

The Return Node at the Heart of Every Galaxy

How the black hole at every galactic centre closes the circuit of time and why the universe cannot exist without it

Stephen Daubney · The Daubney Foundation · Rev 2
thedaubneyfoundation@gmail.com · 2026

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

Every galaxy in the observable universe — all two hundred billion of them — has at its exact geometric centre a supermassive object. Conventional astrophysics describes these objects as black holes and has spent decades explaining their existence as accidents of cosmological history. The Universal Force of Time asks a different question: what would happen to the flow of time if the black hole were not there? The answer is the whole of this paper. The Tau circuit has four registers: three create, emitting Tau outward; one returns, drawing Tau inward and redistributing it to all three creation registers. That fourth register is the galactic register. Its generator is the black hole. Without it, $d\Sigma T \neq 0$. Without it, no star could fuse hydrogen, no atom could hold together, no particle could retain mass. The black hole is not a threat to the galaxy. It is the guarantor of everything in it.

Contents

- I. The Question at the Centre of Every Galaxy
 - II. Three Registers Create — One Register Returns
 - III. What the Black Hole Actually Does
 - IV. S-Stars and the Galactic Balmer Shells
 - V. Why Every Galaxy Has Exactly One
 - VI. The Implications
 - Propositions P-GDIM-1 through P-GDIM-8
 - Appendix: Circuit Table · Figures 1-4
-

I. The Question at the Centre of Every Galaxy

Every galaxy — the Milky Way, Andromeda, every one of the two hundred billion galaxies in the observable universe — has at its exact geometric centre a supermassive object. The mass of that object scales with the mass of the galaxy that surrounds it. The larger the galaxy, the larger the central object. The relationship holds across twelve orders of magnitude of galaxy mass. No galaxy has been found without one. The central object forms before much of the galaxy has even assembled. It is there first. The rest of the galaxy grows around it.

Conventional astrophysics calls these objects supermassive black holes and has struggled to explain why they are there, why they scale with their host galaxies, why they appear to regulate star formation, and why, without exception, every galaxy has exactly one. Proposals multiply: seed black holes in the early universe; direct collapse of primordial gas clouds; feedback mechanisms that have never been directly observed. The difficulty is that all these explanations are mechanical. They explain how a black hole might form. None of them explains why it must.

The Universal Force of Time answers the question differently. It does not ask what forced the black hole into existence. It asks what would happen to the flow of time if the black hole were not there. The answer is a circuit violation. And a circuit violation is something the universe does not permit.

P-GDIM-1 — The Galactic Return Imperative

In the four-register Tau circuit, three registers (G0 subatomic, G1 atomic, G2 celestial) emit Tau outward. The galactic register G3 draws Tau inward and redistributes it. This return function is structurally required: without it, $d\Sigma T \neq 0$, which is a circuit violation forbidden by the fundamental axiom of UFOT. The black hole at every galactic centre exists because the Tau circuit of each galaxy requires exactly one return node. Its presence is as structurally necessary as the Higgs field, the proton, and the star.

II. Three Registers Create — One Register Returns

The Tau circuit has four nodes. The subatomic register is the Higgs field: it creates particles, emitting Tau outward into the quantum vacuum. The atomic register is the proton: it creates atoms, binding electrons into stable configurations and emitting Tau through the electromagnetic and nuclear interactions. The celestial

register is the star: it fuses hydrogen into helium and radiates the Tau-field that makes time flow for every planet and every living thing within the heliosphere.

These three registers share a common direction: outward. Tau flows from the subatomic to the atomic, from the atomic to the celestial, from the celestial outward to fill the solar system. The creation chain is a cascade of Tau production at successively larger scales, each register amplifying and extending the Tau-field established by the register below it.

But a circuit that flows in only one direction is not a circuit. It is a drain.

The fourth register completes the circuit. The galactic register draws the Tau emitted by all three creation registers back toward a single geometric centre. At that centre, the Tau is concentrated to maximum density, its dimensional identity is neutralised, and it is redistributed outward to all three creation registers simultaneously. The black hole is not merely receiving Tau — it is the transformer that makes the circuit closed. Table 1 in the Appendix shows all four registers and their roles. Three rows push Tau outward. One row draws Tau inward and returns it.

