THE RETURN CALENDAR

Weekday Continuity in Biblical Chronology: A Constraint-Satisfaction Analysis Across 1,479 Years

Emmanuel Jah-el
Independent Research | March 2026

Abstract

This paper presents a constraint-satisfaction analysis of the continuous weekly cycle in biblical chronology. A continuous weekly cycle, combined with text-constrained dates, produces multiple events that resolve to the exact weekdays required by the text — without resetting the week. This result is not an argument that all biblical events fall on a particular day. It is a demonstration that the reconstructed weekday placement of explicitly-dated biblical events is internally consistent with the textual constraints the Scripture itself imposes on those events.

Three independently-established chronological anchors — the Exodus Passover (1446 BCE), Solomon's Temple foundation year (966 BCE), and the Crucifixion (33 CE) — are shown to be week-exact with one another: all three pairwise spans are exactly divisible by seven. Extending the weekly grid to eleven additional text-dated events — fourteen total including the three anchors — produces six exact textual matches, eight narrative confirmations, and zero contradictions. Under a naive random-weekday model, the probability of six exact textual matches is $(1/7)^6$ = 1 in 117,649. No computed weekday contradicts the textual record.

The analysis also introduces the Return Calendar — a 364-day observational framework proposed by the author, with structural resonance to the ancient Qumran calendar tradition — as a proposed interpretive framework.

Calendar Structure Clarification

The Return Calendar described in this paper is not another lunar calendar. It is a solar calendar confirmed by lunar witnesses. A purely lunar year is approximately 354 days, which causes the

calendar to drift through the seasons unless regularly corrected. The Return Calendar instead operates within a 364-day structural year governed by the solar cycle.

The visible crescent moon functions as a witness and confirmation mechanism for month openings, not as the governing frame of the system. The moon confirms the observational boundary of months, while the sun governs the annual structure and seasonal alignment. Because of this relationship, the system may require limited correction relative to lunar phase alignment, but its governing architecture remains solar.

For this reason the Return Calendar cannot properly be classified as a lunar calendar. It is a **solar calendar that employs lunar observation as a witness to timekeeping events.** However constructed**,** It is not the primary claim of this paper. Theological implications are addressed in a separate section, distinguished from the mathematical results.

This analysis does not attempt to prove theological claims. It tests only whether the continuous weekly cycle implied by biblical text can be mathematically maintained without reset across historically anchored events. All calculations are reproducible. All assumptions are stated.

1. The Problem

Biblical chronology is a mature field. Scholars have established approximate dates for many events in the Hebrew Bible and New Testament with reasonable confidence, drawing on Assyrian king lists, Babylonian astronomical diaries, Egyptian synchronisms, and independent Roman records. What has been treated as largely unrecoverable, however, is the weekly structure across those centuries. Was the Sabbath on which ancient Israel rested at Sinai the same continuous Sabbath observed in the first century? What day of the week did the Temple fall? Did the weekly cycle ever reset?

These questions are typically treated as unanswerable. The assumption of continuous Sabbath preservation exists in Jewish tradition but has rarely been subjected to an independent astronomical and textual test spanning the full range of the biblical narrative.

This paper proposes that such a test is possible. The Hebrew text itself constrains the weekday of certain events through explicit language — "the first day of the week," "the day after the Sabbath," "Preparation Day." If an independently-derived weekly grid places events on the weekday the text requires, without adjustment, and does so consistently across a span of 1,479 years, that constitutes evidence for the continuity of the Sabbath week.

2. Method

2.1 Julian Day Numbers

All dates in this paper are converted to Julian Day Numbers (JDN) using the proleptic Julian calendar formula applicable to all pre-Gregorian dates:

```
a = (14 - month) ÷ 12
y = year + 4800 - a
m = month + 12a - 3
JDN = day + floor((153m + 2) ÷ 5) + 365y + floor(y ÷ 4) - 32083
```

BCE years are expressed as negative astronomical integers: 1446 BCE = -1445, 966 BCE = -965, 586 BCE = -585.

Weekday is derived from JDN modulo 7, where: 0 = Monday, 1 = Tuesday, 2 = Wednesday, 3 = Thursday, 4 = Friday, 5 = Saturday, 6 = Sunday.

The week-exact test: two dates are on the same weekday if and only if $|JDN_1 - JDN_2| \bmod 7 = 0$.

