The Labyrinth Counts to Forty

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1. The Instrument

The classical labyrinth has seven circuits and one path. There are no choices and no dead ends. You enter, you wind, you arrive. That is what separates it from a maze. A maze offers variations. A calendar cannot.

A calendar must repeat, exactly, year after year, the way the sky repeats.

Eloise Philpot reads the seven-circuit labyrinth as exactly that: a calendar. Her construction is simple and complete. Start from the seed pattern: a cross, four angles, four dots. Give it the four cardinal directions. East sits at the entrance side, in sky-map orientation. Now the sharp turns and arcs take their places. The solstice arcs sit top and bottom. The equinoxes lie on the center crosshairs. The cross-quarter days — the beginnings of May, August, November, February — sit at the sharp turns. Then the seed is wound into the labyrinth: the middle point at the top connects to the next point on the right, that point connects to the empty point left of the middle, back and forth until the figure closes.

The year is one passage. The walker enters at the spring equinox, around March 21. The inner path, March to May, runs through the underworld: the forty days the Pleiades are gone from the night sky. In May the walker emerges and follows the arc to the summer solstice. Summer winds outward to the autumn equinox at the crosshairs. Autumn descends through the November turn to the winter solstice. Winter climbs back up to spring. Then the walker enters again.

One figure holds two times. The walk itself is finite and measurable: this month, this season, this year. The inner path is the other time, the eternal one, running parallel just on the far side of the line. The labyrinth does not illustrate this. It is this.

2. The Counting

Now the number. Philpot counts the spaces of the meandering path: eight, if the center is included. At each zenith she counts by five. Five, ten, fifteen, twenty, twenty-five, thirty, thirty-five on the seven circuits. Five more in the center. **Forty.**

Forty is not decoration. It is the forty days and nights the Pleiades spend below the horizon, from their disappearance near the spring equinox to their helical rising at the May cross-quarter day. Hesiod says it plainly: "Forty days and forty nights they are hidden." The number runs through the old stories — forty days of flood, forty days in the desert. The labyrinth carries it in its own body: walk the path, count the zeniths, arrive at forty in the center.

Chartres confirms it independently. The Christian labyrinth has eleven circuits, not seven. Different figure, different faith, different millennium. Count three days at each circuit zenith — for the Trinity — and you reach thirty-three at the eleventh circuit: the age at the crucifixion. Add the seven days of Holy Week walking to the central goal. Thirty-three plus seven. **Forty.** A liturgical calendar ending at Easter.

Two built labyrinths. Two counting rules. One endpoint. The instrument counts to forty.

3. The Two Series

Here the built record meets the net. The framework is self-contained; every step is in this section.

A route is a sequence of turns. Each turn takes one of three values: over (+1), straight (0), under (−1). A route of depth *n* is therefore a whole number in balanced ternary: the turns are its digits, with weights 1, 3, 9, 27, … So (+1, −1, −1, −1, +1) reads 81 − 27 − 9 − 3 + 1 = 43.

At depth *n* there are 3^n routes. The largest address at depth *n* is the route of all +1 turns: $1 + 3 + 9 + \ldots + 3^{n-1} = (3^n - 1)/2$. This gives the **ceiling series**:

1, 4, 13, 40, 121, 364, …

Its rule is $x_n = 3x_{n-1} + 1$. Each new depth holds three copies of the old ceiling plus one new unit. Check: 3×13 + 1 = 40. 3×40 + 1 = 121.

The second series carries memory. Its rule is $a_n = 3a_{n-1} + a_{n-2}$: three copies of the last term plus the **entire term from two steps back**. Not one unit — the whole previous level. The old thread carries the new windings. This gives the **memory series**:

1, 1, 4, 13, 43, 142, 469, …

Check: 3×4 + 1 = 13. 3×13 + 4 = 43. 3×43 + 13 = 142. The ratio tends to the Bronze Mean, $(3 + \sqrt{13})/2 \approx 3.303$.

The two series are identical through the third term and split at the fourth:

- ceiling: 3×13 + **1** = 40
- memory: 3×13 + **4** = 43

The whole difference between the two counting worlds is that single term: does the new level carry one unit forward, or the full level from two steps back?

The labyrinth chooses 40. So does Chartres. The builders fixed the map: the complete address space at depth four, the ceiling. Not the growth rule. In net words: the ceiling series counts the routes that exist on a given depth; the memory series counts windings laid on the old thread. A calendar needs the ceiling — the same closed path every year, no growth, no remainder. The cultures that built the labyrinth were building a calendar, and their number says so.

This does not decide the standing 43-versus-40 question. The memory rule remains a hypothesis with its own tests. What the built record adds is one clean datapoint: where the ancients carved a counting figure in stone and floor, they counted the ceiling.

4. The Thread

The meander is older than the labyrinth, and it began on a thread.

Alexander Marshack examined a bone from Abri Blanchard in the Dordogne, from the Upper Paleolithic — on the order of thirty thousand years ago. Its flat surface carries a meandering path of pitted dots. Marshack read it as notation: roughly two and a half phases of the moon, marked point by point. And the design looks like something specific: **knots on a string.** Knotted cords are a known tally system of pre-literate cultures. Cord decays; bone keeps the image. The Blanchard bone reads as the durable picture of a perishable instrument — a symbol of a symbol.

So the oldest surviving notation is a winding line, counting the moon. Notation began as winding on a thread, not as a sign on a surface.