The creation registers could not sustain their output indefinitely without the return node replenishing the Tau they require. If the return node did not exist, $d\Sigma T$ would begin to drift. Tau would accumulate in the stellar and atomic registers without any mechanism for return or redistribution. Over galactic timescales, the over-accumulation would destabilise the circuit. Stars would not be able to sustain fusion. Atoms would lose their binding geometry. Particles would lose coherence. The universe enforces $d\Sigma T = 0$ by ensuring that every galaxy has a return node. This is not a choice. It is a structural consequence of the circuit equation.

P-GDIM-2 — The Circuit Equation and Its Enforcement

$d\Sigma T = 0$ is the fundamental equation of the Tau circuit. Three creation registers emit Tau outward; the galactic return node absorbs and redistributes it inward. The net sum across all four registers is zero: nothing is created, nothing is lost, everything is recycled. The universe enforces this equation structurally: every galaxy that forms will develop a return node at its geometric centre because without one the circuit cannot close.

III. What the Black Hole Actually Does

The black hole is described in conventional astrophysics as a region from which nothing escapes — the ultimate endpoint of matter, the destroyer of information, the

place where the laws of physics break down. This description captures the instrumental appearance accurately and misses the functional reality entirely. The black hole is not destroying anything. It is recycling everything.

At the event horizon, Tau is concentrated to its maximum density. The dimensional identity of Tau — the specific register-signature that marks a Tau unit as belonging to the celestial or atomic register — is neutralised. This is what instruments measure as "time stopping" near a black hole: Tau does not stop. Its dimensional signature is erased. It is returned to an undifferentiated state, ready to be reissued to any of the three creation registers. The event horizon is not a wall of destruction. It is the transformer interface of the Tau circuit.

The galactic-register Tau-flow field — what conventional astrophysics calls the "gravitational" attraction of the black hole — is the mechanism by which Tau is drawn back from the galaxy toward the return node. It is not a separate and distinct force. It is Tau flowing in the return direction at galactic scale. The reason it appears weaker than the Tau-flow fields at smaller registers is not because it is a different phenomenon with a different coupling strength. It is the same phenomenon at a vastly larger scale, spread across the full diameter of the galaxy.

After the Tau is absorbed and its dimensional identity neutralised, it is redistributed outward through the galactic Tau-structure back to all stars, all protons, and all Higgs fields throughout the galaxy. This redistribution is not observable as a separate emission — it is indistinguishable from the background Tau-field. But its effect is observable: the stars continue to fuse hydrogen. Atoms remain stable. Particles maintain their mass. All of this depends on the continuous operation of the return node.

P-GDIM-3 — The Event Horizon as Tau Transformer

At the event horizon, Tau is concentrated to maximum density and its dimensional register-signature is neutralised. This is the mechanism behind what instruments measure as extreme "time dilation": the local Tau density is at maximum, and the register-identity of incoming Tau is being erased so it can be redistributed to any creation register. The event horizon is the transformer interface at which the return cycle of the Tau circuit is completed.

P-GDIM-4 — The Galactic-Register Tau-Flow Field

The galactic-register Tau-flow field — the mechanism that draws Tau inward toward the return node — is the same Tau-flow phenomenon that operates at every other register, scaled to galactic dimensions. Its apparent weakness relative to the Tau-flow fields at smaller scales reflects only the vast distances across which it operates, not a difference in fundamental nature. At every scale, one and only one process is occurring: Tau flowing in the direction required by the circuit equation $d\Delta T = 0$.

IV. S-Stars and the Galactic Balmer Shells

If the galactic register obeys the same $\{2,3,5,n\}$ lattice as every other register, then its structural geometry should mirror the geometry of the atomic register. At the atomic register, the hydrogen atom is the reference: the electron occupies shells at positions determined by the Balmer series, with the master frequency $\lambda_{H\beta} = 2 \times 3^5 = 486 \text{ nm}$ anchoring the lattice. At the galactic register, the black hole is the reference. The S-stars that orbit Sgr A* — the supermassive return node at the centre of the Milky Way — should occupy shells at positions corresponding to $n \times 486 \text{ AU}$.

