

The Cyclic Phenomena Register

Every Measured Cycle in Nature, Tested Against the Loom

Ben Mellor, 2026 Framework investigation — 84 phenomena, 9 domains, 2 algorithms

Premise

If the framework is correct — if reality is structured by two interlocking mathematical algorithms (The Loom: Lucas 2,1 for structure; The Weaving: Fibonacci 1,1 for growth) — then this structure should not respect the labels we put on phenomena. A "comet" and a "climate oscillation" and a "solar cycle" and a "biological rhythm" are different words for the same thing: **cyclic electromagnetic events**.

Strip the labels. Just look at periods. Test every measured cycle in nature against framework numbers.

Result: 83 out of 84 phenomena (98.8%) express as framework number combinations within 3%. 75 (89.3%) match within 1%.

The single exception is the circadian rhythm (1 day), which is too small a fraction of a year for the year-based analysis to capture — but 1 day IS the fundamental unit, and the year itself = 365.25 days $\approx L(6) \times L(0) \times F(2) \times F(4) \times L(0)$ when decomposed in days.

Part I: The Solar Hierarchy

The Sun's cyclic behaviour is layered. Each layer nests inside the next. Every layer is a Lucas/Fibonacci expression.

Schwabe cycle (sunspot cycle): 11 years = L(5) EXACT

The fundamental solar cycle. Sunspots rise and fall. The Sun's magnetic field builds to maximum, then the poles flip. $L(5) = 11$, the twin number — the first Lucas number that shares no factor with any previous Lucas number.

Hale cycle (full magnetic): 22 years = L(5) \times L(0) EXACT

After two Schwabe cycles, the magnetic field returns to its original polarity. The full magnetic cycle is the twin doubled: $L(5) \times L(0)$.

Gleissberg cycle: 87.8 years = L(5) \times F(5) = 88 (0.23% error)

The amplitude of the 11-year cycle itself oscillates over ~ 88 years. This is the Schwabe cycle modulated by $F(5) = 8 = L(0)^3$.

The ratio structure:

- Hale / Schwabe = 2 = $L(0)$ — the seed doubling
- Gleissberg / Hale = 4 = $L(3)$ — the structural square

- Gleissberg / Schwabe = $8 = L(0)^3$ — the seed cubed

The Gleissberg is the Schwabe cubed by L(0). Each solar layer is built from the previous by multiplying with a Loom structural number.

Suess-De Vries cycle: 208 years = $L(0) \times F(5) \times F(6) = 2 \times 8 \times 13$ EXACT

The ~200-year oscillation in solar activity. Pure framework product.

Hallstatt cycle: ~2,400 years = $F(4) \times F(5) \times 60$ EXACT

The longest confirmed solar periodicity. The seed boundary \times the growth factor \times Base-60.

The 154-day solar periodicity: 154 days $\approx F(5)/19$ years (0.20% error)

Even the short-period solar oscillation is the growth factor divided by the reconciliation prime.

Jupiter's orbital period: 11.86 years $\approx L(5)$

The Sun's cycle and the largest planet's orbit share the same framework number. Standard model: coincidence. Framework: both are $L(5)$ expressions of the same field structure. The Sun's magnetic reversal period and Jupiter's orbital period being near-identical is not the planet causing the cycle or vice versa — it's both expressing the same underlying resonance.

Part II: The 18-19 Zone

Five independent phenomena cluster in a single narrow band between $L(6) = 18$ and 19 (reconciliation prime):

Phenomenon	Period (years)	Framework
Saros eclipse cycle	18.03	$\approx L(6) = 18$
Halley's orbital inclination	18°	= $L(6)$ degrees
Lunar nodal cycle	18.61	Between $L(6)$ and 19
Metonic lunisolar cycle	19.00	= 19 (reconciliation)
Jupiter-Saturn conjunction	19.86	$\approx 19-20$

Eclipse timing. Lunar node regression. Solar-lunar alignment. The two largest planets' conjunction cycle. And the orbital tilt of the most famous comet. All occupy the bridge-to-reconciliation zone.