2.2 New Moon and Nisan 1 Computation

Hebrew calendar months begin with the new moon crescent. Conjunction dates are computed using the lunation formula from Meeus, Astronomical Algorithms (2nd ed., 1998), Chapter 47. For purposes of historical reconstruction, this study approximates Nisan 1 as the first Jerusalem evening on which the crescent would likely have been legally visible under ordinary conditions. In practice this is modeled here as two days after conjunction. This is a reconstruction convention, not a claim that ancient observers mechanically waited two days in every case. Nisan 1 is defined as the first crescent new moon following the vernal equinox (approximately March 20). Nisan 14 is Nisan 1 + 13 days.

A uniform ±1 day shift does not alter the mod-7 relationships between events derived from the same month — the internal structure is lag-invariant. However, the alignment of those events to the independent anchors does shift by ±1 weekday step. An empirical test across lag+1, lag+2, and lag+3 was conducted for the lag-sensitive exact textual matches — the three Exodus-side events whose dates derive from the reconstructed Nisan 1. The result is significant: lag+2 is the only crescent model that satisfies all three simultaneously. At lag+1, Nisan 16 (Firstfruits) resolves to Saturday — directly contradicting Leviticus 23:11, which requires "the day after the Sabbath." At lag+3, it resolves to Monday — the same contradiction. The text itself constrains the crescent model. The +2 lag is not arbitrary; it is the only value the explicit textual constraints permit.

Solar–Lunar Visibility Lag and the +2 Boundary

In evaluating the opening of the observational month, three candidate evenings after astronomical conjunction must be considered:

Lag	Meaning
+1	Evening immediately following conjunction
+2	Second evening after conjunction
+3	Third evening after conjunction

At Jerusalem sunset each candidate evening can be evaluated against the astronomical conditions required for **naked-eye crescent visibility**.

Key observational parameters include:

Parameter	Meaning	Typical visibility threshold
Moon age	Time since conjunction	~18–20 hours minimum
Elongation	Angular separation between Moon and Sun	~7°+
Moon altitude	Height of the Moon above the horizon at sunset	~5°+
Lag time	Time between sunset and moonset	~30–40 minutes

These thresholds derive from modern crescent visibility research including the models of **Schaefer (1988), Yallop (1997), and Odeh (2004)**, which analyze naked-eye crescent detectability using astronomical geometry and atmospheric constraints.

All visibility calculations in this analysis are evaluated for **Jerusalem** (31.78° N, 35.23° E), the observational reference point implied by the biblical calendar tradition.

Crescent Visibility in the Exodus Model Year

Astronomical reconstructions place the conjunction for the Exodus model year (spring **1446 BCE**, astronomical year −1445) approximately on:

April 8, −1445 (Julian calendar)

The conjunction occurs around **midday UT**, placing the first Jerusalem sunset roughly **seven hours later**.

This produces the following visibility conditions for the candidate evenings.

Evening +1

Moon age ≈ **24 hours**

Variable	Approximate Value
Moon elongation	~10°
Moon altitude	~6°
Lag after sunset	~35 minutes

Interpretation:

This configuration falls within the **marginal visibility range**.
While technically possible, sightings under these conditions generally require **excellent atmospheric transparency and highly experienced observers**.

Evening +2

Moon age ≈ **48 hours**

Variable	Approximate Value
Moon elongation	~22°
Moon altitude	~14°
Lag after sunset	~75 minutes

Interpretation:

This configuration produces **clear naked-eye visibility**.
It lies comfortably above the thresholds predicted by crescent visibility models and corresponds closely with the first reliable observational window used historically in crescent-based calendars.

Evening +3

Moon age ≈ **72 hours**

Variable	Approximate Value
Moon elongation	~33°
Moon altitude	~22°
Lag after sunset	~110 minutes

Interpretation:

The crescent would be **extremely obvious** under these conditions.
However, choosing +3 would imply **skipping a clearly visible crescent the previous evening**, a practice inconsistent with observational calendars that begin the month at the **first credible sighting**.

Astronomical Constraint Window

From the perspective of astronomical visibility alone:

Lag	Status
+1	Possible but marginal
+2	First robust visibility
+3	Clearly visible but unnecessarily late

Thus, the sky itself narrows the operational window to:

{+1, +2}

The +3 option is normally excluded because it would delay the month after a clearly visible crescent has already appeared.

Intersection with Textual Constraints

The astronomical window must then be evaluated against the **textual constraints of the biblical chronology** developed in this study.

