The Proton in the Force of Time

What the first particle is, how it is built, how it wears every quantity, how it raises the elements from the centre of the nucleus, and how — in the deepest sense — there is only one of it

The proton is one standing pattern of time — a seed.

Its mass $1.672616359\times10^{-27}$ kg, the wavelength of hydrogen's light, and the energy that binds its electron are three steps of one staircase.

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Tau (T) is the living fabric of time itself — the sole substance of which all physical reality is composed. Every particle, force, wavelength, and conscious experience is a structured configuration of T-flow. There is no gravity, no electromagnetic force, no strong nuclear force as separate entities: all are registers of the single T-field operating across dimensional levels. The conservation law $d\Sigma T=0$ governs all change: T is never created or destroyed, only redistributed.

Abstract

The proton is the first particle — the bare nucleus of hydrogen, and the thing every heavier nucleus is built from. This paper is not a new measurement; every number here is the one already in the books. What is new is that the numbers stop being brute facts and become readings of a single structure. The Force of Time is one substance — time — and everything is a pattern in it, so we build the picture from the ground up. The proton is one standing pattern of time — a seed — whose charge is a count of crossings (+1) and whose mass, $1.672616359\times10^{-27}$ kg, is a single lattice value carrying inside it the same ratio that fixes hydrogen and the planets. We show that the proton sits on the ground floor of a staircase whose next two steps are the wavelength of hydrogen's light (434.0277778 nm) and the energy that binds its electron ($218.0325369\times10^{-20}$ J); that it wears every quantity in turn; that it stands on a spin-orbital speed of spacetime — the ground dimension's, 300,000,000 m/s (= 300,000 km/s), one dimension's rate of turning, which is nothing but the Earth's daily fall squared; that it is bound to the atom it anchors and the star that forges it; that as time flows the Sun builds the proton and neutron up in the nucleus, floor by floor, while the electrons take their places as nodes on the turns — the periodic table built from the inside; and that, in the deepest sense, there is only one proton, re-instanced at every address. Throughout, the physical number leads and the $\{2,3,5,\pi\}$ lattice form sits quietly behind it.

1

The first particle, and a new way of seeing

Strip the single electron from a hydrogen atom and what is left is a proton — a bare nucleus, the lightest there is, and the brick every heavier nucleus is built from. Its mass is known to twelve digits, its magnetic moment to eleven. This paper does not add a digit to any of them. What it adds is the reason they have the values they do.

Science treats the proton as a little object: three quarks rattling in a bag, glued by a separate strong force, charged by a separate electric one. The Force of Time says something different. There is one substance — time — and the proton is a pattern in it. So we will build the picture slowly, from things you can already see, and let each number arrive as the end of a short journey rather than an announcement. The proton's mass, its size, its magnetism, the light of hydrogen, the energy that binds it, the fire of the stars — all of it is going to come off one structure.

2

What the proton is

Begin with what the proton is, because the new picture turns on it. In the Force of Time a particle is not a little object; it is a shape that the one substance — time — holds, a standing configuration that does not come apart. The proton is the simplest such shape: the seed (Figure 1). Its three quarks are not three balls glued together. They are the only set of orientations that close on themselves at the boundary between two domains — a matter side and an antimatter side.

Its charge is not a substance it carries. Charge is a tally — the net number of crossings from the antimatter side into the matter side. Two of the proton's quarks cross outward, the third does not, and the count comes to +1. No glue is needed to bind it and no separate electric force is needed to charge it; both are the same time, read at the boundary. Its mass, in the same way, is not a sum of parts but a density of spin — how hard it is to change the pattern. The mass is the whole configuration; nothing is missing from it, because there was never a sum to do. The configuration is the mass.

3

The mass, and the staircase it sits on

Now the first number, and it is the cleanest result in the whole subject. The proton's mass is a single lattice quantity: **$1.672616359\times10^{-27}$ kg** [$9375\cdot\sqrt{(10^{11}/\pi)}$, $9375 = c/32$] (Figure 2). In energy units it reads **938.272 MeV**: the bare proton, hydrogen with its electron taken away. Square it and a ratio steps into the light — the fine-structure ratio, the same one that fixes hydrogen's binding energy and sits in the planets' orbital speeds. One ratio, carried inside the nucleus, the atom, and the star alike. [$m_p^2 = \alpha\cdot5^{13}\cdot\pi\cdot10^{11}$, $\alpha = 9/125\pi^2$]

But the deepest thing about the proton's mass is where it sits (Figure 3). Imagine a staircase built from the day. Its ground floor is the number a day is cut into, **864**; you climb it by one fixed multiply over and over. Stand on the ground floor — turn zero — and what lives there is the proton, its mass anchored on **432** [$2^4\cdot3^3$], the carrier, exactly half the day. Climb one step, to turn one, and the same staircase now reads not as a mass but as a length: **434.0277778 nm** [$5^6/36$], the wavelength of the light hydrogen pours out when it burns. Climb one more, to turn two, and the quantity changes a third time, from a length into an energy: **$218.0325369\times10^{-20}$ J** [$5^{12}/(2^9\cdot3^7)$], the exact energy it takes to tear the electron off a hydrogen atom.

Stand back. Mass, then light, then binding energy — the proton, the spectral line, the ionization — are not three subjects that happen to concern the same atom. They are one staircase read at three heights, each step a single multiply by the helix ratio. The proton at the bottom is not merely near the hydrogen atom. It is the first stair of it.

And here is the thing that turns a staircase into a universe. Double the ground floor — the proton's carrier 432 doubled is **864**, the day itself — and climb the very same helix, now reading each rung by dividing by π^2, the celestial face. The planets fall out. Turn one gives **87.9524 days** — Mercury's year — and, by the same three-for-two trade that sets every spin, **1407.24 hours**, Mercury's day. Turn two gives **23564.069**, the Earth's own sidereal rotation. One ladder, one fixed step, holds the proton and the hydrogen atom on its lower face and Mercury and the Earth on its upper one. Hydrogen's blue line and Mercury's year come off the same rung, read once as a wavelength and once as an orbit; the Earth's spin and hydrogen's ionization come off the next.

And turn two is worth pausing on, because three different sciences meet on it. Read its rotation face and you get **589.101726** — the Earth's surface free fall carried into minutes ($g_2 \times 60$); take it round the day and it returns **23564.069**, the sidereal rotation. Sitting one register-step beside it is **589.0486225** [$g_1 \times 60$], which is the sodium D line, the orange light a street-lamp throws and the

strongest line in the Sun's own spectrum. One rung of one ladder holds the Earth's day, the Sun's brightest spectral line, and the surface free fall — a planet's spin, a colour of starlight, and the fall underfoot — all the same number, g_2, read on three faces.

