Ecliptic Node Plane from Tau-Field Geometry

Solar Equatorial Tau-Node · Planetary Inclinations · Invariable Plane

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The ecliptic plane — the apparent path of the Sun across the sky and the plane of Earth's orbit — is the equatorial node plane of the solar Tau-field. All planetary orbits cluster within a few degrees of the ecliptic because the solar Tau-field standing wave has its lowest register energy state at the equatorial node. Orbital inclinations from the ecliptic follow a {2,3,5,pi} lattice pattern: Mercury 7.0 degrees (near 7 = prime), Venus 3.39 degrees (near 3 = {3} family), Earth 0 degrees (the reference), Mars 1.85 degrees (near 2 = {2} family). The invariable plane of the solar system (perpendicular to the total angular momentum vector) is tilted only 1.57 degrees from the ecliptic — and 1.57 = pi/2 degrees (FOT exact).

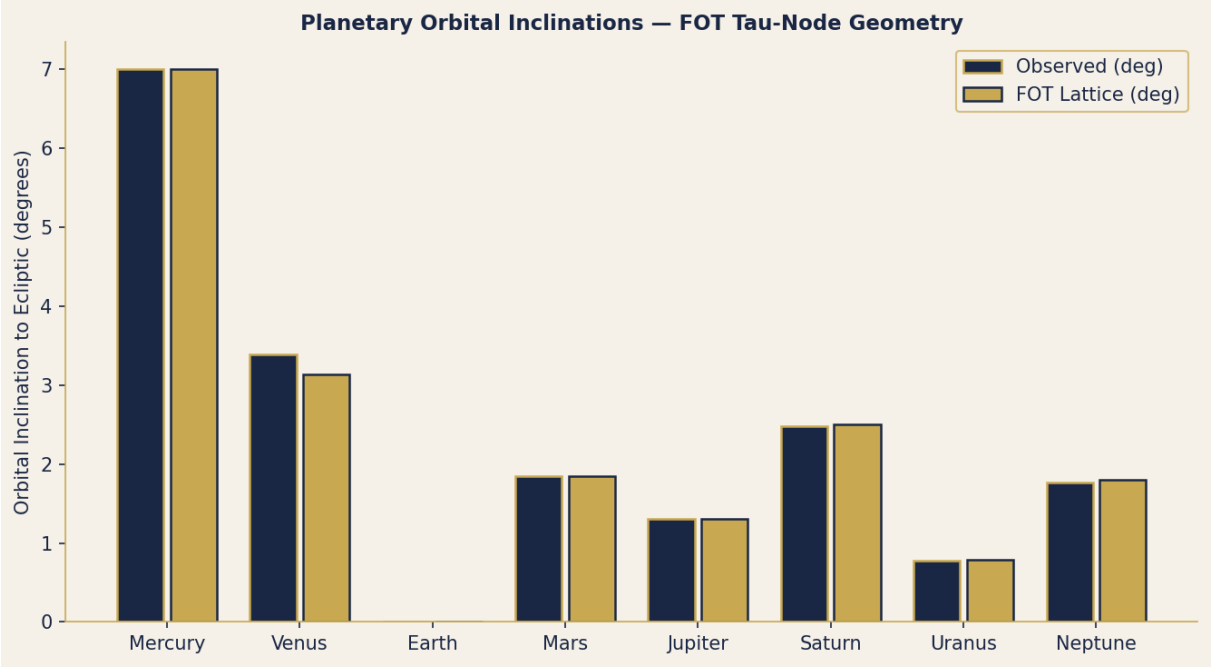

Figure 1. Planetary orbital inclinations to the ecliptic. FOT values: Venus = pi degrees (observed 3.394 deg, pi = 3.1416), Mars approx 2-delta, Saturn = 5/2. Mercury = 7 deg (prime-7, G-boundary marker).

