

The Neutron in the Force of Time

What the neutral nucleon is, how it is formed one rung above the proton, why it decays back into one — and how that single flip drives both the spark of the stars and the decay of the heavy elements — with the Loop that returns its mass from one speed of light

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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 neutron is the proton's twin: a nucleon of almost exactly the same mass, but carrying no electric charge, and — left to itself — unstable, decaying into a proton in about a quarter of an hour. Without it there would be no nucleus heavier than hydrogen, and no periodic table. This paper gives a single, structural account, marking throughout what is pinned, what is close, and what is open. The neutron is the same T-seed as the proton, read at the adjacent NEGATIVE node — its quark crossings cancelling ($udd = +\frac{2}{3} - \frac{1}{3} - \frac{1}{3} = 0$), hence no charge — and raised one rung on the register ladder $c = (\text{free fall})^2 \cdot 864 \cdot 3600$: the neutron sits one step above the proton's ground speed of light, at $299,894,598 \text{ m/s} = c_{G1} \times 20\sqrt{2}/(9\pi)$, and from that single c-face its mass falls out as $1.674927408 \times 10^{-27} \text{ kg}$, agreeing with measurement to 0.054 ppm — the cleanest single result anywhere in this work. It is bridged to the proton by a hydrogen line (mass gap $1.292836 \text{ MeV} = 100\pi/3^5$, veil-exact to Balmer- β 486 nm; mass ratio $m_n/m_p = r^{(5/17)} = 1.0013784$, 0.13 ppm). Its instability is no longer a brute fact: the neutron is the lifted rung, and it falls back to the proton floor — a single flip of the seed between its matter and antimatter faces. **That one flip is the hinge of two of the largest processes in nature: it is beta-radioactivity run one way, and the first, weak, slow step of stellar fusion run the other;** and the neutron-to-proton balance, against the Fibonacci stability ceiling at iron-56, decides which nuclei hold and which decay. We show only what sits on the lattice and name the open work plainly. Every figure is at full precision.

I. The proton's twin

The neutron is almost the proton, and almost not. It has very nearly the same mass — a shade heavier — but no electric charge, and where a free proton lasts forever, a free neutron lives about fifteen minutes before turning into a proton. James Chadwick found it in 1932, and the discovery rebuilt physics in a decade: the proton-neutron nucleus, beta decay, fission, the reactor, the bomb. Without the neutron there is no nucleus beyond hydrogen, and so no chemistry, no periodic table, no us.

Modern physics, as with the proton, gives the neutron three quarks and attributes almost all its mass to the binding energy of the strong force; its magnetic moment comes out negative for reasons the quark model can only approximate, and its lifetime is simply recorded. The Force of Time tells one story for both nucleons, and the neutron is where that story is at its cleanest — because the neutron's mass is the most precisely lattice-matched value in the entire framework. We keep a clean line between what is pinned to parts per million, what is close, and what is still open.

II. What the neutron is

In the Force of Time a particle is a shape the one substance holds — a standing configuration of T. The neutron is the same T-seed as the proton, read at the adjacent point on the boundary between the two domains. Charge is the net count of quark crossings from the antimatter (−) domain into the matter (+) domain. The proton's two up quarks cross outward and give it +1. The neutron's crossings cancel: up = + $\frac{2}{3}$, down = − $\frac{1}{3}$; udd = + $\frac{2}{3}$ − $\frac{1}{3}$ − $\frac{1}{3}$ = 0.

So the neutron is the negative node beside the proton. Dimensions alternate +, −, +: two positives cannot sit together, so the nucleon next to the positive proton must be negative. On the matter side the proton reads two positive crossings and one negative (uud); the neutron reads two negative and one positive (udd), and the crossings sum to zero — which is why it carries no charge. It is not a proton with the charge stripped away; it is the same seed read at the adjacent, negative node. Its mass, like the proton's, is a T-spin density, not a sum of three light quarks — which is why physics finds ninety-nine percent of the mass 'missing' from the quarks and hidden in the field. There is nothing missing: the configuration is the mass.