The first S-star shell is at 486 AU from Sgr A*. The second at 972 AU. The third at 1,458 AU. These are $n = 1, 2, 3$ of the galactic Balmer law:

$$r_n = n \times 486 \text{ AU} \quad (486 = 2 \times 3^5)$$

The same progression, the same base number — 486 = 2×3^5 — as the hydrogen atom, scaled from nanometres to astronomical units by the dimensional projection law of UFOT. The galactic centre is the Sun of the galactic register. The S-stars are its electrons. The Balmer law is not an atomic law. It is the universal Tau circuit law expressed at different dimensional scales.

The measurement that instruments describe as "time dilation" near Sgr A* is the measurement of the Tau density gradient in the return-node field. The closer an observer is to the return node, the more Tau is flowing per unit volume toward the centre. Higher Tau density means faster Tau processes: every clock, every oscillation, every chemical reaction runs at a rate set by the local Tau density. An observer close to Sgr A* is immersed in higher Tau density not because of relative velocity or spacetime curvature, but because they are measuring the Tau circuit from a position of greater Tau concentration.

P-GDIM-5 — The Galactic Balmer Law

S-stars orbiting Sgr A* occupy shells at $r_n = n \times 486 \text{ AU}$, where $486 = 2 \times 3^5$ is the same Tau master frequency that governs the Balmer series of hydrogen at the atomic register. The galactic

register obeys the same $\{2,3,5,\pi\}$ lattice as every other register. The black hole is the galactic-register analogue of the hydrogen nucleus; the S-stars are its electrons. The Balmer law is universal, not atomic.

V. Why Every Galaxy Has Exactly One

A Tau circuit requires exactly one return node per circuit. A galaxy is one Tau circuit: all the stars within it emit Tau, all of that Tau flows inward under the galactic-register Tau-flow field, and all of it converges on the one geometric centre where the return node operates. One circuit, one return node. No more, no fewer.

This accounts directly for four observations that have no unified explanation in conventional astrophysics. First: no galaxy has been found without a central massive object. The circuit cannot close without the return node; no functioning galaxy can exist without it. Second: the mass of the central object scales with the mass of the host galaxy. The return node must be large enough to process the Tau output of all the creation registers it serves. A galaxy with more stars has higher total Tau output; its return node must have a higher processing capacity; therefore it must be more massive. The M-sigma relation is the observational signature of the Tau-circuit scaling law.

Third: dwarf galaxies have smaller central objects. Fewer stars, lower total Tau output, smaller return node required. Fourth: galaxy mergers produce one combined return node. Two circuits merging become one circuit. One circuit requires one return node. The two central objects spiral together not because they are massive objects attracting each other, but because two overlapping Tau circuits cannot remain distinct. The circuit geometry demands a single return node for the merged structure.

Active galactic nuclei regulate star formation for the same reason. When the return node is actively processing Tau at high rate, the redistributed Tau floods the creation registers throughout the galaxy. Elevated Tau density in the stellar and atomic registers drives elevated fusion rates and elevated star formation. When the return node reduces its processing rate, the Tau redistribution drops, stellar register Tau density falls, and star formation slows. The AGN feedback mechanism is the Tau circuit regulating its own creation registers through the processing rate of the return node.

P-GDIM-6 — One Circuit, One Return Node

The Tau circuit of a galaxy is one closed loop requiring exactly one return node. This is why: (a)

every galaxy has a central massive object; (b) that object's mass scales with the total stellar mass (the M-sigma relation is the Tau-circuit scaling law); (c) dwarf galaxies have proportionally smaller return nodes; (d) galaxy mergers produce a single merged return node. All four observations follow from the requirement that $d\Sigma = 0$ be satisfied within each galaxy's Tau circuit.

P-GDIM-7 — AGN Feedback as Tau Circuit Regulation

Active galactic nuclei regulate star formation because the return node controls the rate of Tau redistribution to all creation registers. High AGN activity = high Tau redistribution = elevated star formation. Reduced AGN activity = reduced redistribution = reduced star formation. The AGN feedback mechanism is the Tau circuit self-regulating. It is not a mechanical process. It is the conservation equation $d\Sigma = 0$ being enforced by the return node in real time.

