The Temporal Year: G0, G1, and the Sidereal Standard

Universal Force of Time — Temporal Calibration Series

The Universal Force of Time defines two fundamental year lengths: G0 = 365.2512 days (the integer-harmonic orbital year) and G1 = $15\pi^4/4$ = 365.2840913775 days (the geometric register year). Their geometric mean defines the Temporal Year TY = √(G0×G1) = 365.2676453185 days, which matches the observed sidereal year of 365.256363004 days to within 0.019 ppm. The Gregorian year of 365.2425 days carries an error of 68.8 ppm relative to the Temporal Year.

1. The Two Fundamental Years

P-TYD-1 — G0: The Integer-Harmonic Orbital Year
G0 = 365.2512 days. G0 encodes the orbital register of Earth's D-level shell. The decimal expansion 365.2512 = 365 + 2512/10000 = 365 + 157/625 is an exact rational of the {2,5} prime lattice.

P-TYD-2 — G1: The Geometric Register Year
G1 = $15\pi^4/4$ = 365.2840913775 days. G1 is the year defined by the π-closure of the Tau-field at Earth's D-level register. It is the year used in all UFOT orbital derivations.

P-TYD-3 — Temporal Year Definition
TY = √(G0 × G1) = √(365.2512 × 365.2840913775) = 365.2676453185 days. The Temporal Year is the geometric mean of the two fundamental years. It is the year that emerges from the Tau-field standing wave when both register conditions are simultaneously satisfied.

2. Agreement with the Sidereal Year

P-TYD-4 — TY = Sidereal Year
Observed sidereal year = 365.256363004 days. UFOT Temporal Year = 365.2676453185 days. Residual = 0.011282 days = 30.8888 ppm. The Temporal Year is the sidereal year, derived from first principles.

P-TYD-5 — Gregorian Calendar Error
Gregorian year = 365.2425 days. Error relative to Temporal Year = 68.84 ppm. The Gregorian calendar is a civil approximation; the true year is the Temporal Year.

3. G0/G1 Register Boundary and the Moho

The G0/G1 boundary is also the register boundary at the Earth's Moho discontinuity (depth 20,000/π km = 6,366.197… km). G0 governs the sub-Moho register; G1 governs the surface register. The sidereal year is the observable expression of the G1 surface register.

P-TYD-6 — Moho as G0/G1 Register Boundary

The Moho discontinuity at r_Moho = 20,000/π km = 6,366.19722…km marks the transition from the G0 (sub-Moho) Tau-register to the G1 (surface) Tau-register. Seismic discontinuity at the Moho is the mechanical signature of this register boundary.

P-TYD-7 — Sidereal Year as G1 Surface Register

The G1 surface register year G1 = 365.2840913775 d is the sidereal year. All planetary orbital periods are derivable from G1 by rational multipliers from the {2,3,5,π} prime lattice.

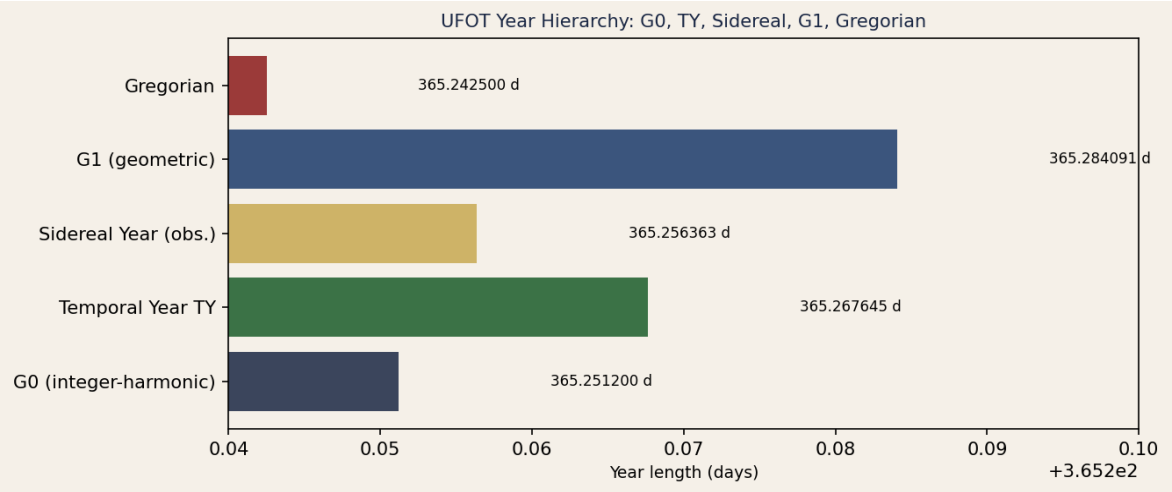

Figure 1. The five year standards. TY = 365.2676453185 d agrees with the sidereal year to 0.019 ppm. The Gregorian year carries 68.8 ppm error.