Nodes of the Gravitational Metric

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* Increasing Time and Matter Density →

1. **Big Bang:** Gravitational negative energy balances electromagnetic positive energy; universe is born with zero net energy and charge (the latter due to the equivalent presence of antimatter). The intrinsic motions of light, time, and gravity are "entropy drives" – creating the entropic domains of space, history, and causal spacetime. Space, Light, "Velocity c"

2. **Spacetime and primordial gas clouds:** Gravity lays the entropic (temporal/historical) foundation for energy conservation in material systems (entropy allows energy to be used without violating energy conservation). Spacetime is the entropic domain of free and bound forms of electromagnetic energy, allowing the expansion and cooling of free energy and the aging and decay of bound energy. Gravity creates time by the annihilation of space, producing a metrically equivalent temporal residue; gravity is the spatial consequence of the intrinsic motion of time.

3. **Galaxies:** Gravity provides elemental and material platforms for life (heavy elements created and dispersed – supernovas, etc.; stars, solar systems, and planets created). Gravitational "warpage" of spacetime is due to the gravitational creation of time from space and time's intrinsic, asymmetric one-way motion. *The charges of matter are the symmetry debts of light* (Noether's Theorem). Gravity's "location" charge is matter's symmetry debt for light's lost "non-local" energy state – lost when light created matter via asymmetric weak force decays during the "Big Bang." Time is the active principle of "location" charge.

4. **Stars:** Gravity provides energy (heat and light) for life, makes elements, conserves symmetry (by converting bound to free energy – paying the "principle" on matter's symmetry debt). Light moving freely in space produces no gravitational field.

5. **Solar System and planets:** Gravity provides an astrophysical location and structure for life – also creating a historic entropic domain (by converting local space into time – paying the "interest" on matter's symmetry debt). Time/history is an alternative entropic domain for bound forms of electromagnetic energy which, unlike light, do not have intrinsic spatial motion "c". Gravity is weak because the "present moment" is only tangentially connected to history.

CONDENSED MATTER STATES

6. **White dwarfs:** Novas – electron shells crushed into electron "sea" – electromagnetic force attenuated. Gravity begins to take over all electromagnetic forces and functions.

7. **Neutron stars:** Supernovas – weak force suppressed (protons and electrons converted to neutrons, neutrons do not decay).

8. **Black holes:** Quasars, Hawking radiation – strong force overwhelmed (proton decay?). Gravitational/temporal metric, as gauged by "G", completely replaces electromagnetic/spatial metric as gauged by "c". Matter achieves "velocity c" (g = c), bound and free forms of electromagnetic energy are equivalent. Black hole (eventually) totally evaporates via Hawking radiation, fully satisfying gravity's symmetry-conservation agenda. At the "event horizon" gravity reestablishes the primordial contact between matter and antimatter. Gravitational negative energy = positive rest mass energy. Time, Matter, "Velocity g = c"

* **Scale is diagrammatic.**