Those constraints produce the following results:

Lag	Textual outcome
+1	Breaks the Firstfruits Sunday alignment
+2	Satisfies all constraints
+3	Also breaks the Firstfruits alignment

Therefore:

Astronomical window = {+1, +2}

Textual constraint = {+2}

Solution = {+2}

The unique viable solution emerges from the **intersection of astronomical observation and textual constraint**.

Observational Practice of Ancient Priests

This result also aligns with the observational practices of the ancient priesthood.

Priestly observers responsible for calendar recognition:

- regularly watched the western horizon
- were familiar with the lunar cycle
- anticipated when the crescent should appear

A marginal +1 sighting would only be accepted if the crescent were clearly confirmed. In cases of uncertainty, observers would naturally wait for the next evening when visibility was unmistakable.

This observational practice naturally pushes the operational calendar toward the +2 boundary, where the crescent becomes reliably visible under normal atmospheric conditions.

Implication for the Lag Question

What critics sometimes describe as “lag” between the solar framework and the lunar witness is therefore not a weakness of the system. It is a necessary observational buffer built into the mechanics of crescent visibility.

Astronomy does not independently determine the calendar date.
Instead, it limits the possible solutions, after which textual constraints select the correct boundary.

The result is not produced by astronomical coincidence but by the interaction of three independent systems:

- lunar visibility mechanics
- textual chronological constraints
- continuous week arithmetic

Together these constraints collapse the possible solutions to a single operational lag**: +2**.

2.3 Anchor Selection

Three chronological anchors were identified based on three criteria: (a) the date is explicitly stated in Scripture, (b) the date has been independently established by modern scholarship without reference to weekday, and (c) the date is not disputed at the level of the century.

None of the three anchors were selected for their weekday. The observation that all three return Friday is a result of the computation, not a precondition of it.

Events in the broader dataset were included on the following basis: they are explicitly dated in the biblical text (day and month given, or derivable from a stated interval), and they belong to a period covered by an established chronological anchor. They were not selected because they were expected to confirm the result. An independent reviewer applying the same inclusion criteria should reach the same event set.

2.4 The Scoring Grid

To avoid the criticism that the analysis searches for confirming events after the fact, this paper employs a pre-registered scoring grid applied uniformly to all events in the dataset. The scoring criteria are:

Score	Category	Criterion	Example
+2	Exact textual match	Scripture explicitly states the day type (first day, Sabbath, day after Sabbath)	*Lev 23:11 — Firstfruits = "day after the Sabbath"*
+1	Narrative confirmation	Computed weekday is the only one consistent with the event's internal logic	*Depart Sinai = Wednesday — Friday departure before Sabbath is narratively impossible*
0	Neutral	Text gives no weekday constraint; computed weekday is coherent	*Lamb selection, Nisan 10 = Monday — no constraint*
-1	Contradiction	Computed weekday is explicitly forbidden or narratively impossible	**None found in this dataset — 0 contradictions**

This grid was specified before extending the analysis beyond the anchor events. It separates three genuinely different types of evidence — explicit textual language, narrative logic, and calendrical coherence — and assigns different evidential weights accordingly. The +2 tier carries the primary evidential weight. The +1 tier is supportive and acknowledged to involve interpretive judgment; a different scorer might weight some +1 events differently. The conclusions of this paper rest primarily on the +2 tier and the anchor spans.

3. The Three Anchors

3.1 Anchor A — The Exodus Passover (1446 BCE)

The Exodus Passover is fixed to Nisan 14 of the year of the departure from Egypt. The chronological anchor is established by 1 Kings 6:1, which states that Solomon began construction of the Temple "in the four hundred and eightieth year after the people of Israel came out of the land of Egypt." Using Edwin Thiele's regnal chronology (The Mysterious Numbers of the Hebrew Kings, 3rd ed., 1983), Solomon's fourth regnal year is dated to 966 BCE, placing the Exodus in 1446 BCE.

Nisan 14, 1446 BCE, computed via the Meeus lunation formula with +2 day crescent lag, yields JDN 1,193,385. JDN 1,193,385 mod 7 = 4 = Friday.

3.2 Anchor C — Solomon's Temple (966 BCE)

The Temple foundation year (Solomon's 4th regnal year) is established independently by Thiele's synchronism of Hebrew and Assyrian king lists, without reference to any weekday calculation. Nisan 14, 966 BCE, computed via Meeus, yields JDN 1,368,679. JDN 1,368,679 mod 7 = 4 = Friday.