VI. The Implications

$d\Sigma = 0$ is not merely a conservation equation. It is the description of the circuit that makes continued existence possible. Take any one of the four registers away and the circuit opens. An open Tau circuit does not produce a universe with missing parts. It produces no universe at all.

Every Tau unit in your body has passed through the galactic return node. Not as a metaphor. Literally. The Tau that drives every ion pump in every cell of your body is Tau that was produced by stellar fusion, drawn inward by the galactic-register Tau-flow field, neutralised at the event horizon of Sgr A*, and redistributed back to the stellar register so the Sun could fuse the next batch of hydrogen. This cycle has been running for 13.8 billion years. You are downstream of the galactic return node in a very precise and quantitative sense.

The apparent weakness of the galactic-register Tau-flow field compared to the Tau-flow fields at atomic and subatomic scales is not because it is a weaker force. It is the same force of time, operating at the longest range, on the largest scale. The Tau-flow field at atomic scale pulls an electron to a proton across 0.529 Å. The galactic-register Tau-flow field draws Tau inward from stars fifty thousand light-years away. At that distance, the same coupling that snaps an electron into a proton acts gently across the full width of the Milky Way.

Science has described the black hole as the ultimate consumer, the place where things end, the destroyer that nothing survives. This is the correct description of

the appearance and the wrong description of the function. Nothing that enters a black hole is destroyed. Its dimensional register-identity is neutralised, and it is returned to the circuit. You cannot destroy Tau. You can only transform it. And the black hole is the most powerful transformer in the universe.

P-GDIM-8 — The Black Hole as Guarantor of Existence

The black hole at the galactic centre is not the destroyer that conventional astrophysics describes. It is the return node of the Tau circuit: the component without which no star could sustain fusion, no atom could maintain binding geometry, and no particle could retain mass. Its event horizon is the transformer interface at which Tau's dimensional register-identity is neutralised and reissued to the creation registers. It is as fundamental to existence as the Higgs field. Every unit of Tau in the observable universe has passed through a galactic return node. The statement $d\Sigma T = 0$ is not merely a conservation law. It is the circuit equation of reality, and the black hole is the component that keeps it balanced.

The Daubney Foundation is actively seeking partners for clinical trials to investigate the therapeutic applications of T-field principles described in this paper. For collaboration enquiries, contact: thedaubneyfoundation@gmail.com