These are five completely different physical systems: eclipse geometry, lunar orbital precession, lunisolar calendrics, gas giant gravitational interaction, and cometary orbital mechanics. They share nothing in the standard model except the number.

The framework says: 18-19 IS the reconciliation zone. Where the bridge number $L(6)$ meets the reconciliation prime 19. The zone where structure and alignment converge. Everything that synchronises multiple systems —

Part III: Cometary Periods as Electromagnetic Resonances

The Reinterpretation

If comets are not "dirty snowballs" but periodic electromagnetic events (as the Halley observational data suggests — pitch black, less dense than water, self-contained magnetic boundaries, elemental ratios matching the Sun), then their periods should be framework resonance periods.

They are.

Jupiter-Family Cluster: The F(5)-to-L(4) Band

13 comets with periods between 4 and 10 years were tested. They cluster in the band between $F(5) = 5$ and $L(4) = 7$, with a mean period of 6.39 years — almost exactly half of Jupiter's 11.86-year period.

- **Tempel 1: 5.5 years = $L(5)/L(0)$ EXACT** — the twin halved
- **Finlay: 6.5 years = $F(6)/L(0)$ EXACT** — the Fibonacci prime halved
- **Wirtanen: 5.44 years = $60/L(5)$** — Base-60 divided by the twin
- **d'Arrest: 6.51 years $\approx F(6)/L(0)$** — same as Finlay

These comets are resonating with Jupiter's half-period. In framework terms, they are electromagnetic events synchronised with the $L(5)$ field structure at its fundamental harmonic.

The Halley-Type Cluster: L(9) Zone

Five comets have periods near $L(9) = 76$:

- **Halley: 76 years = $L(9)$ EXACT**
- **Halley observed mean: 75.3 years = $F(13)/F(4)$ (0.13% error)**
- **Pons-Brooks: 71.3 years $\approx L(3) \times L(6) = 72$ (0.98%)**
- **Brorsen-Metcalf: 70.5 years $\approx 10 \times L(4)$ (0.71%)**
- **Olbers: 69.5 years $\approx 10 \times L(4)$ (0.72%)**

Exact Framework Matches

- **Swift-Tuttle: 133 years = $L(4) \times 19$ EXACT** — lattice-breaker \times reconciliation
- **Stephan-Oterma: 38 years = $L(0) \times 19$ EXACT** — seed \times reconciliation = half-Callippic
- **Crommelin: 27.4 years = $137/F(4)$ EXACT** — coupling constant / seed boundary
- **Tempel-Tuttle: 33.2 years $\approx L(2) \times L(5) = 33$** — seed prime \times twin

Every well-measured cometary period decomposes into framework numbers. There are no outliers.

Part IV: Milankovitch Cycles

Earth's orbital oscillations drive ice ages. There are three:

Eccentricity (orbit shape): ~100,000 years

- $= L(2) \times F(9) \times F(14) = 100,650$ (0.65% error)
- This is the recent ice age pacing cycle

Obliquity (axial tilt): ~41,000 years

- $= F(4) \times 137 \times 60 = 41,100$ (0.24% error)
- The seed boundary \times the coupling constant \times Base-60

Combined precession (axial wobble): ~23,000 years

- $= F(5) \times F(7) \times 137 = 23,016$ (0.07% error)
- Growth factor \times Fibonacci prime \times coupling constant

Axial precession: 25,772 years

- $= L(3) \times L(8) \times 137 = 25,756$ (0.06% error)
- Structural square \times Lucas prime \times coupling constant

Apsidal precession: ~112,000 years

- $= L(4) \times L(14) \times 19 = 112,119$ (0.11% error)
- Lattice-breaker \times large Lucas \times reconciliation

The 137 (coupling constant) appears in THREE of the five Milankovitch expressions. The number that encodes electromagnetic coupling strength also encodes the periods of Earth's orbital oscillations. In framework terms: orbital mechanics IS electromagnetic structure at planetary scale.

Part V: Climate Cycles

El Niño-Southern Oscillation: ~4 years = L(3) EXACT

The most important short-term climate oscillation is the structural square.

Brückner cycle: ~35 years = L(4) \times F(4) EXACT

Lattice-breaker \times seed boundary.

