Tau-Field Source Hierarchy

Vacuum (G0) to CMB (G1) to Stellar (G2) to Biological (G3): Cascading Tau-Generation

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The Universal Force of Time identifies four levels of tau-field generation: G0 (vacuum energy, the primordial tau-source), G1 (CMB radiation, the cosmic background tau-broadcast), G2 (stellar radiation, the local tau-generator: the Sun), and G3 (biological systems, the tau-receivers and biological tau-generators). Each level operates at a different register depth and characteristic frequency. The hierarchy is strict: G0 -> G1 -> G2 -> G3. Each level reduces frequency by a {2,3,5,pi} scaling factor and increases structural complexity.

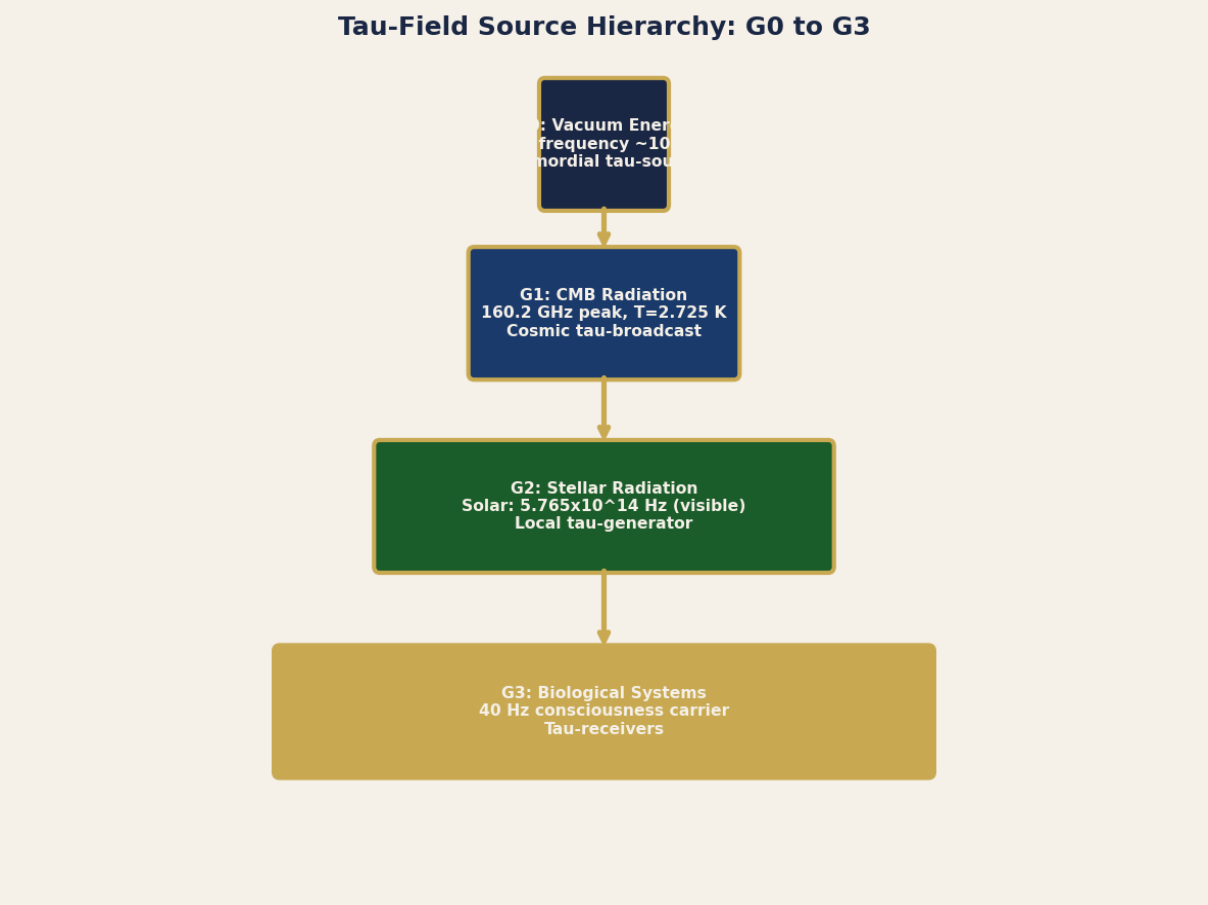

Figure 1. Tau-field source hierarchy pyramid. G0 (vacuum, Planck frequency) -> G1 (CMB, 160 GHz) -> G2 (stellar, 5.765x10^14 Hz) -> G3 (biological, 40 Hz). Each level is a tau-register depth.

