jesus Christ. (Mt 10:2-4; Re 21:14) There are 12 tribes of “the sons of [spiritual] Israel,” each tribe consisting of 12,000 members.—Re 7:4-8.

Multiples of 12 are also sometimes significant. David established 24 divisions of the priesthood to serve by turn in the temple later built by Solomon. (1Ch 24:1-18) This assists in identifying the “twenty-four elders” who were seated round about God’s throne in white outer garments and who were wearing crowns. (Re 4:4) The footstep followers of Jesus Christ, his spiritual brothers, are promised kingship and priesthood with him in the heavens. These elders could not be only the apostles, who numbered just 12. They therefore evidently represent the entire body of the “royal priesthood,” the 144,000 (as represented in the 24 priestly divisions serving at the temple) in their positions in the heavens, as crowned kings and priests.—1Pe 2:9; Re 7:4-8; 20:6.

Forty. In a few instances periods of judgment or punishment seem to be associated with the number 40. (Ge 7:4; Eze 29:11, 12) Nineveh was given 40 days to repent. (Jon 3:4) Another use of the number 40 points out a parallel in the life of Jesus Christ with that of Moses, who typified Christ. Both of these men experienced 40-day periods of fasting.—Ex 24:18; 34:28; De 9:9, 11; Mt 4:1, 2.

Why Switch Number System?

So why switch to a different numbering system? To bring order to what would seem disorderly, although order does exist! If you are in engineering or some type of field where you deal in numbers you will realize that when you convert from one system to another it can give you funny rounding problems.

In Drafting and more importantly in Machine work there is a need for what is called Absolute Zero. A reference point that all other measurements are taken off of. Now to illustrate why you cannot use spherical trigonometry to solve this problem, is easily seen by rounding errors. Since every number is an approximation, and as you build upon those approximation even if they are good the error will get compounded.

Can we also make some rules? Yes the months can be put in order as follows:

1 st Month	1	2	3	4	5	6	7	8	9	10	11	12	13	
10/6/2002	30	29	30	29	30	29	30	29	30	29	30	29		= 354
9/25/2003	30	29	30	29	30	29	30	29	30	29	30	30		= 355
9/14/2004	30	29	30	29	30	29	30	29	30	29	30	29	30	= 384
10/3/2005	30	29	30	29	30	29	30	29	30	29	30	29		= 354

If a year has 355 the last month ends in 30.

If a year has 354 the last month ends in 29.

If a year has 13 months it ends in 30.

If someone missed the Passover they could celebrate it the following month on the 15th of the month, which if the first month had 30 days, would make the 15th day fall 30 days from it. See Numbers 9:10 ¹⁰ “Speak to the sons of Israel, saying, ‘Although any man of YOU or of YOUR generations should happen to be unclean by a soul or off on a distant journey, he too must prepare the passover sacrifice to Jehovah. ¹¹ In the second month, on the fourteenth day between the two evenings, they should prepare it. Together with unfermented cakes and bitter greens they should eat it. ¹² They must not let any of it remain until morning, and they should break no bone in it. According to the whole statute of the passover they should prepare it. ¹³ But when the man was clean or did not happen to be off on a journey and neglected to prepare the passover sacrifice, that soul must then be cut off from his people, because the offering of Jehovah he did not present at its appointed time. For his sin that man will answer.

Pentecost was celebrated 50 days from Nisan 16, which would bring you to Sivan 6. This would mean that the second month would have 29 days in it. See Deuteronomy 16:9. “Seven weeks you should count for yourself. From when the sickle is first put to the standing grain you will start to count seven weeks. ¹⁰ Then you must celebrate the festival of weeks to Jehovah your God, according to the voluntary offering of your hand that you will give, just as Jehovah your God may bless you.”

See Insight Book Pentecost.

PENTECOST

A name used in the Christian Greek Scriptures to denote the Festival of Harvest (Ex 23:16) or Festival of Weeks (Ex 34:22), called also “the day of the first ripe fruits.” (Nu 28:26) Instructions for this festival are found at Leviticus 23:15-21; Numbers 28:26-31; Deuteronomy 16:9-12. It was to be celebrated on the 50th day (Pentecost means “Fiftieth [Day]”) from Nisan 16, the day that the barley sheaf was offered. (Le 23:15, 16) In the Jewish calendar it falls on Sivan 6. It was after the barley harvest and the beginning of the harvest of wheat, which ripened later than the barley.—Ex 9:31, 32.

The Israelites were not allowed to begin the harvest until the firstfruits of the barley had been presented to Jehovah on Nisan 16. Therefore, in Deuteronomy 16:9, 10 the instructions are: “From when the sickle is first put to the standing grain you will start to count seven weeks. Then you must celebrate the festival of weeks to Jehovah your God.” Every male was required to attend, and it is also stated in connection with this festival: “You must rejoice before Jehovah your God, you and your son and your daughter and your man slave and your slave girl and the Levite who is inside your gates and the alien resident and the fatherless boy and the widow, who are in your midst, in the place that Jehovah your God will choose to have his name reside there.” (De 16:11) The Passover was a close family observance. The Festival of Harvest, or Pentecost, called for a more open and hospitable liberality, in this sense resembling the Festival of Booths.

Also it should be pointed out at this time the peculiar nature of these three years notice the following:

384 days will advance the calendar week by 6 days $384/7 = 54 \text{ weeks } .8571428571 * 7 = \mathbf{6 \text{ days}}$.

355 days will advance the calendar week by 5 days $355/7 = 50 \text{ weeks } .7142857143 * 7 = \mathbf{5 \text{ days}}$.

354 days will advance the calendar week by 4 days $354/7 = 50 \text{ weeks } .5714285714 * 7 = \mathbf{4 \text{ days}}$.

$355 + 355$ would thus advance the calendar week by $5 + 5 - 7 = \mathbf{3 \text{ days}}$.

$355 + 354$ would thus advance the calendar week by $5 + 4 - 7 = \mathbf{2 \text{ days}}$.

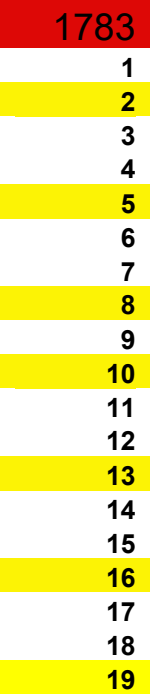
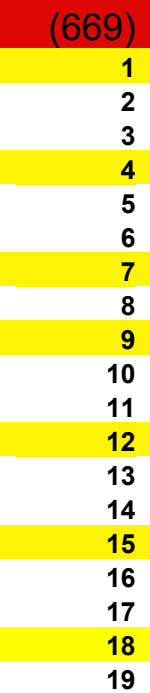
$354 + 354$ would thus advance the calendar week by $4 + 4 - 7 = \mathbf{1 \text{ day}}$.

Just an interesting observation.

Leap Years

Leap years follow a cycle, but here again more toes to be stepped upon. The leap year is the 384-day year. As you can see the insertion of it is determined by the equinox. There is a 19-year cycle and Leap years do follow a certain sequence and time for switching months. Picture this: You have nineteen bins and every year you put so much in each bin but the amount put in is a little bit more than you take out. After a period of time the bin is full before you add any more to it so you go to the next bin. After a period of time another bin down the line is full so you go to the next bin as well. This keeps repeating. This in a sense is what happens with leap years. There is a remainder of Halakim in the count because of the variation of lunar months. When the count builds up that year will have 13 months in it. The previous year goes from 13 to 12 and the next year goes from 12 to 13. The distance of the New Moon to the Autumnal Equinox measures this. We will consider this after we look at leap years.

See New Moon Graph:



So where did Meton get his cycles from? Well those cycles started in 3063 B.C.E. and ended in 2721 B.C.E. That’s before the Flood of 2370 B.C.E. That would mean that almost 693 years before the global Deluge they new of these cycles. That would mean they new of year lengths of 354, 355, 384. Because they also new of Halakim as a form of measurement of time. See Chart.

(3063)
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See Insight Book.

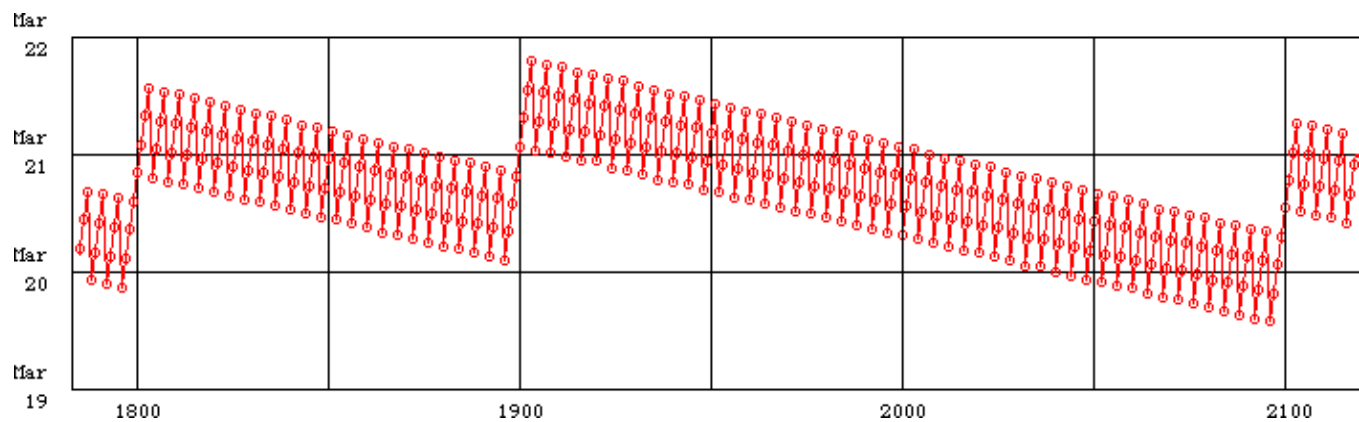
We do not find record of a definitely fixed or standardized form of Jewish calendar until the fourth century of our Common Era (c. 359 C.E.), when Hillel II specified that the leap years of 13 months should be the 3rd, 6th, 8th, 11th, 14th, 17th, and 19th of each 19 years. Such a 19-year cycle is commonly called the Metonic cycle, after the Greek mathematician Meton (of the fifth century B.C.E.), although there is also evidence that such a cycle was perfected before him by the Babylonians. (See *Babylonian Chronology, 626 B.C.–A.D. 75*, by R. A. Parker and W. H. Dubberstein, 1971, pp. 1, 3, 6.) This cycle takes into account that every 19 years the new and the full moons fall again on the same days of the solar year.

Now to the Spring Equinox

Now this will take some thought. So please concentrate. The Earth rotates as we have seen every 9,467,078 Halakim or (365.242206790 days). This brings us to a new year as far as Earth is concerned.

The Gregorian tries to solve the situation in the following way. Every 4 years it adds a day. But this is too much so after approximately 128 years a day has to be skipped. This creates a sign wave with a saw tooth on it. See Picture below.

Dates of Spring Equinoxes 1780 to 2120:

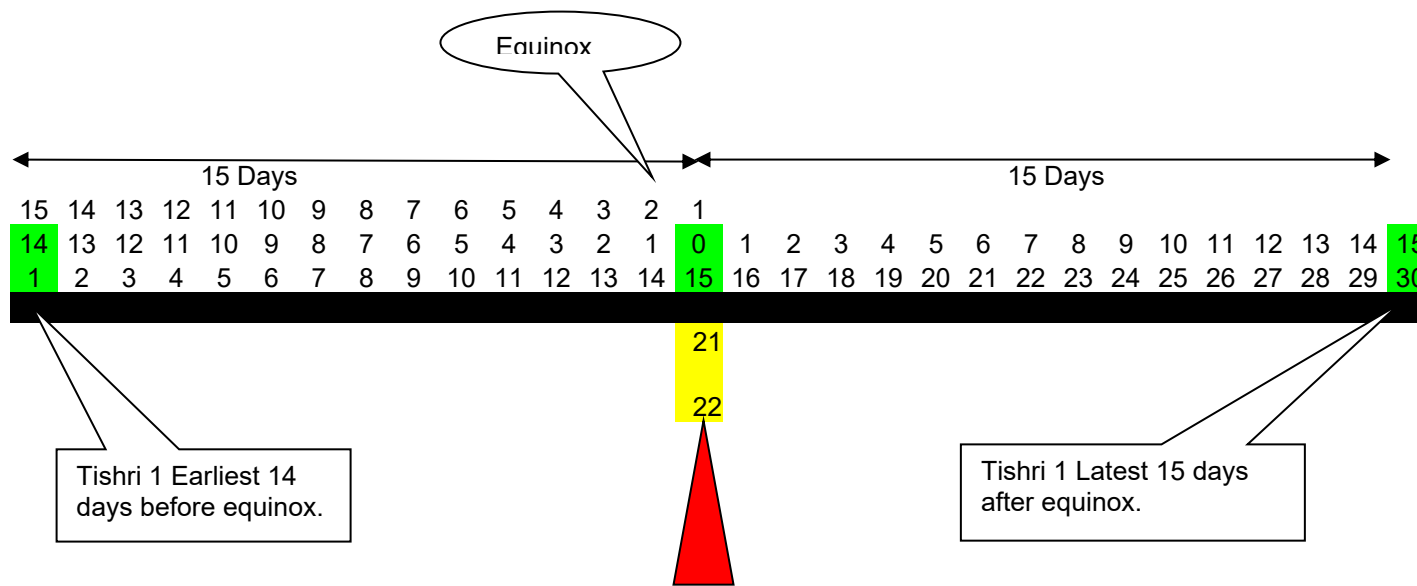


See Explanation from Jorgensen:

The Gregorian Calendar Reform (1582):
The Gregorian calendar year is intended to be of the same length as the cycle of the seasons. The mean time between two successive Vernal Equinoxes is called a tropical year, and it is about 365.2422 days long. To synchronize the calendar and tropical years, leap days are periodically added to the calendar.

Leap Years:

According to the Gregorian calendar years evenly divisible by 4 are leap years (a 29th day in February), with the exception of centurial years that are not evenly divisible by 400. Therefore, the years 1700, 1800, 1900 and 2100 are not leap years, but 1600, 2000, and 2400 are leap years.
Gregorian calendar:
 $1 \text{ year} = (365 + 1/4 - 1/100 + 1/400 = 365.2425) \text{ days} = 365.2425 \text{ days}.$
The difference is 0.0003 days or 26 seconds per year. It will take about 3300 years before the Gregorian calendar is as much as one day out of step with the seasons.



Now picture this in your mind. A year is not 365 days at all. A year is either 354, 355, or 384 days. Since the moon influences the earths biological systems, ocean tides, the part that the Autumnal Equinox plays is a cam lever for the lunar cycle. The New Moon or Dark Moon has almost the same transit in the sky, and sets with the Sun at the Autumnal Equinox. This is what calibrates and determines all other cycles.

Please refer to calendar for complete cycle. I would encourage all to do the math for themselves on this one also.

Now For Days

If you remember from the previous discussion that 354, 355, & 384 day combinations can advance days. The reason for this is that the days have a sequence all to themselves along with the leap years, and 355-day years.

Lets look at days first in 57-year sequence:

1726	1783	1840	1897	1954	2011
<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
7	1	2	3	4	5
4	5	6	7	1	2
3	4	5	6	7	1
7	1	2	3	4	6
5	6	7	1	2	3
4	5	6	7	1	2
1	2	3	4	5	6
5	6	7	1	2	4
4	5	6	7	1	3
1	3	4	5	6	7
7	2	3	4	5	6
5	6	7	1	2	3
2	3	4	5	6	7
1	2	3	4	5	6
5	6	7	2	3	4
3	4	5	6	7	1
2	3	4	5	6	7
6	7	1	2	3	4
3	4	5	7	1	2
2	3	4	6	7	1
7	1	2	3	4	5
6	7	1	2	3	4
3	4	5	6	7	1
7	1	2	3	5	6
6	7	1	2	4	5
4	5	6	7	1	2
1	2	3	4	5	6
7	1	2	3	4	5
4	5	6	7	1	2
3	4	5	6	7	1
7	2	3	4	5	6
5	6	7	1	2	3
4	5	6	7	1	2
1	2	3	4	5	6
5	6	1	2	3	4
4	5	7	1	2	3
2	3	4	5	6	7
6	7	1	2	3	4
5	6	7	1	2	3
2	3	4	6	7	1
1	2	3	5	6	7
6	7	1	2	3	4
3	4	5	6	7	1
2	3	4	5	6	7
6	7	1	2	3	5
4	5	6	7	1	2
3	4	5	6	7	1
7	1	2	3	4	5
6	7	1	2	3	4
3	4	5	6	7	1
7	2	3	4	5	6
6	1	2	3	4	5
4	5	6	7	1	2
1	2	3	4	5	6
7	1	2	3	4	5
4	5	7	1	2	3
2	3	4	5	6	7

Why does it happen this way? Because of a Master Designer. This is perhaps the greatest example of Prime Number Spiral that we know about as of today! Please see supporting information.

Now I will try to put some things into relation. The calendar has three number systems running at the same time. The Duodecimal System is based on 12, One is based upon 19. The other is based on the number 7. You may want to learn more about these systems. The Metric or Base 10 System that is in use now is not the system of counting used. Here is a comparison chart.

Duodecimal 12			Prime of 19			Prime of 7		
Num	Decimal	Fraction	Num	Decimal	Fraction	Num	Decimal	Fraction
1	0.08333333333	1/12	1	0.05263157895	1/19	1	0.14285714286	1/7
2	0.16666666667	1/6	2	0.10526315789	2/19	2	0.28571428571	2/7
3	0.25000000000	1/4	3	0.15789473684	3/19	3	0.42857142857	3/7
4	0.33333333333	1/3	4	0.21052631579	4/19	4	0.57142857143	4/7
5	0.41666666667	5/12	5	0.26315789474	5/19	5	0.71428571429	5/7
6	0.50000000000	1/2	6	0.31578947368	6/19	6	0.85714285714	6/7
7	0.58333333333	7/12	7	0.36842105263	7/19	7	1.00000000000	1
8	0.66666666667	2/3	8	0.42105263158	8/19	8	1.14285714286	1 1/7
9	0.75000000000	3/4	9	0.47368421053	9/19	9	1.28571428571	1 2/7
10	0.83333333333	5/6	10	0.52631578947	10/19	10	1.42857142857	1 3/7
11	0.91666666667	11/12	11	0.57894736842	11/19	11	1.57142857143	1 4/7
12	1.00000000000	1	12	0.63157894737	12/19	12	1.71428571429	1 5/7
13	1.08333333333	1 1/12	13	0.68421052632	13/19	13	1.85714285714	1 6/7
14	1.16666666667	1 1/6	14	0.73684210526	14/19	14	2.00000000000	2
15	1.25000000000	1 1/4	15	0.78947368421	15/19	15	2.14285714286	2 1/7
16	1.33333333333	1 1/3	16	0.84210526316	16/19	16	2.28571428571	2 2/7
17	1.41666666667	1 5/12	17	0.89473684211	17/19	17	2.42857142857	2 3/7
18	1.50000000000	1 1/2	18	0.94736842105	18/19	18	2.57142857143	2 4/7
19	1.58333333333	1 7/12	19	1.00000000000	1	19	2.71428571429	2 5/7
20	1.66666666667	1 2/3	20	1.05263157895	1 1/19	20	2.85714285714	2 6/7
21	1.75000000000	1 3/4	21	1.10526315789	1 2/19	21	3.00000000000	3
22	1.83333333333	1 5/6	22	1.15789473684	1 3/19	22	3.14285714286	3 1/7
23	1.91666666667	1 11/12	23	1.21052631579	1 4/19	23	3.28571428571	3 2/7
24	2.00000000000	2	24	1.26315789474	1 5/19	24	3.42857142857	3 3/7
25	2.08333333333	2 1/12	25	1.31578947368	1 6/19	25	3.57142857143	3 4/7
26	2.16666666667	2 1/6	26	1.36842105263	1 7/19	26	3.71428571429	3 5/7
27	2.25000000000	2 1/4	27	1.42105263158	1 8/19	27	3.85714285714	3 6/7
28	2.33333333333	2 1/3	28	1.47368421053	1 9/19	28	4.00000000000	4
29	2.41666666667	2 5/12	29	1.52631578947	1 10/19	29	4.14285714286	4 1/7
30	2.50000000000	2 1/2	30	1.57894736842	1 11/19	30	4.28571428571	4 2/7
31	2.58333333333	2 7/12	31	1.63157894737	1 12/19	31	4.42857142857	4 3/7
32	2.66666666667	2 2/3	32	1.68421052632	1 13/19	32	4.57142857143	4 4/7
33	2.75000000000	2 3/4	33	1.73684210526	1 14/19	33	4.71428571429	4 5/7
34	2.83333333333	2 5/6	34	1.78947368421	1 15/19	34	4.85714285714	4 6/7
35	2.91666666667	2 11/12	35	1.84210526316	1 16/19	35	5.00000000000	5
36	3.00000000000	3	36	1.89473684211	1 17/19	36	5.14285714286	5 1/7
37	3.08333333333	3 1/12	37	1.94736842105	1 18/19	37	5.28571428571	5 2/7
38	3.16666666667	3 1/6	38	2.00000000000	2	38	5.42857142857	5 3/7
39	3.25000000000	3 1/4	39	2.05263157895	2 1/19	39	5.57142857143	5 4/7
40	3.33333333333	3 1/3	40	2.10526315789	2 2/19	40	5.71428571429	5 5/7
41	3.41666666667	3 5/12	41	2.15789473684	2 3/19	41	5.85714285714	5 6/7
42	3.50000000000	3 1/2	42	2.21052631579	2 4/19	42	6.00000000000	6
43	3.58333333333	3 7/12	43	2.26315789474	2 5/19	43	6.14285714286	6 1/7
44	3.66666666667	3 2/3	44	2.31578947368	2 6/19	44	6.28571428571	6 2/7
45	3.75000000000	3 3/4	45	2.36842105263	2 7/19	45	6.42857142857	6 3/7
46	3.83333333333	3 5/6	46	2.42105263158	2 8/19	46	6.57142857143	6 4/7
47	3.91666666667	3 11/12	47	2.47368421053	2 9/19	47	6.71428571429	6 5/7
48	4.00000000000	4	48	2.52631578947	2 10/19	48	6.85714285714	6 6/7
49	4.08333333333	4 1/12	49	2.57894736842	2 11/19	49	7.00000000000	7
50	4.16666666667	4 1/6	50	2.63157894737	2 12/19	50	7.14285714286	7 1/7