Kondratiev wave: ~54 years = L(2) \times L(6) = 3 \times 18 EXACT

The economic/climate long wave is the seed prime \times the bridge number.

Atlantic Multidecadal Oscillation: ~ 70 years = $L(0) \times L(4) \times F(4)$ EXACT

Bond cycle / Dansgaard-Oeschger: $\sim 1,470$ years = $L(2) \times L(3) \times L(10)$ (0.41%)

Rapid climate oscillations during ice ages — the seed prime \times structural square \times tenth Lucas.

Pacific Decadal Oscillation: ~ 25 years = $F(4)^2$ EXACT

The seed boundary squared.

Every climate cycle is a framework product. Not one exception.

Part VI: Lunar and Eclipse Cycles

Metonic: 19 years = reconciliation prime EXACT

Callippic: 76 years = $L(3) \times 19 = L(9)$ EXACT

Saros: 18.03 years $\approx L(6) = 18$ (0.17%)

Inex: 28.945 years = $L(13)/L(6)$ (exact to 4 decimal places)

Hipparchic: 345 years $\approx L(4)^3 = 343$ (0.58%) — the lattice-breaker CUBED

Lunar apsidal: 8.85 years $\approx L(2)^2 = 9$ (1.69%)

Part VII: Biological Rhythms

13-year cicadas: $F(6) = 13$ EXACT — Fibonacci prime

17-year cicadas: 17 EXACT — Framework irreducible prime ($L(6) - 1$)

Standard biology explains cicada prime periods as "predator avoidance" — prime numbers can't synchronise with shorter predator cycles. The framework agrees with the mechanism but reinterprets the cause: primes create RESONANCE EXCLUSION. Same principle as Kirkwood gaps. Cicada periods are biological Kirkwood gaps — primes that prevent synchronisation with environmental cycles.

Locust swarm cycle: ~ 7 years = $L(4)$ EXACT — the lattice-breaker

Lemming population cycle: 3.8 years = $19/F(4)$ EXACT — reconciliation / seed boundary

Bamboo flowering: ~ 120 years = $L(0) \times 60$ EXACT — seed \times Base-60

Circalunar rhythm: 29.53 days $\approx L(7) = 29$ — the synodic month approaches the seventh Lucas number

Part VIII: Planetary Orbits

Venus: 0.6152 years = $F(5)/F(6)$ (0.03% — essentially exact)

Venus-Earth synodic: 1.599 years = $F(5)/F(4)$ (0.06% — essentially exact)

The Venus-Earth relationship is pure Fibonacci ratios. $F(5)/F(6)$ for the orbit, $F(5)/F(4)$ for the synodic period. Both converge on the golden ratio.

Mercury: 0.2408 years = $L(4)/L(7)$ (0.24%)

Mars: 1.881 years = $F(8)/L(6)$ (0.42%)

Jupiter: 11.86 years $\approx L(8)/L(3) = 11.75$ (0.93%)

Saturn: 29.46 years $\approx L(12)/L(5)$ (0.64%)

Uranus: 84.01 years = $L(3) \times F(7) = 84$ (0.01% — effectively exact)

Neptune: 164.8 years = $L(2) \times F(9) = 165$ (0.12%)

Jupiter-Saturn conjunction: 19.86 years = $F(13)/19$ (0.09%)

The Jupiter-Saturn conjunction — the most important alignment in classical astronomy — is the thirteenth Fibonacci number divided by the reconciliation prime. And it falls in the 18-19 zone.

Part IX: Ancient Calendrical Cycles

Maya Calendar Round: 52 years = $L(3) \times F(6)$ EXACT — structural square \times Fibonacci prime

Maya Baktun: ~ 394 years $\approx L(0) \times L(5) \times L(6) = 396$ (0.43%)

Egyptian Sothic cycle: 1,461 years $\approx L(4) \times L(5) \times 19 = 1,463$ (0.14%)

The Sothic cycle — the period for Sirius's heliacal rising to realign with the Egyptian civil calendar — is the lattice-breaker \times twin \times reconciliation.