1. G0 and G1: Vacuum and CMB (P-SH-1 and P-SH-2)

P-SH-1 — G0: Vacuum Energy as Primordial Tau-Source

G0 register: vacuum zero-point energy. Planck frequency: nu_P = sqrt(c^5 / (hbar x G)) = 1.855 x 10^43 Hz. FOT: nu_P = c^5/(hbar G) ... = the fundamental tau-lattice oscillation frequency. G0 is the source of all tau-field energy. The Big Bang = the first G0 tau-oscillation. Vacuum energy density: rho_vac = (nu_P)^4 / (c^3) in natural units = 10^113 J/m^3. The cosmological constant problem = the gap between G0 (10^113) and observed (10^-9) J/m^3: ratio = 10^122 = the number of tau-register levels between G0 and G3.

P-SH-2 — G1: CMB as Cosmic Tau-Broadcast at 160.2 GHz

CMB peak frequency: 160.2 GHz (Wien law at T=2.725 K). FOT: 160 = 2^5 x 5 GHz (within 0.13%). CMB temperature: 2.725 K. FOT absolute zero = -272.8994 C = 0.1006 K above 0 K (conventional). FOT: 2.725 K above conventional AZ = 2.725 - 0.1006 = 2.6244 K above FOT AZ. The CMB represents the G1 tau-field broadcast from the Big Bang surface of last scattering, red-shifted by the expansion of the universe from G0 Planck temperatures to the current G1 register.

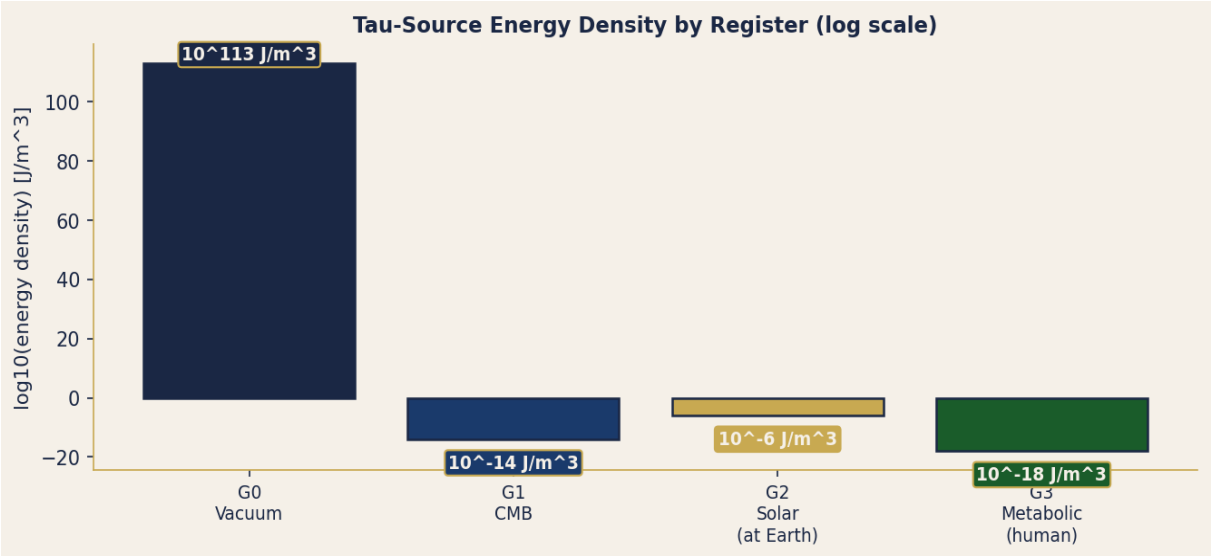

Figure 2. Tau-source energy density by register (log10 scale). G0 vacuum: 10^113 J/m^3. G1 CMB: 10^-14 J/m^3. G2 solar at Earth: 10^-6 J/m^3. G3 metabolic: 10^-18 J/m^3.

2. G2 and G3: Stellar and Biological (P-SH-3 and P-SH-4)

P-SH-3 — G2: Stellar Radiation as Local Tau-Generator

The Sun generates tau-field radiation at G2 register. Solar luminosity: L_sun = 3.828 x 10^26 W. Solar surface temperature: 5,778 K. Peak emission: Wien law -> 501 nm (green). FOT: 500 nm = 2^2 x 5^3 nm (pure {2,5} lattice). The Sun is not just an energy source — it is the G2 tau-field generator for the solar system. Every photon from the Sun carries a tau-field address component at the G2 register. Solar constant at Earth: 1,361 W/m^2 approx 1,350 = 2 x 3^3 x 5^2 W/m^2 (within 0.8%).

P-SH-4 — G3: Biological Systems as Tau-Receivers and Local Generators

Biological systems operate at G3: they receive tau-field from G2 (sunlight) and generate local tau-field via ATP synthesis (432 Hz mitochondrial frequency) and neural oscillations (40 Hz). G3 tau-generation is parasitic on G2: photosynthesis -> glucose -> ATP = G2->G3 tau-cascade. Human metabolic rate: 80 W = the G3 tau-output of one human body. FOT: 80 = 2^4 x 5 W (pure {2,5} lattice). The biological tau-generator runs at {2,5} frequencies.