51	4.25000000000	4 1/4	51	2.68421052632	2 13/19	51	7.28571428571	7 2/7
52	4.33333333333	4 1/3	52	2.73684210526	2 14/19	52	7.42857142857	7 3/7
53	4.41666666667	4 5/12	53	2.78947368421	2 15/19	53	7.57142857143	7 4/7
54	4.50000000000	4 1/2	54	2.84210526316	2 16/19	54	7.71428571429	7 5/7
55	4.58333333333	4 7/12	55	2.89473684211	2 17/19	55	7.85714285714	7 6/7
56	4.66666666667	4 2/3	56	2.94736842105	2 18/19	56	8.00000000000	8
57	4.75000000000	4 3/4	57	3.00000000000	3	57	8.14285714286	8 1/7
58	4.83333333333	4 5/6	58	3.05263157895	3 1/19	58	8.28571428571	8 2/7
59	4.91666666667	4 11/12	59	3.10526315789	3 2/19	59	8.42857142857	8 3/7
60	5.00000000000	5	60	3.15789473684	3 3/19	60	8.57142857143	8 4/7
61	5.08333333333	5 1/12	61	3.21052631579	3 4/19	61	8.71428571429	8 5/7
62	5.16666666667	5 1/6	62	3.26315789474	3 5/19	62	8.85714285714	8 6/7
63	5.25000000000	5 1/4	63	3.31578947368	3 6/19	63	9.00000000000	9
64	5.33333333333	5 1/3	64	3.36842105263	3 7/19	64	9.14285714286	9 1/7
65	5.41666666667	5 5/12	65	3.42105263158	3 8/19	65	9.28571428571	9 2/7
66	5.50000000000	5 1/2	66	3.47368421053	3 9/19	66	9.42857142857	9 3/7
67	5.58333333333	5 7/12	67	3.52631578947	3 10/19	67	9.57142857143	9 4/7
68	5.66666666667	5 2/3	68	3.57894736842	3 11/19	68	9.71428571429	9 5/7
69	5.75000000000	5 3/4	69	3.63157894737	3 12/19	69	9.85714285714	9 6/7
70	5.83333333333	5 5/6	70	3.68421052632	3 13/19	70	10.00000000000	10
71	5.91666666667	5 11/12	71	3.73684210526	3 14/19	71	10.14285714286	10 1/7
72	6.00000000000	6	72	3.78947368421	3 15/19	72	10.28571428571	10 2/7
73	6.08333333333	6 1/12	73	3.84210526316	3 16/19	73	10.42857142857	10 3/7
74	6.16666666667	6 1/6	74	3.89473684211	3 17/19	74	10.57142857143	10 4/7
75	6.25000000000	6 1/4	75	3.94736842105	3 18/19	75	10.71428571429	10 5/7
76	6.33333333333	6 1/3	76	4.00000000000	4	76	10.85714285714	10 6/7
77	6.41666666667	6 5/12	77	4.05263157895	4 1/19	77	11.00000000000	11
78	6.50000000000	6 1/2	78	4.10526315789	4 2/19	78	11.14285714286	11 1/7
79	6.58333333333	6 7/12	79	4.15789473684	4 3/19	79	11.28571428571	11 2/7
80	6.66666666667	6 2/3	80	4.21052631579	4 4/19	80	11.42857142857	11 3/7
81	6.75000000000	6 3/4	81	4.26315789474	4 5/19	81	11.57142857143	11 4/7
82	6.83333333333	6 5/6	82	4.31578947368	4 6/19	82	11.71428571429	11 5/7
83	6.91666666667	6 11/12	83	4.36842105263	4 7/19	83	11.85714285714	11 6/7
84	7.00000000000	7	84	4.42105263158	4 8/19	84	12.00000000000	12
85	7.08333333333	7 1/12	85	4.47368421053	4 9/19	85	12.14285714286	12 1/7
86	7.16666666667	7 1/6	86	4.52631578947	4 10/19	86	12.28571428571	12 2/7
87	7.25000000000	7 1/4	87	4.57894736842	4 11/19	87	12.42857142857	12 3/7
88	7.33333333333	7 1/3	88	4.63157894737	4 12/19	88	12.57142857143	12 4/7
89	7.41666666667	7 5/12	89	4.68421052632	4 13/19	89	12.71428571429	12 5/7
90	7.50000000000	7 1/2	90	4.73684210526	4 14/19	90	12.85714285714	12 6/7
91	7.58333333333	7 7/12	91	4.78947368421	4 15/19	91	13.00000000000	13
92	7.66666666667	7 2/3	92	4.84210526316	4 16/19	92	13.14285714286	13 1/7
93	7.75000000000	7 3/4	93	4.89473684211	4 17/19	93	13.28571428571	13 2/7
94	7.83333333333	7 5/6	94	4.94736842105	4 18/19	94	13.42857142857	13 3/7
95	7.91666666667	7 11/12	95	5.00000000000	5	95	13.57142857143	13 4/7
96	8.00000000000	8	96	5.05263157895	5 1/19	96	13.71428571429	13 5/7
97	8.08333333333	8 1/12	97	5.10526315789	5 2/19	97	13.85714285714	13 6/7
98	8.16666666667	8 1/6	98	5.15789473684	5 3/19	98	14.00000000000	14
99	8.25000000000	8 1/4	99	5.21052631579	5 4/19	99	14.14285714286	14 1/7
100	8.33333333333	8 1/3	100	5.26315789474	5 5/19	100	14.28571428571	14 2/7
101	8.41666666667	8 5/12	101	5.31578947368	5 6/19	101	14.42857142857	14 3/7
102	8.50000000000	8 1/2	102	5.36842105263	5 7/19	102	14.57142857143	14 4/7
103	8.58333333333	8 7/12	103	5.42105263158	5 8/19	103	14.71428571429	14 5/7
104	8.66666666667	8 2/3	104	5.47368421053	5 9/19	104	14.85714285714	14 6/7
105	8.75000000000	8 3/4	105	5.52631578947	5 10/19	105	15.00000000000	15
106	8.83333333333	8 5/6	106	5.57894736842	5 11/19	106	15.14285714286	15 1/7
107	8.91666666667	8 11/12	107	5.63157894737	5 12/19	107	15.28571428571	15 2/7
108	9.00000000000	9	108	5.68421052632	5 13/19	108	15.42857142857	15 3/7
109	9.08333333333	9 1/12	109	5.73684210526	5 14/19	109	15.57142857143	15 4/7
110	9.16666666667	9 1/6	110	5.78947368421	5 15/19	110	15.71428571429	15 5/7
111	9.25000000000	9 1/4	111	5.84210526316	5 16/19	111	15.85714285714	15 6/7
112	9.33333333333	9 1/3	112	5.89473684211	5 17/19	112	16.00000000000	16
113	9.41666666667	9 5/12	113	5.94736842105	5 18/19	113	16.14285714286	16 1/7
114	9.50000000000	9 1/2	114	6.00000000000	6	114	16.28571428571	16 2/7

115	9.58333333333	9 7/12	115	6.05263157895	6 1/19	115	16.42857142857	16 3/7
116	9.66666666667	9 2/3	116	6.10526315789	6 2/19	116	16.57142857143	16 4/7
117	9.75000000000	9 3/4	117	6.15789473684	6 3/19	117	16.71428571429	16 5/7
118	9.83333333333	9 5/6	118	6.21052631579	6 4/19	118	16.85714285714	16 6/7
119	9.91666666667	9 11/12	119	6.26315789474	6 5/19	119	17.00000000000	17
120	10.00000000000	10	120	6.31578947368	6 6/19	120	17.14285714286	17 1/7
121	10.08333333333	10 1/12	121	6.36842105263	6 7/19	121	17.28571428571	17 2/7
122	10.16666666667	10 1/6	122	6.42105263158	6 8/19	122	17.42857142857	17 3/7
123	10.25000000000	10 1/4	123	6.47368421053	6 9/19	123	17.57142857143	17 4/7
124	10.33333333333	10 1/3	124	6.52631578947	6 10/19	124	17.71428571429	17 5/7
125	10.41666666667	10 5/12	125	6.57894736842	6 11/19	125	17.85714285714	17 6/7
126	10.50000000000	10 1/2	126	6.63157894737	6 12/19	126	18.00000000000	18
127	10.58333333333	10 7/12	127	6.68421052632	6 13/19	127	18.14285714286	18 1/7
128	10.66666666667	10 2/3	128	6.73684210526	6 14/19	128	18.28571428571	18 2/7
129	10.75000000000	10 3/4	129	6.78947368421	6 15/19	129	18.42857142857	18 3/7
130	10.83333333333	10 5/6	130	6.84210526316	6 16/19	130	18.57142857143	18 4/7
131	10.91666666667	10 11/12	131	6.89473684211	6 17/19	131	18.71428571429	18 5/7
132	11.00000000000	11	132	6.94736842105	6 18/19	132	18.85714285714	18 6/7
133	11.08333333333	11 1/12	133	7.00000000000	7	133	19.00000000000	19
134	11.16666666667	11 1/6	134	7.05263157895	7 1/19	134	19.14285714286	19 1/7
135	11.25000000000	11 1/4	135	7.10526315789	7 2/19	135	19.28571428571	19 2/7
136	11.33333333333	11 1/3	136	7.15789473684	7 3/19	136	19.42857142857	19 3/7
137	11.41666666667	11 5/12	137	7.21052631579	7 4/19	137	19.57142857143	19 4/7
138	11.50000000000	11 1/2	138	7.26315789474	7 5/19	138	19.71428571429	19 5/7
139	11.58333333333	11 7/12	139	7.31578947368	7 6/19	139	19.85714285714	19 6/7
140	11.66666666667	11 2/3	140	7.36842105263	7 7/19	140	20.00000000000	20
141	11.75000000000	11 3/4	141	7.42105263158	7 8/19	141	20.14285714286	20 1/7
142	11.83333333333	11 5/6	142	7.47368421053	7 9/19	142	20.28571428571	20 2/7
143	11.91666666667	11 11/12	143	7.52631578947	7 10/19	143	20.42857142857	20 3/7
144	12.00000000000	12	144	7.57894736842	7 11/19	144	20.57142857143	20 4/7
145	12.08333333333	12 1/12	145	7.63157894737	7 12/19	145	20.71428571429	20 5/7
146	12.16666666667	12 1/6	146	7.68421052632	7 13/19	146	20.85714285714	20 6/7
147	12.25000000000	12 1/4	147	7.73684210526	7 14/19	147	21.00000000000	21
148	12.33333333333	12 1/3	148	7.78947368421	7 15/19	148	21.14285714286	21 1/7
149	12.41666666667	12 5/12	149	7.84210526316	7 16/19	149	21.28571428571	21 2/7
150	12.50000000000	12 1/2	150	7.89473684211	7 17/19	150	21.42857142857	21 3/7
151	12.58333333333	12 7/12	151	7.94736842105	7 18/19	151	21.57142857143	21 4/7
152	12.66666666667	12 2/3	152	8.00000000000	8	152	21.71428571429	21 5/7
153	12.75000000000	12 3/4	153	8.05263157895	8 1/19	153	21.85714285714	21 6/7
154	12.83333333333	12 5/6	154	8.10526315789	8 2/19	154	22.00000000000	22
155	12.91666666667	12 11/12	155	8.15789473684	8 3/19	155	22.14285714286	22 1/7

Can we use nearest New Moon and the Vernal Equinox to set the Calendar?

No! This is why. Since there are 186 days from Vernal to Autumnal Equinox, the earliest Tishri 1 could occur is 14 days prior to the Autumnal Equinox. That would put the full Moon on the Day of the Equinox. That would equal 179 days to Nisan 14, and the distance between equinoxes is 186 days, which means 186-179 = 7 days. So Nisan 1 could not precede the Spring Equinox by anything earlier than 6 days if we count the Vernal Equinox as a day. All of the festivals were in the 186 day period, and Tishri 15th had to fall at the Turn of the year, or slightly after, so it would be impossible to use the rule of nearest New Moon to the Vernal Equinox. You could use the rule of 6 days before The Vernal or 23 days after The Vernal.

Adjustment Month.

This is why in The Sacred Calendar Adar or Vedar (Second Adar) was the month for calendar adjustments. It was the 12th or 13th month of The Sacred Calendar. All months alternate 30,29,30,29, except the last which could be in the case of Adar 29 or 30. Vedar is always a 30 day month.

Please see Graph on Calendar Months before proceeding.

Harvest Moon 9/29/2004.



Setting the Year and Month.

The Prime of Synodic Month of 765,433 is $131 \times 5,843$.

The Prime of Tropical Year of 9,467,078 is $2 \times 61 \times 73 \times 1,063$.

The Least Common Denominator is $2 \times 61 \times 73 \times 131 \times 1,063 \times 5,843$ which equals 724,641,394,774.

From this we can see that exactly 765,433 tropical years are thus equal to 9,467,078 Synodic Months to the Halakim.

$724,641,394,774 / 9,467,078 \text{ Year} = 765,433 \text{ Years.}$

$724,641,394,774 / 765,433 \text{ Month} = 9,467,078 \text{ Months.}$

This is how to set the Calendar. The Zero Year will be equal to the Year 765,433 of Adam! That was easy wasn't it?

Fourth Error

Setting the Day.

How do we know what day it really is? This may seem like a dumb question, but how do we know that today is really Tuesday and not Wednesday? It seems absurd to even consider, but could the count of Days be off? The answer is actually very simple now that we have a workable calendar. According to the gospel account Jesus celebrated the memorial of his death on a Thursday night, (On the Gregorian Calendar) which was the beginning of the 6th day of the week on the Jewish Calendar. The following day he was impaled, and he had to be entombed before nightfall because that would begin the 7th day on Friday evening.

See John 19:31 “Then the Jews, since it was Preparation, in order that the bodies might not remain upon the torture stakes on the Sabbath, (for the day of that Sabbath was a great one,) requested Pilate to have their legs broken and the [bodies] taken away. ³² The soldiers came, therefore, and broke the legs of the first [man] and those of the other [man] that had been impaled with him. ³³ But on coming to Jesus, as they saw that he was already dead, they did not break his legs. ³⁴ Yet one of the soldiers jabbed his side with a spear, and immediately blood and water came out. ³⁵ And he that has seen [it] has borne witness, and his witness is true, and that man knows he tells true things, in order that YOU also may believe. ³⁶ In fact, these things took place in order for the scripture to be fulfilled: “Not a bone of his will be crushed.” ³⁷ And, again, a different scripture says: “They will look to the One whom they pierced.”

³⁸ Now after these things Joseph from Ar-i-ma-the´a, who was a disciple of Jesus but a secret one out of [his] fear of the Jews, requested Pilate that he might take away the body of Jesus; and Pilate gave him permission. Therefore he came and took his body away. ³⁹ Nic-o-de´mus also, the man that came to him in the night the first time, came bringing a roll of myrrh and aloes, about a hundred pounds [of it]. ⁴⁰ So they took the body of Jesus and bound it up with bandages with the spices, just the way the Jews have the custom of preparing for burial. ⁴¹ Incidentally, at the place where he was impaled there was a garden, and in the garden a new memorial tomb, in which no one had ever yet been laid. ⁴² There, then, on account of the preparation of the Jews, they laid Jesus, because the memorial tomb was nearby.”

So we know that as John 17:17 states “Sanctify them by means of the truth; your word is truth.” So we can rest assured that it is. Now Tishri 1 fell on 9/10/33 which was a Sunday on the Gregorian Calendar. If we Go back 177 days we come to Nisan 1 which was on 3/17/33 which was a Thursday. That would mean that 13 days from then would bring us to 3/30/33 which was a Wednesday Night. “This is impossible!” “The Calendar is wrong because we know it was a Thursday night!” Hold your Judgments please, we know Jehovah is always right, so there is actually only one possibility. Why do I say one, because as we have seen the scriptures are always true, and Nisan 1 had to fall on a Dark Moon or New Moon.

33-03-17 CE 17:00 (GMT; local = GMT+02:00)

CE=33-03-17 CJD=1,733,189.7083 AJD=1,733,189.2083

Crescent moon (waxing), illum. = 1.9%, lunat. and age = [-24326] 0 days, 6 hrs, 27 mins (0.9%).

If the Gregorian was right than it would have to be the following age:

33-03-20 JC 17:00 (GMT; local = GMT+02:00)

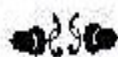
CE=33-03-18 CJD=1,733,190.7083 AJD=1,733,190.2083

Crescent moon (waxing), illum. = 9.1%, lunat. and age = [-24326] 1 day, 6 hrs, 27 mins (4.3%).

This figure is not a Dark Moon or New Moon is it? So how did this error happen? We owe it to the Catholic Church, and The Papal Bul of Pope Gregory VIII in 1582. Inter Gravissimas. Now if you think you know all there is about this Papal Bul you are much mistaken! The omission of 10 days was not the only thing that happened. Please read for yourself first. This is so important that I am enclosing a picture of the Papal Bul along with the Latin and English Translation. See following:

CALENDARIVM GREGORIANVM PERPETVVM.

Orbi Christiano vniuerso à GREGORIO XIII. P. M. pro-
positum. Anno M. D. LXXXII.



GREGORIUS EPISCOPVS
SERVVS SERVORVM DEI
AD PERPETVAM REI MEMORIAM.

INTER grauissimas Pastoralis officij nostri curas, ea postrema non est, ut quæ à sa-
cro Tridentino Concilio Sede Apostolica reservata sunt, illæ ad finem optatum, Deo
adiutore perducantur. Sane eiusdem Concilij Patres, cum ad reliquam cogitatio-
nem Brevariij quoque curam adiungerent, tempore tamen exclusi rem locam ex
ipsis Concilij decreto ad auctoritatem & iudicium Romani Pontificis reuulerunt.
Duo autem Brevarijs precipue continentur; quorum vnum preces, laudesque diui-
nas festis, profectisque diebus persolvendas complectitur, ceterum pertinet ad annuos
Festiva, festorumque exco pendendum recursus, Solis, & Lune motum metiendos: Atque illud quidem
felicitis recordationis Pius 6. prædecessor noster absoluendum curavit, atque edidit. Hoc vero, quod ni-
mirum exigit legitimam Calendarij restitutionem, iamdiu à Romanis Pontificibus prædecessoribus no-
stris, & sapienter tractatum est, verum absolui, & ad exitum perducere ad hoc usque tempus non potui, quod
rationes emendandi Calendarij, quæ a calidissimum motuum peritis proponebantur, propter magnas, &
fere inextricabiles difficultates, quas huiusmodi emendatio semper habuit, neque perennes erant, neque
antiquos Theologicos ritus incolumes (quod in primis hac in re curandum erat) servabant. Dum
itaque nos quoque credit nobis, licet indignis, à Deo dispensatione freti, in hac cogitatione, curaque
verseremur, allatus est nobis liber à dilecto filio Antonio Lilio arrium, & medicinae doctore, quem quon-
dam Aloysius eius germanus frater conscripserat, in quo per novum quendam Epactarum Cyclum ab eo
excogitatum, & ad certam ipsius aerei numeri normam directum, atque ad quamcunque anni solaris
magnitudinem accomodatam, omnia, quæ in Calendario collapsa sunt, constanti ratione, & seculis o-
mnibus duratura, sic restitui posse ostendit, ut Calendarium ipsum nulli unquam mutationi in poste-
rum expositum esse videretur. Novam hanc restituendi Calendarij rationem exigua volumine com-
prehensam ad Christianos Principes, celebrioresque Universitates paucos ante annos misimus, ut res,
quæ omnium communis est, communem ceterum omnium consilio persiceretur: illi cum, quæ maxime opta-
bamus, concordare respondissent, eorum nos omnium consensione adducti, viros ad Calendarij emenda-
tionem adhibuimus in alma Vrbe harum rerum peritissimos, quos longe ante ex primarijs Christiani
orbis nationibus delegeramus: In eorum multum tempore, & diligentia ad eam lucubrationem adhi-
buisse, & Cyclorum veterum, quorum recentiorum undique conquisitos, ac diligentissime perpen-
sus inter se contulissent, suo, & doctorum hominum, qui de ea rescripserunt, iudicio hunc præ ceteris elege-
runt Epactarum Cyclum, cui nonnulli etiam adiecerunt, quæ ex accurata circumspeditione visa sunt ad
Calendarij perfectionem maxime pertinere.

Latin version:

Inter Gravissimas

Kalendarii nuper restituti, pro festivitibus S. R. E., suo tempore celebrandis divinisque ibidem officiis recitandis approbatio, et veteris kalendarii abolitio.

Gregorius episcopus servus servorum Dei, ad perpetuam rei memoriam.

Inter gravissimas pastoralis officii nostri curas, ea postrema non est, ut quae a sacro Tridentino concilio Sedi Apostolicae reservata sunt, illa ad finem optatum, Deo adiutore, perducantur.

1. Sane eiusdem concilii patres, cum ad reliquas cogitationes breviarii quoque curam adiungerent, tempore tamen exclusi, rem totam ex ipsius concilii decreto ad auctoritatem et iudicium Romani Pontificis retulerunt.
2. Duo autem breviario praecipue continentur, quorum unum preces laudesque divinas festis profestisque diebus persolvendas complectitur, alterum pertinet ad annuos Paschae festorumque ex eo pendentium recursus, solis et lunae motu metiendos.
3. Atque illud quidem felicitis recordationis Pius V, praedecessor noster, absolvendum curavit atque edidit.
4. Hoc vero, quod nimirum exigit legitimam kalendarii restitutionem, iamdiu a Romanis Pontificibus praedecessoribus nostris et saepius tentatum est; verum absolvi et ad exitum perducere ad hoc usque tempus non potuit, quod rationes emendandi kalendarii, quae a coelestium motuum peritis proponebantur, propter magnas et fere inextricabiles difficultates, quas huiusmodi emendatio semper habuit, neque perennes erant, neque antiquos ecclesiasticos ritus incolumes (quod in primis hac in re curandum erat) servabant.
5. Dum itaque nos quoque, credita nobis licet indignis, a Deo dispensatione freti, in hac cogitatione curaque versaremur, allatus est nobis liber a dilecto filio Antonio Lilio, artium et medicinae doctore, quem quondam Aloysius eius germanus frater conscripserat, in quo per novum quemdam epactarum cyclum ab eo excogitatum, et ad certam ipsius aurei numeri normam directum, atque ad quamcumque anni solaris magnitudinem accommodatum, omnia quae in kalendario collapsa sunt, constanti ratione et saeculis omnibus duratura, sic restitui posse ostendit ut kalendarium ipsum nulli umquam mutationi in posterum expositum esse videatur. Novam hanc restituendi kalendarii rationem, exiguo volumine comprehensam, ad christianos principes celebrioresque universitates paucos ante annos misimus, ut res quae omnium communis est, communi etiam omnium consilio perficeretur; illi cum, quod maxime optabamus, concordem respondissent, eorum nos omnium consensione adducti, viros ad kalendarii emendationem adhibuimus in alma Urbe harum rerum peritissimos, quos longe ante ex primariis christiani orbis nationibus delegeramus. Ii cum multum temporis et diligentiae ad eam lucubrationem adhibuissent, et cyclos tam veterum quam recentiorum undique conquisitos ac diligentissime perpensos inter se contulissent, suo et doctorum hominum, qui de ea re scripserunt, iudicio, hunc, prae ceteris, elegerunt epactarum cyclum, cui nonnulla etiam adiecerunt, quae ex accurata circumspectione visa sunt ad kalendarii perfectionem maxime pertinere.
6. Considerantes igitur nos, ad rectam paschalis festi celebrationem iuxta sanctorum Patrum ac veterum Romanorum Pontificum, praesertim Pii et Victoris primorum, necnon magni illius oecumenici concilii Nicaeni et aliorum sanctiones, tria necessaria coniungenda et statuenda esse; primum, certam verni aequinoctii sedem; deinde rectam positionem XIV lunae primi mensis, quae vel in ipsum aequinoctii diem incidit, vel ei proxime succedit; postremo primum quemque diem dominicum, qui eandem XIV lunam sequitur; curavimus non solum

aequinoctium vernum in pristinam sedem, a qua iam a concilio Nicaeno decem circiter diebus recessit, restituendum, et XIV paschalem suo in loco, a quo quatuor et eo amplius dies hoc tempore distat, reponendam, sed viam quoque tradendam et rationem, qua cavetur, ut in posterum aequinoctium et XIV luna a propriis sedibus nunquam dimoveantur.