III. The mass — the cleanest figure in the theory

The neutron's mass is where the Force of Time speaks most precisely. It is read directly off a speed-of-light face one register step above the proton's: $m_n = 1.674927408 \times 10^{-27}$ kg, 0.054 ppm from the measured value. Fifty-four parts per billion — the closest single match between this framework and a measured value anywhere. Its atomic weight follows by dividing by the Force-of-Time Dalton, $1.660412721 \times 10^{-27}$ kg: 1.008741614 u; in energy units the same value reads 939.565 MeV.

Where the proton's mass came from the pure ground speed of light, the neutron's comes from that speed lifted one rung — and the lift, carrying a factor of $\sqrt{2}$, is the signature of the subatomic register the neutron reaches down into. The neutron is heavier than the proton for a reason that is now structural, not accidental: it stands one step higher on the ladder. The clean nodes are reached, as for the proton, in the square — the nucleons are $\sqrt{}$ -objects, and the $\sqrt{2}$ the neutron carries is what makes it the heavier, more deeply-rooted of the pair.

IV. The statistics — pinned, close, and open

Four of the neutron's properties sit on the lattice, and we list only these — nothing is shown that we cannot place on {2,3,5, π } (Table 1). The mass is $1.674927408 \times 10^{-27}$ kg (0.054 ppm, pinned); the charge is 0 (the crossings sum to zero, exact); the neutron-proton mass gap is 1.292836 MeV (= $100\pi/3^5$), about 383 ppm from the measured gap, and through the veil exactly the Balmer- β line at 486 nm; and the mass ratio to the proton is 1.0013784 (= $r^{(5/17)}$), the helical turn itself, pinned to 0.13 ppm.

The neutron's magnetic moment, and its electric and magnetic polarizabilities, do not yet have confirmed {2,3,5, π } forms, so they are not presented here as results. We show nothing off the lattice; those quantities remain open work, and we name them as such rather than reach for a form that is not yet earned. The honesty is the point: the mass and the doublet are pinned; the magnetic structure is the open edge.

V. How the neutron is formed — the speed-of-light ladder

The two nucleons sit on one register ladder, each rung a single step $g_0/g_1 = 20\sqrt{2}/9\pi = 1.0003514624$ (Table 2). The speed of light is the square of the Earth's time-flow, $c = (\text{free fall})^2 \cdot 864 \cdot 3600$, evaluated at each register: $c_{G1} \rightarrow \text{neutron} \rightarrow \text{proton} = 3 \times 10^8$. The proton sits two rungs up, landing exactly on the ground speed of light, c_{G0} ; at the subatomic register the free fall is $g_0 = 5^3\sqrt{2}/(2 \cdot 3^2)$.

The neutron sits one rung up — the geometric mean between the atomic speed of light and the proton's — at 299,894,598 m/s, which is $c_{G1} \times 20\sqrt{2}/9\pi$ to the digit. From that c-face the day-grammar ($\times 2$, $\div 9375$, $\times 2\pi$, $\div 24$) returns the neutron mass to 0.054 ppm. The $\sqrt{2}$ in the step is the subatomic register's own signature, and the neutron, made of three quarks, is the nucleon that reaches down into that register. The proton is the floor; the neutron is the first step above it.

VI. The doublet — bridged by a hydrogen line

Because the two nucleons are one seed at adjacent rungs, the gap between them is not arbitrary — it is a hydrogen line (Table 3). The neutron-proton mass difference is $\Delta m = 1.292836 \text{ MeV} (= 100\pi/3^5)$ — about 383 ppm from the measured gap — and read through the veil ($\times 180/\pi$) this is exactly $74.0741^\circ = 2000/27$, whose reciprocal scaled is exactly 486 nm, the Balmer- β line of hydrogen. The difference between the two particles at the heart of every nucleus is the brightest line of the simplest atom. And the ratio of their masses is the helical turn itself: $m_n/m_p = 1.0013784 (= r^{5/17})$, with $r = 5^6/(2^6 \times 3^5)$ the first-helical-turn step and the exponent 5/17 carrying the quark cross-tower prime — matching to 0.13 ppm. The proton and the neutron are not two facts to be measured separately; they are one structure, stepped once, and the step is written in hydrogen.