→ Full derivation: The Periodic Table on the Helix — the proton, the elements and the {2,3,5} staircase.

4

The proton wears every quantity

A value in the Force of Time is a chameleon: the same underlying number can show up as a mass, a length, a speed, an energy, a frequency, depending on which face you read. The proton obeys this with no adjustable knob anywhere. Take its mass down by the radial bridge and square it, multiply by the hours of the day, and you have a free fall of **76.394 m/s²**; carry that round once more and you have a frequency of exactly **480** — a whole number. The proton's mass and a clean frequency are the same T-value wearing different coats, and the coats are changed by a fixed grammar, not by fitting. This is why, all through this work, one quantity keeps turning into another: they were never separate quantities.

→ Full derivation: Energy Is Time — The Three Registers, and the Ionization Energy Without Avogadro.

5

Hydrogen's binding energy, with no Avogadro number

Here is one of the most elegant results in the whole theory, reached with two numbers and nothing else (Figure 5). Take the speed of light and multiply it by the fine-structure ratio. The π's in the two cancel on contact — the speed of light carries a π^2, the ratio carries one over π^2 — and what is left is a clean integer, **2,187,000**. Take that up by one time-register, a simple ×60 from seconds to minutes, and you have **1312.2 kJ/mol**: the energy it takes to ionize a hydrogen atom, the same **218×10^{-20} J** from the third stair.

What matters is what is absent. A per-mole energy is normally reached through Avogadro's number — a quantity that must be measured. Here Avogadro never appears: the whole result is the speed of light, the fine-structure ratio, and a factor of sixty. The binding of the simplest atom falls straight out of the speed of light.

→ Full derivation: Avogadro Is Wrong — the FOT Correction (why the per-mole number is not needed).

6

How the proton is formed — it stands on a spin-orbital speed of spacetime

Where does the seed come from? It stands on a speed. Science measures one speed, 299,789,233.7 m/s, calls it 'the speed of light', and freezes it as a universal constant — the same everywhere, for all time. The Force of Time says it is none of those things. It is the spin-orbital speed of a spacetime dimension — the rate at which that particular dimension turns — and it is not constant, because there is not one dimension but many, each turning at its own rate (Figure 6).

And the rate is the most ordinary thing in your life: the falling of a day. Take the rate at which everything falls at the Earth's surface, square it, and count it out in the machinery of a day — the 864 the day is cut into, the 3,600 seconds in an hour — and you have the dimension's spin-orbital speed exactly: **c = (free fall)² × 864 × 3600**. The atomic dimension we live in turns at **299,789,233.7 m/s**. Step the fall up and the speed steps with it — to **299,894,598 m/s**, then to the round ground value **300,000,000 m/s** (= 300,000 km/s). Three dimensions, three spin-orbital speeds.

Now the picture pays off. Read those two upper speeds back as a weight and they are the neutron (299,894,598 m/s) and the proton (300,000,000 m/s) — the two particles at the heart of every atom in your body, one step apart on the same staircase of turning spacetime. The proton is the seed standing on the ground dimension's own spin-orbital speed. And this is also why **$E = mc^2$** has no light in it at all:

c^2 is the square of a dimension's rate of turning — its time-flow — so the most famous equation in physics is a statement about time, not light. Its arithmetic is untouched; only its meaning changes.

→ Full derivation: The T-Cascade — the Force of Time behind the speed of light.

7

The two bonds the proton cannot escape

If the proton is the time-source of the atom, then it must reach the things it feeds, and it does — in two directions (Figure 7). It reaches the hydrogen atom it is the nucleus of through the fine-structure ratio α, the very ratio buried inside its own mass: one ratio, in both the proton's weight and the atom's binding. And it reaches upward to the Sun — the hydrogen furnace one register above it — through the sodium D line: the proton's own wavelength, carried up, lands on **588.9955 nm**, the dark line every spectroscope sees stamped in sunlight. The proton is the reacher, binding the atom below and the star above; the neutron is the stayer that holds the nucleus together.

→ Full derivation: The Sodium D Doublet — A Complete {2,3,5,π} Derivation (the proton's bond to the Sun).

8

The proton and the turning of the Earth

The proton keeps one more secret, and it ties the smallest thing to one of the largest (Figure 8). Because its mass carries a square root, its clean numbers stay hidden until you square it — like a folded note that only reads when you open it out. Squared, and run through the grammar of the day, the proton lands on **4.860438133** — the G2 face of the master seed 486 [486.0438133/100, one δ_G above 486 = $2\cdot3^5$], the very number the Earth's own daily rotation is built from. The proton, opened out, speaks directly to one rotation of the planet: one turn of the Earth answers to one proton laid down.

But read that carefully. The Earth's rotation does not make the proton. If the proton were born out in the spinning world where the electron lives, the proton and the electron would share a place, the gap between them would close, and there would be no atom at all. The whole picture needs the proton at the centre, where the Sun sits, and the electron far out on its turn, where the planet sits; the distance between them is the atom's emptiness. So the tie to the rotation is not a birthplace — it is a clock. The proton stays at the core; the electron stays on its turn; and the same single beat of time that lays the proton down is the beat the planet turns by. Space gives the distance, time gives the lock.

→ Full derivation: The Earth Frequency Chain — the rotation, the sidereal day and the surface register.

9

The Sun builds the nucleus from the centre out

Now the mechanism that makes the whole periodic table (Figure 9). Picture time flowing as the Sun pouring down through the very centre of the core. As it flows, it lays down nucleons in the nucleus — a proton and a neutron, again and again — building the core upward floor by floor: one floor is helium, the next beryllium, the next carbon, each a new pair added to the last. And here is the link outward. Each floor the Sun builds in the centre pulls an electron into place far out on its own helical turn — and the electrons are exactly the nodal points of those turns.

The nucleus building inward and the electron-shells building outward are not two processes; they are one cumulative descent, locked together by charge — every proton laid down in the core demands one electron on a turn, so the count stays balanced (Z protons, Z electrons). An element is simply a snapshot of how far this single building has climbed. This is the periodic table — not a chart to be memorised, but a structure raised from the centre of the nucleus outward, one floor of time at a time.