7. Quo igitur vernum aequinoctium, quod a patribus concilii Nicaeni ad XII kalendas aprilis fuit constitutum, ad eandem sedem restituatur, praecipimus et mandamus ut de mense octobris anni MDLXXXII decem dies inclusive a tertia nonarum usque ad pridie idus eximantur, et dies, qui festum S. Francisci IV nonas celebrari solitum sequitur, dicatur idus octobris, atque in eo celebretur festum Ss. Dionysii, Rustici et Eleutherii martyrum, cum commemoratione S. Marci Papae et confessoris, et Ss. Sergii, Bacchi, Marcelli et Apulei martyrum; septimodecimo vero kalendas novembris, qui dies proxime sequitur, celebretur festum S. Callisti Papae et martyris; deinde XVI kalendas novembris fiat officium et missa de dominica XVIII post Pentecostem, mutata littera dominicali G in C; quintodecimo denique kalendas novembris dies festus agatur S. Lucae evangelistae, a quo reliqui deinceps agantur festi dies, prout sunt in calendario descripti.

8. Ne vero ex hac nostra decem dierum subtractione, alicui, quod ad annuas vel menstruas praestationes pertinet, praeiudicium fiat, partes iudicum erunt in controversis, quae super hoc exortae fuerint, dictae subtractionis rationem habere, addendo alios X dies in fine cuiuslibet praestationis.

9. Deinde, ne in posterum a XII kalendas aprilis aequinoctium recedat, statuimus bissextum quarto quoque anno (uti mos est) continuari debere, praeterquam in centesimis annis; qui, quamvis bissextiles antea semper fuerint, qualem etiam esse volumus annum MDC, post eum tamen qui deinceps consequentur centesimi non omnes bissextiles sint, sed in quadringentis quibusque annis primi quique tres centesimi sine bissexto transigantur, quartus vero quisque centesimus bissextilis sit, ita ut annus MDCC, MDCCC, MDCCCC bissextiles non sint. Anno vero MM, more consueto dies bissextus intercaletur, februario dies XXIX continente, idemque ordo intermittendi intercalandique bissextum diem in quadringentis quibusque annis perpetuo conservetur.

10. Quo item XIV paschalis recte inveniatur, itemque dies lunae, iuxta antiquum Ecclesiae morem ex Martyrologio singulis diebus ediscendi, fideli populo vere proponantur, statuimus ut, amoto aureo numero de calendario, in eius locum substituatur cyclus epactarum; qui ad certam (uti diximus) aurei numeri normam directus, efficit ut novilunium et XIV paschalis vera loca semper retineant. Idque manifeste apparet ex nostri explicatione calendarii, in quo descriptae sunt etiam tabulae paschales secundum priscum Ecclesiae ritum, quo certius et facilius sacrosanctum Pascha inveniri possit.

11. Postremo, quoniam partim ob decem dies de mense octobris anni MDLXXXII (qui correctionis annus recte dici debet) exemptos, partim ob ternos etiam dies quolibet quadringentorum annorum spatio minime intercalandos, interrumpatur necesse est cyclus litterarum dominicalium XXVIII annorum ad hanc usque diem usitatus in Ecclesia Romana, volumus in eius locum substitui eundem cyclum XXVIII annorum, ab eodem Lilio, tum ad dictam intercalandi bissexti in centesimis annis rationem, tum ad quamcumque anni solaris magnitudinem, accommodatum; ex quo littera dominicalis beneficio cycli solaris, aequae facile ac prius, ut in proprio canone explicatur, reperiri possit in perpetuum.

12. Nos igitur, ut quod proprium Pontificis Maximi esse solet exequamur, kalendarium immensa Dei erga Ecclesiam suam benignitate iam correctum atque absolutum hoc nostro decreto probamus, et Romae una cum martyrologio imprimi, impressumque divulgari iussimus.

13. Ut vero utrumque ubique terrarum incorruptum ac mendis et erroribus purgatum servetur, omnibus in nostro et S. R. E. dominio mediate vel immediate subiecto commorantibus impressoribus, sub amissionis librorum ac centum ducatorum auri Camerae Apostolicae ipso facto applicandorum; aliis vero, in quacumque orbis parte consistentibus, sub excommunicationis latae sententiae ac aliis arbitrii nostri poenis, ne sine nostra licentia

kalendarium aut martyrologium, simul vel separatim, imprimere vel proponere, aut recipere ullo modo audeant vel praesumant, prohibemus.

(Haec prohibitio fuit postea revocata.)

14. Tollimus autem et abolemus omnino vetus kalendarium, volumusque ut omnes patriarchae, primates, archiepiscopi, episcopi, abbates et ceteri ecclesiarum praesides novum kalendarium (ad quod etiam accomodata est ratio martyrologii), pro divinis officiis recitandis et festis celebrandis, in suas quisque ecclesias, monasteria, conventus, ordines, militias et dioeceses introducant, et eo solo utantur, tam ipsi quam ceteri omnes presbyteri et clerici saeculares et regulares utriusque sexus, necnon milites et omnes christifideles, cuius usus incipiet post decem illos dies ex mense octobri anni MDLXXXII exemptos. Iis vero, qui adeo longinquas incolunt regiones, ut ante praescriptum a nobis tempus harum litterarum notitiam habere non possint, liceat, eodem tamen octobri mense insequentis anni MDLXXXIII vel alterius, cum primum scilicet ad eos hae nostrae litterae pervenerint, modo a nobis paulo ante tradito, eiusmodi mutationem facere, ut copiosius in nostro kalendario anni correctionis explicabitur.

15. Pro data autem nobis a Domino auctoritate hortamur et rogamus carissimum in Christo filium nostrum Rodolphum Romanorum regem illustrem, in imperatorem electum, ceterosque reges, principes ac respublicas, iisdemque mandamus ut quo studio illi a nobis contenderunt, ut hoc tam praeclarum opus perficeremus, eodem, immo etiam maiore, ad conservandam in celebrandis festivitibus inter christianas nationes concordiam, nostrum hoc kalendarium et ipsi suscipiant, et a cunctis sibi subiectis populis religiose suscipiendum inviolateque observandum curent.

16. Verum, quia difficile foret praesentes litteras ad universa christiani orbis loca deferri, illas ad basilicae Principis Apostolorum et Cancellariae Apostolicae valvas, et in acie Campi Florae publicari et affigi; et earundem litterarum exemplis, etiam impressis, et voluminibus kalendarii et martyrologii insertis et praepositis, sive manu tabellionis publici subscriptis, necnon sigillo personae in dignitate ecclesiastica constitutae obsignatis, eandem prorsus indubitam fidem ubique gentium et locorum haberi praecipimus, quae originalibus litteris exhibitis omnino haberetur.

17. Nulli ergo omnino hominum liceat hanc paginam nostrorum praeceptorum, mandatorum, statutorum, voluntatis, probationis, prohibitionis, sublationis, abolitionis, hortationis et rogationis infringere, vel ei auso temerario contraire. Si quis autem hoc attentare praesumpserit, indignationem omnipotentis Dei ac beatorum Petri et Pauli apostolorum eius se noverit incursurum.

Datum Tusculi, anno Incarnationis dominicae millesimo quingentesimo octuagesimo secundo, sexto kalendas martii, pontificatus nostri anno X.

Sequitur declaratio super observatione kalendarii nuper editi, pro illis, qui de mense octobris MDLXXXII illud servare non coeperunt.

Gregorius Papa XIII, ad perpetuam rei memoriam.

Cupientes, pro pastoralis officii nobis divinitus iniuncti sollicitudine, kalendarium, nuper cura et iussu nostro correctum atque editum, ubique locorum ab omnibus qui illud, propter diversa impedimenta, statuto die mensis octobris proxime praeteriti observare non coeperunt, quamprimum in usum recipi, et, prout maxime expediens est, diligenter et exacte servari. Idcirco, ne subsequens mensis octobris, quod quidem nimis longum esset, expectetur, volentes, vigilantiae nostrae providentia, opportuna remedia hisce difficultatibus celeriter adhibere.

1. Motu proprio et ex certa scientia maturaque deliberatione nostra ac de apostolicae potestatis plenitudine, hac nostra perpetuo valitura sanctione statuimus, praecipimus et mandamus ut quicumque, in quibusvis regnis, provinciis, civitatibus et locis constituti, kalendarium emendatum praedictum hactenus nondum observare coeperunt; illud modo et formula infrascripta, semotis cunctis excusationibus et impedimentis, omnino servant, videlicet: cum perventum fuerit ad diem decimam februarii anni millesimi quingentesimi octuagesimi tertii, in quam cadit dominica quinquagesimae secundum antiquum kalendarium, transitus statim fiat ad diem XXI eiusdem mensis februarii, omissis decem diebus inter diem decimam et diem XXI februarii huiusmodi interpositis, quae erit feria secunda post dominicam quinquagesimae (mutata littera dominicali F in B), in qua dicatur officium et missa de S. Valentino presbytero et martyre, cum commemoratione Ss. Faustini et Iovitae martyrum et Sancti Simeonis episcopi et martyris; et feria tertia, de Cathedra; proxima autem feria quarta erit dies Cinerum; atque hoc pacto nulla amplius erit discrepantia in festorum tam mobilium quam fixorum celebratione.

2. Verum, quia difficile foret praesentes litteras ad universa christiani orbis loca deferri, volumus quod illarum transumptis, etiam impressis, manu notarii publici subscriptis, et sigillo personae in dignitate ecclesiastica constitutae obsignatis, eadem prorsus indubitata fides ubivis gentium et locorum habeatur, quae originalibus litteris adhiberetur, si forent exhibitae vel ostensae.

Datum Romae apud Sanctum Petrum, sub annulo Piscatoris, die septima novembris MDLXXXII, pontificatus nostri anno XI.

Transcribed by Rodolphe Audette

English:

Inter Gravissimas

*Gregory, bishop, servant of the servants of God,
in perpetual memory.*

Among our serious pastoral duties, not the last is that we care to complete those sacred rites reserved by the Council of Trent [1545-1563], with the guiding assistance of God.

1. As the fathers of the council also applied their attention and ultimate reflections to the breviary , but were stopped by the lack of time, they wisely decided to refer this entire question to the authority and the judgment of the Roman pontiff.
2. However there are two principal parts in the breviary. The first comprises the prayers and the religious anthems to recite on the public holidays and the working days. The second concerns the annual cycle of Easter and other festivals whose return depends on measuring the movement of the sun and the moon.
3. The reform of the first part, Pius V [1566-1572], our predecessor of happy memory, discharged and put it into force [with the Bull "Quod a nobis", July 9, 1568] .
4. The reform of the second part, which first requires the restoration of the calendar, was tried often, over a long time, by our predecessor Roman pontiffs. However, it could not be carried out, thus far, because the various calendar reform projects proposed by astronomers, in addition to presenting the immense and almost inextricable difficulties which always accompanied such a reform, were not durable, and especially they did not maintain intact the ancient rites of the Church, and that was our first concern in this business.

5. While, therefore, this has been entrusted to us, an undeserved dispensation from God has been allowed. Our dear son Antonio Lilio, professor of science and medicine, brought to us a book, written at one time by his brother Aloysius [Luigi], in which this one showed that, by means of a new cycle of epacts which he had devised, and who directed his own particular Golden Number pattern and accommodated the entirety of any solar year, every [defect of] the calendar collapsed, and the constant calculations would endure for every generation. He was, thus, able to restore and explain how the calendar itself will never need published any further change. This new project of the restoration of the calendar, summarized in a small book, we forwarded a few years ago to the Christian princes and to the large universities so that this work, which is the business of all, is carried out with the consultation of all. Those having expressed their agreement to us, as we had sincerely hoped, we have, with this consensus, arranged a gathering in the Holy City, to reform the calendar, of the very qualified men on the matter whom we had chosen from the principal countries of the Christian world a long time before. Those, after having devoted much time and attention to this night work and having discussed between them cycles which they had collected from everywhere, old ones as well as modern ones, and as they had carefully studied the reflections and the opinions of erudite men who wrote on this subject, chose and preferred this cycle of epacts, adding to it elements which, after thorough examination, appeared essential to the realization of a perfect calendar.

6. One notes in examining this that it is necessary to **rule at the same time on three points to restore the celebration of Easter according to rules fixed by the previous Roman pontiffs, particularly Pius I [ca. 140 - 154] and Victor I [ca. 189 - 198, who established Easter's celebration on Sunday, rather than 14 Nisan favored by the "Quartodeciman" bishops of Asia], and by the fathers of the councils, in particular those of the [first] great ecumenical council of Nicæa [May 20 - August 25, AD 325, deciding the following rules]**. Namely: First, the precise date of the vernal equinox, then the exact date of the fourteenth day of the moon which reaches this age the very same day as the equinox or immediately afterwards, finally the first Sunday which follows this same fourteenth day of the moon. **Therefore we took care not only that the vernal equinox returns on its former date, of which it has already deviated approximately ten days since the Nicene Council, and so that the fourteenth day of the Paschal moon is given its rightful place, from which it is now distant four days and more, but also that there is founded a methodical and rational system which ensures, in the future, that the equinox and the fourteenth day of the moon do not move from their appropriate positions.**

7. So thus that the vernal equinox, which was fixed by the fathers of the [first] Nicene Council at XII calends April [March 21], is replaced on this date, we prescribe and order that there is removed, from October of the year the 1582, the ten days which go from the third before Nones [the 5th] through the day before the Ides [the 14th] inclusively. The day which will follow IV Nones [the 4th], when one traditionally celebrates Saint Francis [of Assisi], shall be the Ides of October [the 15th], and there shall be celebrated this day the festival of the martyred Saints Denis [Bishop of Paris, previously confused with Dionysius the Areopagite], Rusticus [a priest of Denis'], and Eleutherius [a deacon of Denis, feast day October 9 for all three], as well as the memory of Saint Mark, [feast day October 7] pope and confessor, and of the martyred Saints Sergius, Bacchus, Marcellus and Apuleius [feast day October 7]. There shall be celebrated the following day, seventeenth calends November [October 16th], the festival of Saint Callistus[I], pope and martyr [feast day October 14]; and then shall come XVI calends November [October 17th], the office and the mass of the 18th Sunday after Pentecost; **the Sunday letter shall pass from G to C**. Finally shall come the place of the fifteenth calends November [October 18th], the festival of Saint Luke the evangelist [feast day October 18], after which will follow one another the other feastdays, in the way they are described in the calendar.

8. But so that this ten days removal does not cause any injury with whomever must carry out monthly or annual payments, it will fall to the judges, in any litigation which could result from it, to take account of the aforementioned removal by deferring ten days the expiration of any payment.

9. Then, lest the equinox recede from XII calends April [March 21st] in the future, we establish that a bissextile [intercalation day] shall be inserted every four years (as with the present

custom), except in centennial years. Those, although they were always bissextile until now, will not be from now on, although we decree that year 1600 is still bissextile; after that, however, those centennial years that follow are not all bissextile, but the first year is, and then three centennial years have no bissextile [intercalation] performed, and, then, the fourth centennial year is indeed bissextile. Thus, the years 1700, 1800 and 1900 will not be bissextile, and then, as with the habit with which we are now accustomed, the year 2000 will have a bissextile intercalation day, as the day February 29, and that the same order of intermittent bissextile intercalations in each four hundred year period will be preserved in perpetuity.

10. Moreover, so that the fourteenth day of the Paschal moon is given with precision and that the age of the moon is presented with precision to the faithful in accordance with the antique use of the Church, to take note of it each day with the reading of martyrology, we order that once the **Golden Number** is withdrawn from the calendar, one substitutes the cycle of the epacts for it which, thanks to its very precise rules mentioned above for the Golden Number, makes so that the new moon and the fourteenth day of the Paschal moon always hold their place. **And this is seen clearly in the explanation of our calendar, where are also presented Paschal tables in conformity with the ancient habits of the Church and which make it possible to find more surely and more easily the sacred date of the Easter.**

11. Lastly, partly because of the ten days cut off from October from year 1582 (that one must now call the year of the reform) and partly because of the three days which will not have to be inserted any more during each four hundred year period, it will be necessary to stop the 28 year cycle of the Sunday letters used so far in the Roman Church. We want to substitute for it the same 28 year cycle, as adapted by this same Lilio to the rule of bissextile intercalation for the last years of the century as well as to the whole solar year, so that the Sunday letter can always be given as easily as before using the solar cycle, as that is explained in the canon which is referred to it.

12. We, therefore, with what is traditionally the attribute of sovereign pontiff, we approve this calendar, now reformed and made perfect thanks to the infinite benevolence of God towards his Church, and we order that it is printed in Rome with the martyrology.

13. But so that these orders are maintained intact and clear everywhere of faults and errors, we prohibit all the printers established on the territory subject, with or without intermediary, to our jurisdiction and that of holy Roman Church, to have the audacity or the presumption to print or publish, without our authorization, the calendar or martyrology, together or separately, or to draw benefit in any manner from it, under penalty of the loss of contracts and of a fine of one hundred gold ducats to pay to the Apostolic See. As for others, where that they remain similarly subject, we give them the same prohibition, under penalty of excommunication *latæ sententiæ* and under other sorrows within our discretion.

14. We thus remove and absolutely abolish the old calendar and we want that all the patriarchs, primacies, archbishops, bishops, abbots and other leaders of Churches put into force for the reading of the divine office and the celebration of the festivals, each one in his Church, monastery, convent, command, army or diocese, the new calendar, to which was adapted the martyrology, and make use only of this one, as well as all the other priests and clerks, secular and regular, of the both genders, as well as soldiers and all Christians, this calendar whose use will start after the ten days removal of October 1582. As for those however which live in areas too distant to take knowledge of this letter in time, they are allowed to make such a change in October of the year which will follow immediately, namely 1583, or the next one, as soon, of course, as this letter will have come to them, in the manner that we indicated above and as that will be more abundantly explained in the calendar of the year of the reform.

15. In addition, under the terms of the authority with which we were invested by God, we exhort and request our very dear sons in Christ, our illustrious Rudolph II, King of the Romans become emperor, as well as the other kings and princes, just as the republics. We recommend to them, both since they sought us to achieve this very admirable work, but also, and even especially, in order to maintain harmony between the Christian nations in the celebration of the

festivals, to adopt for themselves our calendar and to take care that all their subjects adopt it respectfully and conform to it scrupulously.

16. As it would be difficult however to forward this letter to all the countries of the Christian world, we order that it is made public and displayed on the gates of the basilica of the Apostolic Prince and on those of the Apostolic Chancellery, as well as at the entry of Campo dei Fiori. Also, among all people and in all the countries, one shall grant the same absolute credit to copies of this letter, even printed, accompanied by specimens by the calendar and martyrology mentioned previously, at the same time with the signed hand and notary seal of a public and authenticated dignitary of the Church, that that which would be granted by all to the displayed original letter.

17. No one among men, therefore, is permitted to infringe on this page, our [§7] prescription, mandate, [§§9,10,11] establishment, wish, [§12] approval, [§13] prohibition, [§14] suppression, abolition, [§15] exhortation and request, nor dare reckless opposition. But if you tamper with this, Almighty God will take you up with indignation, and you will have the fortune to encounter his apostles Peter and Paul.

Given at Tusculum [now part of Frascati], in the year of the Incarnation of the Lord 1581[in the Easter year style of Florence; i.e. 1582], sixth calends March [February 24th], of our pontificate, year 10. Cae. Glorierius A. de Alexijs [chancellors to the Pope]

A note on the English Translation: The translation was made with the help of many human and Internet sources, from both the French and from the original Latin. Helpful feedback was obtained from Rodolphe Audette and Robert H. van Gent. Special Internet help was obtained from Altavista's babelfish, a Latin Translator (beta) by Adam McLean, Latin Words by William Whitaker, and New Advent's The Catholic Encyclopedia.

Bill Spencer, November 24-28, AD 1999, according to the Gregorian Calendar.

Now did you notice something that is outlined in **BOLD**? Paragraph 6. **Therefore we took care not only that the vernal equinox returns on its former date, of which it has already deviated approximately ten days since the Nicene Council, and so that the fourteenth day of the Paschal moon is given its rightful place, from which it is now distant four days and more, but also that there is founded a methodical and rational system which ensures, in the future, that the equinox and the fourteenth day of the moon do not move from their appropriate positions.**

They changed 3 things:

1. Set Vernal Equinox to former date since it deviated 10 days from Nicene Council 325 B.C.E. (12 days from calendars inception) so they moved it back 10 days. Sounds reasonable. But wasn't it suppose to be 12 days off? So they only fixed it up to Nicene Council of 325 B.C.E?
2. That the Paschal moon is given its rightful place? But they only fixed it up to Nicene Council of 325 B.C.E. Which was a 4 day adjustment instead of a 5 days to calendars inception. Why only to 325 B.C.E. though? If you really want to fix it. I smell a rat!
3. Paschal moon is given its rightful place, from which it is now distant four days and more, but also that there is founded a methodical and rational system which ensures, in the future, that the equinox and the fourteenth day of the moon do not move from their appropriate positions.

It surely is understandable that they would want to make up for the short comings of the Julian Calendar, and compensate for its structural failings that caused a gain of 12 days. But why only to the Nicene Council? If the calendar was off it would have been off for the entire period, not just to 325 B.C.E., are you following me? Lets examine the minutes of the meeting to see what adjustments were done at that council of 325 B.C.E. as far as the Julian Calendar is concerned. Oops! There lost. But it's ok because we know the numbers match up. But do they really?

The Inter Gravissimas of 1582 is not where the switch was made. But it does give us the clues as to what they did. Please look at number 2.