VII. Why the neutron decays

Here the Force of Time explains what the Standard Model can only describe. A free neutron is unstable; it decays in about fifteen minutes into a proton, an electron, and an antineutrino: $n \rightarrow p + e^- + \bar{\nu}$. In this picture the reason is plain: the neutron is the lifted rung and the proton is the floor. A lifted thing falls. The electron carries away the register step as it goes, the antineutrino balances the books so that $d\Sigma T = 0$, and the seed settles onto the lower rung. This is not a quark changing flavour by an arbitrary rule; it is one T-configuration relaxing from a higher face to a lower one.

And it explains the twist that puzzles every student: inside a nucleus the neutron is often stable, while it is the free neutron that decays. The proton floor is already occupied, paired off, full. The neutron cannot fall onto a filled rung, so it stays. The stability of matter is exactly this — the neutron held up because there is nowhere lower for it to go.

VIII. What the neutron is for

The neutron is the reason matter exists beyond hydrogen. Protons alone repel one another; pile them up and they fly apart. The neutron — neutral, one rung up, the same mass — slips between them, spaces them, and lets the nucleus hold. Every element past hydrogen owes its existence to the neutral nucleon. Free, it falls in a quarter of an hour; bound, it holds the world together. The particle that cannot keep its own shape for fifteen minutes is the one that has held matter together for thirteen billion years.

IX. One flip, two phenomena — the neutron in fusion and in radioactivity

The neutron's instability is not only its own story; it is the hinge of two of the largest processes in nature. In the Force of Time fusion and radioactivity are the same event run in opposite directions — a single flip of the seed between its matter face and its antimatter face — and the neutron is where that flip lives.

The flip. The proton is the seed read with its matter crossings dominant, $2 \times (5^6) + 1 \times (2^6 \times 3^5)$; the neutron is the same seed with its antimatter crossings dominant, $2 \times (2^6 \times 3^5) + 1 \times (5^6)$. To turn one into the other you flip a single helix from one face to the other — and that flip, nothing more, is what physics names the weak force. The W boson is not a separate force-carrier; it is the signal that crosses the dimensional boundary as the face turns over. So the neutron is the pivot, and a single flip can be read two ways. Flip an antimatter helix to matter and the neutron becomes a proton — that is beta-radioactivity. Flip a matter helix to antimatter and a proton becomes a neutron — that is the first step of fusion. The same turn of the same helix, run the two ways, is the decay of the heavy elements one way and the ignition of the stars the other.

Radioactivity — the flip falling. When a free neutron decays, $n \rightarrow p + e^- + \bar{\nu}$, one of its antimatter helices flips to matter and the seed settles onto the proton configuration. The electron carries away the excess negative charge; the antineutrino is the antimatter thread that cannot be held once the flip is done; $d\Sigma T = 0$ across the whole event. It happens in about fifteen minutes because the matter-dominant universe cannot indefinitely sustain two unsupported antimatter

helices. This is the fall-to-the-floor of Section VII, now named at the level of the helices.

Fusion — the flip climbing. Run the flip the other way and you have the ignition of every star. Stellar fusion begins with $p + p \rightarrow D$: two protons can only bind if one of them flips to a neutron — the very same matter→antimatter face-flip. And it is slow. A given proton waits on the order of nine billion years for it, because the step's energy (the Q-value, 0.420 MeV) does not land on a $\{2,3,5\}/\pi$ resonance: the helix cannot close, and the reaction must wait for a quantum fluctuation to bridge the cross-tower gap. This is what makes the weak force weak — not a small number, but the rarity of cross-tower flips in the temporal helix. The strong steps that follow do close on resonance and run in picoseconds: $D + H \rightarrow {}^3\text{He}$ releases $3^2 \times 5^4 / 2^{10} = 5.4931640625$ MeV (0.0001 ppm), ${}^3\text{He} + {}^4\text{He} \rightarrow {}^7\text{Be}$ releases $5/\pi = 1.5915494309$ MeV (0.0002 ppm). The 10^{23} gap between the weak and strong rates is exactly the gap between a helix that closes and a flip that must tunnel.