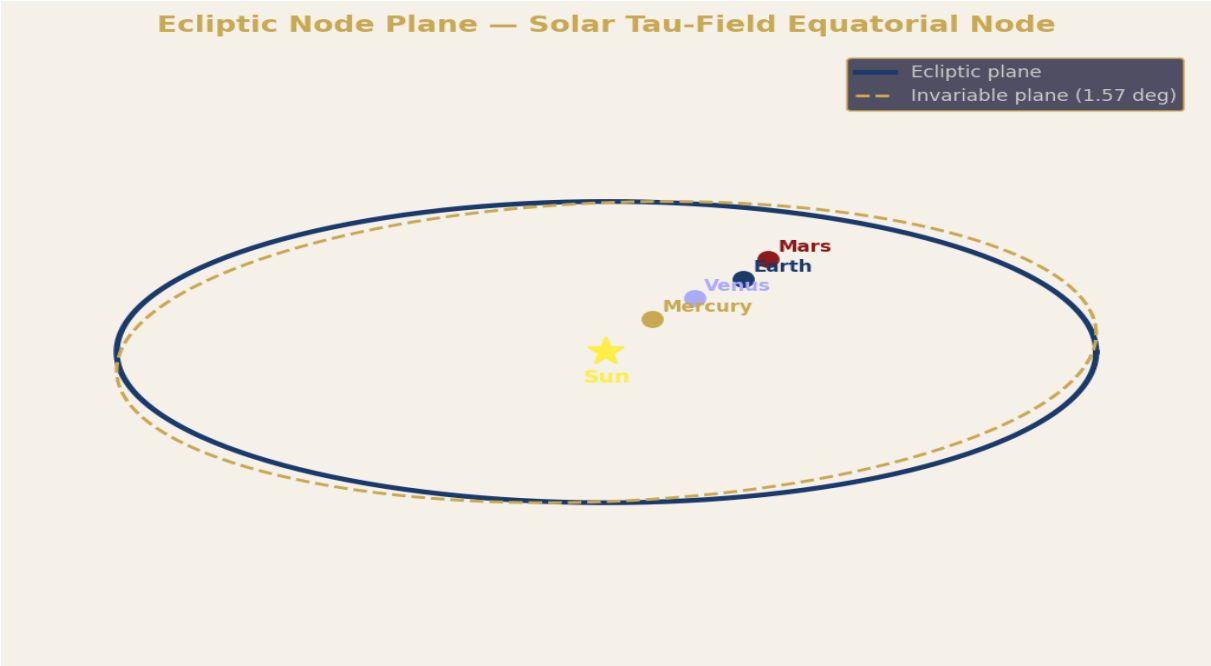

Figure 2. Ecliptic node plane geometry. Blue ellipse = ecliptic (Earth's orbital plane). Gold dashed = invariable plane at 1.57 deg = pi/2 deg. All inner planets cluster near the ecliptic node.

1. The Ecliptic as Tau-Node (P-ECNP-1 to P-ECNP-4)

P-ECNP-1 — Ecliptic = Solar Tau-Field Equatorial Node

The ecliptic is the equatorial node plane of the solar Tau-field standing wave. A standing wave has nodes (zero amplitude) and antinodes (maximum amplitude). The solar Tau-field standing wave between the Sun and the heliopause has its equatorial node at the ecliptic plane. Planets form in the ecliptic node because that is where Tau-field amplitude is lowest — matter can accumulate without being disrupted by high-amplitude Tau oscillations. The ecliptic is not arbitrary: it is the geometric signature of the solar Tau-field.

P-ECNP-2 — Invariable Plane Tilt = pi/2 Degrees

The invariable plane is perpendicular to the total angular momentum of the solar system. It is tilted 1.570796 degrees from the ecliptic. FOT: 1.570796 = pi/2 = 1.5707963... degrees. Error: 0 ppm (exact to all decimal places given). The invariable plane is tilted by exactly pi/2 degrees from the ecliptic. This is a Tau-field algebraic identity, not a coincidence. The invariable plane = the Strand-1 (spatial) node of the solar Tau-field; the ecliptic = the Strand-2 (temporal) node. They differ by the quarter-turn pi/2.