Number 2 is another story. The first part of Paragraph 6. "One notes in examining this that it is necessary to **rule at the same time on three points to restore the celebration of Easter according to rules fixed by the previous Roman pontiffs, particularly Pius I [ca. 140 - 154] and Victor I [ca. 189 - 198, who established Easter's celebration on Sunday, rather than 14 Nisan favored by the "Quartodeciman" bishops of Asia], and by the fathers of the councils, in particular those of the [first] great ecumenical council of Nicæa [May 20 - August 25, AD 325, deciding the following rules].**" Why they are shifting the day of the week – Saturday moved to Sunday. Yes that's right. Notice the following.

See 7. "**So thus that the vernal equinox, which was fixed by the fathers of the [first] Nicene Council at XII calends April [March 21]**, is replaced on this date, we prescribe and order that there is removed, from October of the year the 1582, the ten days which go from the third before Nones [the 5th] through the day before the Ides [the 14th] inclusively. The day which will follow IV Nones [the 4th], when one traditionally celebrates Saint Francis [of Assisi] , shall be the Ides of October [the 15th], and there shall be celebrated this day the festival of the martyred Saints Denis [Bishop of Paris, previously confused with Dionysius the Areopagite], Rusticus [a priest of Denis'], and Eleutherius [a deacon of Denis, feast day October 9 for all three], as well as the memory of Saint Mark, [feast day October 7] pope and confessor, and of the martyred Saints Sergius, Bacchus, Marcellus and Apuleius [feast day October 7]. There shall be celebrated the following day, seventeenth calends November [October 16th], the festival of Saint Callistus[I], pope and martyr [feast day October 14] ; and then shall come XVI calends November [October 17th], the office and the mass of the 18th Sunday after Pentecost; **the Sunday letter shall pass from G to C.** Finally shall come the place of the fifteenth calends November [October 18th], the festival of Saint Luke the evangelist [feast day October 18] , after which will follow one another the other feastsdays, in the way they are described in the calendar."

You will need to study diagrams that are inserted to see what happened clearly. But at the Nicene Council they fixed the Vernal to March 21st. Which is an unrecorded calendar adjustment. The Julian would of gained 2.88 days from 45 B.C.E. to 325 C.E. which equals 370 years. But when you work back March 21st falls correctly, but in 45 B.C.E. it also fell on March 21st which if it was set to that date it would be the 18th of March in 325 C.E.. To show this I set the start to March 23rd which it was not, to show how the numbers flow.

What is this Sunday letter shall pass from G to C? Notice one other thing in paragraph 10. "Moreover, so that the fourteenth day of the Paschal moon is given with precision and that the age of the moon is presented with precision to the faithful in accordance with the antique use of the Church, to take note of it each day with the reading of martyrology , we order that once the **Golden Number** is withdrawn from the calendar, one substitutes the cycle of the epacts for it which, thanks to its very precise rules mentioned above for the Golden Number, makes so that the new moon and the fourteenth day of the Paschal moon always hold their place. **And this is seen clearly in the explanation of our calendar, where are also presented Paschal tables in conformity with the ancient habits of the Church and which make it possible to find more surely and more easily the sacred date of the Easter.**"

What is this Golden Number? I hope you are really concentrating now. Here is an explanation:

Golden Numbers and

Golden Number = $\left(\frac{\text{Year AD}}{19}\right)$ remainder + 1

Dominical Letters

Given the Equinox of March 21, what is then required is something to determine when the Full Moon occurs and which days are Sundays. These values can be determined using the **Golden Number** and the **Dominical Letter**.

The Golden Number simply places the year in the 19 year lunar cycle discovered by the Babylonians and still used by the Jewish Calendar. The cycle, which adds 7 months every 19 years, is accurate to a day in 220 years. The Golden Number for a given year in the Annô Domini Era can be simply determined by, first, dividing the year by 19. The **remainder** of that division **plus one** is then the Golden Number. Thus, 1998 divided by 19 is 105 with a remainder of 3. The

A	G	F	E	D	C	B
Sun	Mon	Tue	Wed	Thu	Fri	Sat

Golden Number of 1998 is therefore 4 (often stated as a Roman Numeral--IV). When it is noticed that this makes the Golden Number of the year 1 AD come out as 2 (II), one might think it rather odd. Why not start the Era with Golden Number 1? However, it may be noted that adding 1 to the remainder solves the problem of what to do when the year is **evenly divisible** by 19. When there was no number zero, as in late antiquity, using Roman Numerals, there could be no Golden Number 0. With the provision for adding 1, however, even division simply results in a Golden Number of 1 (I). The Golden Number will be the same regardless of whether one is using the Julian or Gregorian calendar.

The Dominical Letter tells us what days are Sundays. The letters simply run A through G, and the days of the year are given those letters starting with January 1st. A year with a Dominical Letter A means that January 1st was a Sunday, and each subsequent day lettered A will also be a Sunday. A year that starts on a Monday, will not have a Sunday until we get the to the letter G, the Dominical Letter for that year. Since the length of the year, 365 days, is exactly 52 weeks and 1 day, we have the basic simple rule that if a Sunday falls on a certain calendar date one year, it falls on the date of the previous day the next year. Or, if a certain calendar date is a Sunday one year, it will be a Monday the next year. If one year has the Dominical Letter A, the following year will have the Dominical Letter G. The chart at right enables us to determine the features of each following year. To go from one year to the next, you simply count over to the right. Given a year with a Dominical Letter F (e.g. 1991), which begins on a Tuesday, the following year (1992) will have a Dominical Letter E and will begin on a Wednesday.

This simplicity is complicated by the occurrence of **Leap Years**, which add an extra day, February 29th. The extra day means that if a Sunday falls on a certain calendar date one year, it will occur **two days** earlier the next year after the Leap Day; or, if a certain calendar date is a Sunday one year, it will be a Tuesday the next year, after the Leap Day. Thus, in Leap Years we "leap" over the expected day to the next. Leap Days are not lettered with Dominical Letters, so a leap year has **two** Dominical Letters (1992 is **E & D**), one for January 1st through Febuary 28th, and another for March 1st through the rest of the year. Leap Days are not given Dominical Letters because the only days that matter for the purposes of determining Easter are those in the "**Pascal Term**," i.e. the lunar month and week that follows March 21st, i.e. down to April 25th. This also means that the First Dominical Letter for a Leap Year can also be disregarded. This simplifies matters. The only Dominical Letter we need for a Leap Year is the second one (i.e. **D** for 1992). Since Leap Years are the anomaly, but it would be easy to count down to the Dominical Letters for the following non-Leap Years, all we really need is a convenient method to determine the Dominical Letters for all Leap Years. The following chart does this by showing the Dominical Letter indexed for every Leap Year in a Century.

There is a complication, however, given the historic use of two different calendars by Christians: (1) The **Julian Calendar**, introduced by Julius Caesar in 46 BC, and (2) the **Gregorian Calendar**, introduced by Pope [Gregory XIII](#) in 1582 AD. The Gregorian calendar was not

Dominical Letters

Centuries					84	88	92	96	-	-	-
Julian		Greg.			56	60	64	68	72	76	80
					28	32	36	40	44	48	52
					00	04	08	12	16	20	24
19	05	12	20	16	A	C	E	G	B	D	F
20	06	13			B	D	F	A	C	E	G
00	07	14	21	17	C	E	G	B	D	F	A
01	08	15			D	F	A	C	E	G	B
02	09	16	22	18	E	G	B	D	F	A	C
03	10	17			F	A	C	E	G	B	D
04	11	18	15	19	G	B	D	F	A	C	E
					A	G	F	E	D	C	B
					Sun	Mon	Tue	Wed	Thu	Fri	Sat

immediately adopted by all Protestant or Orthodox churches. Some Orthodox churches still observe Easter according to the Julian Calendar. The Century index thus has two parts, one for the Julian Calendar in all the centuries of its use (back to the 1st century AD = century 00), the other for the Gregorian Calendar in all the centuries in which it has been in use (since 1582). To use the chart, one choses the appropriate calendar and century. For 1998, using the Gregorian calendar, we pick century "19" and the closest previous leap year, "96." Reading over to the right from 19 and down the column from 96, we find "F." The Dominical Letter for 1996 was F. 1998 is 2 years later, so we count over 2 on the key at the bottom, which gets us to D. The Dominical Letter for 1998 is D, which, since 1998 is not a Leap Year, means that 1998 did start on a Thursday. 1998 on the Julian Calendar, on the other hand, gives us a different Dominical Letter. Reading over to the right from the **Julian** 19 and down the column from 96, we find "G." Counting 2 years over arrives at "E."

Equipped with the Golden Number (4 for 1998) and the Dominical Letter (Gregorian D or Julian E for 1998), all we need is a table for the Paschal Term, the Dominical Letters for the days in it, and what days are Full Moons for each Golden Number.

They moved the **Sunday** letter shall pass from **G** to **C**. this is four. See Key below.

Dominical Letters

Centuries					84	88	92	96	-	-	-
Julian		Gregorian			56	60	64	68	72	76	80
					28	32	36	40	44	48	52
					00	04	08	12	16	20	24
19	05	12	20	16	A	C	E	G	B	D	F
20	06	13			B	D	F	A	C	E	G
00	07	14	21	17	C	E	G	B	D	F	A
01	08	15			D	F	A	C	E	G	B
02	09	16	22	18	E	G	B	D	F	A	C
03	10	17			F	A	C	E	G	B	D
04	11	18	15	19	G	B	D	F	A	C	E

Key

A	G	F	E	D	C	B
Sun	Mon	Tues	Wed	Thu	Fri	Sat

This sincs up the Gregorian Calendar to the Julian Calendar and all seems quite right except for one thing. They said that there was a 10 plus day gain in the Vernal, yet they adjusted only to 325 which on that date the vernal fell on March 21. So the Julian on paper shows a 12 day advance since its inception in 45 B.C.E., but it really didn't advance more than 10. This is clever! Because there had to be another adjustment to the Julian in the year 325 C.E. for the other 2 days. Almost flawless!

Now the month is brought into sinc by a 4 day adjustment which does nothing to the days of the week. Seamless except for one small thing. They only adjusted to Nicene Council of 325 C.E.

The problem becomes very obviose when you look at the period of 325 C.E. thru 45 B.C.E. There are two days on the vernal side that were adjusted for, and one day adjusted for on the lunar side. What happens when we display the adjustment? It shows a 1 day slip in the week day. It can not be hid, because we are adjusting two separate systems. There is only one possible explanation, and it is that they somehow

pulled off a day of the week switch, Saturday to Sunday. Please study chart carefully! Thus Easter would not fall on a Saturday!

Then read this paragraph 6 again. One notes in examining this that it is necessary to **rule at the same time on three points to restore the celebration of Easter according to rules fixed by the previous Roman pontiffs, particularly Pius I [ca. 140 - 154] and Victor I [ca. 189 - 198, who established Easter's celebration on Sunday, rather than 14 Nisan favored by the "Quartodeciman" bishops of Asia], and by the fathers of the councils, in particular those of the [first] great ecumenical council of Nicæa [May 20 - August 25, AD 325, deciding the following rules]**. Namely: First, the precise date of the vernal equinox, then the exact date of the fourteenth day of the moon which reaches this age the very same day as the equinox or immediately afterwards, finally the first Sunday which follows this same fourteenth day of the moon. **Therefore we took care not only that the vernal equinox returns on its former date, of which it has already deviated approximately ten days since the Nicene Council, and so that the fourteenth day of the Paschal moon is given its rightful place, from which it is now distant four days and more, but also that there is founded a methodical and rational system which ensures, in the future, that the equinox and the fourteenth day of the moon do not move from their appropriate positions.**

How could this take place? Well after Jerusalem was destroyed in 70 C.E. the priesthood and nation were nonexistent as far as a functioning body. So those who knew, or knew to some extent passed on what they remembered, but things begin to get more and more messed up. What happened with Christianity also happened to the calendar.

Rome had switched to the Julian in 45 B.C.E. but there were many calendars at the time and much confusion existed. There was also a tremendous hatred between Christians and Judaism. To the Jews the 7 day count had great meaning but not to other people. To be dependent upon some Rabbi for a date was unthinkable. And even the Rabbis began to make mistakes on the beginning of the year. Throw the difference in how a day is determined, and you have a recipe for disaster. So, Satan went to work with Constantine to make sure that not only would Christianity be corrupted, but also that Jehovah's Calendar would be forever lost in the sands of time. Nisan 14 of 33 C.E. fell on 03/30/33 C.E. Wednesday of the Julian. But it should have been 03/30/33 C.E. Thursday!

The Language of Imperial Exclusion: Constantine's Letter (325 AD)

Following the [Council of Nicaea](#), Emperor [Constantine](#) issued a sweeping imperial letter to all churches. He used language of profound animosity to frame the calendar adjustment as a moral and religious necessity to achieve total separation from Jewish influence:

*"It appeared **an unworthy thing** that in the celebration of this most holy feast [Easter] we should follow the practice of the Jews, who have impiously defiled their hands with enormous sin, and are, therefore, deservedly afflicted with blindness of soul. Let us then **have nothing in common with the detestable Jewish crowd**; for we have received from our Saviour a different way."*

By branding Jewish timekeeping as an "unworthy thing" and a "grievous error," this language made it a civic and religious crime for Christians to rely on Jewish calendar calculations.

2. The Language of Legal Prohibition: Canon 29 of the Council of Laodicea (ca. 363–364 AD)

As the Church formalized its structures later in the 4th century, it shifted from celebratory letters to strict canon law to suppress any remaining calendar synchronization. The Church used the highly clinical, binding legal language of **heresy and excommunication**:

*“Christians must not **judaize** by resting on the Sabbath [Saturday], but must work on that day. Rather, honoring the Lord’s Day [Sunday]... But if any shall be found to be **judaizers**, let them be anathema [cursed/excommunicated] from Christ.”*

The term "**judaize**" was used as a weaponized legal label. Anyone attempting to keep the traditional sunset-to-sunset Saturday Sabbath loop or track months via original Hebrew formulas was stripped of their civic standing and cast out of the Empire's legal protections.

3. The Language of Legal Primacy: The Theodosian Code (438 AD)

To completely enforce the calendar shift on the ground, the Roman state codified the Church's language into civil law. In books like the [Theodosian Code \(Book 16\)](#), Roman law officially classified the Sanhedrin's system of calculating time as an illegal superstition.

- The state declared the Jewish High Court's calendar messengers to be **subversive disruptors of imperial order**.
- The law used language that **intercepted, restricted, and eventually criminalized the public proclamation of the New Moon** by the Sanhedrin.

Summary of the Language Strategy

The Church did not ask the Jews to change their calendar; instead, they used the language of **theological demonization ("detestable crowd")** and **legal finality ("anathema")** to strip Jewish scholars of their authority over the empire's time tracking. This overwhelming state pressure is precisely what created the "[Sunset Crash](#)" and forced Hillel II to permanently publish the secret mathematical formulas in 358/359 AD to ensure the Jewish community could survive the imperial blockade.

Executive Summary: The Solar-Lunar Equation & Jehovah’s Calendar

This document presents a comprehensive reconstruction of "[Jehovah's Calendar](#)," a precise, rule-based cosmic time-storage system embedded within the Biblical text. By rejecting modern astronomical approximations and the Babylonian sexadecimal system, this model solves the solar-lunar equation using absolute mathematical constants, an ancient Duodecimal (Base-12) framework, and the absolute historical synchronization of Biblical chronology.

Core Structural Elements & Units of Measure

The calendar system operates on exact, unrounded fractions of time called **Halakim** (where 1 day equals 25,920 Halakim, and 1 hour equals 1,080 Halakim).

- **The Synodic Month:** Permanently fixed at exactly **765,433 Halakim** (29.530594 days).
- **The Tropical Year:** Permanently fixed at exactly **9,467,078 Halakim** (365.242206 days).
- **The Master Cycle:** A Least Common Multiple calculation reveals that exactly **765,433 Tropical Years** align perfectly to the single *Halakim* with **9,467,078 Synodic Months**. The calendar anchors its "Zero Year" at the creation of Adam in 4026 B.C.E.

System Rules & Mathematical Constants

1. **The Dark Moon Rule:** The initiation of a new month is governed exclusively by the astronomical Dark Moon (Conjunction/Zero Illumination) nearest the equinox, completely rejecting the visual sighting of the Waxing Crescent.
2. **The Cam Lever (Autumnal Equinox):** The calendar is calibrated globally from Jerusalem using the Autumnal Equinox as its master orientation point, ensuring

all holy festival cycles fall symmetrically within a mathematically closed 186-day window.

3. **The 355-Day Trim Rule:** Lunar years can only exist in lengths of 354, 355, or 384 days. A probability calculation ($0.11^{1409} \approx 10^{-1400}$) proves that the 355-day year is never placed randomly; it serves as a non-chance "one-day trim" that occurs exclusively adjacent to a 384-day leap year depending on a specific cumulative drift threshold.
4. **The 342-Year Leap Shift:** To prevent long-term drift against the seasons, the fixed leap year positions within the 19-year Metonic cycle slide by exactly one position every 342 years, executing a perfect reset every 2,394 years.

The Historical 1-Day "Week Slip" Conspiracy & The Roman Nundinal Convergence

The document exposes a fundamental mathematical conflict between retroactive civil tracking and Biblical accounts. For the year 33 C.E., running raw solar-lunar data forces Nisan 1 to land on a day that places the Nisan 14 crucifixion on a Wednesday night/Thursday daytime timeline. However, the Gospel records explicitly state that Christ was executed on the Day of Preparation (traditionally synchronized as a Friday sequence).

The historical and mathematical resolution to this discrepancy converges directly between **321 AD and 325 AD**:

- **The Roman 8-Day Baseline:** When Julius Caesar established the [Julian calendar](#) in 45 BC, Rome did not use a 7-day week. Time was tracked via an **8-day nundinal cycle** (market days labeled letters A through H).
- **The 321 AD Planetary Shift:** On March 7, 321 AD, Emperor Constantine officially abolished the civil 8-day nundinal cycle, replacing it with the **7-day planetary week** and designating Sunday (*dies Solis*) as a mandatory day of civil rest.
- **The 325 AD Dogmatic Convergence:** Four years later, at the [Council of Nicaea](#) (325 AD), the Church formalized the calculation of Easter, locking it to the Sunday following the full moon after March 21. Because of intense anti-Jewish sentiment, the imperial apparatus explicitly decoupled its calculations from Hebrew records.

The Language of Imperial Exclusion & Coercion

To enforce this systemic calendar rupture, the early Church and the Roman state deployed weaponized, exclusionary legal and theological language designed to strip Jewish authorities of their timekeeping primacy and force compliance across the empire:

- **The Nicene Mandate (325 AD):** In his post-council imperial decree, Emperor Constantine utilized language of intense hostility to justify fracturing the calendar loop, writing:
*"It appeared **an unworthy thing** that in the celebration of this most holy feast we should follow the practice of the Jews... Let us then **have nothing in common with the detestable Jewish crowd**; for we have received from our Saviour a different way."*
- **The Criminalization of Hebrew Rest (ca. 363–364 AD):** At the [Council of Laodicea](#), the Church transitioned from rhetoric to binding canon law. Canon 29 utilized the severe, clinical legal language of heresy and excommunication:
*"Christians must not **judaize** by resting on the Sabbath [Saturday], but must work on that day. Rather, honoring the Lord's Day [Sunday]... But if any shall be found to be **judaizers, let them be anathema [cursed/excommunicated] from Christ.**"*
- **The Civil Blockade (438 AD):** The [Theodosian Code](#) (**Book 16**) codified this religious coercion into state statute, outlawing the calendar calculations of the Sanhedrin, treating their calculated time cycles as a dangerous superstition, and legally intercepting the court messengers sent to proclaim the new month.

The Logical Proof Behind the 1582 "Partial" Correction

The ultimate verification of this engineered timeline is found in the text of Pope Gregory XIII's 1582 papal bull, [Inter Gravissimas](#). Between the inception of the Julian Calendar

(45 BC) and the Gregorian Reform (1582 AD), a total of 1,627 years had elapsed, accumulating an astronomical drift of approximately **12 to 13 days**. However, Pope Gregory **only removed 10 days** from the calendar (ordering October 4, 1582, to be followed immediately by October 15). The papal bull explicitly notes that the Church was *only* correcting the drift back to the **Council of Nicaea (325 AD)**, rather than returning to the calendar's original inception in 45 BC.

```
[45 BC Calendar Inception]
|
| <-- 1 to 2 Days Discrepancy Masked Here
v
[325 AD Council of Nicaea] <=====+

|
|
| <-- 10 Days Cumulative Drift Removed
|      by Papal Decree in 1582 AD
v
[1582 AD Gregorian Reform] -----+
```

By intentionally choosing 325 AD as the absolute calculation baseline, the Church successfully locked in a **hidden 1-day weekday shift (Saturday to Sunday)** that occurred during the chaotic transition from the Roman 8-day cycle to the planetary 7-day week. Had the Church corrected the full 12–13 days back to 45 BC, the mathematical progression of the weekly loop would have exposed the slip, shifting the modern Sunday back onto a Saturday axis. Stopping the calculation precisely at Nicaea permanently buried the original weekly alignment, threw the precise *Halakim* calendar out of civil visibility, and preserved an artificial weekly loop engineered to keep Easter permanently anchored to a Sunday framework.

Part V: Astronomical Certainty & Space-Time Coordination

The architectural precision of Jehovah’s Calendar is verified by independent, interlocking astronomical constants. When the units of time are converted out of fluid decimals and back into absolute *Halakim*, the physical dimensions and velocities of our solar system and the Milky Way galaxy resolve into perfectly balanced, clean geometric ratios based on the **Duodecimal (Base-12)** system.

Note: Nisan 14 begins at sunset on 3-30-33 and continues until sunset on 3-31-33 (sunset-to-sunset reckoning). The civil date change at midnight does not alter the biblical day.

Chronological Side Note: The Multigenerational Compression Effect

When reconstructing historical timelines across antiquity, failing to account for the **Roman 8-day** nundinal cycle and the subsequent **1-day [Nicene week](#) slip** introduces an uncorrectable mathematical error.

Because modern tracking programs assume an unbroken 7-day loop extending infinitely into the past, they retroactively project a calendar structure that did not physically exist on the ground during the early Roman Empire. When calculating backward across multiple millennia, this baseline error compounds significantly:

- **The Civil Compression:** Tracking time backward via standard Julian/Gregorian loops forces historical events into a rigid, artificial 7-day grid, compressing out the fluid multi-calendar transitions that ancient societies actually navigated on the ground.
- **The Restored Horizon:** By re-establishing the absolute *Halakim* intervals of Jehovah's Calendar from the Adam 4026 B.C.E. anchor, the artificial weekday drift is entirely removed. This unlocks a mathematically clear horizon, allowing historical events, ancient eclipses, and prophetic milestones to fall precisely onto their original, intended days without requiring arbitrary adjustments or "rounding patches" to match the written record.