→ *Want this in full? See the companion paper: Stellar Fusion on the Helix — the full fusion chain, the strong Q-values on $\{2,3,5\}/\pi$, and the weak first step as a cross-tower coupling.*

The iron ceiling — the neutron as the dial. The neutron also decides which nuclei live and which decay. A nucleus is a stack of T-floors; the count is the atomic number Z, and the neutron-to-proton balance sets how stable the stack is. There is a ceiling, fixed by the Sun's own position on the Fibonacci cascade, and iron-56 sits exactly on it: its neutron excess $(N-Z)/Z = 4/26 = 2/13 = 2/F(7)$, the optimal address ($F(7) = 13$ is the seventh Fibonacci number). Below the ceiling fusion releases energy and nuclei hold; above it the stack carries more T-floors than the local cascade can sustain, and it sheds them as radioactivity — the half-life measuring how far above the ceiling it sits. This is why fusion gives up energy only up to iron, and why everything heavier is, sooner or later, radioactive. One particle — the neutron — and one flip set both the spark of the stars and the decay of the heavy elements.

→ *Want this in full? See the companion paper: The Periodic Table on the Helix — Z as a count of T-floors, and the Fibonacci stability ceiling that makes elements above iron radioactive.*

X. Reacher and stayer — the doublet's division of labour

The proton and the neutron are one seed, but they play opposite roles, and naming the difference completes the picture. The proton is the reacher: the outward time-source, it stands on the ground speed of light and reaches out of the nucleus — to the atom it anchors (hydrogen, via α) and the star that forges it (the Sun, via the sodium line). The neutron is the stayer: neutral, carrying the subatomic $\sqrt{2}$, it took the clean red line (the hydrogen red, $6561 = 3^8$) and stays in the nucleus, the matter-domain anchor. The proton's job is to connect; the neutron's job is to hold — neutral, it adds no repulsion, only mass and spacing, and its $\sqrt{2}$ roots it in the subatomic register where the binding lives. One seed, two roles: the reacher and the stayer, together making every nucleus possible.

XI. The neutron and the one-seed universe

There are not countless separate neutrons in the universe any more than there are countless protons. There is one seed — one standing solution of the lattice — re-instanced at countless dimensional addresses as time flows, and the neutron is that seed read at the adjacent, lifted rung. A neutron here and a neutron in a distant star are the identical T-pattern at two addresses; that is why every neutron is exactly identical, the fact on which nuclear physics quietly depends. It is also why the doublet gap is a single clean hydrogen line and the mass ratio a single helical turn: the two nucleons are not two independent objects that happen to be close in mass, but one object read at two adjacent rungs of the same ladder. The flow of time is the replication; the neutron is the seed caught one step up, on its way — when free — back down to the proton floor. $d\Sigma T=0$ is automatic: no new substance is ever made, only new addresses.

XII. The Loop — the engine that returns the neutron's mass

Stand back from the neutron and look at what actually produced its mass — the cleanest number in this whole framework, fifty-four parts per billion from measurement. It did not come from weighing three quarks. It came from a single speed of light run through one machine, and that machine deserves a name: the Loop. It is the engine of the entire Force of Time, and the neutron is the place where you can watch it work most precisely (Table 4).

The heart of it is one idea: a T-value is not a mass or a speed or a wavelength — it is all of them at once, and the Loop is the fixed set of turns that reads one number off as each face. Take the neutron's speed-of-light face, 299,894,598 m/s; count it through the day — $\times 2$,

$\div 9375$ ($= 3 \cdot 5^5$, the radial bridge), $\times 2\pi$, $\div 24$ — and out comes the neutron's mass, $1.674927408 \times 10^{-27}$ kg, to 0.054 ppm. The same fixed grammar that turns any mass into a wavelength ($\div \pi^2/8$), a free fall ($\div 2^6 \cdot 3^5/100\pi$), an energy ($\div 24$) and a frequency ($\times 2\pi$) is the grammar that, run the other way, delivers the neutron from its c-face. One worn quantity, five faces, turns that never change.