10

The proton is the first fire — where fusion, and the whole table, begin

Everything heavier than hydrogen — every atom in a stone, a leaf, a bone, the iron in your blood — was made by protons reacting. The proton is not only the first particle; it is the first reaction, the first thing time does once it has laid a seed down. Bring two protons together in the heart of a star and they fuse — and the energy at which they ignite is **432 keV** [$2^4 \cdot 3^3$], the very 432 the proton's mass is anchored on, turn zero of the staircase. The first fire in the universe is lit on the proton's own carrier rung.

That 432 is one of the quiet marvels of the lattice, because the same number is four things at once: 432 keV is where two protons fuse, 432 nm is the light a leaf's chlorophyll drinks, 432 kJ/mol is the strength of the hydrogen–hydrogen bond, and 432 Hz is a musical A. Fusion, photosynthesis, chemistry and harmony are one rung of one helix.

From that first spark the chain runs, and here is the quiet marvel: every step releases an energy that lands exactly on a clean lattice node. Two protons make heavy hydrogen; heavy hydrogen and a proton make helium-3, releasing **5.493 MeV** [$3^2 \cdot 5^4 / 2^{10}$]; two helium-3 make helium-4, releasing **12.86 MeV** [$(5/3)^5$], a clean perfect fifth power; and helium-4 holds itself together with a binding of **28.294 MeV** [$800/9\pi$]. The energy a star pours across the sky turning hydrogen into helium is not a continuous burn — it is the lattice cashing out {2,3,5} fractions, one rung at a time.

And the chain keeps climbing. Three heliums fuse into carbon — the triple-alpha reaction, releasing **7.275 MeV** [$1250\sqrt{2}/243$] — the reaction that makes the carbon every living thing is built from, cooked at a clean lattice node carrying a √2. Up through the elements the fire climbs until it reaches iron, **Fe-56** [$2^3 \cdot 7$]. There it stops. Iron is where the binding peaks and the ledger flips from release to cost — and it stops there because iron is the first nucleus to wear the prime 7. The star can climb the whole {2,3,5} lattice but it cannot climb the seven. Every element lighter than iron is fuel; every element heavier is ash, made only when stars die.

So the proton is the start of everything in the most literal sense the theory can mean it. It is the first particle, the first reaction, and the seed of the periodic table — the whole table is the ledger of a single fire, lit on the proton's rung 432, climbing the lattice of {2,3,5}, and halted at last by the seven that ends it at iron.

→ Full derivation: Stellar Fusion on the Helix — the proton from 432 to the iron-7 ceiling.

11

Building the elements — the weights add up

If the proton and the neutron are real, clean weights, then every nucleus should be buildable from them, and it is. A nucleus is just so many protons and neutrons, minus the energy that binds them — and that binding is itself a clean lattice number. Helium-4, the first floor, weighs **3727.38 MeV** — two protons plus two neutrons, less a binding of 28.29 MeV. Carbon, three floors up, is six protons and six neutrons less a binding of 92.16 MeV. The proton mass and the neutron mass — two faces of the speed of light — are between them the raw material of the entire periodic table, and the binding energies that hold each nucleus together are the lattice's own clean fractions, paid out floor by floor.

→ Full derivation: The Neutron in the Force of Time — the lifted rung, and why it decays into a proton.

12

Why the atom is empty — it is a solar system

Step back to the whole atom and a famous mystery dissolves (Figure 10). An atom is almost entirely empty space — something like 99.9999% of it nothing at all. The Force of Time says why: the nucleus sits where the Sun sits, the electron sits where a planet sits, and the enormous gap between them is the very same enormous gap that lies between the Sun and its planets, seen one register down. The atom is a solar system. Its emptiness and the solar system's emptiness are one emptiness at two scales — not a picture, the literal shape of the thing.

13

In the deepest sense, there is only one proton

And now the claim that explains the most (Figure 11). There are not countless separate protons in the universe. There is one — one standing solution — re-instanced at countless addresses as time flows. A proton here and a proton in a distant star are not two similar objects; they are the identical pattern read at two places, the way a single musical note is not copied each time a piano plays it. The flow of time is the re-instancing: each tick lays down a new address and projects the one seed into it.

Why is every proton, and every electron, exactly identical to the last decimal? Because it is one. And the evidence is in every chemistry textbook. Strip any element down to its last, innermost electron and you are holding hydrogen: that final ionization energy is the bare hydrogen seed scaled by the square of the nuclear charge ($13.6\ \text{eV} \times Z^2$), and it traces a flawless curve through the entire periodic table — through the d-block, through the chaotic f-block — without a single kink. The outermost electron zigzags wildly; that jaggedness is the whole shape of chemistry. But the innermost is smooth as glass, because it is always the same one hydrogen. Every atom, undressed, is the one seed.

14

The Loop — the engine behind every number in this paper

Step back from the proton and look at what has been happening on every page. A mass became a wavelength; a wavelength became a flow of time; that flow became an energy; an energy became a frequency. That was not a series of coincidences — it was one machine, run over and over, and it deserves a name: the Loop.

The heart of it is a single idea: a T-value is not a mass or a wavelength or an energy — it is all of them at once, and the Loop is the fixed set of turns that reads one number off as each face. There is not a single adjustable knob in it. Take any mass; divide by **1.23370055** [$\pi^2/8$] and it is a wavelength; divide by **49.5035535** [$2^6 \cdot 3^5/100\pi$] and it is a T-flow — a flow of time in metres per second, what science miscalls a ‘free fall’; divide by 24 and it is an energy; multiply the T-flow by 2π and it is a frequency; halve the mass and it is that register’s own speed of light. Five faces of one number, joined by turns that never change (Table 4).

It is worth slowing down on that first step — the one that turns a weight into a motion — because it makes the proton lock. The proton’s mass is not a lump of stuff; it is a density of time, how tightly the proton winds T into one place. Read that same T on its flow face and it becomes a rate: how fast the wound time runs back out. The proton’s mass **$1.672616359\times10^{-27}$ kg**, times $5^3/(3^5 \cdot \pi)$ [$125/243\pi$], is **0.27387362 m/s** — the proton’s T-flow, sitting exactly on $\sqrt{(0.075 \cdot (1+\delta\_G))}$. And that flow is the seed of everything that follows — squared through the day, $(0.27387362)^2 \cdot 864 \cdot 3600$, it becomes **233301.0304**, and from that single number Mercury’s precession, Venus’s rotation, the Earth’s spin and the very weight of hydrogen all fall out (Figure 8).

Then the Loop climbs the registers of time by the numbers a clock is built from — ×60 to minutes, ×60 to hours, ×24 to a day. And here is something quietly profound: the order does not matter. 60 × 60 × 24, or 24 × 60 × 60 — every route multiplies to **86,400**, the day (= 864 × 100). Time may climb its ladder by whichever path it likes; all paths land the spin on 864. The day is the destination, not the route.