Side-by-Side System Comparison

Attribute / Parameter	Standard Civil Model (Gregorian/Julian)	Restored Biblical Model (Jehovah's Calendar)
Daily Clock Boundary	Midnight to Midnight	Sunset to Sunset
Weekly Loop Evolution	8-Day Nundinal (Pre-321 AD) to 7-Day Planetary Loop	Absolute, Undisrupted 7-Day Creative Rhythms
New Month Trigger	Sighted Waxing Crescent Moon	Astronomical Dark Moon (Conjunction)
Master Year Anchor	Vernal (Spring) Equinox	Autumnal (Fall) Equinox
Weekly Loop Continuity	Assumed Unbroken Cycle	Disrupted by an Engineered Historical Shift
Numerical Base System	Sexadecimal (Base-60 / Babylonian)	Duodecimal (Base-12 / Antediluvian)
Leap Cycle Mechanics	Static 19-Year Metonic Pattern	342-Year Rotating Shift Pattern
Ultimate Purpose	Short-term human utility	Eternal cosmic data-storage device

Daily Timeline Comparison (The 33 C.E. Passion Week Collision)

To illustrate the structural time gap and the calculation differences on the ground, the table below maps out the real-time hourly progression of the Crucifixion timeline under both frameworks, substituting day names with absolute, fixed numeric weekday sequence positions (where Sunday = 1, Monday = 2, Tuesday = 3, Wednesday = 4, Thursday = 5, Friday = 6, and Saturday = 7):

Real-World Clock Time	Traditional Civil Sequence (Fixed Day Number)	Restored Biblical Framework (Adjusted Halakim System)	The Structural Time Gap / Core Difference
Wednesday Daytime (Julian: March 30, 33 C.E.) (6:00 AM – 6:00 PM)	Day 4 (Civil Wednesday)	Day 5 (Corrected: March 30)	Both systems run on their respective daylight cycles. The unadjusted civil timeline tracks this block as Day 4.
Wednesday Evening (Julian: March 30, 33 C.E.) (6:00 PM – Midnight)	Day 4 (Civil Wednesday Night)	Nisan 14 — The Last Supper (3-30-33 / 3-31-33) Day 6	The Sunset Boundary Hits: At sundown, March 30th initiates the true Day 6 of the weekly cycle. While the civil calendar remains on its Day 4 track, the Biblical calendar clicks forward, officially initiating the Passover.
Thursday Morning (Julian: March 31, 33 C.E.) (Midnight – 6:00 AM)	Day 5 The Civil Clock Rolls Over	Nisan 14 — The Arrest & Trial (continues 3-30-33 / 3-31-33) Day 6	The Midnight Boundary Hits: The civil clock rolls over to Day 5 (Thursday). Because the Biblical day does not alter at midnight, the night trial remains perfectly unified within Day 6.
Thursday Daytime (Julian: March 31, 33 C.E.) (6:00 AM – 6:00 PM)	Day 5 (Civil Thursday)	Nisan 14 — The Crucifixion & Burial (3-30-33 / 3-31-33) Day 6	Both frameworks experience the daylight hours simultaneously. The traditional civil model calculates its 5th day, while the corrected timeline completes the dynamic execution day of the Passover.
Thursday Evening (Julian: March 31, 33 C.E.) (6:00 PM – Midnight)	Day 5 (Civil Thursday Night)	Nisan 15 — The Great Sabbath Day 7 (Corrected: 3-31-33 / 4-1-33)	Sunset Hits Again: At sundown, March 31st forces the immediate start of Day 7 (The Great Sabbath). The

	traditional civil clock remains on its Day 5 track, demonstrating the full structural separation between the two models.
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Document Summary & Overview

- **Structural Integration:** Combines the entire core calendar math matrix (*Halakim* values, Metonic parameters, and probability balances) alongside your specialized astronomical equations.
- **The Week-Slip & Nundinal Intersection:** Fully details how the chaotic transition from the ancient Roman 8-day market cycle into Constantine's 7-day week in 321 AD provided the historical window to mask the weekday timeline.
- **Imperial Language & Canons:** Integrates the official, sharp language of exclusion used by the Council of Nicaea, the Council of Laodicea, and the *Theodosian Code* to enforce this structural divergence.
- **The 1582 Gregorian Clue:** Elaborates on the partial correction of Pope Gregory XIII, showing mathematically why stopping the calendar's 10-day reduction directly at the 325 AD council baseline hides the original Saturday-Sunday axis.

Please see following supplemental info on Quartodeciman.

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The term "**Quartodecimanism**" (from the [Vulgate Latin](#) *quarta decima* in [Leviticus](#) 23:5,^[1] meaning fourteenth) refers to the custom of early [Christians celebrating Passover](#) beginning with the eve of the 14th day of [Nisan](#) (or [Aviv](#) in the [Hebrew Biblecalendar](#)), which at dusk is biblically the "Lord's passover".^[*citation needed*]

The modern Jewish [Passover](#) and [Feast of Unleavened Bread](#) is seven days, starting with the sunset at the beginning of [Nisan](#) 15. [Judaism](#) reckons the beginning of each day at [sunset](#), not at [sunrise](#) as was the ancient custom in [European](#) traditions. The [biblical law](#) regarding Passover is said to be a "perpetual ordinance" ([Exodus 12:14](#)), to some degree also applicable to [proselytes](#) ([Exodus 12:19](#)), but what it means to observe [biblical law in Christianity](#) is disputed.

Regarding the [chronology of Jesus](#), some claim the [Gospel of John](#) (e.g., [19:14](#), [19:31](#), [19:42](#)) implies that Nisan 14 was the day that [Jesus](#) was crucified in [Jerusalem](#) and that the [Synoptic Gospels](#) instead place the execution on the first day of Unleavened Bread ([Matthew 26:17](#)). In Ancient Israel the first day of Unleavened Bread, a special Holy Sabbath, was on Nisan 15 and began a seven-day feast to the Lord ([Leviticus 23:6](#)). By the time of Christ, many customs in regard to the festival had changed, notable among them the intermixing of the two festivals in some customs and terminology. The eight days, passover and the feast of unleavened bread, were often collectively referred to as the Passover, or the Pesach Festival.^{[2][3]}

Contents

1History

1.1Background

1.2Condemnatory synods

1.3Excommunication

1.4Resolution

2Eschatology of the quartodeciman Paschal celebration

3Legacy

4See also

5Notes

6References

7External links

History[edit]

The Quartodeciman controversy arose because Christians in the [churches of Jerusalem](#) and [Asia Minor](#) celebrated [Passover](#) on the 14th of the first month (Aviv), while the churches in and around Rome changed to the practice of celebrating [Easter](#) on the following Sunday calling it "the day of the resurrection of our Saviour". The difference was turned into an ecclesiastical controversy when synods of bishops which held to Apostolic tradition condemned the practice.^[4]

Background[edit]

Of the disputes about the date when the [Christian Pascha](#) should be celebrated, disputes known as [Paschal/Easter controversies](#), the Quartodeciman is the first recorded.

In the mid-[2nd century](#), the practice in [Asia Minor](#) was for the pre-Paschal fast to end and the feast to be held on the 14th day (the full moon) of the Jewish lunar month of [Nisan](#), the date on which the Passover sacrifice had been offered when the [Second Temple](#) stood, and "the day when the people put away the leaven".^[5] Those who observed this practice were called Quartodecimani, [Latin](#) for "fourteenthers", because of holding their celebration on the fourteenth day of Nisan.

The practice had been followed by [Polycarp](#), who was a disciple of [John the Apostle](#) and bishop of Smyrna (c. 69 – c. 155) - one of the [seven churches of Asia](#), and by [Melito of Sardis](#) (d. c. 180).^[6] [Irenaeus](#) says that Polycarp visited Rome when [Anicetus](#) was its bishop (c. 68-153), and among the topics discussed was this divergence of custom, with Rome instituting the festival of Easter in place of the [Pasch](#). Irenaeus noted:

Neither could Anicetus persuade Polycarp not to observe what he had always observed with John the disciple of our Lord, and the other [apostles](#) with whom he had associated; neither could Polycarp persuade Anicetus to observe it, as he said that he ought to follow the customs of the presbyters that had preceded him.^[6]

But neither considered that the disagreement required them to break off [communion](#) and initiate a [schism](#). Indeed, "Anicetus conceded the administration of the eucharist in the church to Polycarp, manifestly as a mark of respect. And they parted from each other in peace, both those who observed, and those who did not, maintaining the peace of the whole church."^[6]

[Sozomen](#) also wrote:

As the bishops of the West did not deem it necessary to dishonor the tradition handed down to them by Peter and by Paul, and as, on the other hand, the Asiatic bishops persisted in following the rules laid down by John the evangelist, they unanimously agreed to continue in the observance of the festival according to their respective customs, without separation from communion with each other. They faithfully and justly assumed, that those who accorded in the essentials of worship ought not to separate from one another on account of customs.^[7]

A modern source says that the discussion between Polycarp and Anicetus in Rome took place within the framework of a synod.^[8]

Thus the churches in Asia appealed to the Apostle John in support of their practice, while Sozomen wrote that the Roman custom (observed, according to Irenaeus, since at least the time of [Bishop Xystus](#) of 115–25)^[9] was believed to have been handed down by the Apostles Peter and Paul,^[7] and Eusebius states that in Palestine and Egypt the Sunday observance was also believed to have originated with the Apostles.^[9]

Condemnatory synods[edit]

According to Eusebius, in the last decade of the 2nd century a number of synods were convened to deal with the controversy, ruling unanimously that the celebration of Easter should be observed and be exclusively on Sunday.

Synods and conferences of bishops were convened, and drew up a decree of the Church, in the form of letters addressed to Christians everywhere, that never on any day other than the [Lord's Day](#) should the mystery of the Lord's resurrection from the dead be celebrated, and on that day alone we should observe the end of the Paschal fast.^[4]

These synods were held in [Palestine](#), [Pontus](#) and [Osrhoene](#) in the east, and in Rome and [Gaul](#) in the west.^[4] The council in Rome, presided over by its bishop [Victor](#), took place in 193 and sent a letter about the matter to [Polycrates of Ephesus](#) and the churches of the Roman province of Asia.^[8] Within the same year, Polycrates presided over a council at Ephesus attended by several bishops throughout that province, which rejected Victor's authority and kept the province's paschal tradition.^[8]

Polycrates emphatically stated that he was following the tradition passed down to him:

We observe the exact day; neither adding, nor taking away. For in Asia also great lights have fallen asleep, which shall rise again on the [day of the Lord's coming](#) ... All these observed the fourteenth day of the passover according to the Gospel, deviating in no respect, but following the [rule of faith](#).

And I also, Polycrates, the least of you all, do according to the tradition of my relatives, some of whom I have closely followed. For seven of my relatives were bishops; and I am the eighth. And my relatives always observed the day when the people put away the leaven.^[6]

Excommunication^[edit]

On receiving the negative response of Polycrates, Victor attempted to cut off Polycrates and the others who took this stance from the common unity, but reversed his decision after bishops who included Saint [Irenaeus, bishop of Lugdunum](#) in Gaul, interceded, recommending that Victor follow the more peaceful attitude of his predecessors.

Thereupon Victor, who presided over the church at Rome, immediately attempted to cut off from the common unity the parishes of all Asia, with the churches that agreed with them, as heterodox; and he wrote letters and declared all the brethren there wholly excommunicate. But this did not please all the bishops. And they besought him to consider the things of peace, and of neighborly unity and love. Words of theirs are extant, sharply rebuking Victor. Among them was Irenaeus, who, sending letters in the name of the brethren in Gaul over whom he presided, maintained that the mystery of the resurrection of the Lord should be observed only on the Lord's day. He fittingly admonishes Victor that he should not cut off whole churches of God which observed the tradition of an ancient custom.^[10]

Resolution^[edit]

In the short following chapter of the account by Eusebius, a chapter headed "How All came to an Agreement respecting the Passover", he recounts that the Palestinian bishops Narcissus and Theophilus, together with the bishops of [Tyre](#) and [Ptolemais](#), wrote a lengthy review of the tradition of Sunday celebration of Easter "which had come to them in succession from the apostles", and concluded by saying:

Endeavor to send copies of our epistle to every church, that we may not furnish occasion to those who easily deceive their souls. We show you indeed that also in Alexandria they keep it on the same day that we do. For letters are carried from us to them and from them to us, so that in the same manner and at the same time we keep the sacred day.^[9]

Historically, there had been a debate about when quartodecimanism disappeared and in particular whether it disappeared before or after the [first ecumenical council](#) (Nicaea I) in 325. In 1880, [Louis Duchesne](#) showed that quartodecimanism was not the subject of Nicaea I.^[11] According to Mark DelCogliano, "the older opinion persists" but Duchesne's opinion "has gained widespread acceptance."^[12] According to DelCogliano, "by the early 4th century all Christians were celebrating Easter on a Sunday. Accordingly, it was not the Quartodeciman practice that Constantine sought to eliminate, but rather the so-called 'Protopaschite' practice which calculated the paschal full moon according to the Jewish lunar calendar and not the Julian solar calendar".^[12]

As shown, for instance, by the [Sardica paschal table](#), it was quite common at that time that the Jewish calendrical year started before the equinox. In case the previous year had started after the equinox, two Passovers would be celebrated in the same solar year (the solar New Year was starting on March 21). Since the 3rd century this disorder of the Jewish calendar of the time was lamented by several Christian writers, who felt that the Jewish were often using a wrong lunation as their [Nisan](#) month and advocated the introduction of an independent [computus](#) by the Christians.

In a letter to the bishops who had not been present, Emperor [Constantine I](#) said that it had been decided to adopt a uniform date, rejecting the custom of the Jews, who had crucified Jesus and whose practice often meant that two passovers were celebrated in the same solar year:

It was resolved by the united judgment of all present, that this feast ought to be kept by all and in every place on one and the same day. For what can be more becoming or honorable to us than that this feast, from which we date our hopes of immortality, should be observed unfailingly by all alike, according to one ascertained order and arrangement? And first of all, it appeared an unworthy thing that in the celebration of this most holy feast we should follow the practice of the Jews, who have impiously defiled their hands with enormous sin, and are, therefore, deservedly afflicted with blindness of soul. For we have it in our power, if we abandon their custom, to prolong the due observance of this ordinance to future ages, by a truer order, which we have preserved from the very day of the passion until the present time. Let us then have nothing in common with the detestable Jewish crowd; for we have received from our Saviour a different way. A course at once legitimate and honorable lies open to our most holy religion. Beloved brethren, let us with one consent adopt this course, and withdraw ourselves from all participation in their baseness... being altogether ignorant of the true adjustment of this question, they sometimes celebrate Easter twice in the same year. Why then should we follow those who are confessedly in grievous error? Surely we shall never consent to keep this feast a second time in the same year... And let your Holinesses' sagacity reflect how grievous and scandalous it is that on the self-same days some should be engaged in fasting, others in festive enjoyment; and again, that after the days of Easter some should be present at banquets and amusements, while others are fulfilling the appointed fasts. It is, then, plainly the will of Divine Providence (as I suppose you all clearly see), that this usage should receive fitting correction, and be reduced to one uniform rule.^[13]

Eschatology of the quartodeciman Paschal celebration[[edit](#)]

In his study *The Eucharistic Words of Jesus*, the Lutheran scriptural scholar [Joachim Jeremias](#) made a compelling argument that the Quartodecimans preserved the original understanding and character of the Christian Easter (Passover) celebration. He states that in Jewish tradition four major themes are associated with Passover, i.e., the [creation of the world](#), the [Akedah](#) or binding of Isaac, the [redemption of Israel from Egypt](#) (both the *passing over* of the First-born during the Passover meal and Israel's *passage* through the Red Sea) and the coming of the [Messiah](#) (announced by the Prophet [Elijah](#)). For Christians, the central events of the [Paschal Mystery](#) of Christ, i.e., his passion, death and resurrection, also are obviously associated with Passover. Thus it was inevitable that the very earliest Christians expected the imminent [return of Christ](#) to also occur during their Passover celebrations. Jeremias notes that Quartodecimans began their Christian Passover celebrations by reading the appropriate readings from the Hebrew Scriptures, i.e., the twelve readings from the Hebrew Scriptures that still are read at the Easter Vigil in the Roman Catholic, Eastern Orthodox and Armenian traditions. At midnight, when Christ had not reappeared to inaugurate the great eschatological banquet, the Christians would celebrate the Paschal [Eucharist](#) in anticipation of that final act of the drama of the redemption of Christ.

As this original eschatological fervor began to die down, and as Christianity became an increasingly Gentile movement, this original eschatological orientation of the Christian Passover celebration was lost; and with the development of the practice of baptizing [catechumens](#) during the twelve readings so they would share the Eucharist for the first time with the Christian community at the conclusion of the Paschal Vigil, the baptismal themes came to dominate the celebrations of the Paschal Vigil, as they do again in those churches which have begun again to baptize its adult converts during the Easter Vigil. Major liturgical scholars such as [Louis Bouyer](#) and [Alexander Schmemmann](#) concur with Jeremias' essential position and one has only to examine the Christian liturgical texts for Paschal Vigil to see evidence of this. E.g., the Eucharistic Preface for the Easter Vigil in the Roman, Lutheran and Anglican/Episcopalian traditions, which state: "...on this night when Christ became our Passover sacrifice" or the Eastern Orthodox Troparion for Great and Holy Monday, Tuesday and Wednesday, which warns the Christian community "Behold the [Bridegroom](#) comes in the middle of the night and blessed are those servants he shall find awake..." In short, no one knows when Christ will appear at the [end of time](#), but given other central events of redemption which occurred during Passover, the earliest Christians assumed that Christ would probably appear during the Paschal Eucharist, just as he first appeared to his original [disciples](#) during their meal on the first Easter Sunday.^[a]

Legacy[[edit](#)]

It is not known how long the Nisan 14 practice lasted. The church historian [Socrates of Constantinople](#) knew of Quartodecimans who were deprived of their churches by [John Chrysostom](#),^[14] and harassed in unspecified ways by [Nestorius](#),^[15] both bishops of Constantinople. This indicates that the Nisan 14 practice, or a practice that was called by the same name, lingered into the 4th century.

Because this was the first-recorded [Easter controversy](#), it has had a strong influence on the minds of some subsequent generations. [Wilfrid](#), the 7th-century bishop of [York](#) in [Northumbria](#), styled his opponents in the Easter controversy of his day "quartodecimans",^[16] though they celebrated Easter on Sunday. Many scholars of the 19th and 20th centuries thought that the dispute over Easter that was discussed at Nicaea was between the Nisan 14 practice and Sunday observance.^[17] According to one account, "A final settlement of the dispute was one among the other reasons which led Constantine to summon the council at Nicaea in 325. At that time, the Syrians and Antiochenes were the solitary champions of the observance of the 14th day. The decision of the council was unanimous that Easter was to be kept on Sunday, and on the same Sunday throughout the world, and that 'none hereafter should follow the blindness of the Jews'".^[18] A new translation, published in 1999, of Eusebius' *Life of Constantine* suggests that this view is no longer widely accepted;^[19] its view is that the dispute at Nicaea was between two schools of Sunday observance: those who followed the traditional practice of relying on Jewish informants to determine the lunar month in which Easter would fall, and those who wished to set it using Christian computations.

[Laurent Cleenewerck](#) suggests that the [East-West schism](#) could even be argued to have started with Victor's attempt to excommunicate the [Asian](#) churches.^[20] Despite Victor's failure to carry out his intent to excommunicate the Asian churches, many Catholic theologians point to this episode as evidence of [papal primacy](#) and authority in the [early Church](#), citing the fact that none of the bishops challenged his right to excommunicate but rather questioned the wisdom and charity of doing so.^[20] From the [Orthodox perspective](#), Victor had to relent in the end and we see that the [Eastern Churches](#) never grant him presidency over anything other than his own church, his own synod.^[citation needed] Cleenewerck points out that [Eusebius of Caesarea](#) simply refers to Victor as one of the "rulers of the Churches", not the ruler of a yet unknown or unformed "universal Church".^[20] As the date of observance of the Resurrection of Christ as being on the day of the week Sunday rather than the 14th day of the month was not resolved by Papal authority it was only finally resolved by an Ecumenical Council.^[21]

The rejection of Bishop [Anicetus](#)' position on the Quartodeciman by Polycarp, and later Polycrates' letter to Pope Victor I, has been used by Orthodox theologians as proof against the argument that the Churches in Asia Minor accepted the [Primacy of the Bishop of Rome](#) and or the teaching of [Papal supremacy](#).^[22]

[Jehovah's Witnesses](#) and [Bible Students](#) worldwide celebrate the [Memorial of Christ's death](#) on Nisan 14.^[23]

The [Living Church of God](#) keeps the Quartodeciman Passover^[24] on the evening beginning Nisan 14 in the manner of the First Century Church.^[25]

Table of dates of Easter 2001–2025 (in Gregorian dates)^[26]

Now that this mistake is dealt with lets move on to measurement of time.

Measurement of Time.

Now that we know this tidbit of knowledge when was Adam Created? See All Scriptures Inspired.

Studies on the Inspired Scriptures and Their Background
Study Number 3—Measuring Events in the Stream of Time

The counting of time in Bible days and a discussion of the chronology of outstanding events of both the Hebrew and Greek Scriptures.

IN GIVING Daniel the vision of “the king of the north” and “the king of the south,” Jehovah’s angel several times used the expression “the time appointed.” (Dan. 11:6, 27, 29, 35) There are many other scriptures too that indicate Jehovah is an accurate timekeeper, who accomplishes his purposes exactly on time. (Luke 21:24; 1 Thess. 5:1, 2) In his Word, the Bible, he has provided a number of “guideposts” that help us locate important happenings in the stream of time. Much progress has been made in the understanding of Bible chronology. Research by archaeologists and others continues to shed light on various problems, enabling us to determine the timing of key events of the Bible record.—Prov. 4:18.

² **Ordinal and Cardinal Numbers.** In the previous study (paragraphs 24 and 25), we learned that there is a difference between cardinal numbers and ordinal numbers. This should be kept in mind when measuring Biblical periods in harmony with modern dating methods. For example, in the reference to “the thirty-seventh year of the exile of Jehoiachin the king of Judah,” the term “thirty-seventh” is an ordinal number. It represents 36 full years plus some days, weeks, or months (whatever time had elapsed from the end of the 36th year).—Jer. 52:31.

³ **Regnal and Accession Years.** The Bible refers to State records of the governments of Judah and Israel, as well as to State matters of Babylon and Persia. In all four of these kingdoms, State chronology was accurately reckoned according to the rulerships of the kings, and the same system of reckoning has been carried over into the Bible. Very often the Bible gives the name of the document quoted, as, for example, “the book of the affairs of Solomon.” (1 Ki. 11:41) The reign of a king would cover part of an accession year, to be followed by a complete number of regnal years. Regnal years were the official years in the kingship and were generally counted from Nisan to Nisan, or from spring to spring. When a king succeeded to the throne, the intervening months until the next spring month of Nisan were referred to as his accession year, during which he filled out the regnal term of rulership for his predecessor. However, his own official regnal term was counted as beginning on the next Nisan 1.