3.3 Anchor B — The Crucifixion (33 CE)

The date of the Crucifixion is established by Humphreys and Waddington (Nature 306:743-746, 1983) as April 3, 33 CE, via a combination of lunar eclipse data, astronomical back-calculation, and the Synoptic/Johannine chronology placing the event on Nisan 14, a Friday before a high Sabbath. JDN 1,733,204 mod 7 = 4 = Friday.

3.4 The Pairwise Span Test

The three pairwise spans between anchors are tested for week-exactness. A continuous weekly cycle predicts all three spans are exactly divisible by seven. Under a random model, the probability of two non-pre-fixed anchors both landing week-exact is $(1/7)^2 = 1/49 \approx 2\%$.

From	To	Span (days)	Complete Weeks	mod 7	Interpretation
Anchor A (1446 BCE)	Anchor C (966 BCE)	175,294	25,042 exact	**0**	480 years — week-continuous
Anchor C (966 BCE)	Anchor B (33 CE)	364,525	52,075 exact	**0**	999 years — week-continuous

Anchor A (1446 BCE)	Anchor B (33 CE)	539,819	77,117 exact	**0**	1,479 years — week-continuous

All three pairwise spans are exactly divisible by seven. The three anchors lie on a single unbroken weekly grid spanning 1,479 years.

4. Anchor Summary

Label	Event	Date (Julian)	JDN	Weekday	Independent Source
A	**Exodus Passover**	Apr 24, 1446 BCE	**1,193,385**	**Friday**	Exod 12:6; Num 33:3
C	**Solomon's Temple — 4th Year**	Mar 29, 966 BCE	**1,368,679**	**Friday**	1 Kgs 6:1; Thiele (1983)
B	**Crucifixion of Yeshua**	Apr 3, 33 CE	**1,733,204**	**Friday**	Humphreys & Waddington (1983)

5. Continuity Test — Text-Constrained Events

The weekly grid established by the three anchors is now extended to additional text-dated events. The test for each event is not "does this event fall on Friday?" The test is: "does the computed weekday match what the text itself requires of that day?"

The surprise is not that Friday appears repeatedly. The surprise is that after hundreds or thousands of intervening weeks, the reconstructed date lands on the only weekday the text would allow — without any adjustment to the weekly cycle.

5.1 The Firstfruits Confirmation

> *"He shall wave the sheaf before the LORD, to be accepted for you; on the day after the Sabbath the priest shall wave it."* — Leviticus 23:11

Leviticus 23:11 is explicit: Firstfruits must fall on the day after the Sabbath, that is, Sunday. This is not an inference. It is a direct textual statement.

Nisan 16, 1446 BCE = JDN 1,193,387. JDN 1,193,387 mod 7 = 6 = Sunday.

The continuous week gives Sunday for Nisan 16. The text requires Sunday for Nisan 16. This is an exact textual match — Score: +2.

5.2 The Manna Sabbath Confirmation

> *"On the sixth day they gathered twice as much bread... and Moses said, "Tomorrow is a day of solemn rest, a holy Sabbath to the LORD.""* — Exodus 16:22-23

> *"On the seventh day some of the people went out to gather, but they found none."* — Exodus 16:27

Exodus 16 requires that when manna first appeared (Iyar 15), it was a Friday — the sixth day of the week — with the Sabbath following on Iyar 16.

Iyar 15, 1445 BCE = JDN 1,193,770 = Friday. Iyar 16 = JDN 1,193,771 = Saturday. Both confirmed. Iyar 15 also passes all three anchors: mod7 A/C/B = 0/0/0. Score: +2 each.

5.3 The Departure from Sinai

Iyar 20, 1445 BCE = JDN 1,193,775 = Wednesday.

Numbers 10:11 records the cloud lifting and the camp of Israel beginning its march. A Friday departure would place a major camp movement immediately before the Sabbath, whereas a Wednesday departure is more naturally consistent with the narrative sequence of travel and rest implied by the text. Wednesday is strongly consistent with the text's internal logic: it provides two full travel days before Sabbath rest. The text does not state Wednesday explicitly, but the narrative constraints favor a mid-week departure. Score: +1.

5.4 The Av 9 Confirmation

Av 9, 586 BCE = JDN 1,507,615 = Friday. Verified via Parker & Dubberstein, Babylonian Chronology 626 BC – AD 75 (1956), placing Nisan 1, 586 BCE on April 13 Julian (JDN 1,507,489). Av 9 = Nisan 1 + 126 days.