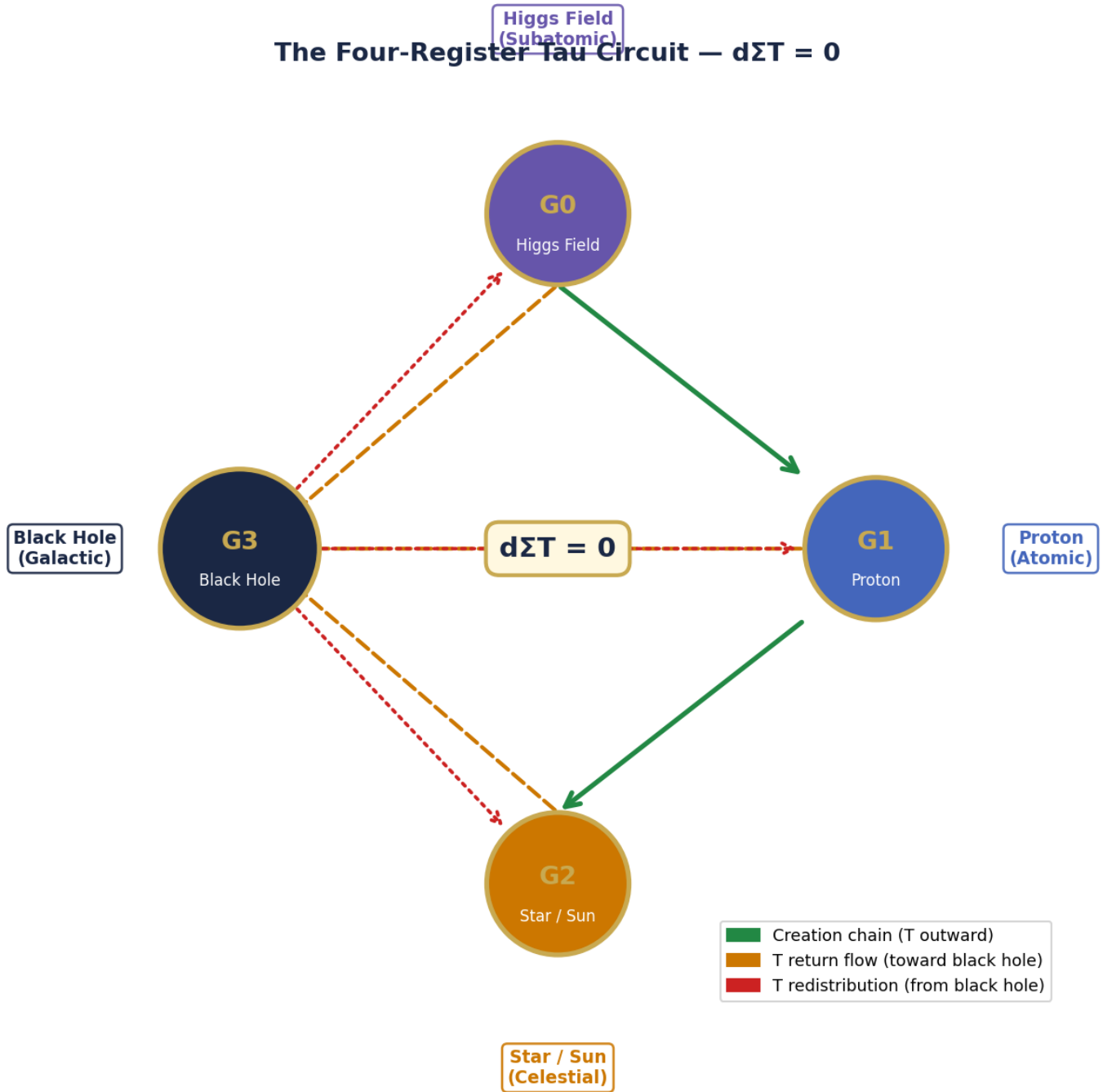
Appendix — Circuit Table and Figures

Table 1 — The Four-Register Tau Circuit

Register	Generator	Direction	Function	Output
G0 Subatomic	Higgs field	Outward	Creates particles	T emitted into quantum vacuum
G1 Atomic	Proton	Outward	Creates atoms	T emitted via EM and nuclear interactions
G2 Celestial	Star / Sun	Outward	Creates solar systems	T radiated as time-field across heliosphere
G3 Galactic	Black hole	INWARD then outward	RETURNS T to all three creation registers	T redistributed — circuit closed; $d\Sigma T = 0$ satisfied