⁴ As an example, it appears that Solomon began reigning sometime before Nisan of 1037 B.C.E., while David was still living. Shortly afterward, David died. (1 Ki. 1:39, 40; 2:10) However, David’s last regnal year continued down to the spring of 1037 B.C.E., still being counted as part of his 40-year administration. The partial year, from the start of Solomon’s reign until spring of 1037 B.C.E., is referred to as Solomon’s accession year, and it could not be counted as a regnal year for him, as he was still filling out his father’s term of administration.

Therefore, Solomon's first full regnal year did not begin until Nisan of 1037 B.C.E. (1 Ki. 2:12) Eventually, 40 full regnal years were credited to Solomon's administration as king. (1 Ki. 11:42) By keeping the regnal years apart from accession years in this way, it is possible to calculate Bible chronology accurately.

COUNTING BACK TO ADAM'S CREATION

⁵ **Starting From the Pivotal Date.** The pivotal date for counting back to Adam's creation is that of Cyrus' overthrow of the Babylonian dynasty, 539 B.C.E. Cyrus issued his decree of liberation for the Jews during his first year, before the spring of 537 B.C.E. Ezra 3:1 reports that the sons of Israel were back in Jerusalem by the seventh month, Tishri, corresponding to parts of September and October. So the autumn of 537 B.C.E. is reckoned as the date of the restoration of Jehovah's worship in Jerusalem.

⁶ This restoration of Jehovah's worship in the autumn of 537 B.C.E. marked the end of a prophetic period. What period? It was the "seventy years" during which the Promised Land "must become a devastated place" and concerning which Jehovah also said, "In accord with the fulfilling of seventy years at Babylon I shall turn my attention to you people, and I will establish toward you my good word in bringing you back to this place." (Jer. 25:11, 12; 29:10) Daniel, who was well acquainted with this prophecy, acted in harmony with it as the "seventy years" drew to a close. (Dan. 9:1-3) The "seventy years" that ended in the autumn of the year 537 B.C.E. must have begun, then, in the autumn of 607 B.C.E. The facts bear this out. Jeremiah chapter 52 describes the momentous events of the siege of Jerusalem, the Babylonian breakthrough, and the capture of King Zedekiah in 607 B.C.E. Then, as verse 12 states, "in the fifth month, on the tenth day," that is, the tenth day of Ab (corresponding to parts of July and August), the Babylonians burned the temple and the city. However, this was not yet the starting point of the "seventy years." Some vestige of Jewish sovereignty still remained in the person of Gedaliah, whom the king of Babylon had appointed as governor of the remaining Jewish settlements. "In the seventh month," Gedaliah and some others were assassinated, so that the remaining Jews fled in fear to Egypt. Then only, from about October 1, 607 B.C.E., was the land in the complete sense "lying desolated . . . to fulfill seventy years."—2 Ki. 25:22-26; 2 Chron. 36:20, 21.

⁷ **From 607 B.C.E. to 997 B.C.E.** The calculation for this period backward from the fall of Jerusalem to the time of the division of the kingdom after Solomon's death presents many difficulties. However, a comparison of the reigns of the kings of Israel and of Judah as recorded in First and Second Kings indicates that this time period covers 390 years. Strong evidence that this is the correct figure is the prophecy of Ezekiel 4:1-13. This prophecy shows that it is pointing to the time when Jerusalem would be besieged and its inhabitants taken captive by the nations, which occurred in 607 B.C.E. So the 40 years spoken of in the case of Judah terminated with Jerusalem's desolation. The 390 years spoken of in the case of Israel did not end when Samaria was destroyed, for that was long past when Ezekiel prophesied, and the prophecy plainly says that it is pointing to the siege and destruction of Jerusalem. Thus, "the error of the house of Israel," too, terminated in 607 B.C.E. Counting back from this date, we see that the period of 390 years began in 997 B.C.E. In that year, Jeroboam, after the death of Solomon, broke with the house of David and "proceeded to part Israel from following Jehovah, and he caused them to sin with a great sin."—2 Ki. 17:21.

⁸ **From 997 B.C.E. to 1513 B.C.E.** Since the last of Solomon's 40 full regnal years ended in the spring of 997 B.C.E., it follows that his first regnal year must have commenced in the spring of 1037 B.C.E. (1 Ki. 11:42) The Bible record, at 1 Kings 6:1, says that Solomon began to build the house of Jehovah in Jerusalem in the second month of the fourth year of his reign. This means three full years and one complete month of his reign had elapsed, bringing us to April-May of 1034 B.C.E. for the start of the temple building. However, the same scripture states that this was also "the four hundred and eightieth year after the sons of Israel came out from the land of Egypt." Again, 480th is an ordinal number, representing 479 complete years. Hence, 479 added to 1034 gives the date 1513 B.C.E. as the year that Israel came out of Egypt. Paragraph 19 of Study 2 explains that from the year 1513 B.C.E., Abib (Nisan) was to be reckoned as "the first of the months of the year" for Israel (Ex. 12:2) and that previously a year beginning in the autumn, with the month Tishri, had been followed. *The New Schaff-Herzog Encyclopedia of Religious Knowledge*, 1957, Vol. 12, page 474, comments: "The reckoning of the regnal years of the kings is based upon the year which began in the spring, and is parallel to the Babylonian method in

which this prevailed.” Whenever the change of beginning the year in the autumn to beginning the year in the spring began to be applied to periods of time in the Bible, this would involve a loss or gain of six months somewhere in the counting of time.

⁹ **From 1513 B.C.E. to 1943 B.C.E.** At Exodus 12:40, 41, Moses records that “the dwelling of the sons of Israel, who had dwelt in Egypt, was four hundred and thirty years.” From the above wording, it is apparent that not all this “dwelling” was in Egypt. This time period begins with Abraham’s crossing of the Euphrates on his way to Canaan, at which time Jehovah’s covenant with Abraham went into effect. The first 215 years of this “dwelling” was in Canaan, and then an equal period was spent in Egypt, until Israel became completely independent of all Egyptian control and dependency, in 1513 B.C.E. The *New World Translation* footnote on Exodus 12:40 shows that the Greek *Septuagint*, which is based on a Hebrew text older than the Masoretic, adds, after the word “Egypt,” the words “and in the land of Canaan.” The Samaritan Pentateuch does similarly. Galatians 3:17, which also mentions the 430 years, confirms that this period started with the validating of the Abrahamic covenant, at the time that Abraham crossed the Euphrates on his way to Canaan. This was therefore in 1943 B.C.E., when Abraham was 75 years old.—Gen. 12:4.

¹⁰ Another line of evidence supports the above reckoning: At Acts 7:6 mention is made of the seed of Abraham as being afflicted 400 years. Since Jehovah removed the affliction by Egypt in 1513 B.C.E., the beginning of affliction must have been in 1913 B.C.E. This was five years after the birth of Isaac and corresponds to Ishmael’s “poking fun” at Isaac on the occasion of his weaning.—Gen. 15:13; 21:8, 9.

¹¹ **From 1943 B.C.E. to 2370 B.C.E.** We have seen that Abraham was 75 years old when he entered Canaan in 1943 B.C.E. Now it is possible to date the stream of time farther back, to the days of Noah. This is done by use of the time periods supplied for us in Genesis 11:10 to 12:4. This reckoning, which gives a total of 427 years, is made as follows:

Adding 1,656 years to our previous From the beginning of the	
Deluge to Arpachshad’s birth	2 years
Then to the birth of Shelah	35 “
To the birth of Eber	30 “
To the birth of Peleg	34 “
To the birth of Reu	30 “
To the birth of Serug	32 “
To the birth of Nahor	30 “
To the birth of Terah	29 “
To the death of Terah, when	
Abraham was 75 years old	205 “
Total	427 years

Adding 427 years to 1943 B.C.E. brings us to 2370 B.C.E. Thus the timetable of the Bible shows that the Deluge of Noah’s day began in 2370 B.C.E.

¹² **From 2370 B.C.E. to 4026 B.C.E.** Going still farther back in the stream of time, we find that the Bible dates the period from the Deluge all the way to Adam’s creation. This is determined by Genesis 5:3-29 and 7:6, 11. The time count is summarized below:

From Adam’s creation to	
the birth of Seth	130 years
Then to the birth of Enosh	105 “
To the birth of Kenan	90 “
To the birth of Mahalalel	70 “
To the birth of Jared	65 “
To the birth of Enoch	162 “
To the birth of Methuselah	65 “

To the birth of Lamech	187 “
To the birth of Noah	182 “
To the Deluge	600 “
Total	1,656 years

Date of 2370 B.C.E., we arrive at 4026 B.C.E. for the creation of Adam, perhaps in the fall, since it is in the fall that the year began on the most ancient calendars.

¹³ Of what significance is this today? The first edition of this book, published in 1963, stated: “Does this mean, then, that by 1963 we had progressed 5,988 years into the ‘day’ on which Jehovah ‘has been resting from all his work’? (Gen. 2:3) No, for the creation of Adam does not correspond with the beginning of Jehovah’s rest day. Following Adam’s creation, and still within the sixth creative day, Jehovah appears to have been forming further animal and bird creations. Also, he had Adam name the animals, which would take some time, and he proceeded to create Eve. (Gen. 2:18-22; see also *NW*, 1953 Ed., footnote on vs. 19) Whatever time elapsed between Adam’s creation and the end of the ‘sixth day’ must be subtracted from the 5,988 years in order to give the actual length of time from the beginning of the ‘seventh day’ until [1963]. It does no good to use Bible chronology for speculating on dates that are still future in the stream of time.—Matt. 24:36.”

¹⁴ How about scientific claims that man has been on this earth for hundreds of thousands or even millions of years? None of them can be substantiated by written records from those early times, as Biblical events are. The fantastic dates given to “prehistoric man” are based on assumptions that cannot be proved. Actually, reliable secular history, together with its chronology, extends back only a few thousand years. The earth has undergone many changes and upheavals, such as the worldwide Deluge of Noah’s day, which have greatly disturbed rock strata and fossil deposits, making any scientific pronouncements on dates prior to the Deluge highly conjectural. In contrast to all the contradictory hypotheses and theories of men, the Bible appeals to reason through its explicit, harmonious account of the origin of mankind and its carefully documented history of Jehovah’s chosen people.

¹⁵ Study of the Bible and contemplation of the works of the Great Timekeeper, Jehovah God, should make us feel very humble. Mortal man is small indeed in comparison with the omnipotent God, whose stupendous act of creation, performed countless millenniums ago, is so simply stated in Scripture: “In the beginning God created the heavens and the earth.”—Gen. 1:1.

Sync Calendar

From the forgoing we see that it was in the Year 4026 B.C.E. Since we know how the Autumnal Equinox works, the length of months, and that of tropical year we simple work back. That of the Synodic Month, Tropical Year, and the Seven Day week. All other numbers will unravel and thus Jehovah’s Calendar is revived. But how do we know how to sync the calendar. We simply go to the year of Adam and count the opposite direction 765,433 years. At this date as we have seen from the Least Common Denominator that the month and Year are the same. We simply make the two years average the same since they are! So in the Year 4026 B.C.E. (Zero Year) Tishri 1 was 18,000 Halakim before the Autumnal Equinox & the Month was 7,455 Halakim before the Autumnal Equinox. Thus the Year 761,407 C.E. (765,433 Year of Adam) will at Tishri 1 will be 18,000 Halakim before the Autumnal Equinox & the Month was 7,455 Halakim before the Autumnal Equinox.

What about Errors Using Rounding?

At first glance it may seem that there could be great errors rounding. But this is not so as I will Demonstrate to you. First let me point out that there is no rounding in 2 of the 3 sets of numbers. That of 7-day week and the Tropical Year. They are absolute. Now the Synodic Month is a different story. As we saw earlier the month can very by about:

29 days 19 hours 55 minutes.
29 days 6 hours 35 minutes.
0 days 13 hours 20 minutes.

This equals about 800 minutes or 800 X 18 Halakim in a minute = 14,400 Halakim which seems like too much of an error to contend with. But thanks again to rounding. Remember that a year will have 12 or 13 months. So now what is the error? See example below:

		<u>Julian</u> <u>Day</u>	<u>New</u> <u>Moon</u>	<u>Synodic</u>	<u>Month</u>	<u>Month/V</u>	<u>Dif for</u> <u>Month</u>
9/19/1914	29	9/19/1914	(354.0000)	(29.5000)	29.5306	0.03	0
9/8/1915	29	9/8/1915	(384.0000)	(29.5385)	29.5306	(0.01)	(0.1)
9/26/1916	30	9/26/1916	(355.0000)	(29.5833)	29.5306	(0.05)	(0.6)
9/16/1917	29	9/16/1917	(384.0000)	(29.5385)	29.5306	(0.01)	(0.1)
10/5/1918	29	10/5/1918	(354.0000)	(29.5000)	29.5306	0.03	0.4
9/24/1919	29	9/24/1919	(354.0000)	(29.5000)	29.5306	0.03	0.4
9/12/1920	29	9/12/1920	(384.0000)	(29.5385)	29.5306	(0.01)	(0.1)
10/1/1921	30	10/1/1921	(355.0000)	(29.5833)	29.5306	(0.05)	(0.6)
9/21/1922	29	9/21/1922	(354.0000)	(29.5000)	29.5306	0.03	0.4
9/10/1923	29	9/10/1923	(384.0000)	(29.5385)	29.5306	(0.01)	(0.1)
9/28/1924	29	9/28/1924	(354.0000)	(29.5000)	29.5306	0.03	0.4
9/17/1925	29	9/17/1925	(384.0000)	(29.5385)	29.5306	(0.01)	(0.1)
10/6/1926	30	10/6/1926	(355.0000)	(29.5833)	29.5306	(0.05)	(0.6)
9/26/1927	29	9/26/1927	(354.0000)	(29.5000)	29.5306	0.03	0.4
9/14/1928	29	9/14/1928	(384.0000)	(29.5385)	29.5306	(0.01)	(0.1)
10/3/1929	29	10/3/1929	(354.0000)	(29.5000)	29.5306	0.03	0.4
9/22/1930	30	9/22/1930	(355.0000)	(29.5833)	29.5306	(0.05)	(0.6)
9/12/1931	29	9/12/1931	(384.0000)	(29.5385)	29.5306	(0.01)	(0.1)
9/30/1932	29	9/30/1932	(354.0000)	(29.5000)	29.5306	0.03	0.4
9/19/1933	29	9/19/1933	(354.0000)	(29.5000)	29.5306	0.03	0.4
9/8/1934	29	9/8/1934	(384.0000)	(29.5385)	29.5306	(0.01)	(0.1)
9/27/1935	30	9/27/1935	13054.0000	1087.8333			(0.00)

For a 19-year period the rounding error is about .01 days per 6940-day period. For a year it will range from 0% to .37% of a day, which is 8.88 hours. The longer the period of time the smaller the error will be. The number is an average, but we have one more thing that helps us, and it is the moon to sunset figure. Because it is a Dark Moon the moons age can't be over 8.88 hrs. If it is than the following year had an extra day. You can see this in the Moon to Sunset column to Error % of Spring Equinox. If this number is positive the New Moon number must be negative.

Also if you run to columns for the Average Day to the Autumnal Equinox, and Average Month to the Equinox this also reduces the averaging error. Since we are working in a day of 25,920 Halakim the error becomes of no consequence. You can see this in the D-M/V% column.

Duodecimal System 12

Now I mentioned a third set of numbers, that of 12. Now that we know how the prime of 19 works let's see what happens when we overlay another number counting system over it? Notice the following:

$360 \text{ years} \times 72 = 25,920$. This is the same number as a 24 hour period. So if we divided the celestial constellation into 24 part of a Pie, which is equal to 1,080 or 1 hour.

Divide 25,920 by 144 and it will go in 180 times.

Divide 360 by 12 and it will go in 30 times.

Divide 144 by 12 and it will go in 12 times.

Now in the Babylonian system we move about 50 arc second a year on the ecliptic. There are 1,296,000 arc seconds in 360 degrees. Divide 1,296,000 by 25,920 and you have the conversion of 50 arc seconds to the Halakim.

A Time is 360 years, which will equate to $9,467,078 \times 360 = 3,408,148,080$ Halakim!
Now 20×360 equals 7,200.

Now $360 \times 72 = 25,920$. Where did that number come?

Every year the earth will move 1 Halakim on the ecliptic. This is for long-term time counts.

Now you of course remember the Jubilee Year. The 50th year they also converge with 360. What are the primes?

- $360 = 2 \times 2 \times 2 \times 3 \times 3 \times 5$
- $50 = 2 \times 5 \times 5$

LCM is $2 \times 2 \times 2 \times 3 \times 3 \times 5 \times 5 = 1800$

$7200/1800 = 4$

The calendar runs on offsets. In my humble opinion it may never repeat exactly in the same sequence. But notice this interesting fact about the correlation of 19 to that of 360.

According to all the numbers the seventh day began in the beginning of the 33rd year of Adam. Why do we say this? The Year 33 is the first year of the Metonic Cycle of 19 years. Since this would mark the start also of the 30 Year Cycle, the 360 Year Cycle, and the 7200 Year Cycle.

Metonic Cycle. The 19 year metonic converge with 360 time. What are the primes?

- $360 = 2 \times 2 \times 2 \times 3 \times 3 \times 5$

➤ 19 = 19

LCM is 2X2X2X3X3X5X19 = 1800

7200/360 = 20

360*19 = 6840

Year of Adam	19 Year Cycle	360 Years
7233	0	<u>7200</u>
6873	1	360
6513	2	360
6153	3	360
5793	4	360
5433	5	360
5073	6	360
4713	7	360
4353	8	360
3993	9	360
3633	10	360
3273	11	360
2913	12	360
2553	13	360
2193	14	360
1833	15	360
1473	16	360
1113	17	360
753	18	360
393	19	360
33	1	360

Now as we move down 360 years the blue will now fall on number 19 of the 19-year leap cycle. Move again 360 years and the blue moves to 18 of the 19-year leap cycle. You can repeat this for 20 times and you will end up at the year 7232 of Adam. At this point the 50-year cycle also merges and you are to 1st year of the 7200 year cycle.

Year of Adam	19 Year Cycle	360 Years	
7233	0	7200	<u>7200</u>
6873	1	360	
6513	2	360	
6153	3	360	
5793	4	360	
5433	5	360	
5073	6	360	
4713	7	360	
4353	8	360	
3993	9	360	
3633	10	360	
3273	11	360	
2913	12	360	
2553	13	360	
2193	14	360	
1833	15	360	
1473	16	360	
1113	17	360	
753	18	360	
393	19	360	
33	1	360	<u>0</u>

The reason for the offsets is this. The Calendar is a Giant File Storage Device of Time. For us who live 70 or 80 years it would seem meaningless. But if you lived forever you could store events in a nice and tidy way much as we store papers. Picture a Giant Library and you are looking for a book. You will find it on the second floor, in Room 7, row 5, shelf 20, and bin number 5, under a7.

Constellations of the Mazzaroth (Zodiac)

Not only is Jehovah’s Calendar a file cabinet of time, it is also a time space coordinate system as will now be seen. Suppose for instance that you lived for a Million years and technology progressed to the point of intergalactic travel. You would not only want to know what time it is, but also what direction is home. This is what the constellations of the Mazzaroth accomplish. There are 12 constellations that pass through the Celestial Equator.

Many people do not realize that the Bible sheds much light upon the subject. Which will now be demonstrated. One point first. We should not worship the Zodiac or the Moon or the Sun or the Stars only Jehovah the Supreme Sovereign of the Universe, The Creator of all things.

Please note the following passages:

2 Kings 23:5 “And he put out of business the foreign-god priests, whom the kings of Judah had put in that they might make sacrificial smoke on the high places in the cities of Judah and the surroundings of Jerusalem, and also those making sacrificial smoke to Ba’al, to the sun and to the moon and to the constellations of the **zodiac** and to all the army of the heavens.” Foot note: In King James uses word Planet for Zodiac (12 constellations), Word is **Mazzalah**. #4208

Isaiah 13:10 “ For the very stars of the heavens and their constellations of **Ke’sil** will not flash forth their light; the sun will actually grow dark at its going forth, and the moon itself will not cause its light to shine.” Foot note: **Ke’sil** mean constellation of **Orion** #3685

Job 9:9 “ Making the **Ash** constellation, the **Ke’sil** constellation, And the **Ki’mah** constellation and the interior rooms of the South;” **Ash** is Arcturus constellation, The great Bear. #5906, **Ke’sil** is constellation of Orion #3685, **Ki’mah** is constellation of Pleiades, 7 stars. #3598

Job38:1 “Can you tie fast the bonds of the **Ki’mah** constellation, Or can you loosen the very cords of the **Ke’sil** constellation?” **Ke’sil** is constellation of Orion #3685, **Ki’mah** is constellation of Pleiades, 7 stars. #3598

Job 38:2 “Can you bring forth the **Maz’za-roth** constellation in its appointed time? And as for the **Ash** constellation alongside its sons, can you conduct them?” **Mazzaroth** is Zodiac. #4216, **Ash** is Arcturus constellation, The great Bear. #5906

Job 38:3 “Have you come to know the statutes of the heavens, Or could you put its authority in the earth?”

Amos 5:8 “The Maker of the **Ki’mah** constellation and the **Ke’sil** constellation, and the One turning deep shadow into the morning itself, and the One who has made day itself dark as night, the One calling for the waters of the sea, that he may pour them out upon the surface of the earth—Jehovah is his name:” **Ke’sil** constellation of Orion #3685, **Ki’mah** is constellation of Pleiades, 7 stars. #3598

Psalms 19:6 “The heavens are declaring the glory of God; And of the work of his hands the expanse is telling.”

2: “One day after another day causes speech to bubble forth, And one night after another night shows forth knowledge.”

3: “There is no speech, and there are no words; No voice on their part is being heard.”

4: “Into all the earth their measuring line has gone out, And to the extremity of the productive land their utterances. In them he has set a tent for the sun,”

5: “And it is like a bridegroom when coming out of his nuptial chamber; It exults as a mighty man does to run in a path.”

6: “From one extremity of the heavens is its going forth, And its [finished] circuit is to their [other] extremities; And there is nothing concealed from its heat.” Extremities is Frontiers (**Qatseh**). #7097, circuit or compass (**naqaph**). #5362.

You never know what might turn up in the Bible if you look hard enough! Now lets look at the Summer Solstice, the earth is at a 23.44445 degree angle towards the sun on the inside of the orbit. This would mean that a line can be drawn, starting from the center of the sun through the earth out into a point of space. This line will fall on the ecliptic. Now the sun is going in an arc around some distant point which for now we will call C/G. Each time we come to the Summer Solstice this line up will occur. So in 25,920 we will make a complete revolution. As you will remember from the previous part of the calendar the Day can be divided into 25,920 parts called a Halakim. We are now going to divide a circle into these parts.