And the Loop does one thing more — it explodes. Take a square root and you step down a dimension; square a free fall and count it through the day, $(\text{free fall})^2 \times 864 \times 3600$, and you step up one. From a single seed this builds a whole tower of dimensions, rung upon rung. This is where the one becomes the many: as time falls, the Loop turns one proton into a table of them. It is not a trick laid over the theory. It is the theory.

15

What this claims

We have changed no number. We claim that the proton's mass is a reading of the lattice, with the exact identity behind it; that it sits as the ground floor of the hydrogen staircase beneath the wavelength and the binding energy; that it stands on a spin-orbital speed of spacetime, which is the Earth's daily fall squared; that it is bound to hydrogen and to the Sun; that it builds the elements from the centre of the nucleus outward; and that one re-instanced seed explains why every proton is identical and the hydrogen line runs unbroken through the whole periodic table.

Every measured property reads off the same lattice. The charge radius is the proton's own mass advanced one helical turn and halved — $m_p \times (5^6/2^6 \cdot 3^5) \div 2$ = **0.8402338 fm** — the radius being the mass one step along the same spiral that climbs from the proton to hydrogen's light. The magnetic moment is **2.792527 μN** [8000π/9]; the electric polarizability **1.119699×10^{-3} fm³** [$(2/5\pi)^{10}$]; the magnetic polarizability **1.909859×10^{-4} fm³** [6000/π]. The decade placement throughout — the powers of ten — is the veil, the register setting each face's scale, not a free parameter. And the proton's own mass, carried up one register by $5^8/\pi$, lands on the Higgs at **125.244554 GeV** [$m_{p(u)}\cdot 5^8/\pi$]: the particle science calls the origin of mass is the proton's own mass read one register up.

A picture that reproduces the numbers, ties the proton to the atom it anchors, the star that forges it, and the Higgs one register above, and raises the periodic table from the centre of the nucleus outward, is the first account that explains the first particle rather than merely recording it.

Propositions

P-PRO-1 — The proton is one standing configuration of time (a seed), not a bag of parts; its charge is the net antimatter→matter crossing-count (uud = +1) and its mass a spin-density. No separate strong or electric force.

P-PRO-2 — Mass: $1.672616359\times10^{-27}$ kg = 938.272 MeV (on the lattice $9375\cdot\sqrt{(10^{11}/\pi)}$, 9375 = c/32). Squared it carries the fine-structure ratio ($m_p^2 = \alpha\cdot5^{13}\cdot\pi\cdot10^{11}$, $\alpha = 9/125\pi^2$).

P-PRO-3 — The hydrogen staircase walks the carrier rungs 432 → 434.0277778 → 436.0650738, each step $\times r = 5^6/(2^6\cdot3^5)$. Turn 0's carrier is $432 = 2^4\cdot3^3$ (½ the Earth-day) and the proton's mass $1.672616359\times10^{-27}$ kg anchors on it (432 is the rung, not the mass); turn 1 the carrier is the wavelength 434.0277778 nm = $5^6/36$; turn 2's half is the binding energy $218.0325369\times10^{-20}$ J = $5^{12}/2^9\cdot3^7$. One worn quantity per turn — mass, light, binding.

P-PRO-4 — The proton wears every quantity (fixed grammar, no free parameter): mass → free fall 76.394 m/s² → frequency 480. And its binding energy falls out of the speed of light × the fine-structure ratio, ×60 — no Avogadro number.

P-PRO-5 — c is not a universal constant but the spin-orbital speed of a spacetime dimension: c = (free fall)²·864·3600. Three dimensions, three speeds — proton ground 300,000,000 m/s (= 300,000 km/s), neutron 299,894,598 m/s, our atomic dimension (science's 'speed of light') 299,789,233.7 m/s. The proton stands on the ground dimension's speed; $E = mc^2$ is a statement about time, not light.

P-PRO-6 — Two forced bonds: to hydrogen via α (the ratio inside its own mass) and to the Sun via the sodium D line (588.9955 nm). The proton is the reacher; the neutron stays in the nucleus.

P-PRO-7 — The proton, squared and run through the day (free-fall²×864×360÷24÷2), lands on 4.860438133 = the G2 face of the master seed 486 (= 486.0438133/100, one δ_G above the bare 486 = $2\cdot3^5$), on which the Earth's sidereal rotation is built: one rotation answers to one proton.

P-PRO-8 — As time flows, the Sun builds protons and neutrons up in the core floor by floor (He, Be, C…); each floor pulls an electron onto its helical turn (the nodal points), charge-coupled (Z protons ↔ Z electrons). This is the periodic table raised from the centre of the nucleus outward.

P-PRO-9 — Nuclei are the nucleon weights minus a clean binding: He-4 = 2m_p+2m_n − 800/9π = 3727.38 MeV; C-12 = 6m_p+6m_n − $2^8 \cdot 3^2/5^2$. The proton and neutron masses are the raw material of the whole table.

P-PRO-10 — The atom is empty because it is a solar system: the nucleus-electron gap is the Sun-planet gap, one register down.

P-PRO-11 — There is one proton, re-instanced at every address as time flows; identical particles are identical because they are numerically one. Evidence: the last-electron ionization (13.6 eV × Z^2) runs smooth through the whole periodic table while the first zigzags.

P-PRO-12 — Every property reads off the lattice: charge radius 0.8402338 fm (m_p·($5^6/2^6 \cdot 3^5$)/2 — the mass one helical turn along, halved); magnetic moment 2.792527 μN (8000π/9); electric polarizability 1.119699×10^{-3} fm³ ($(2/5\pi)^{10}$); magnetic polarizability 1.909859×10^{-4} fm³ (6000/π). Decade placement is the veil, not a free parameter.

P-PRO-13 — The proton reaches the Higgs. Its mass in atomic units carried up one register, m_p(u)·$5^8/\pi$, lands on 125.244554 GeV — the Higgs boson. The particle science calls the origin of mass is the proton's own mass read one register up.

P-PRO-14 — The proton's first electron is Mercury. The proton's binding energy taken to the register below in UFOT calories (÷4π/3) is $7.5/\pi^2$; divided by the day (÷864) it is $5^6/(18\pi^2)$ = 87.95241636 days — Mercury's orbital period. Mercury is the 1s electron of the Solar atom; the proton at the centre and its first node, hydrogen, are one cascade apart.