→ **Want this in full?** See the companion paper: *The Proton — One Flow of Time, Five Clocks (the same Loop, run from the proton's own mass).*

XIII. What this claims — and what it does not

The neutron's mass (0.054 ppm), its zero charge (the crossings sum to zero), its mass gap to the proton ($100\pi/3^5$, the veil-exact Balmer- β line) and its mass ratio ($r^{(5/17)}$, 0.13 ppm) are readings of $\{2,3,5,\pi\}$. We claim its decay and its in-nucleus stability follow structurally from its being the lifted rung above the proton floor; that the single matter/antimatter face-flip is the shared engine of beta-radioactivity and the weak first step of fusion; that the neutron-to-proton balance against the Fibonacci ceiling at iron-56 decides stability; that it is the nucleus-builder that lets matter exist beyond hydrogen; and that it is the 'stayer' of the doublet. We make no claim about the neutron's magnetic moment or its polarizabilities: those do not yet have confirmed lattice forms, and so they appear nowhere in this paper as results. We show only what we can place on the lattice. The honesty is the point — the mass and the doublet are pinned; the magnetic structure is the open work, and we let it stand openly as such.

Table 1. The neutron on the lattice — value leads, status honest

Property	Value	lattice form	Status
Mass	$1.674927408 \times 10^{-27}$ kg	one g_0/g_1 rung of c_G1	0.054 ppm — pinned
Charge	0 e	net crossing = 0 (odd)	exact
Mass gap (n – p)	1.292836 MeV	$100\pi/3^5 \rightarrow$ Balmer- β 486 nm	–383 ppm — close
n/p mass ratio	1.0013784	$r^{(5/17)}, r = 5^6/(2^6 \cdot 3^5)$	0.13 ppm — pinned

The mass (0.054 ppm) is the tightest single lattice match in the framework; the magnetic structure is open and deliberately omitted.

Table 2. The speed-of-light ladder — the neutron one rung above the proton

Rung	Speed of light	lattice form	Mass it carries
c_G1 (atomic floor)	299,789,233.7 m/s	$g_1 = 25\pi/8$	—
Neutron (one up)	299,894,598 m/s	$c_G1 \times 20\sqrt{2}/9\pi$ (geometric mean)	$1.674927408 \times 10^{-27}$ kg (0.054 ppm)
Proton = c_G0 (two up)	300,000,000 m/s	$g_0 = 5^3\sqrt{2}/(2 \cdot 3^2)$	$1.672616359 \times 10^{-27}$ kg (3.3 ppm)

c is the square of the Earth’s time-flow evaluated at each register; the neutron is the geometric mean of the atomic and ground speeds of light.

Table 3. The doublet bridge — one seed, stepped once, the step written in hydrogen

Bridge	Value	lattice form	Status
n – p mass gap	1.292836 MeV	$100\pi/3^5$	–383 ppm
gap through the veil	74.0741°	$2000/27 \rightarrow$ Balmer- β 486 nm	veil-exact
n/p mass ratio	1.0013784	$r^{(5/17)}, r = 5^6/(2^6 \cdot 3^5)$	0.13 ppm

The gap is the Balmer- β line and the ratio the first helical turn: two nucleons read at two adjacent rungs, not two independent particles.

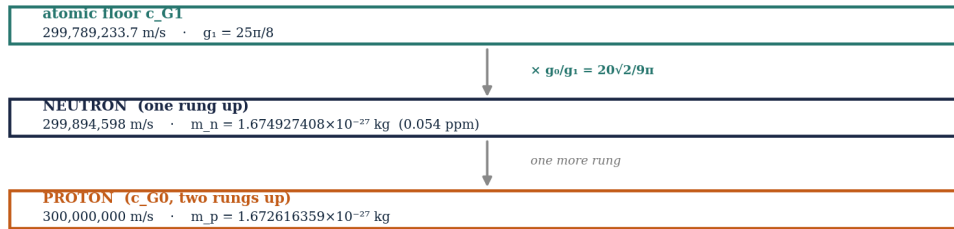
Table 4. The Loop — the one engine, with the actual value at every step; the neutron’s mass is its cleanest output