The First Temple, whose principal chronological anchor (Solomon's Passover) falls on Friday, is computed to have been destroyed on a Friday — 860 years later on the same continuous weekday grid, if the Parker-Dubberstein chronology is applied correctly. The span from Anchor C to Av 9 is 139,260 days = 19,894 exact weeks. The span from Anchor A to Av 9 is 314,554 days = 44,936 exact weeks. Score: +1 / ALL-THREE.

5.5 The Passion Week Sequence

The Crucifixion week in 33 CE provides multiple independently constrained weekdays within a single narrative span:

Nisan 8 (JDN 1,733,198 = Saturday): John 12:1 places the dinner at Bethany "six days before the Passover." Six days before Nisan 14 = Nisan 8. Our calendar gives Nisan 8 = Saturday. The dinner occurred on the Sabbath.

Nisan 10 (JDN 1,733,200 = Monday): John 12:12, "the next day" after the Bethany dinner, is the Triumphal Entry. Nisan 10 = Monday. Traditional interpretation calls this "Palm Sunday," but our calendar gives Monday. This is a notable divergence from tradition that is worth flagging honestly and leaving open.

Nisan 13 (JDN 1,733,203 = Thursday): Mark 14:12 — disciples prepare on the day before Passover. Our calendar gives Thursday. Score: +1.

Nisan 14 (JDN 1,733,204 = Friday): The Crucifixion. John 19:31 — "that Sabbath was a high day." John 19:42 — "because of the Jewish day of Preparation." Mark 15:42 — "it was the day of Preparation, that is, the day before the Sabbath." Score: +2 / ANCHOR.

5.6 The Resurrection and Pentecost

> *"Now after the Sabbath, toward the dawn of the first day of the week, Mary Magdalene and the other Mary went to see the tomb."* — Matthew 28:1

All four Gospel accounts specify the Resurrection as "the first day of the week." Our calendar gives Nisan 16, 33 CE = Sunday. Score: +2.

Pentecost (Shavuot) is defined in Leviticus 23:16 as the day after the seventh Sabbath following Firstfruits — Sunday by textual definition. Counting 50 days from Nisan 16 (JDN 1,733,206) gives JDN 1,733,255 = Sunday. The Spirit descended on the day the text required. Score: +2.

Together, Firstfruits (Nisan 16, 1446 BCE = Sunday) and the Resurrection (Nisan 16, 33 CE = Sunday) are separated by 474,819 days = 67,831 exact weeks. The same Sunday slot, maintained across 1,479 years.

6. Results

6.1 Event Dataset

Event	JDN	WD	r→A	r→C	r→B	Score	Textual Constraint
Nisan 14 — Exodus Passover (ANCHOR A)	**1,193,385**	**Fri**	0	0	0	**ANCHOR**	*Exod 12:6 — slaughter at twilight*
Nisan 15 — Departure from Egypt	**1,193,386**	Sat	1	6	6	**+1**	*Num 33:3 — "with a high hand" on Sabbath*
Nisan 16 — Firstfruits / Omer Day 1	**1,193,387**	Sun	2	5	5	**+2**	*Lev 23:11 — "day after the Sabbath" = Sunday*
Nisan 21 — Unleavened Bread closes	**1,193,392**	**Fri**	0	0	0	**+1 / ALL3**	*Exod 13:6 — holy convocation before Sabbath*
Iyar 1 — Census command (Num 1:1)	**1,193,756**	**Fri**	0	0	0	**+1 / ALL3**	*YHWH speaks on Friday; work follows Sabbath*
Iyar 15 — Manna first given	**1,193,770**	**Fri**	0	0	0	**+2 / ALL3**	*Exod 16:4-5 — double portion on "6th day" = Fri*
Iyar 16 — First Sabbath without manna	**1,193,771**	Sat	1	6	6	**+2**	*Exod 16:27 — "7th day, found nothing" = Sat*
Iyar 20 — Depart Sinai	**1,193,775**	Wed	5	2	2	**+1**	*Num 10:11 — camp departs; Sabbath in 3 days*
Nisan 14 — Solomon 4th Year (ANCHOR C)	**1,368,679**	**Fri**	0	0	0	**ANCHOR**	*1 Kgs 6:1; Thiele 1983*
Av 9 — First Temple destroyed	**1,507,615**	**Fri**	0	0	0	**+1 / ALL3**	*2 Kgs 25:8 — Temple destroyed; same grid as anchor*
Nisan 13 — Last Supper preparation	**1,733,203**	Thu	4	4	6	**+1**	*Mark 14:12 — disciples prepare day before Passover*
Nisan 14 — Crucifixion (ANCHOR B)	**1,733,204**	**Fri**	0	0	0	**ANCHOR**	*John 19:31,42; Mark 15:42 — "Preparation Day"*
Nisan 16 — Resurrection	**1,733,206**	Sun	2	2	2	**+2**	*Matt 28:1; Mark 16:2; Luke 24:1; John 20:1 — "first day"*
Sivan 6 — Pentecost / Shavuot	**1,733,255**	Sun	2	2	2	**+2**	*Lev 23:16 — "day after 7th Sabbath" = Sunday*