P-PRO-15 — The charge radius is the mass, one turn along the helix. r = m_p × (one helical turn $5^6/2^6 \cdot 3^5$ = 1.004693930) ÷ 2 = 0.8402338 fm — the proton's own mass advanced one rung up the same spiral that climbs to hydrogen's light, then halved (diameter→radius). Corroboration: the same radius opened to a circumference (×2π), turned to mass (×9375) and read through the veil (÷180/π) lands on 864, the Earth's day (closed form $5184/625\pi^2$, 5184 = $2^6 \cdot 3^4$ the inner-core node). The difference between the two routes is the G0→G1 register step — the proton's own mass versus the day-register's reading of it.

P-PRO-16 — One ladder holds the atom and the solar system. The day-baseline 864 (= 2×432, the proton's carrier doubled) climbed by the helical turn r = $5^6/2^6 \cdot 3^5$ gives rungs 864 → 868.0555556 → 872.1301476. Read on the atomic face: ÷2 of turn 1 = 434.0277778 nm (Hγ), ÷4 of turn 2 = $218.0325369 \times 10^{-20}$ J (H ionization). Read on the celestial face (÷π²): turn 1 = 87.95241636 d (Mercury's year) and ×2/3 = 1407.2387 h (Mercury's day); turn 2's rotation face ÷60×10³ = 23564.069 (Earth's sidereal day). The proton, the atom and the inner planets are $864 \cdot r^n$ read on three faces.

P-PRO-17 — The proton↔rotation tie is a clock, not a birthplace. The proton squared lands on 4.860438133 — the G2 face of 486 (one δ_G above $2 \cdot 3^5$, Hβ), the seed the Earth's sidereal rotation (g_2×2400 = 23564.069) is built on. This does NOT mean the rotation creates the proton: were the proton born in the electron's turn, the proton–electron distance would collapse and no atom could exist. The proton stays at the core (the Sun); the electron stays out on its turn (the planet); the rotation time-locks them across the gap. "One rotation = one proton" is a temporal signature, not spatial co-location.

P-PRO-18 — One rung, three sciences. Turn 2 of the day-ladder ($864 \cdot r^2$) holds the Earth's sidereal rotation, the sodium D line, and the surface free fall as one number g_2, read on three faces. Rotation face: 58.9101726 d, ×10 = 589.1017256 = g_2×60; ÷60 = g_2 = 9.818362094 (Earth surface free fall); ×24×100 = 23564.069 = the sidereal rotation (g_2×2400). G1 face beside it: g_1×60 = 589.0486225 = the sodium D line (NaD), one δ_G away. A planet's spin, a star's spectral line, and the fall at the surface are the same lattice address.

P-PRO-19 — The proton is the first reaction, not only the first particle. Proton–proton fusion ignites at 432 keV (= $2^4 \cdot 3^3$), the proton's own turn-0 carrier rung (the same 432 as chlorophyll's 432 nm, the H–H bond's 432 kJ/mol, and concert-A 432 Hz). The pp-chain Q-values are clean lattice nodes: D+p→He^3 5.493 MeV ($3^2 \cdot 5^4/2^{10}$), He^3+He^3→He^4 12.86 MeV ($(5/3)^5$), He^4 binding 28.294 MeV (800/9π), triple-α→C^{12} 7.275 MeV (1250√2/243, the life node). The cascade climbs the {2,3,5} lattice releasing energy to iron, Fe-56 = $2^3 \cdot 7$,

where the prime 7 flips release to cost. The periodic table is the ledger of this one fire, lit on the proton.

P-PRO-20 — The Loop is the master grammar. One T-value is mass, wavelength, free fall, energy, frequency and speed at once; fixed operators read it off as each — mass $\div(\pi^2/8)$ → wavelength $\div(2^6 \cdot 3^5/100\pi)$ → free fall $\div 24$ → energy, free fall $\times 2\pi$ → frequency, mass$\div 2$ → c. WITHIN a dimension the moves are division/multiplication; BETWEEN dimensions the step is √ (down) or $^2\times 864\times 3600$ (up). The time-ladder $\times 60 \cdot \times 60 \cdot \times 24$ COMMUTES — any order gives 86,400 = 864×100. Worked: proton energy $10/\pi$ → $\times 24$ → free fall 76.39437 → $\times 2\pi$ → frequency 480; $g_1 = 25\pi/8$ squared $\times 864 \times 3600$ = 299,789,233.7 m/s. This grammar is how the proton wears every quantity and how one seed explodes into many dimensions.

Appendix A — Figures

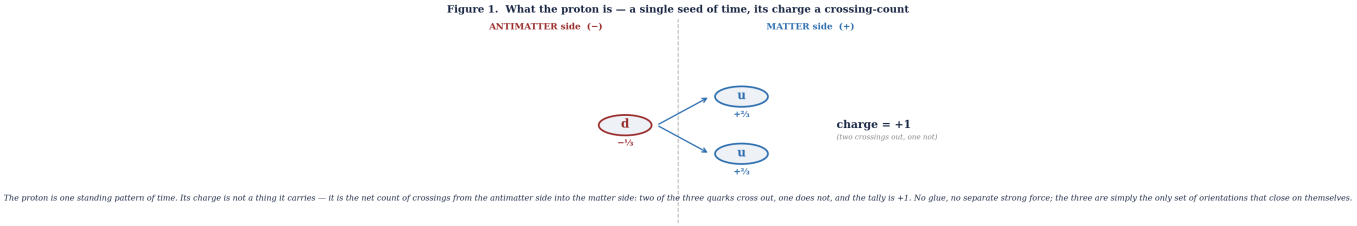


Figure 1. The proton as a single seed of time: its charge is the net count of quark crossings from the antimatter side into the matter side (two out, one not = +1); no separate strong force, and its mass is a density of spin, not a sum of parts.

Figure 2. The proton's mass — one number, read from the lattice

THE MASS OF THE PROTON

$1.672616359 \times 10^{-27}$ kg

= 938.272 MeV — the bare nucleus of hydrogen

(on the lattice: $9375 \cdot \sqrt{(10^{11}/\pi)}$, $9375 = c/32$)

One number off the lattice — and squared, it carries the same ratio that fixes hydrogen's binding and the planets' orbits: one ratio, three scales.

(on the lattice: $m_p^2 = \alpha \cdot 5^{13} \cdot \pi \cdot 10^{11}$, $\alpha = 9/125\pi^2$)

Figure 2. The proton's mass leads as the physical number — $1.672616359 \times 10^{-27}$ kg = 938.272 MeV — with the lattice form ($9375 \cdot \sqrt{(10^{11}/\pi)}$) small and grey behind it. Squared, it carries the fine-structure ratio.