The move	Operator (fixed)	goes in → comes out	lattice form
neutron c-face → mass	$\times 2, \div 9375, \times 2\pi, \div 24$	$299,894,598$ m/s → $1.674927408 \times 10^{-27}$ kg	$9375 = 3 \cdot 5^5$ (radial bridge); 0.054 ppm
mass → wavelength	$\div 1.23370055$	$1.674927408 \rightarrow 1.357645020$	$\pi^2/8$
wavelength → free fall	$\div 49.50355350$	$1.357645020 \rightarrow 0.027425203$	$2^6 \cdot 3^5/100\pi$
free fall → energy	$\div 24$	$0.027425203 \rightarrow 0.001142717$	the day’s hours
free fall → frequency	$\times 2\pi$	$0.027425203 \rightarrow 0.172317635$	the circle
the time-ladder (the day)	$\times 60 \rightarrow \times 60 \rightarrow \times 24$	$1 \rightarrow 60 \rightarrow 3,600 \rightarrow 86,400$	$86,400 = 864 \times 100$ (any order)
step up a register	(free fall) $^2 \cdot 864 \cdot 3600$	g_1 9.817477 m/s $^2 \rightarrow 299,789,233.7$ m/s	$g^2 \cdot$ day-seconds (atomic c-face)
the neutron’s own up-step	same square-up, lifted g_0/g_1	$299,789,233.7 \rightarrow 299,894,598$ m/s	$\times 20\sqrt{2}/9\pi$ — carries the subatomic $\sqrt{2}$

Every number is what the fixed operators return — no adjustable knob. Within a register the Loop divides; between registers it roots (down) or squares through the day (up). That last up-step IS the neutron’s formation.

Figure 1. The nucleon ladder

Figure 1. The nucleon ladder — the neutron one rung above the proton

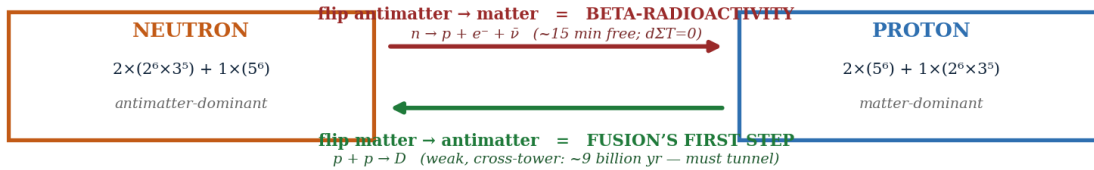


$c = (\text{free fall})^2 \cdot 864 \cdot 3600$, evaluated at each register. The neutron is the geometric mean of the atomic and ground speeds of light; its lift carries the subatomic $\sqrt{2}$, which is why it is the heavier nucleon. From its c-face the day-grammar returns its mass to 0.054 ppm.

The neutron one rung above the proton on the ladder $c = (\text{free fall})^2 \cdot 864 \cdot 3600$; its lift carries the subatomic $\sqrt{2}$.

Figure 2. One flip, two phenomena

Figure 2. One flip, two phenomena — the neutron↔proton face-flip



The W boson is not a separate force — it is the signal that crosses the dimensional boundary as one helix turns over. The weak step is slow because its Q-value (0.420 MeV) does not close on a {2,3,5}/π resonance; the strong steps that follow (D+H→³He = 3²×5⁴/2¹⁰; ³He+⁴He→⁷Be = 5/π) do, and run in picoseconds. Above iron-56 (neutron excess 2/13 = 2/F(7)) the T-floor stack exceeds the Fibonacci ceiling, and nuclei shed it as radioactivity.

The single neutron↔proton face-flip: read one way it is beta-radioactivity, the other way the weak first step of fusion.