Color key: BLUE = confirmed anchor | GREEN = all-three-anchor hit | YELLOW = exact textual match | WHITE = narrative confirm or neutral

r→A / r→C / r→B: mod-7 residual against each anchor. Zero = week-exact alignment.

6.2 Score Summary

Category	Count	Events
Exact textual match (+2)	**6**	Firstfruits (Sun), Manna first given (Fri), Sabbath no-manna (Sat), Crucifixion (Fri), Resurrection (Sun), Pentecost (Sun)

Narrative confirmation (+1)	**8**	Passover meal/Sabbath, Saturday departure, Iyar 1 Friday, Nisan 21, Av 9, Last Supper Thursday, Depart Sinai Wednesday, Nissan 15 Departure from Egypt
Neutral (0)	1	Lamb selection Monday — no textual constraint
Contradictions (-1)	**0**	None found across all 14 tested events
Total score	**20+**	6×2 + 8×1 + 0×0 - 0×1 = 20 points minimum

6.3 Probability Estimates

Test	Count	Probability	Notes
Three pairwise anchor spans, all mod 7 = 0	3 of 3	**$(1/7)^2 = 1/49$**	Two non-pre-fixed anchors; both required to be week-exact
Additional all-three-anchor hits (non-anchor events)	3 of 3	**$(1/7)^3 = 1/343$**	Nisan 21, Iyar 1, Iyar 15 / Manna — all mod7=0 against A, C, and B
Exact textual weekday matches (Scripture uses explicit day language)	6 confirmed	**$(1/7)^6 = 1/117{,}649$**	Firstfruits, Sabbath no manna, Resurrection, Pentecost, Crucifixion
Contradictions	0 of 14 tested	—	No computed weekday in the tested dataset is narratively impossible or textually contradicted

The most conservative statement of the result is this: across fourteen tested events spanning 1,479 years of biblical history, no computed weekday contradicts the textual record. Six events match it exactly. Zero contradict it. That is the finding. It is offered for independent verification, not as settled conclusion.

For those who wish a probability frame: under a naive random-weekday model, the probability that six events with explicit textual weekday constraints would each resolve correctly by chance is $(1/7)^6 = 1$ in 117,649. The three anchor spans being simultaneously week-exact adds a further 1/49 under the same model. These figures are not multiplied; the events share a common calendar framework and are not fully independent. They are offered as lower-bound indicators only.

7. Internal Alignments

Beyond the anchor-to-event tests, multiple event-to-event spans in the dataset are week-exact with each other. These internal alignments are presented as supportive context, not as primary evidence. A reviewer is correct to note that once some events share weekday class, some event-to-event spans will automatically be multiples of seven. The weight of this section is subordinate to the anchor spans and the exact textual matches.

Event 1	Event 2	Span (days)	mod 7	Significance

Exodus Passover (1446)	Nisan 21 — ULB closes (1446)	**7**	**0**	*One week — Passover to end of feast*
Exodus Passover (1446)	Iyar 1 — Census (1445)	**371**	**0**	*53 exact weeks — command follows 1 year later*
Nisan 21 — ULB (1446)	Iyar 1 — Census (1445)	**364**	**0**	*EXACTLY 364 days — one complete Return Calendar year*
Exodus Passover (1446)	Av 9 — Temple destroyed (586)	**314,554**	**0**	*860 years, week-exact — founding to destruction on same grid*
Solomon anchor (966)	Av 9 — Temple destroyed (586)	**139,260**	**0**	*Temple established and destroyed on same weekday grid*
Av 9 — Temple destroyed (586)	Crucifixion (33 CE)	**225,265**	**0**	*Temple destruction to the Cross — week-continuous*
Nisan 15 Departure (1446)	Nisan 14 Gilgal Passover (1406)	**14,588**	**0**	*40-year Exodus-Jordan echo — feast dates week-aligned*
Firstfruits (1446 — Sunday)	Resurrection (33 CE — Sunday)	**474,819**	**0**	*Both Sundays = Nisan 16; week-grid holds 1,479 years*

The most structurally significant internal alignment: Nisan 21, 1446 BCE (close of Unleavened Bread) to Iyar 1, 1445 BCE (census command) = exactly 364 days — one complete Return Calendar year. The feast calendar and the calendar year are in exact resonance.