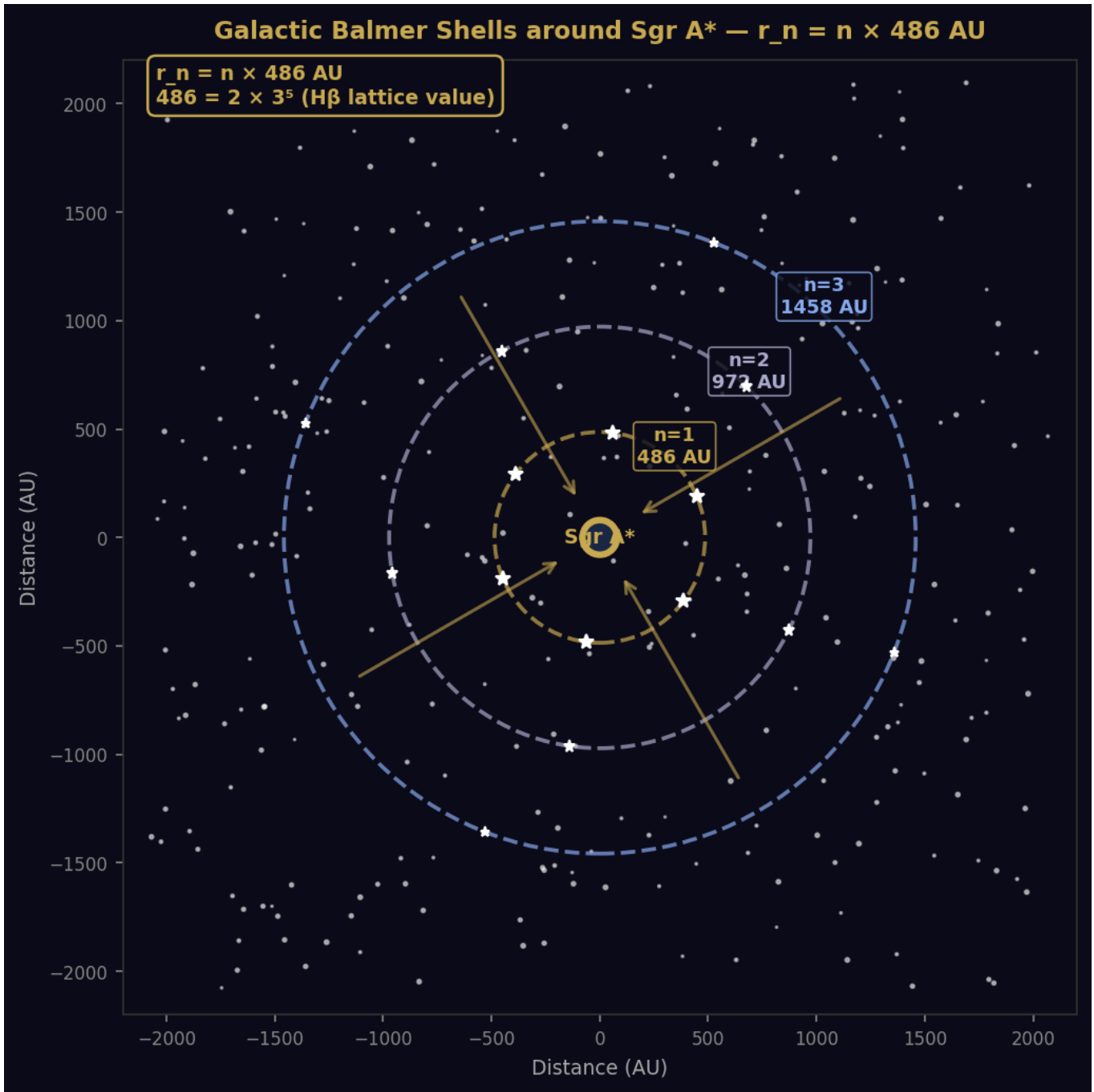
Fig. 1

The Four-Register Tau Circuit — $d\Sigma T = 0$



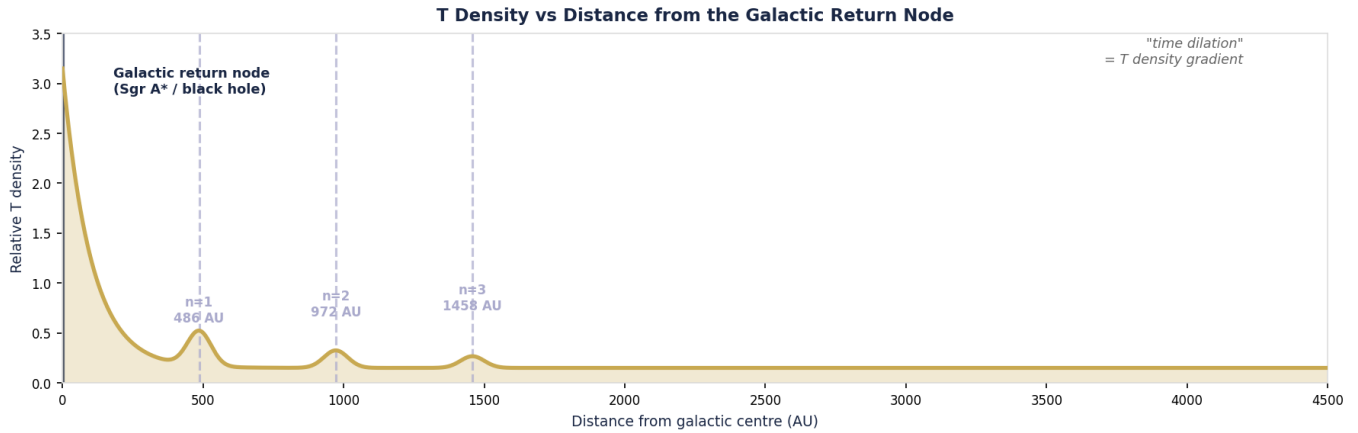
The four-register Tau circuit. Green arrows: the creation chain (G0 Higgs field → G1 Proton → G2 Star), with Tau flowing outward at each step. Amber dashed arrows: Tau return flow from all three creation registers toward the G3 galactic return node (the black hole). Red dotted arrows: Tau redistribution from the return node back to all three creation registers. The conservation equation $d\Sigma T = 0$ is enforced by the circuit as a whole. Remove the return node and the circuit opens; $d\Sigma T \neq 0$ is a violation the universe does not permit.