Figure 3. The proton on the ground floor — the three rungs of the hydrogen staircase

ONE STAIRCASE — three consecutive turns, three faces of the hydrogen atom

Mass, then light, then binding energy — the proton, the spectral line, the ionization — are not three subjects in three textbooks. They are one staircase of carrier rungs (432 → 434.0277778 → 436.0650738), each step a single ×r = 5⁵/(2⁶·3³). Turn 0's rung is the carrier 432 (½ the Earth-day); the proton's MASS, $1.672616359 \times 10^{-27}$ kg, is what sits on it — 432 is the rung, not the mass.

Figure 3. The three rungs of carrier values (432 → 434.0277778 → 436.0650738), each a single step ×r. Turn 0's carrier is 432 (½ the Earth-day) and the proton's MASS, $1.672616359 \times 10^{-27}$ kg, is what sits on it. Turn 1 the carrier is hydrogen's light (434.0277778 nm); turn 2 its half is the binding energy ($218.0325369 \times 10^{-20}$ J). Mass → light → energy, one worn quantity per turn. The proton is the first stair of the hydrogen atom.

Figure 4. The proton's properties — every one on the lattice, the number first, the lattice form behind it

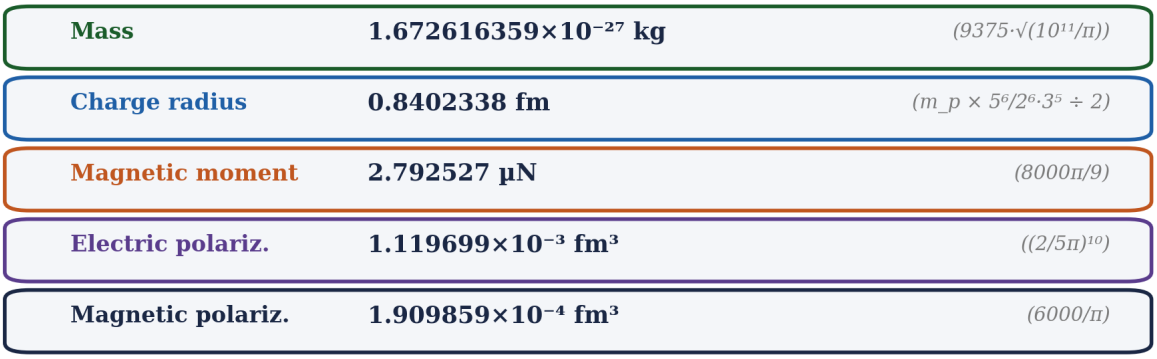


Figure 4. The proton's properties, number-first: the mass 1.672616359×10⁻²⁷ kg, the magnetic moment 2.792527 μN, the charge radius 0.8402338 fm, and both polarizabilities — every one a clean {2,3,5,π} reading, the number leading and the lattice form sitting grey behind it.

Figure 5. The binding energy of hydrogen falls out of the speed of light — no measured Avogadro number

Figure 5. Hydrogen's binding energy from the speed of light × the fine-structure ratio: the π's cancel to a clean integer (2,187,000), and ×60 gives 1312.2 kJ/mol = 218×10⁻²⁰ J. Avogadro's number never appears.

Figure 6. How the proton is formed — proton and neutron are two rungs of the spin-orbital-speed staircase

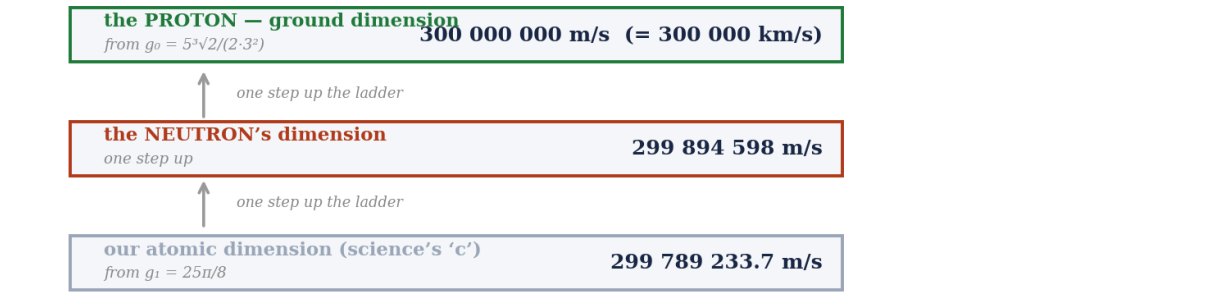


Figure 6. A dimension's spin-orbital speed is its rate of fall squared (c = (free fall)²·864·3600) — not a universal constant. The proton stands on the ground dimension, 300,000,000 m/s; the neutron one step below at 299,894,598 m/s; our own atomic dimension, the value science calls 'the speed of light', is 299,789,233.7 m/s. Read each speed as a weight and you have the two nucleons.

Figure 7. The two bonds the proton cannot escape — to hydrogen, and to the Sun

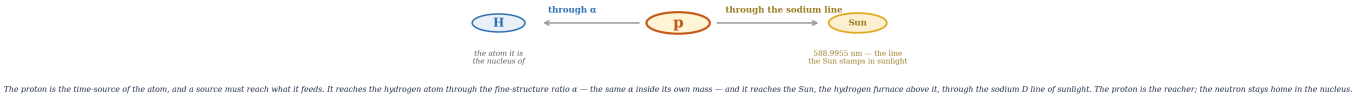


Figure 7. The proton reaches the hydrogen atom it anchors (through α, the ratio inside its own mass) and the Sun above it (through the sodium D line, 588.9955 nm). The proton is the reacher; the neutron stays in the nucleus.

