SPECIFICATION / CALENDRICAL SYSTEMS

The Year With the Hinges Restored

A 364-day count from 1 Enoch 72–82, with four named leader-days and week-only intercalation so the week stays locked and the year still faces the sun.

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Companion code: enoch_calendar.py · Maps: 1300–2026

0. What this paper is not

This is a count-repair. It is not a climate paper, not a civil-code proposal, and not a claim that a person is timed by a clock. A 364-day year loses about 1.24 days against the mean tropical year (~365.2422 days). That is arithmetic. It is not a thermometer. Seasonal walk in an uncorrected schematic year does not measure tropospheric temperature, ocean heat content, ice mass, or radiative forcing. Those are separate instruments. This specification does not argue that global warming is unreal, and it does not use calendar drift as evidence for or against climate claims. If a count is wrong, fix the count. Do not load weather onto it.

1. Problem

Twelve months of thirty days give 360. That is the schematic year already available in the ancient Near East. The Astronomical Book of 1 Enoch (chapters 72–82) treats 360 as incomplete. Uriel shows Enoch four additional days that “belong to the reckoning of the year.” Drop them and the year closes as a dead circle. Keep them and the year is 364: four quarters of 91 days, fifty-two intact weeks.

The load-bearing reason is worship order, not convenience. 364 is divisible by 7. Festivals lock to the same weekday every year. Sabbath does not collide with a feast because a committee moved the moon. Jubilees and the Qumran mishmarot texts use the same year for the same reason: wrong time is wrong service. A later political fact follows from that — two calendars can produce two Days of Atonement on the same civil week — but the book’s own charge is narrower: restore the four days.

2. The four that hold the year open

1 Enoch 82:13–20 names four leaders over the four parts of the year. Each quarter is 30 + 30 + 31 = 91 days. The 31st is named, not swallowed into the thirties. Names below follow the Charles / Knibb line.

#	Leader	Holds	Extra day	Hinge (intent)
1	Milkiel (Mîlkî’êl)	Season 1 · 91d	31st of month 3	spring equinox
2	Helememelek (Hel’emmêlêk)	Season 2 · 91d	31st of month 6	summer solstice
3	Meleeyel (Mêl’êjal)	Season 3 · 91d	31st of month 9	autumn equinox
4	Narel (Nârêl)	Season 4 · 91d	31st of month 12	winter solstice

Table 1. Four leader-days. Source: 1 Enoch 82. Intent column is astronomical reading, not a verse.

Month lengths are fixed:

Months 1, 4, 7, 10 = 30. Months 2, 5, 8, 11 = 30. Months 3, 6, 9, 12 = 31.

Week lock used here: the year begins on Wednesday (Qumran / Jubilees tradition: luminaries set on day four). A Thursday-start reconstruction exists. Do not mix them inside one implementation.

3. What 364 fixes, and what it does not

Restoring the four days stops the 360-only count and locks the week. It does not track the seasons by itself. 364 – 365.2422 ≈ –1.2422 days per tropical year. Uncorrected, the schematic year loses about a month in 24 years. That is the wall Qumran likely hit. The Astronomical Book does not publish an intercalation scheme. A second repair is engineering, not scripture.

4. Second repair: gate week

Rule: never scatter extra days inside a quarter. Add whole weeks only, after Narel, before the next year opens.

Pin used in this working copy: the year starts on the Wednesday nearest 20 March (civil proxy for the vernal equinox). If 364 days from that Wednesday does not land on the next March Wednesday pin — if the pin has jumped seven days — insert one gate week. Resulting year lengths are only 364 or 371. Across 1300–2026 that yields 598 years of 364 and 129 years of 371.

20 March is a proxy, not a reconstructed ancient observation. Dates generated for the fourteenth century are proleptic Gregorian. A clerk in 1345 used Julian. Do not quote the ISO column as a period document.

5. Live year (2026 pin)

Field	Value
Start	Wednesday 18 March 2026
Next start	Wednesday 17 March 2027
Length	364 days
Milkiel 03.31	Tuesday 16 June 2026
Helememelek 06.31	Tuesday 15 September 2026
Meleeyel 09.31	Tuesday 15 December 2026
Narel 12.31	Tuesday 16 March 2027
Next gate year	2027 pin (371 days; gate week 15–21 March 2028)

Table 2. Current pin. All four hinges fall on Tuesday because 91 ≡ 0 (mod 7) from a Wednesday start: the last day of each quarter is weekday –1.