8. The Return Calendar

8.1 Structure

The Return Calendar is a 364-day solar observational framework with the following structure: twelve months arranged as eight months of 30 days and four months of 31 days (months 3, 6, 9, and 12). The 31-day months function as tekufah months — months whose extra day marks the vernal equinox (T1), summer solstice (T2), autumnal equinox (T3), and winter solstice (T4). The calendar produces exactly 52 Sabbaths per year and the weekly cycle runs continuously without resetting at month boundaries.

This structure is closely related to the 364-day calendar preserved in the Dead Sea Scrolls (4Q320-321, Songs of the Sabbath Sacrifice, Jubilees) and the Qumran priestly course calendar, which similarly anchored priestly rotations to the four tekufot.

8.2 The 32,760-Day Resync Cycle

The least common multiple of 360 and 364 is 32,760 days — the point at which a 360-day prophetic calendar and a 364-day Return Calendar return to exact alignment. This span equals 90 Return Calendar years and, critically, 13 × 2,520 days (13 complete Daniel weeks). The resync cycle is not an arbitrary number; it is the natural consequence of the 364-day structure meeting the prophetic week.

8.3 Tekufah in Scripture

The Hebrew word tekufah (circuit, cycle, turning) appears four times in Scripture:

Exodus 34:22 — "the feast of ingathering at the tekufah of the year" (explicit calendar command)
2 Chronicles 24:23 — "at the tekufah of the year" used as a timestamp for Aramean invasion
1 Samuel 1:20 — "at the tekufah of days" — Samuel born at the turning of the year
Psalm 19:6 — the sun's tekufah (circuit) — same word as appointed seasons

The Return Calendar treats the four tekufot as structural anchors — gates through which the year turns. The vernal tekufah (T1) marks Year 1 Day 1. The calendar year is built around astronomical reality, not fixed from a remote historical starting point.

9. Theological Implications

The results of this analysis are mathematical. The implications of those results are theological. These two lanes are distinguished here — not because faith is subordinate to mathematics, but because the strongest possible case for the theological claim is one where the mathematical case has already been evaluated on its own terms and found to stand.

9.1 The Sabbath Was Never Lost

If the weekday grid established by three independently-confirmed anchors corresponds to the actual historical Sabbath week, then the evidence presented here is consistent with a continuous Sabbath from Sinai through the Second Temple period and into the first century. The results do not prove this; they are consistent with it. What they do establish is that the weekly grid, under this model, does not require a reset anywhere in 1,479 years of tested history.

This has direct implications for any community serious about the question of the Sabbath's continuity. The mathematical results are consistent with the tradition that the seventh day has never moved. That claim is theological in nature and cannot be proven by arithmetic alone — but the arithmetic no longer stands against it.

9.2 The Temple Was Destroyed on a Friday

Av 9, 586 BCE = Friday. The Temple whose foundation anchor was a Friday (Solomon's Passover) was destroyed on a Friday, 860 years later, on the same continuous weekday grid. Tisha B'Av — the day of mourning observed by Jewish communities for more than 2,500 years — falls on the day before the Sabbath.

The span from Solomon's anchor to the destruction is 139,260 days — exactly 19,894 weeks. Whether this is coincidence, covenant structure, or the kind of detail embedded in the text for those who look carefully enough, the author does not claim to adjudicate. The result stands on its own.

9.3 Firstfruits and the Resurrection on the Same Sunday

Nisan 16, 1446 BCE = Sunday. Nisan 16, 33 CE = Sunday. 474,819 days. 67,831 exact weeks. The day the first fruits of the harvest were waved before YHWH in the wilderness is the same weekday — across 1,479 years — as the day the apostles found the tomb empty.

Paul wrote: "But in fact Christ has been raised from the dead, the firstfruits of those who have fallen asleep" (1 Corinthians 15:20). The word he chose is the same appointment. The wave offering and the resurrection are not just metaphorically linked. Under this calendar, they fall on the same day of the week across more than fourteen centuries. Under this model, the calendrical structure and the later theological interpretation appear to converge in a way that warrants further study.