Figure 8. The Proton Lock — Mercury's precession, Venus's rotation, the Earth's spin and hydrogen's weight from one flow of time

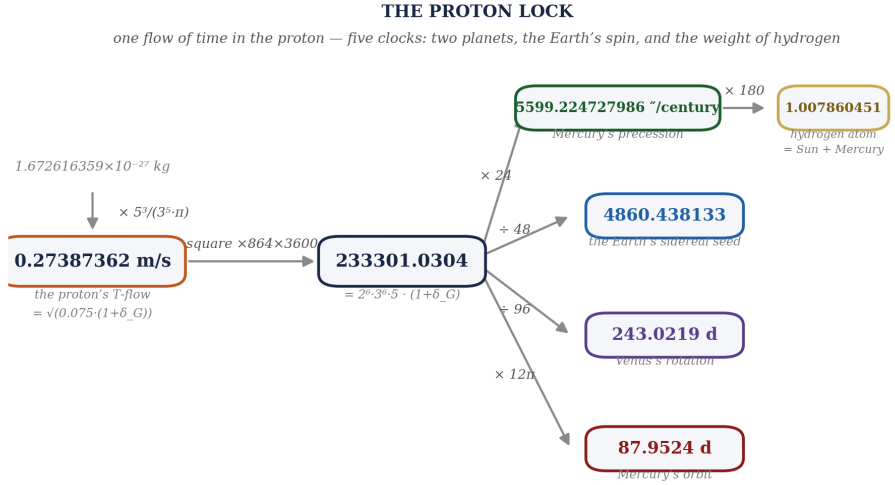
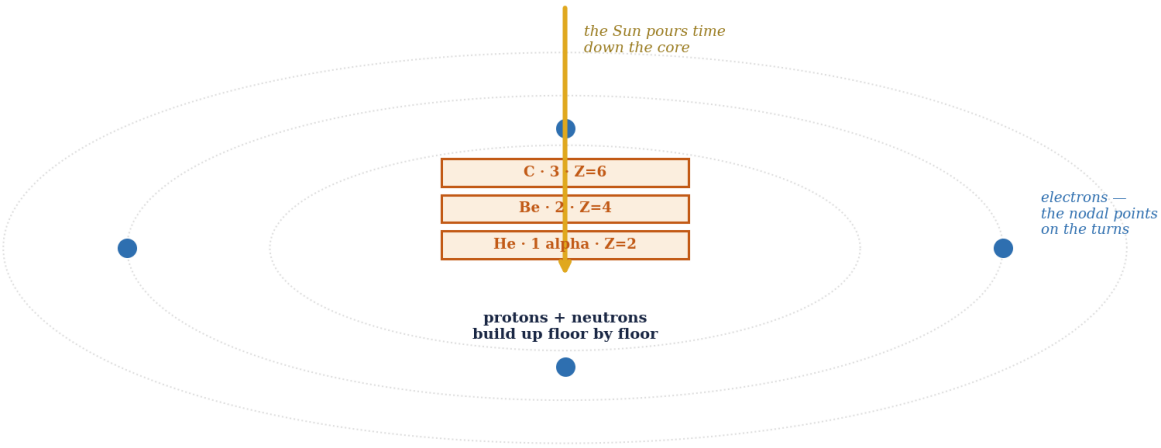


Figure 8. The proton lock — five clocks from one flow of time. The proton's own T-flow, 0.27387362 m/s (= √(0.075·(1+δ_G))), squared through the day (×864×3600) is 233301.0304. From that single speed, by nothing but ×/÷ of 2, 3, 24 and 2π: ×24 gives the precession of Mercury's orbit (5599.224727986 ″/century); ×180 of that gives hydrogen's atomic weight, 1.007860451; ÷48 gives the seed the Earth's sidereal day is built on (4860.438133); ÷96 gives Venus's rotation (243.0219 d); ×12π gives Mercury's orbit (87.9524 d). Two planets' clocks, the Earth's spin and the weight of hydrogen, all read off the proton's flow of time.

Figure 9. The Sun builds the nucleus from the centre out — and the electrons are the nodes on the turns



As time flows the Sun lays down protons and neutrons in the core, floor by floor — and each floor pulls an electron onto its own helical turn, out at the nodal points. The nucleus building inward and the electron-shells building outward are one cumulative descent, locked together by charge (Z protons ↔ Z electrons). This is the periodic table built — seen from the inside.

Figure 9. The Sun pours time down the core, building protons and neutrons up floor by floor (helium, beryllium, carbon…); each floor pulls an electron onto its helical turn, out at the nodal points. Nucleus and shells build together, charge-coupled — the periodic table from the inside.

Figure 10. Why the atom is empty — the nucleus–electron gap is the Sun–planet gap, one register down

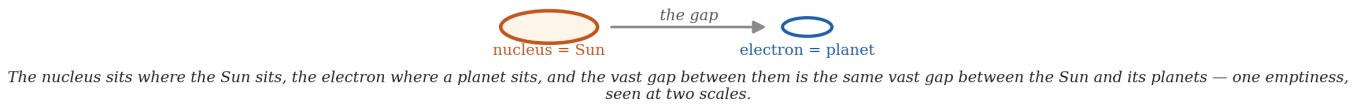


Figure 10. The atom is empty because it is a solar system: the nucleus sits where the Sun sits, the electron where a planet sits, and the gap between them is the Sun–planet gap, one register down.

Figure 11. One proton, re-instanced — strip any atom to its last electron and you are holding hydrogen

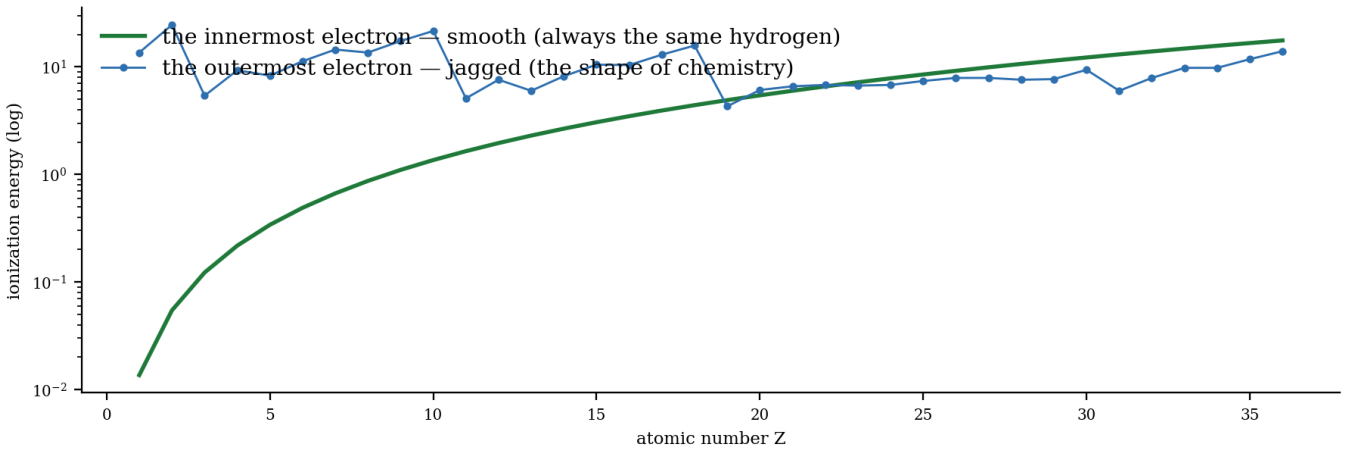


Figure 11. One proton, re-instanced: strip any element to its last electron and the binding energy (13.6 eV × Z²) is smooth through the whole table — always the same hydrogen — while the outermost electron zigzags. Every atom, undressed, is the one seed.