6. Fourteenth-century gate years

Same rule run backward. 1301–1400: 83 ordinary years, 17 gate years. Gaps between gates: 5, 6, 6, 5 repeating. That is the ~1.24-day annual shortfall accumulating to a week every ~5.6 years.

1306, 1311, 1317, 1323, 1328, 1334, 1339, 1345, 1351, 1356, 1362, 1367, 1373, 1379, 1384, 1390, 1395.

7. Why the source text wants this

Enoch's book does not argue for a nicer planner. It argues that wrong time is wrong worship. The four days are part of created order as the author understood it. The week must remain whole. Permitted cosmological measure (Uriel → Enoch) is set against illicit disclosure of technique (Asael / Azazel) in the same Enochic library. Calendar is the allowed knowledge: how the luminaries actually run, not how to cut metal or paint eyes.

A community that keeps a different Day of Atonement from the Temple is not having a scheduling disagreement. It is asserting a different claim about who is in the reckoning. That is why the count mattered then. It is also why this paper keeps the count and refuses to hang a person or a weather thesis on it.

8. Locked rules

- Year = 12 × 30 + 4 leader-days = 364.
- Start = Wednesday nearest 20 March (working pin).
- Quarters = 30 + 30 + 31. The 31st is named.
- If the next March Wednesday pin is seven days later than 364, insert one gate week after Narel.
- Never add rogue days inside a quarter.
- Do not attach the four leaders, the 360-sum, or the gate week to a person.
- Do not treat schematic drift as a climate series.

9. Work product

Generator: enoch_calendar.py. Year maps: enoch_year_2026.md, enoch_year_2027.md. Backward table: enoch_year_map_1300_2026.csv (727 pins). Century cut: enoch_year_map_14th_century.md. Prior notes: enoch_year_fix_v0.md, enoch_year_fix_v1.md.

10. Reckoning as Enoch calculates it

Uriel's law in 1 Enoch 72–82 does not add weeks later. The luminaries "complete the years with perfect justice in 364 days" and "do not advance or delay their position by a single day unto eternity" (74:12). What follows is that arithmetic only.

10.1 The year

Six eastern gates, six western. The sun spends thirty days in each paired gate. At the end of months 3, 6, 9, and 12 one extra day is added in gates 1, 3, 4, and 6. 12 × 30 = 360. 360 + 4 = 364. Four quarters of 91. Fifty-two weeks. The four days are not optional. Those who omit them "shall not be found in the reckoning of the whole year" (82:4–6; 75:1–3).

10.2 Day and night in eighteen parts

A nychthemeron is 18 parts. Each month the day gains or loses one part. Equinox (months 3 and 9, the 31st): day 9, night 9. Solstice extremes: 12 : 6 and 6 : 12. Ratio 2 : 1. That is the book's own daylight law (72:8–32).

Station	Month.day	Day parts	Night parts
Vernal hinge (Milkiel)	03.31	9	9

Station	Month.day	Day parts	Night parts
Summer hinge (Helememelek)	06.31	12	6
Autumnal hinge (Meleeyel)	09.31	9	9
Winter hinge (Narel)	12.31	6	12

Table 3. Eighteen-part day as Enoch sets the four hinges. 1 Enoch 72.

10.3 Sun against moon — the eight-year sum

Lunar year in the same book: 354 days. Sun leads the moon by 10 days a year, 6 of those being the excess of 360 over 354, plus the 4 leaders that complete 364 (74:10–16).

Span	Sun / stars (364)	Moon (354)	Sun ahead
1 year	364	354	10
3 years	1,092	1,062	30
5 years	1,820	1,770	50
8 years	2,912	2,832	80

Table 4. 1 Enoch 74:13–16. 364 × 8 = 2,912. 354 × 8 = 2,832. Difference 80 = 8 × 10.

10.4 What Enoch does not calculate

He does not insert a seventh week after Narel. He does not pin the year to 20 March. He does not treat 365¼ as the sun’s year. On his terms the error is only this: men stop at 360 and lose the four leaders. Restore the four. The year is then already just.

The gate week in §§4–6 of this paper is a later operational patch for a tropic of 365.2422, which this book does not use. Keep the layers distinct: Enoch’s sum is Table 4. The patch is ours.

Receipt. Enoch: 12 × 30 + 4 = 364; 8 years = 2,912 against the moon’s 2,832. The four leaders finish the year. Gate week is a later patch, not his sum.