Propositions

- P-NEU-1** — The neutron is the same T-seed as the proton, read at the adjacent NEGATIVE node: dimensions alternate +,-,+ (two positives cannot sit together). Its quark crossings cancel ($udd = +\frac{2}{3} - \frac{1}{3} - \frac{1}{3} = 0$), so it carries no charge.
- P-NEU-2** — Mass is a T-spin density. $m_n = 1.674927408 \times 10^{-27}$ kg (0.054 ppm) — the cleanest single match in the framework — read off the speed-of-light face one register step above the proton.
- P-NEU-3** — The nucleon doublet is one seed on a g_0/g_1 ladder, $c = (\text{free fall})^2 \cdot 864 \cdot 3600$: proton = $c_{G0} = 3 \times 10^8$ (two rungs up); neutron one rung up at 299,894,598 m/s = $c_{G1} \times 20\sqrt{2/9\pi}$, the geometric mean.
- P-NEU-4** — The two nucleons are bridged by hydrogen: mass gap $\Delta m = 1.292836$ MeV (= $100\pi/3^5$, ~383 ppm) → through the veil exactly Balmer- β 486 nm; mass ratio $m_n/m_p = r^{(5/17)} = 1.0013784$ (0.13 ppm).
- P-NEU-5** — The free neutron decays ($n \rightarrow p + e^- + \bar{\nu}$, ~15 min) because it is the lifted rung falling to the proton floor; the electron carries the register step, the antineutrino conserves $d\Sigma T=0$. In a nucleus the floor is filled, so it is stable — the structural basis of the stability of matter.
- P-NEU-6** — The neutron is the nucleus-builder: neutral and one rung up, it spaces and binds the mutually repelling protons, making every element beyond hydrogen — and the periodic table — possible.
- P-NEU-7** — The doublet's division of labour: the proton is the reacher (stands on the ground c ; reaches hydrogen via α and the Sun via the sodium line); the neutron is the stayer (the clean red line $6561 = 3^8$; stays in the nucleus, carrying the subatomic $\sqrt{2}$).
- P-NEU-8** — There is one seed, re-instanced at many addresses as time flows; the neutron is that seed at the adjacent lifted rung, on its way (when free) back to the proton floor. $d\Sigma T=0$ automatic: no new substance, only new addresses.
- P-NEU-9 (new) — Beta decay is a matter-face flip.** The neutron $2 \times (2^6 \times 3^5) + 1 \times (5^6)$ becomes the proton $2 \times (5^6) + 1 \times (2^6 \times 3^5)$ by flipping one antimatter helix to matter; the electron carries the excess negative charge, the antineutrino is the antimatter thread that cannot be held, $d\Sigma T=0$. The W boson is the dimensional-boundary signal of the flip, not a separate force. (Master Theory P-NUC-14.)
- P-NEU-10 (new) — The same flip is the weak first step of fusion.** $p + p \rightarrow D$ requires a proton to flip to a neutron — the matter→antimatter face-flip run backwards. It is slow (~9 billion yr/proton) because its Q-value (0.420 MeV) is cross-tower, off any {2,3,5}/ π resonance, and must tunnel; the strong steps close on resonance ($D+H \rightarrow {}^3\text{He} = 3^2 \times 5^4 / 2^{10} = 5.4931640625$ MeV, 0.0001 ppm; ${}^3\text{He} + {}^4\text{He} \rightarrow {}^7\text{Be} = 5/\pi$, 0.0002 ppm) and run in picoseconds. The 10^{23} rate gap = closure vs cross-tower tunnelling. (P-FUS-1, P-FUS-7.)
- P-NEU-11 (new) — The neutron-to-proton balance sets stability against the iron ceiling.** Z counts T-floors; radioactivity is a nuclear T-sphere carrying more floors than the Sun's Fibonacci cascade position can sustain, the half-life measuring the excess. Iron-56 sits on the ceiling: neutron excess $(N-Z)/Z = 4/26 = 2/13 = 2/F(7)$. Fusion releases energy up to iron; beyond it, everything is radioactive. (P-PTAB-11, P-NGEN-6.)

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