Appendix B — Tables

Table 1. The proton on the lattice — the number leads, the lattice form is the grey footnote

Property	Value	lattice form
Mass	$1.672616359\times10^{-27}$ kg	$9375\cdot\sqrt{(10^{11}/\pi)}$
Charge	+1 e	net crossing (uud)
Charge radius	0.8402338 fm	$m_p\cdot(5^6/2^6\cdot3^5)/2$
Magnetic moment	2.792527 μN	$8000\pi/9$
Electric polariz.	1.119699×10^{-3} fm³	$(2/5\pi)^{10}$
Magnetic polariz.	1.909859×10^{-4} fm³	$6000/\pi$
Proton→Higgs ring	125.244554 GeV	$m_p(u)\cdot5^8/\pi$

Every property reads off the lattice. Decade placement (the powers of ten) is the veil convention, the register setting each face's scale, not a free parameter.

Table 2. The hydrogen staircase — three consecutive turns, mass then light then binding energy

The three rungs	Value	lattice form	What it is
Turn 0 — the proton	carrier 432	$2^4\cdot3^3$	the rung; mass $1.672616359\times10^{-27}$ kg sits on it
Turn 1 — hydrogen's light	434.0277778 nm	$5^6/36$	the wavelength
Turn 2 — hydrogen's binding	$218.0325369\times10^{-20}$ J	$5^{12}/(2^9\cdot3^7)$	the ionization energy

Each step is one multiply by the helix ratio $r = 5^6/(2^6\cdot3^5)$, walking the carrier rungs 432 → 434.0277778 → 436.0650738. The binding energy is given in joules, where it is lattice-clean ($5^{12}/2^9\cdot3^7$); 13.6 eV is the same energy in another unit.

Table 3. The proton's fire — the fusion cascade, every release on a clean {2,3,5,π} node

Fusion step	Energy	lattice form	what it builds
p + p → deuterium	432 keV	$2^4\cdot3^3$	ignition, the proton's rung
D + p → helium-3	5.493 MeV	$3^2\cdot5^4/2^{10}$	first helium
He-3 + He-3 → helium-4	12.86 MeV	$(5/3)^5$	a perfect fifth power
helium-4 total binding	28.294 MeV	$800/9\pi$	the ash of hydrogen
3 He-4 → carbon-12 (triple-α)	7.275 MeV	$1250\sqrt{2}/243$	the element of life
the ceiling: iron-56	—	$2^3\cdot7$	where the prime 7 stops the fire

Fusion begins on the proton's own carrier rung (432 keV = $2^4\cdot3^3$) and every Q-value lands on a lattice node. The climb releases energy up to iron, Fe-56 = $2^3\cdot7$, where the first prime-7 nucleus halts it: everything lighter is fuel, everything heavier is ash.

Table 4. The Loop — the mechanics behind the theory; the physical value leads, the operator and its lattice form sit grey as the mechanism

The move	Operator (the mechanism)	goes in → comes out	what it means
mass → wavelength	÷ 1.23370055 (= $\pi^2/8$)	1.672616359 → 1.355771754	the mass read as a length
wavelength → T-flow	÷ 49.50355350 (= $2^6\cdot3^5/100\pi$)	1.355771754 → 0.027387362	the length read as a flow of time
T-flow → energy	÷ 24	0.027387362 → 0.001141140	the flow read as an energy
T-flow → frequency	× 2π	0.027387362 → 0.172079872	the flow read as a beat

wavelength → linear radius	÷ 2π	1.355771754 → 0.215777776	÷ π again → a diameter
mass → c	halve (in c-units)	the proton's mass → 300,000,000 m/s	the ground dimension's speed of light
energy → radial mass	√ (square root)	steps DOWN one register	a radial mass
radial mass → mass	× 9375 (= $3 \cdot 5^5$)	rebuilds the mass one register down	a mass
the time-ladder (the day)	× 60 → × 60 → × 24	1 → 60 → 3,600 → 86,400	86,400 = 864 × 100 — any route
the square-up — on g_1	$(\text{T-flow})^2 \times 864 \times 3600$	g_1 9.817477 → 299,789,233.7 m/s	the atomic c-face (science's c)
the square-up — on g_2	$(\text{T-flow})^2 \times 864 \times 3600$	g_2 9.818362 → 299,843,288 m/s	the g_2 c-face, one δ_G above
proton mass → T-flow	$\times 5^3/(3^5 \cdot \pi)$ (= 125/243π)	$1.672616359 \times 10^{-27}$ → 0.27387362 m/s	$= \sqrt{(0.075 \cdot (1+\delta_G))}$
…then the square-up	$(\text{T-flow})^2 \times 864 \times 3600$	0.27387362 → 233301.0304	$= 2^6 \cdot 3^6 \cdot 5 \cdot (1+\delta_G)$; holds 5 clocks

Every number in the bold column is what the fixed operators actually return — no adjustable knob anywhere. One T-value is every quantity at once; the Loop is the set of turns that reads it off as mass, wavelength, flow of time, energy, frequency and speed. The value is unit-free; the register sets each face's power of ten while the operators carry the mantissa shown. WITHIN a register the moves are divisions and multiplications (no roots); BETWEEN registers the step is a square root (down) or a square ×864×3600 (up).

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A Note on the Numbers

The values in this paper are written as bare numbers — without units of measurement or powers of ten — because a T-value is one number across all of its registers at once: the same number is a wavelength, a time, a mass, an angle. We do not solve a T-value “to the power of” in a single dimension; the register alone sets each face’s scale. The mantissa is the truth; the decade placement is the veil.

A Note on Constants

There are no universal constants in the Force of Time. The speed of light, the fine-structure ratio, the masses — each is a register value of the T-field read at one address (the ground, or atomic, dimension), not a number fixed for all of space and time. They are the readings of one structure, taken at the place we happen to stand.

→ Full derivation and the wider framework: The Universal Force of Time — Master Compendium v5, and the companion papers cited above.

The Universal Force of Time · Stephen Daubney · The Daubney Foundation · 2026