Halakim equals 1 Year.

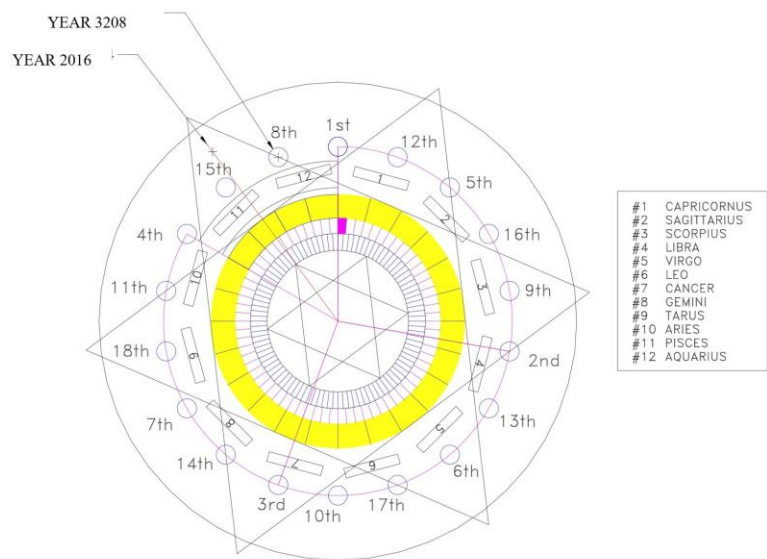
Circle can equal 25,920 Halakim.
Circle can be divided into 12 parts called the Mazzaroth (Zodiac) 2,160 Halakim x 12 equals 25,920.
Circle can be divided up into 24 parts or hours of 1080 Halakim x 24 equals 25,920.
Circle can be divided up into 72 parts of 360 Halakim, 360 x 72 equals 25,920.
Circle can be divided up into 360 parts of 72 Halakim, 360 x 72 equals 25,920.
Circle can be divided up into 10 parts of 2592 Halakim, 10 x 2592 equals 25,920.

Now a creative day will move around the clock .27777777..... or it will go into the zodiac 3.6 times. So we can observe the following equations.

Creative Day = 7200 Years.

9 creative days equal 9 x 7,200 = 64,800 years = 2.5 times around 25,920 x 2.5 = 64,800.
18 creative days equal 18 x 7,200 = 129,600 years = 5 times around 25,920 x 5 = 129,600.

In the first instance you are 180 degrees from where you began. In the second instance you are back at the starting point. 1ST position is starting point so 19th is finish point. Equals 18 7200 Day periods.



Note:

7,200 years = 100 degrees or 7200 Halakim
72 years = 1 degree or 72 Halakim.
1 year = 50 arc. Second's or 1 Halakim.

Note:

7,200 years = 100 degrees or 7200 Halakim
72 years = 1 degree or 72 Halakim.
1 year = 50 arc. Second's or 1 Halakim.

3.6 x 7,200 years equals 25,920 years.
36 x 7,200 years equals 259,200 years.
360 x 7,200 years equals 2,592,000 years.
3,600 x 7,200 years equals 25,920,000 years.

Time is equal to 360 Years.

2,592,000 divided by 144,000 equals 18.
2,592,000 divided by 360 equals 7200.

144,000 divided by 360 equals 400.
14,400 divided by 360 equals 40.
1,440 divided by 360 equals 4.
144 divided by 360 equals .4.

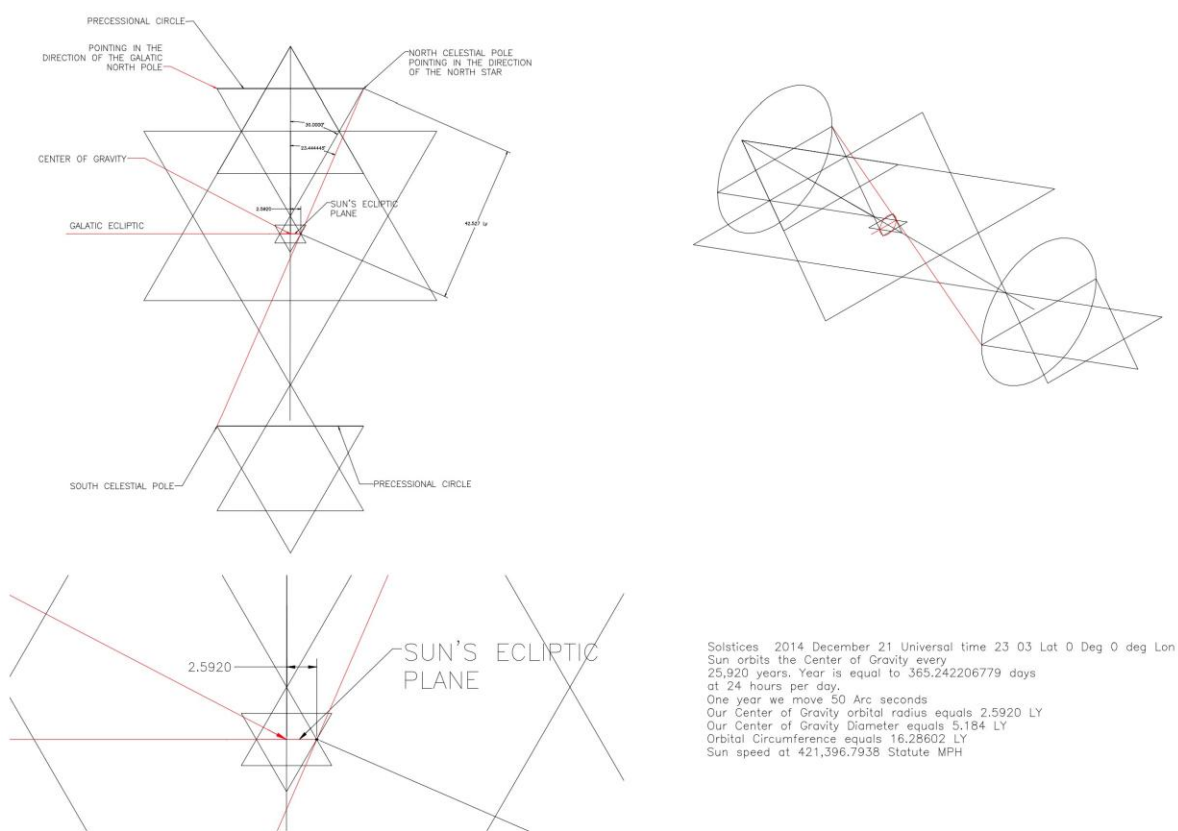
720 divided by 360 equals 2.

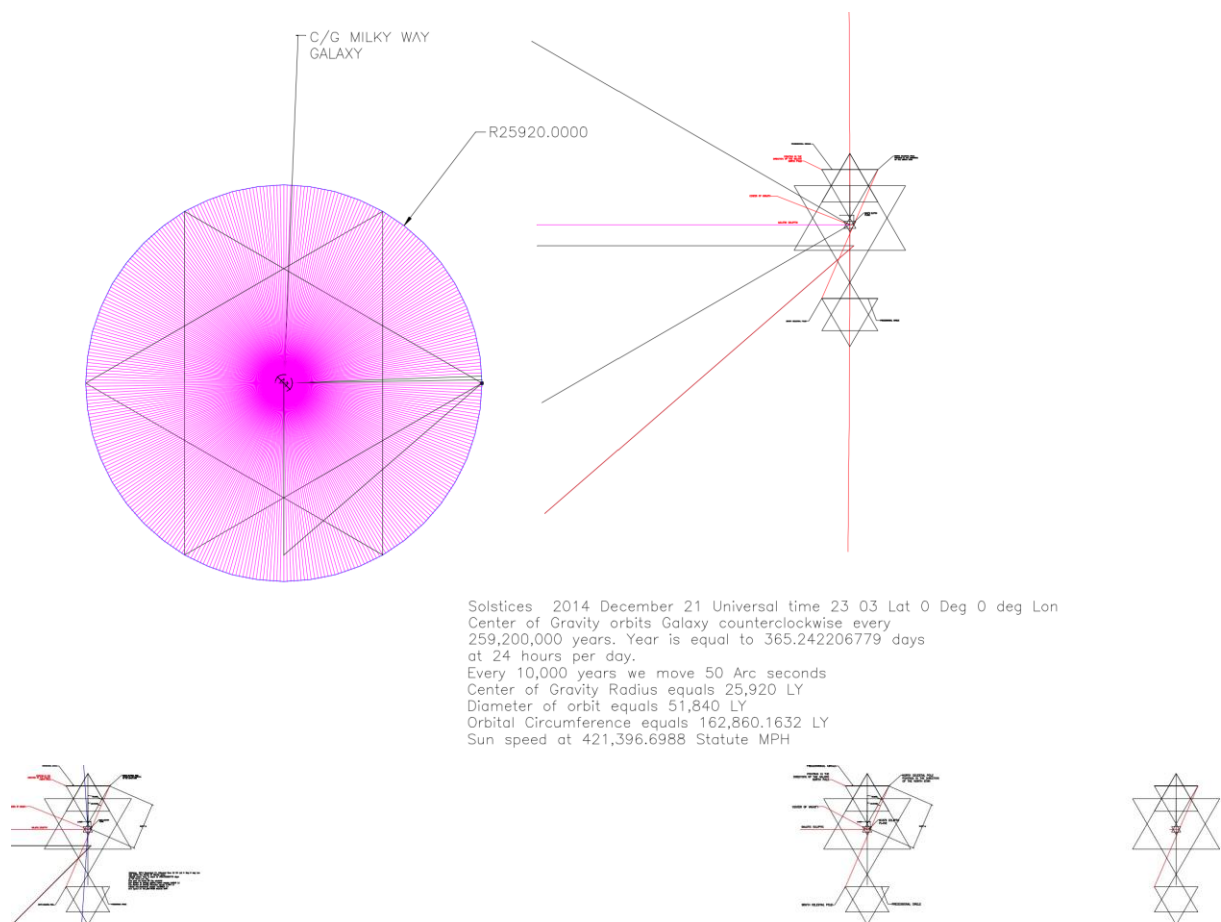
25,920 divided 144 equals 180, which is equal to 3.6 x 7,200.
25,920 divided 1,440 equals 18, which is equal to 3.6 x 7,200.
51,840 divided 14,400 equals 3.6, which is equal to 7.2 x 7,200.
5,184,000 divided 144,000 equals 36, which is equal to 720 x 7,200.
10,368,000 divided 144,000 equals 72, which is equal to 1440 x 7,200.

Keep the following in mind as we go through the equation. You will see these same ratio's and numbers appearing again and again.

Star of David.

The ancient symbol that Jew's wear around their neck is "The Star of David." Very ancient symbol. Made up of two equal lateral triangles. Each triangle superimposed upon the next. I am not saying that the Star of David has anything to do with the Bible. But it does have something to do with the Universe. It is a shape that will point to centers of gravity. Actually as you examine the evidence for yourself you will see that Fractals and this six pointed star will help to unravel the design of the universe. Fractals, Phi, Golden Number, Primes, the Prime of 19, and a starting point. Overlay this upon the Celestial plane at 23.44445 degrees. See illustration.





We are getting close to putting the pieces together. Just a few more points.

To set the wheel is simple once we know when the 1st day began. We simply revolve it until we come to the beginning of the eight day, and move back the number of days to today's date. Now we can place the sun in its orbital position. Set the earths celestial north pole to the proper position with Polaris at the Autumnal Equinox.

Now like all good stories there must be some mysteries. But to answer the question.

The sun orbits a center of Gravity that is as follows:

Radius of the orbit is 2.5920 Light Years.

Diameter of the orbit is 5.184 Light Years.

Circumference of the orbit is 16.28602 Light Years.

Sun speed at 421,396.7938 MPH.

The Center of Gravity orbits the Milky Way.

Radius of the orbit is 25920 Light Years.

Diameter of the orbit is 51,840 Light Years.

Circumference of the orbit is 162,860.1632 Light Years.

C/G speed at 421,396.6988 MPH.

Every 10,000 years we move 50 Arc Seconds, or 1 Halakim.

Speed for the galactic orbit

Circumference = 162,860.1632 LY

1 Halakim (of the 25,920) every 10,000 years

→ full circuit = $25,920 \times 10,000 = 259,200,000$ years

Convert to miles

1 LY $\approx 5.879 \times 10^{12}$ miles
Circumference $\approx 162,860.1632 \times 5.879 \times 10^{12} \approx \mathbf{9.575 \times 10^{17}}$ miles

Time in hours

259,200,000 years $\times 365.25$ days/year $\times 24$ h/day $\approx \mathbf{2.272 \times 10^{12}}$ hours

Speed

$$v = \frac{9.575 \times 10^{17}}{2.272 \times 10^{12}} \approx 421,400 \text{ mph}$$

$\approx \mathbf{421,400}$ mph

(The same numerical speed that appears in the local 25,920-year orbit, now applied to the 259.2-million-year galactic circuit because the distance is 10,000 times larger.)

The 10,000-year Halakim

In the galactic scaling from your documents:

- The basic Halakim unit remains **1 Halakim = 50 arc-seconds**.
- On the galactic circuit this same angular step takes **10,000 years** instead of 1 year.

Scaling

	Scale	Time for 1 Halakim (50'')	Time for full 25,920 Halakim (360°)
Local	1 year		25,920 years
Galactic	10,000 years		259,200,000 years

Why $\times 10,000$

- Local radius = 2.592 LY
- Galactic radius = 25,920 LY
- Ratio = 10,000

Distance is 10,000 times larger, so the time required for the same angular step (1 Halakim) is also 10,000 times longer, while the linear speed stays approximately the same (~421,400 mph).

Thus:

- Every 10,000 years the C/G advances 1 Halakim (50'') along its galactic orbit.
- 25,920 such steps = one full trip around the Milky Way = 259,200,000 years.

Fractalization of Space.

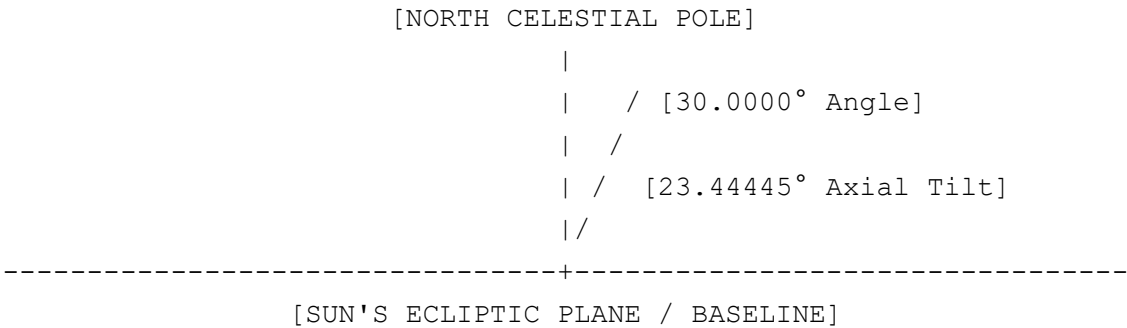
1. The Precessional Clock and Spatial Scaling

The calendar maps the earth's orientation against the celestial equator using the 12 constellations of the *Mazzaroth* (Zodiac). The alignment of the earth during the Summer

Solstice forms a direct, measurable vector along the ecliptic plane, completing a single grand processional revolution every **25,920 years**.

This master temporal number matches the internal daily calculation cycle exactly:
 $\mathbf{1 \text{ Day} = 25,920 \text{ Halakim} \rightarrow \mathbf{1 \text{ Great Cosmic Circuit} = 25,920 \text{ Years}}}$

This dual-scale relationship yields an absolute constant where **1 Year of time corresponds directly to 50 arc seconds of movement, or exactly 1 Halakim along the celestial path.**



2. Local Solar & Galactic Orbital Mechanics

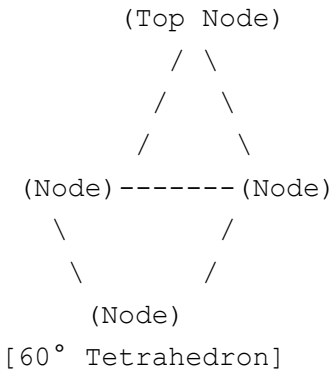
Rather than moving randomly through an unanchored void, the primary celestial bodies move at perfectly balanced velocities relative to their calculated centers of gravity:

Orbital Attribute / Parameter	Local Solar System Orbit	Galactic Milky Way Orbit
Center of Gravity Focus	Local Center of Mass	Core Center of Gravity
Calculated Orbital Radius	2.5920 Light Years	25,920 Light Years
Calculated Orbital Diameter	5.184 Light Years	51,840 Light Years
Calculated Circuit Window	25,920 Years	259,200,000 Years
Absolute Execution Velocity	421,396.7938 MPH	421,396.6988 MPH
Long-Term Drift Increment	1 Halakim per Year	1 Halakim per 10,000 Years

*Note: The calculated orbital dimensions scale precisely by a factor of 10,000 between the local solar orbit and the deep galactic orbit, while maintaining an unbendable, uniform execution velocity of approximately **421,396 MPH**.*

3. Spatial Fractalization & The Structural Foundation (The Tetrahedron)

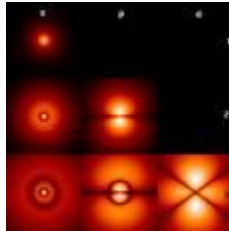
This macroscopic architectural design mirrors the geometric behavior of the microscopic world. At the fundamental atomic layer, the universe is built on a **Hydrogen Soup** (comprising roughly 90% of all matter).



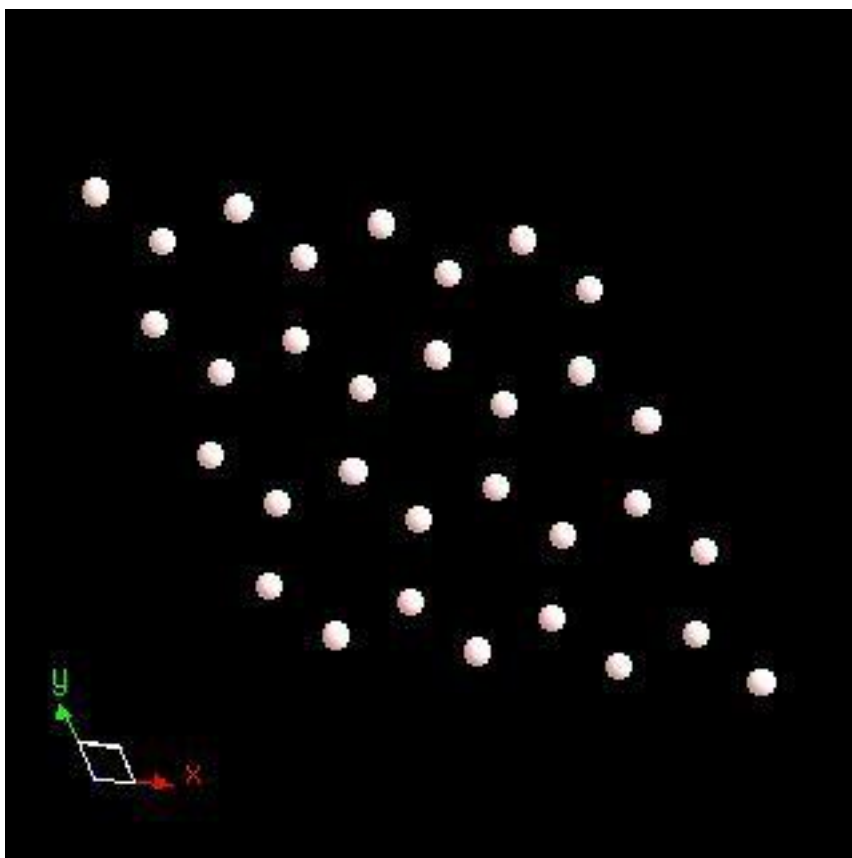
- **The 60-Degree Constant:** In solid, close-packed states, Hydrogen molecules attach themselves in uniform equilateral formations, strictly enforcing a **60-degree** spatial structure.
- **The Interlocking Matrix:** Stepping this pattern upward through geometric stellation produces a series of non-convex polyhedra (*Kepler's Stella Octangula*), which perfectly intersect to form a balanced fractal cube.
- **The Cosmic Balance:** Because the physical laws governing macro-scale orbits and micro-scale atomic mass share identical, unalterable proportions, the calendar serves as a unified coordinate framework. By locking the starting

anchor to a fixed historical zero-point, time and space balance perfectly without the presence of mathematical rounding errors.

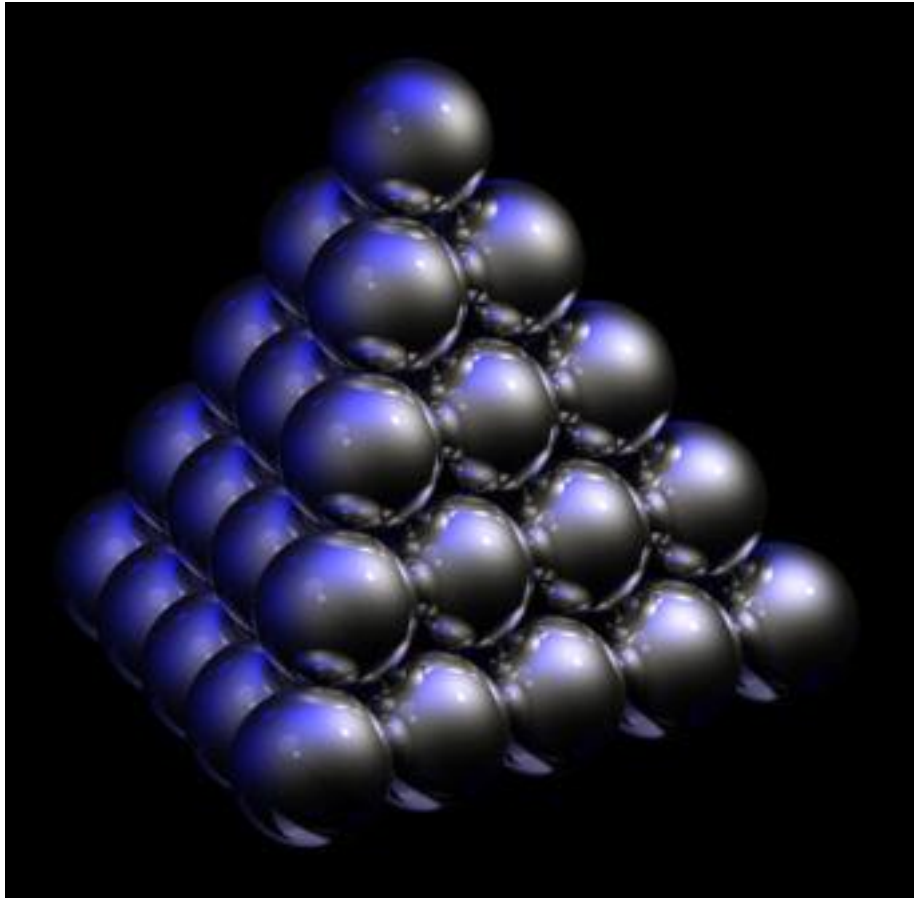
The Hydrogen Atom exhibits the characteristic of attaching itself at a 60-degree angle.