The meander then grows. At the passage tombs of the Boyne Valley in Ireland, around 3200 BCE, it becomes a major carved motif. Martin Brennan read those carvings as lunar-solar reconciliation: the moon's path weaves above and below the sun's ecliptic through the year — a line winding around a line — and the stones balance the 355-day lunar year against the 365-day solar year. The tombs themselves are aligned so that solstice light enters the inner chamber: the building is the instrument.

There are no true labyrinths on the Boyne stones. But across the water, in Galicia, labyrinth petroglyphs appear. Philpot's suggestion: when a culture loses its stones, it needs a portable form — a design that can be carried in the head and brought out when needed. The labyrinth is the memorized form of the stone knowledge. The thread, the bone, the stone, the floor: one line, four carriers.

5. Mirror, Scale, Exit

Three more features of the built record land directly on the route framework.

Mirror. Labyrinths were built in both rotations, entered moving left or moving right, with east on the entrance side. In route language these are the pair n and $-n$: the same route with every turn sign-flipped. The mirror pair is not a conjecture of the framework. It was built, on both orientations, and the builders treated both as valid.

Scale. Philpot reads the labyrinth a second way: as an elevation map. Flat, it is the underworld passage — Theseus under the ground. Read as contour lines, it is a mountain or tower, the solstice at the summit — Daedalus imprisoned in a tower, says the myth, in the same labyrinth. One figure, two readings, and the myths preserved both without contradiction. Heaven, earth and underworld in a single image: the axis mundi. In net words: the same winding at another depth. Identity over scale, carved.

Exit. Modern walkers reach the center and return by the same path. Philpot restores the older reading: in May, the walker does not turn back. The walker leaves at the curve and follows the arc to the summer solstice. The path has an exit, at a computable place, at a computable moment. The instrument itself contains the rule: the next ring lies at the right distance, and the figure tells you when to step across. That rule was not invented later. It was in the floor.

6. Status

Found. The forty in two independent built labyrinths: the seven-circuit count (7 zeniths × 5 + 5 = 40) and the Chartres count (11 × 3 + 7 = 40). Philpot's calendar construction as published: seed pattern, cardinal directions, solstice and cross-quarter placement.

Derived. The ceiling series $(3^n - 1)/2 = 1, 4, 13, 40, 121$ from the three-valued route definition, in full above. The memory series 1, 1, 4, 13, 43, 142 from $a_n = 3a_{n-1} + a_{n-2}$. The split at term four: 3×13+1 versus 3×13+4.

Reading. The labyrinth as time instrument is Philpot's thesis: argued from Hesiod and the astronomy, coherent, not proven. Her sickle-and-Saturn passage she marks as speculative herself. The assignment of 142 to the Chartres line is a reading within this programme, supported but not forced by the calendar result.

Open. The 43-versus-40 question stands. The memory rule awaits its derivation. This essay adds one fact to that file: the cultures that built the counting figure counted the ceiling. The map was carved. The growth rule was not — or has not been found.

Annotated References

None of these is needed to follow the calculations; every step is in the text. They are here for further digging.

Eloise Philpot, "The Labyrinth as Time Art," Athens Journal of Humanities and Arts. Why read it? The complete calendar construction: seed pattern to seasons, Hesiod verse by verse, and the forty-count at the center. The source this essay builds on. Read it first.

Alexander Marshack, *The Roots of Civilization* (McGraw Hill, 1972). Why read it? The Blanchard bone and the case for lunar notation tens of millennia before writing. The knots-on-a-string observation is here. Read chapters on the Dordogne material; the method (microscopic analysis of mark sequences) is as valuable as the finding.

Martin Brennan, *The Stones of Time* (Inner Traditions, 1994). Why read it? The Boyne Valley carvings read as working astronomy: meanders as the moon weaving the ecliptic, buildings as instruments. The best antidote to reading megalithic art as decoration.

Jeff Saward, *Labyrinths and Mazes* (Lark Books, 2003). Why read it? The standard survey. The seed-pattern construction method, the Galicia petroglyphs, and the Roman four-fold labyrinths — four compressed seven-circuit figures, which Philpot suggests may count the four-year Julian cycle. That suggestion is worth its own follow-up.

Hesiod, *Works and Days*, trans. Hugh G. Evelyn White (Putnam, 1929). Why read it? The farmer's calendar the labyrinth encodes, in the original voice. The Pleiades' forty hidden days, the sickle, the sailing window, the winter warnings. Short, and older than almost everything cited about it.

Anthony Aveni, *Empires of Time* (University Press of Colorado, 2002). Why read it? Hesiod's calendar diagrammed, and calendars compared across cultures. Useful for seeing how many different reconciliations of sun, moon and season have been built.

Robin Heath, *Sun Moon and Earth* (Walker, 1999). Why read it? The solstice-equinox geometry with the simple tools the builders actually had: measure, dial, count, horizon. Grounds the claim that Neolithic astronomy was precise without being instrumental.

J. Konstapel, "Ideogram 142: The Labyrinth" (constable.blog, November 2025). Why read it? The assignment of 142 to the labyrinth within the threshold series. This essay tests that line against the built record and finds the built record counting the neighbouring series.

J. Konstapel, "Counting the Universe" (constable.blog, 2026). Why read it? Both series in full: the recursion, the graph construction, the 43-versus-40 discrimination, the ladder of 119 steps. The framework Section 3 summarizes.