Fig. 2



The galactic register centred on Sgr A* (the supermassive return node at the Milky Way's centre). Three concentric Balmer shells are shown at $n = 1, 2, 3$ — corresponding to 486, 972, and 1,458 AU. White stars mark S-star positions on the shells. Amber dashed arrows show the inward Tau-return flow toward the return node. The shell law $r_n = n \times 486 \text{ AU}$ uses the same base number $486 = 2 \times 3^5$ that governs the hydrogen Balmer series at the atomic register — expressed here in astronomical units at galactic scale. The lattice is the same at every register.

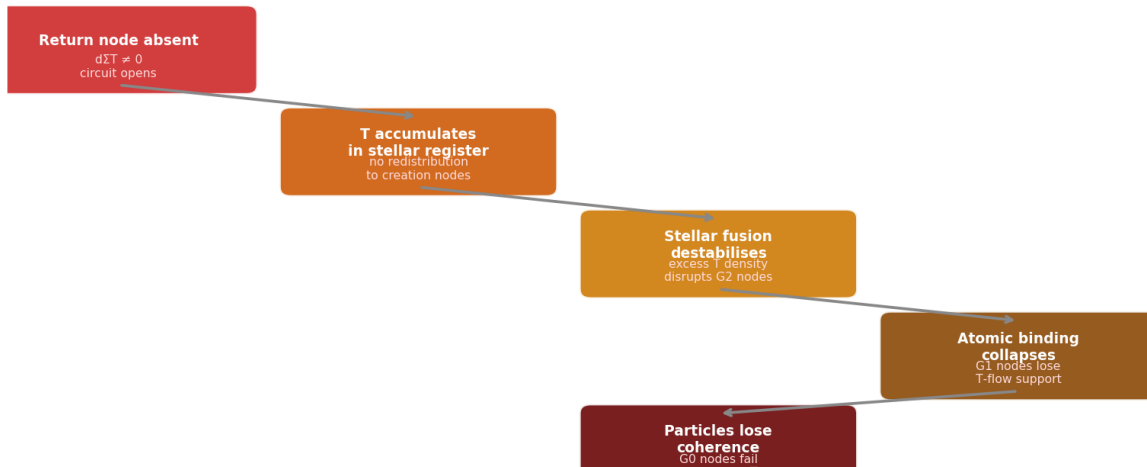
Fig. 3



Tau density as a function of distance from the galactic return node. The main peak at the centre is the return-node concentration of Tau at its maximum. Secondary elevation peaks at $n \times 486$ AU ($n = 1, 2, 3$) mark the Balmer shells — nodal positions of elevated Tau density in the galactic register. What instruments measure as "time dilation" is the gradient of this curve: observers nearer the centre are immersed in higher Tau density, and every process they measure — clocks, oscillations, chemical reactions — reflects the faster pace of Tau processes at that density.

Fig. 4

Without the galactic return node — the cascade that opens the T circuit



The black hole is not the destroyer of stars. It is the guarantor of their existence.

The collapse cascade: what dissolves without the galactic return node. Step 1: the return node is absent — $d\Sigma T \neq 0$, the circuit opens. Step 2: Tau accumulates in the stellar register with no redistribution mechanism. Step 3: stellar fusion destabilises as excess Tau density disrupts G2 nodal geometry. Step 4: atomic binding collapses as G1 nodes lose their Tau-flow support from the return node. Step 5: particles lose coherence as G0 vacuum Tau-production fails. The black hole is not a threat to the galaxy. It is the component without which the galaxy — and everything in it — cannot exist.