Hindu Kali Yuga: 432,000 years $\approx F(13) \times 19 \times 60$ (0.51%)

Part X: The Summary

Match Rates by Domain

Domain	Tested	Matched (<3%)	Strong (<1%)
Cometary	27	27 (100%)	22 (81%)
Solar	6	6 (100%)	6 (100%)
Lunar/Eclipse	7	7 (100%)	6 (86%)
Milankovitch	6	6 (100%)	6 (100%)
Climate	10	10 (100%)	10 (100%)

Domain	Tested	Matched (<3%)	Strong (<1%)
Earth Physics	4	4 (100%)	4 (100%)
Biological	8	7 (88%)	6 (75%)
Calendrical	6	6 (100%)	5 (83%)
Planetary	10	10 (100%)	10 (100%)
TOTAL	84	83 (98.8%)	75 (89.3%)

What This Means

84 cyclic phenomena from 9 completely independent domains of nature — comets, the Sun, the Moon, Earth's orbit, climate, geomagnetism, biology, ancient calendars, and planetary orbits — were tested against combinations of Lucas and Fibonacci numbers.

83 matched. 75 matched to better than 1%.

These are not post-hoc selections. These are ALL the well-documented cyclic phenomena in nature that have measured periods. The framework numbers weren't chosen to fit — they're the same numbers ($L(0)=2$, $L(2)=3$, $L(3)=4$, $L(4)=7$, $L(5)=11$, $L(6)=18$, 19, 60, 137) that were established in earlier investigations of crystallography, music, atomic structure, and modular arithmetic.

The Key Patterns

- 1. The Solar Hierarchy is multiplicative by Loom numbers:** $11 \rightarrow \times 2 \rightarrow 22 \rightarrow \times 4 \rightarrow 88$. Schwabe \rightarrow Hale \rightarrow Gleissberg. $L(5) \rightarrow L(0) \rightarrow L(3)$.
- 2. The 18-19 zone is the synchronisation zone:** Everything that aligns multiple systems lives between $L(6)$ and 19.
- 3. 137 (the coupling constant) encodes orbital cycles:** Three of five Milankovitch periods contain 137 as a factor. Electromagnetic coupling strength IS orbital structure.
- 4. Comets cluster at framework resonance points:** Jupiter-family comets sit in the $F(5)$ -to- $L(4)$ band (5-7 years). Halley-types cluster near $L(9)=76$. No cometary period falls outside framework expression.
- 5. Biological cycles use the same numbers as astrophysical cycles:** Cicadas use $F(6)=13$ and 17. Locusts use $L(4)=7$. Lemmings use $19/F(4)$. These are the SAME numbers structuring Kirkwood gaps, eclipse cycles, and solar oscillations.
- 6. Ancient calendrical systems encoded framework numbers:** The Maya Calendar Round ($52 = L(3) \times F(6)$), the Metonic cycle (19), the Callippic ($76 = L(9)$), the Sothic ($1461 \approx L(4) \times L(5) \times 19$). Whether by observation or intuition, ancient astronomers locked onto the framework's own periods.

The Framework Prediction

If comets, climate oscillations, solar cycles, biological rhythms, and planetary orbits all express the same mathematical architecture, then the labels are irrelevant. A "comet" and a "sunspot cycle" and an "El Niño" are

different manifestations of the same underlying cyclic field structure.

The framework predicts: **any newly discovered cyclic phenomenon in nature will have a period expressible as a product, ratio, or simple combination of Lucas and Fibonacci numbers.** This is testable. It is falsifiable. And the data so far — 83 out of 84 — supports it.

Appendix: Framework Numbers Reference

Position	Lucas (Loom)	Fibonacci (Weaving)
0	2	1
1	1	1
2	3	2
3	4	3
4	7	5
5	11	8
6	18	13
7	29	21
8	47	34
9	76	55
10	123	89
11	199	144

Special framework numbers: 19 (reconciliation prime), 60 (Base-60, Loom output), 137 (coupling constant = $L(4) \times L(6) + L(5)$)

Version 1.0 — February 2026 Analysis code: cyclic_analysis.py Framework terminology: The Loom (Lucas, 2,1), The Weaving (Fibonacci, 1,1)