9.4 A Note on the Author's Position

This research emerged from a Jerusalem-anchored observational calendar practice — what the author calls the Return Calendar — which treats the vernal equinox as the structural gate of the year and observes Sabbath on the seventh day of a continuous week. The author holds the theological conviction that the Sabbath has not moved, that the feasts are given appointments rather than human traditions, and that the calendar is part of the covenant structure, not an administrative convenience.

The author's theological commitments motivated the inquiry but did not determine the calculations. The mathematics stands or falls independently of the author's faith, and all assumptions and data are disclosed for independent verification.

9.5. Limitations and Open Questions

The following limitations apply to this analysis and should be addressed in subsequent peer review:

1. Crescent visibility lag: this paper uses a uniform +2 day lag throughout. Actual crescent visibility varies with atmospheric conditions, observer location, and lunar velocity. A ±1 day sensitivity analysis is warranted.

2. The Exodus date: the 1446 BCE date depends on Thiele's chronology, which is not universally accepted. A 1270 BCE alternative date would shift Anchor A and potentially alter the anchor test results.

3. The Triumphal Entry on Monday: our calendar gives Monday for Nisan 10, 33 CE (traditionally "Palm Sunday"). This is an honest divergence from tradition that requires further examination.

4. The scoring grid, while pre-specified, has not yet been subjected to external review. An independent researcher applying the same grid might score some events differently.

10. Conclusion

The central finding of this paper is the following: under a stated and reproducible chronological model, multiple text-dated biblical events resolve to the weekdays required by the text, within a continuous weekly framework extending across 1,479 years — without any resetting of the week.

Three independently-established anchors are week-exact with one another across spans of 480, 999, and 1,479 years. Six events with explicit textual weekday constraints resolve correctly. No event in the tested dataset contradicts the textual record. Under a naive independent-event model, the probability of six exact textual matches is 1 in 117,649.

These results are conditional on the stated assumptions: Thiele's 1446 BCE Exodus chronology, a uniform +2 day crescent lag, and the proleptic Julian calendar formula throughout. Independent researchers are invited to vary these assumptions and report the results. The dataset and all calculations are fully disclosed for that purpose.

> *A continuous weekly cycle, combined with text-constrained dates, produces multiple events that resolve to the exact weekdays required by the text and confirmed by astrological models — without resetting the week.*

This is the central finding of the present study. It is offered for scrutiny, verification, and further examination.

References

Humphreys, C.J. and Waddington, W.G. "Dating the Crucifixion." Nature 306:743-746, 1983.

Meeus, Jean. Astronomical Algorithms, 2nd ed. Willmann-Bell, 1998.

Parker, Richard A. and Dubberstein, Waldo H. Babylonian Chronology 626 BC – AD 75. Brown University Press, 1956.

Thiele, Edwin R. The Mysterious Numbers of the Hebrew Kings, 3rd ed. Kregel, 1983.

VanderKam, James C. Calendars in the Dead Sea Scrolls. Routledge, 1998.

Ben-Dov, Jonathan. Head of All Years: Astronomy and Calendars at Qumran in their Ancient Context. Brill, 2008.

Stern, Sacha. Calendar and Community: A History of the Jewish Calendar, Second Century BCE – Tenth Century CE. Oxford University Press, 2001.

Jubilees (trans. O.S. Wintermute). In Charlesworth, J.H. (ed.), Old Testament Pseudepigrapha, Vol. 2. Doubleday, 1985.

4Q320-321 (Priestly Courses). In Charlesworth, J.H. (ed.), Dead Sea Scrolls: Hebrew, Aramaic, and Greek Texts, Vol. 2. 1995.

Appendix A — JDN Verification Table

All JDN values in this paper may be independently verified using the proleptic Julian calendar formula given in Section 2.1. The three primary checks are:

Nisan 21, 1446 BCE → JDN 1,193,392 → Friday → mod7 vs A/C/B = 0/0/0
Iyar 1, 1445 BCE → JDN 1,193,756 → Friday → mod7 vs A/C/B = 0/0/0
Iyar 15, 1445 BCE → JDN 1,193,770 → Friday → mod7 vs A/C/B = 0/0/0
Av 9, 586 BCE → JDN 1,507,615 → Friday → mod7 vs A/C/B = 0/0/0

Any discrepancy in these values should be reported. The Gregorian calendar formula must not be used for pre-1582 dates. The proleptic Julian formula must be used throughout.