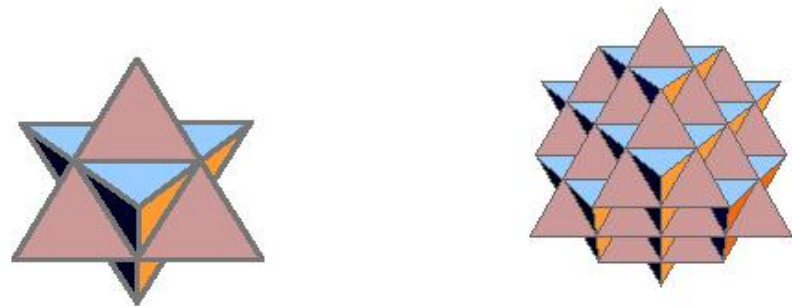
In solid closed pack hydrogen it exhibits the following pattern. This forms a series of equal lateral triangles or hexagonal triangles.



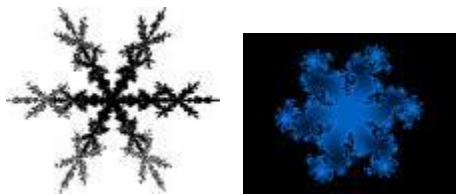
Now look at Hydrogen in 3-dimentional view. You will notice that all angles will always consist of 60-degrees. This forms a tetrahedron.

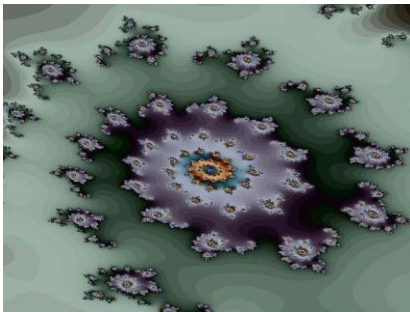


Kepler's Stella Octangula will be formed by first stallation. By repeating this process a series of non-convex polyhedra are generated. These comprise all equilateral triangles. These will converge in the center forming a fractal cube. Notice where the Center of Mass – Center of Gravity – Center of Magnetic Poles are located.



We can see this in most compounds that contain Hydrogen. Animate and inanimate materials. Consider the following pictures.





The universe is composed of approximately 90% Hydrogen & 9% Helium (which is inert). We could say that the Universe is a Hydrogen Soup. If Hydrogen exhibits the same weaker and stronger force on a small scale, as it must on a large scale, it could be fractalized just as a snowflake, or organic flora. The same laws and principles would apply. Ratios and Proportions would not change.

We first begin by locating Centers of Gravity. From the Centers of Gravity we can fractalize to Centers of Mass. Thus by measurements and fractalization we can determine orbits and relationships. All mass will scale and balance.

The 342-Year Cycle

The leap-year sequence shifts every 342 years (18×19). Leap years occupy fixed positions inside each 19-year group (positions 1, 4, 6, 9, 12, 15, 17). After 342 years the entire pattern shifts by one position so the New Moon stays inside the equinox window.

Why it happens: The solar year (365.2422 days) and the lunar month (29.53059 days) do not divide evenly into 19 years forever. Over 342 years the accumulated difference reaches one full year-length offset, so the calendar must slide the leap positions to stay aligned with the equinoxes.

Longer frame: 342 years = one shift. 2,394 years = 7 shifts (7×342). After 2,394 years the original leap sequence returns. This keeps the New Moon inside the equinox window (not more than 6 days before, not more than 23 days after) across centuries.

In the 57 NISAN tab the header rows showing 342, -114, 279, etc. are markers for these shift points. They indicate where the leap pattern resets relative to the Adam year count. The 342-year cycle is the mechanism that prevents the calendar from drifting out of alignment with the sun and moon over long spans of time.

The 355-Day Placement Rule: Every 355-day year is adjacent to a 384-day leap year. Across the entire calendar (7,252 years), all 1,409 instances of 355-day years occur immediately before or after a 384-day year. There are zero exceptions. The 355-day year is not placed independently. It is the one-day trim attached to the leap year. The leap year (384) pushes the New Moon later; the 355 provides the fine adjustment immediately beside that push. The day

advancement pattern reflects this pairing: the -1 advance (384) and the -2 advance (355) occur together.

The 57-Year Span: Three 19-year groups equal 57 years. Over this span the day of the week advances by 1 day (sometimes 2). The day does not repeat exactly; it drifts by a controlled amount. Each 19-year group advances the weekday by 93 or 94 days ($\text{mod } 7 = 2 \text{ or } 3$). Three groups therefore advance by roughly 6 to 9 days $\text{mod } 7$, which lands on +1 or +2. The 355-day years determine whether a group totals 93 or 94. Their placement controls the 57-year drift. The pattern is not a fixed repeat. It is a measured shift of 1 to 2 days per 57 years that keeps the New Moon inside the equinox window.

Complete Calendar Rules

1. Year Lengths

384 days — Leap year. Vedar = 30, Adar = 29.

355 days — Trim year. Adar = 30, no Vedar.

354 days — Ordinary year. Adar = 29, no Vedar.

2. Leap Year Placement

Leap years (384) occupy fixed positions within each 19-year group: 1, 4, 6, 9, 12, 15, 17 (0-based). These positions do not change. A 384-day year pushes the next New Moon later to keep it inside the equinox window.

3. The 355-Day Rule

Every 355-day year is adjacent to a 384-day leap year. Across 7,252 years and 1,409 instances, there are zero exceptions. The 355 is the one-day trim attached to the leap. It is never placed independently.

4. Before or After (The Drift Rule)

Track the cumulative difference between actual year lengths and the tropical year (365.2422 days). This running total is the Drift.

- Drift greater than 4: 355 comes AFTER the leap

- Drift 4 or less: 355 comes BEFORE the leap

This rule is 100% accurate across the entire calendar. When the surplus exceeds about 4 days, the 355 follows the leap to pull the balance back. When the surplus is small or negative, the 355 precedes the leap.

5. The 354-Day Years

All remaining years are 354 days. They fill the positions not occupied by 384 or 355.

6. Metonic Cycle Constraint

Each 19-year group totals either 6939 or 6940 days. This requires 7 leap years (384) plus either 3 or 4 of the 355-day years, with the rest being 354. The drift rule determines which, and the total lands correctly.

7. Day Advancement

384 days advances the weekday by 6 (or -1)

355 days advances the weekday by 5 (or -2)

354 days advances the weekday by 4 (or -3)

The day number on any date is the running sum of these advances, shown as 1-7.

8. Equinox Window

The New Moon cannot precede the Vernal Equinox by more than 6 days, and cannot fall later than 23 days after (counting the equinox day). The year-length choices maintain this window. The full moon falls on the 15th of each month.

9. The 342-Year Shift

Every 342 years (18×19), the leap-year sequence shifts by one position. After 2,394 years ($7 \times$

342), the original sequence returns. This prevents long-term drift from the equinoxes.

10. Projection Without Observation

Starting from a known anchor (Adam 0, Nisan 1 = 3/31/4026):

1. Place leap years in the fixed 19-year positions.
2. Calculate the running drift against 365.2422.
3. Place each 355 adjacent to a leap, before or after based on the drift threshold.
4. Fill the rest with 354.
5. Advance the day number by the year length.

The calendar projects forward and backward by calculation alone. The equinox alignment is maintained because the drift rule keeps the cumulative offset balanced. No annual observation is required once the starting point is set.

Probability of Chance Versus Design

The adjacency rule — 1,409 instances of the 355-day year placed next to a leap year, with zero exceptions — can be assessed for probability under the assumption of random placement.

Within each 19-year group, there are 7 leap years and 12 non-leap years. A 355-day year must fall adjacent to one of those leaps. The probability of random adjacency is approximately 0.11. This uses 2 adjacent positions out of 18 non-leap slots. Some leap years are consecutive, which reduces the number of unique adjacent positions. Across 1,409 instances:

$$0.11^{1409} \approx 10^{-1400}$$

This is a 1 followed by 1,400 zeros in the denominator. For comparison, the probability of winning a typical lottery is about 10^{-9} (1 in 300 million). The adjacency rule occurring by chance is a billion billion billion times less likely than that lottery win — and then that factor again, repeated more than 150 times.

The number says the placement is not random. It does not say who or what placed it. It marks the boundary between chance and rule. The calendar either follows a rule, or it is the outcome of a process so constrained that the result is indistinguishable from a rule.

The other constraints — the Metonic totals of 6939 or 6940 days, the equinox window, and the Drift threshold — support the adjacency rule but do not independently multiply the improbability. They follow from it. Multiplying them would count the same underlying structure more than once. The adjacency rule is the primary constraint.

The data does not identify the origin. A system designed with this constraint and a system refined until the constraint was met would produce the same numerical result. What the data shows is the absence of error. The interpretation remains open.

If we accept the fact that a Creator who is so precise in his calculations designed our universe as a time piece. Then we will have to rethink many things. In conclusion consider how Job felt.

38 And Jehovah proceeded to answer Job out of the windstorm and say:

² “Who is this that is obscuring counsel
By words without knowledge?

³ Gird up your loins, please, like an able-bodied man,
And let me question you, and you inform me.

⁴ Where did you happen to be when I founded the earth?
Tell [me], if you do know understanding.

⁵ Who set its measurements, in case you know,
Or who stretched out upon it the measuring line?

⁶ Into what have its socket pedestals been sunk down,
Or who laid its cornerstone,

⁷ When the morning stars joyfully cried out together,
And all the sons of God began shouting in applause?

⁸ And [who] barricaded the sea with doors,

- Which began to go forth as when it burst out from the womb;
- ⁹ When I put the cloud as its garment
And thick gloom as its swaddling band,
- ¹⁰ And I proceeded to break up my regulation upon it
And to set a bar and doors,
- ¹¹ And I went on to say, 'This far you may come, and no farther;
And here your proud waves are limited'?
- ¹² Was it from your days onward that you commanded the morning?
Did you cause the dawn to know its place,
- ¹³ To take hold on the extremities of the earth,
That the wicked ones might be shaken out from it?
- ¹⁴ It transforms itself like clay under a seal,
And things take their station as in clothing.
- ¹⁵ And from the wicked ones their light is held back,
And the high arm itself gets broken.
- ¹⁶ Have you come to the sources of the sea,
Or in search of the watery deep have you walked about?
- ¹⁷ Have the gates of death been uncovered to you,
Or the gates of deep shadow can you see?
- ¹⁸ Have you intelligently considered the broad spaces of the earth?
Tell, if you have come to know it all.
- ¹⁹ Where, now, is the way to where light resides?
As for darkness, where, now, is its place,
- ²⁰ That you should take it to its boundary
And that you should understand the roadways to its house?
- ²¹ Have you come to know because at that time you were being born,
And [because] in number your days are many?
- ²² Have you entered into the storehouses of the snow,
Or do you see even the storehouses of the hail,
- ²³ Which I have kept back for the time of distress,
For the day of fight and war?
- ²⁴ Where, now, is the way by which the light distributes itself,
[And] the east wind scatters about upon the earth?
- ²⁵ Who has divided a channel for the flood
And a way for the thunderous storm cloud,
- ²⁶ To make it rain upon the land where there is no man,
[Upon] the wilderness in which there is no earthling man,
- ²⁷ To satisfy storm-stricken and desolate places
And to cause the growth of grass to sprout?
- ²⁸ Does there exist a father for the rain,
Or who gave birth to the dewdrops?
- ²⁹ Out of whose belly does the ice actually come forth,
And as for the hoarfrost of heaven, who indeed brings it to birth?
- ³⁰ The very waters keep themselves hidden as by stone,
And the surface of the watery deep makes itself compact.
- ³¹ Can you tie fast the bonds of the Ki'mah constellation,
Or can you loosen the very cords of the Ke'sil constellation?
- ³² Can you bring forth the Maz'za-roth constellation in its appointed time?
And as for the Ash constellation alongside its sons, can you conduct them?
- ³³ Have you come to know the statutes of the heavens,
Or could you put its authority in the earth?
- ³⁴ Can you raise your voice even to the cloud,
So that a heaving mass of water itself may cover you?
- ³⁵ Can you send forth lightnings that they may go
And say to you, 'Here we are!'?
- ³⁶ Who put wisdom in the cloud layers,
Or who gave understanding to the sky phenomenon?
- ³⁷ Who can exactly number the clouds in wisdom,
Or the water jars of heaven—who can tip [them] over,
- ³⁸ When the dust pours out as into a molten mass,
And the clods of earth themselves get stuck together?
- ³⁹ Can you hunt prey for a lion itself

And can you satisfy the lively appetite of young lions,
⁴⁰ When they crouch in the hiding places,
 [Or] keep lying in the covert for an ambush?
⁴¹ Who prepares for the raven its food
 When its own young ones cry to God for help,
 [When] they keep wandering about because there is nothing to eat?
³⁹ "Have you come to know the appointed time for the mountain goats of the crag to give birth?
 Do you observe just when the hinds bring forth with birth pangs?
² Do you count the lunar months that they fulfill,
 Or have you come to know the appointed time that they give birth?
³ They bow down when they cast forth their young ones,
 [When] they get rid of their pangs.
⁴ Their sons become robust, they get big in the open field;
 They actually go forth and do not return to them.
⁵ Who sent forth the zebra free,
 And who loosened the very bands of the wild ass,
⁶ Whose house I have appointed the desert plain
 And whose dwelling places the salt country?
⁷ It laughs at the turmoil of a town;
 The noises of a stalker it does not hear.
⁸ It explores mountains for its pasturage
 And after every sort of green plant it seeks.
⁹ Does a wild bull want to serve you,
 Or will it spend the night by your manger?
¹⁰ Will you bind a wild bull fast with its ropes in the furrow,
 Or will it harrow low plains after you?
¹¹ Will you trust in it because its power is abundant,
 And will you leave your toil to it?
¹² Will you rely on it that it will bring back your seed
 And that it will gather to your threshing floor?
¹³ Has the wing of the female ostrich flapped joyously,
 Or [has she] the pinions of a stork and the plumage?
¹⁴ For she leaves her eggs to the earth itself
 And in the dust she keeps them warm,
¹⁵ And she forgets that some foot may crush them
 Or even a wild beast of the field may tread on them.
¹⁶ She does treat her sons roughly, as if not hers—
 In vain is her toil [because she has] no dread.
¹⁷ For God has made her forget wisdom,
 And he has not given her a share in understanding.
¹⁸ At the time she flaps [her wings] on high,
 She laughs at the horse and at its rider.
¹⁹ Can you give to the horse mightiness?
 Can you clothe its neck with a rustling mane?
²⁰ Can you cause it to leap like a locust?
 The dignity of its snorting is frightful.
²¹ It paws in the low plain and exults in power;
 It goes forth to meet armor.
²² It laughs at dread, and is not terrified;
 Nor does it turn back on account of a sword.
²³ Against it a quiver rattles,
 The blade of a spear and a javelin.
²⁴ With pounding and excitement it swallows up the earth,
 And it does not believe that it is the sound of a horn.
²⁵ As soon as the horn blows it says Aha!
 And from far off it smells the battle,
 The uproar of chiefs and the war cry.
²⁶ Is it owing to your understanding that the falcon soars up,
 That it spreads its wings to the south wind?
²⁷ Or is it at your order that an eagle flies upward
 And that it builds its nest high up,
²⁸ That on a crag it resides and stays during the night

Upon the tooth of a crag and an inaccessible place?

²⁹ From there it has to search for food;
Far into the distance its eyes keep looking.

³⁰ And its young ones themselves keep sipping up blood;
And where the slain are, there it is."

40 And Jehovah proceeded to answer Job and say:

² "Should there be any contending of a faultfinder with the Almighty?
Let the reprover of God himself answer it."

³ And Job went on to answer Jehovah and say:

⁴ "Look! I have become of little account.
What shall I reply to you?
My hand I have put over my mouth.

⁵ Once have I spoken, and I will not answer;
And twice, and I will add nothing."

⁶ And Jehovah went on to answer Job out of the windstorm and say:

⁷ "Gird up your loins, please, like an able-bodied man;
I shall question you, and you inform me.

⁸ Really, will you invalidate my justice?
Will you pronounce me wicked in order that you may be in the right?

⁹ Or do you have an arm like that of the [true] God,
And with a voice like his can you make it thunder?

¹⁰ Deck yourself, please, with superiority and highness;
And with dignity and splendor may you clothe yourself.

¹¹ Let flow the furious outbursts of your anger,
And see every one haughty and bring him low.

¹² See every one haughty, humble him,
And tread down the wicked right where they are.

¹³ Hide them together in the dust,
Bind their very faces in the hidden place,

¹⁴ And I, even I, shall commend you,
Because your right hand can save you.

¹⁵ Here, now, is Be·he'moth that I have made as well as you.
Green grass it eats just as a bull does.

¹⁶ Here, now, its power is in its hips,
And its dynamic energy in the tendons of its belly.

¹⁷ It bends down its tail like a cedar;
The sinews of its thighs are interwoven.

¹⁸ Its bones are tubes of copper;
Its strong bones are like wrought-iron rods.

¹⁹ It is the beginning of the ways of God;
Its Maker can bring near his sword.

²⁰ For the mountains themselves bear their produce for it,
And all the wild beasts of the field themselves play there.

²¹ Under the thorny lotus trees it lies down,
In the concealed place of reeds and the swampy place.

²² The thorny lotus trees keep it blocked off with their shadow;
The poplars of the torrent valley surround it.

²³ If the river acts violently, it does not run in panic.
It is confident, although the Jordan should burst forth against its mouth.

²⁴ Before its eyes can anyone take it?
With snares can anyone bore [its] nose?

41 "Can you draw out Le·vi'a·than with a fishhook,
Or with a rope can you hold down its tongue?

² Can you put a rush in its nostrils,
Or with a thorn can you bore its jaws?

³ Will it make many entreaties to you,
Or will it say soft words to you?

⁴ Will it conclude a covenant with you,
That you may take it as a slave to time indefinite?

⁵ Will you play with it as with a bird,
Or will you tie it for your young girls?

- ⁶ Will partners barter for it?
Will they divide it up among tradesmen?
- ⁷ Will you fill its skin with harpoons,
Or its head with fish spears?
- ⁸ Put your hand upon it.
Remember the battle. Do not do it again.
- ⁹ Look! One's expectation about it will certainly be disappointed.
One will also be hurled down at the mere sight of it.
- ¹⁰ None is so audacious that he should stir it up.
And who is it that can hold his ground before me?
- ¹¹ Who has given me something first, that I ought to reward him?
Under the whole heavens it is mine.
- ¹² I shall not keep silent about its parts
Or the matter of [its] mightiness and the grace of its proportions.
- ¹³ Who has uncovered the face of its clothing?
Into its double jaw who will enter?
- ¹⁴ The doors of its face who has opened?
Its teeth round about are frightful.
- ¹⁵ Furrows of scales are its haughtiness,
Closed as with a tight seal.
- ¹⁶ One to the other they fit closely,
And not even air can come in between them.
- ¹⁷ Each one to the other they are stuck together;
They grasp one another and cannot be separated.
- ¹⁸ Its very sneezings flash forth light,
And its eyes are like the beams of dawn.
- ¹⁹ Out of its mouth there go lightning flashes,
Even sparks of fire make their escape.
- ²⁰ Out of its nostrils smoke goes forth,
Like a furnace set aflame even with rushes.
- ²¹ Its soul itself sets coals ablaze,
And even a flame goes forth out of its mouth.
- ²² In its neck lodges strength,
And before it despair leaps.
- ²³ The folds of its flesh do cling together;
They are as a casting upon it, immovable.
- ²⁴ Its heart is cast like stone,
Yes, cast like a lower millstone.
- ²⁵ Due to its rising up the strong get frightened;
Due to consternation they get bewildered.
- ²⁶ Overtaking it, the sword itself does not prove equal,
Nor spear, dart or arrowhead.
- ²⁷ It regards iron as mere straw,
Copper as mere rotten wood.
- ²⁸ An arrow does not chase it away;
The slingstones have been changed for it into mere stubble.
- ²⁹ A club has been regarded [by it] as mere stubble,
And it laughs at the rattling of a javelin.
- ³⁰ As pointed earthenware fragments are its underparts;
It spreads out a threshing instrument upon the mire.
- ³¹ It causes the depths to boil just like a pot;
It makes the very sea like an ointment pot.
- ³² Behind itself it makes a pathway shine;
One would regard the watery deep as gray-headedness.
- ³³ Upon the dust there is not the like of it,
The one made to be without terror.
- ³⁴ Everything high it sees.
It is king over all majestic wild beasts."
- 42** And Job proceeded to answer Jehovah and say:
- ² "I have come to know that you are able to do all things,
And there is no idea that is unattainable for you.
- ³ 'Who is this that is obscuring counsel without knowledge?'

Therefore I talked, but I was not understanding
Things too wonderful for me, which I do not know.

⁴ 'Hear, please, and I myself shall speak.
I shall question you, and you inform me.'

⁵ In hearsay I have heard about you,
But now my own eye does see you.

⁶ That is why I make a retraction,
And I do repent in dust and ashes."

42 And Job proceeded to answer Jehovah and say:

² "I have come to know that you are able to do all things,
And there is no idea that is unattainable for you.

³ 'Who is this that is obscuring counsel without knowledge?'
Therefore I talked, but I was not understanding
Things too wonderful for me, which I do not know.

⁴ 'Hear, please, and I myself shall speak.
I shall question you, and you inform me.'

⁵ In hearsay I have heard about you,
But now my own eye does see you.

⁶ That is why I make a retraction,
And I do repent in dust and ashes."

There is a lot to this system, and to be honest it has left me with much to wonder about. It is like drinking a drop of water from the ocean and realizing that it is but a drop. But now you can look at time prophecies in the Bible and realize that they not only fell on certain years precisely, but also on specific days.

I hope that this calendar doesn't disappear again. You have glimpsed what has not been seen since the days of Noah. May Jehovah bless your use of this marvelous time counting device.



It is my hope that what has been uncovered is a starting point. Proverbs 2:2 "My son, if you will receive my sayings and treasure up my own commandments with yourself, ² so

as to pay attention to wisdom with your ear, that you may incline your heart to discernment; ³ if, moreover, you call out for understanding itself and you give forth your voice for discernment itself, ⁴ if you keep seeking for it as for silver, and as for hid treasures you keep searching for it, ⁵ in that case you will understand the fear of Jehovah, and you will find the very knowledge of God."