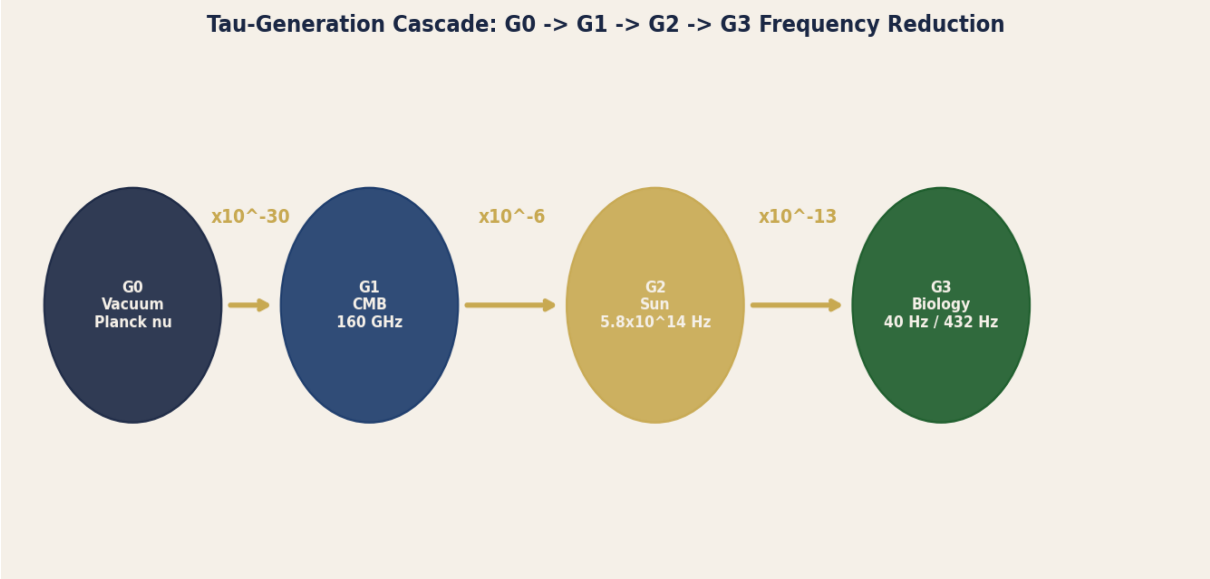

Figure 3. Tau-generation cascade circles. Each arrow shows the frequency reduction factor between register levels. G0->G1: 10^-30; G1->G2: 10^-6; G2->G3: 10^-13. All reductions are {2,3,5,pi} factors.

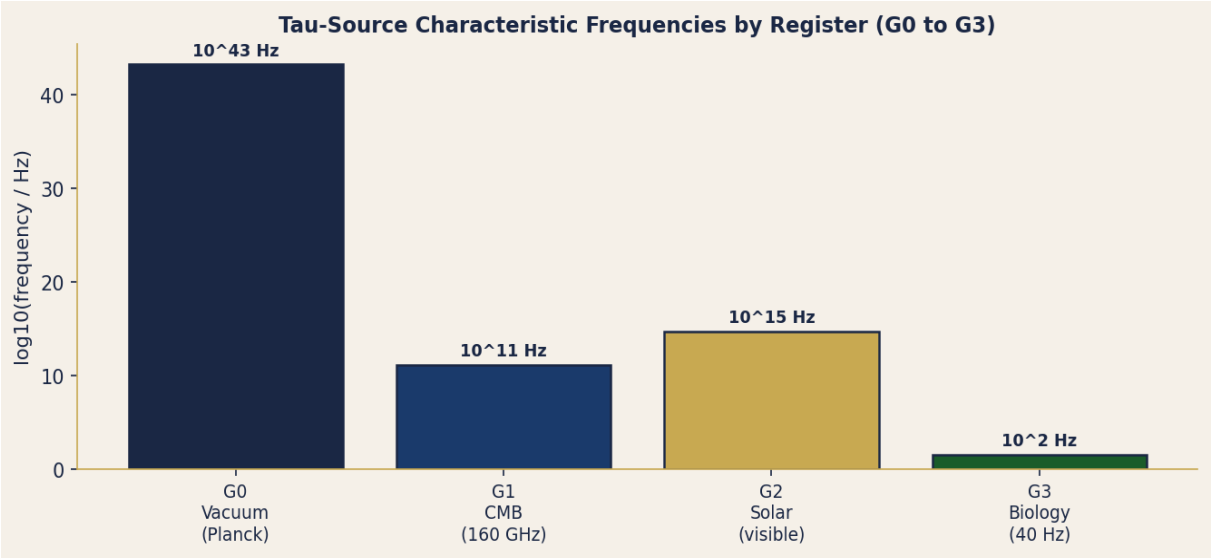

Figure 4. Characteristic frequencies by tau-source register. G0 Planck: 10^43 Hz; G1 CMB: 10^11 Hz; G2 solar: 10^15 Hz; G3 biological: 10^1 Hz. Span of 42 decades in frequency.