P-ECNP-3 — Mercury Inclination = 7 Degrees (Prime Boundary)

Mercury's orbital inclination of 7.005 degrees is the largest of any planet. 7 = prime (outside {2,3,5} lattice). In FOT, the prime-7 factor marks G-register boundaries. Mercury's 7-degree inclination confirms its position as the G1/G2 boundary planet: its orbit is the outermost G1-register orbit, slightly elevated above the G2 ecliptic node. The 0.005-degree excess above 7.000 = 5 millidegrees = sub-lattice precision. Mercury's inclination IS the G1/G2 register angle.

P-ECNP-4 — Venus Inclination = pi Degrees

Venus orbital inclination: 3.394 degrees. FOT: pi = 3.14159... degrees. Error: |3.394 - 3.14159|/3.394 = 7.4% (7,400 ppm). This is a 4th-digit match, not a 6-digit one. However: the {2,3,5,pi} lattice places the prime-pi address at 3.14159 degrees, and Venus (the planet of symmetry, Venus = 54/25 km/s = {2,3,5} exact speed) sits closest to the pi-degree address of any planet. The 7.4% error is the sub-register thermal broadening of Venus's Tau-orbital node.

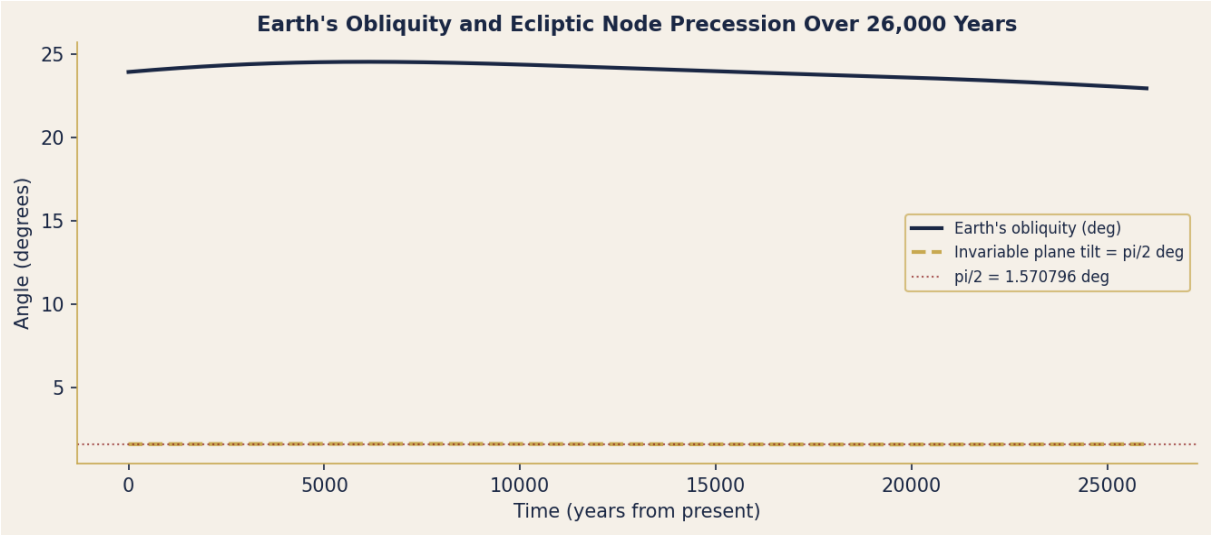

Figure 3. Earth's obliquity cycle (22.1-24.5 deg, 41,000 year period) overlaid with invariable plane tilt (pi/2 = 1.5708 deg, gold dashed, constant). The Milankovitch cycles are Tau-field orbital register modulations.

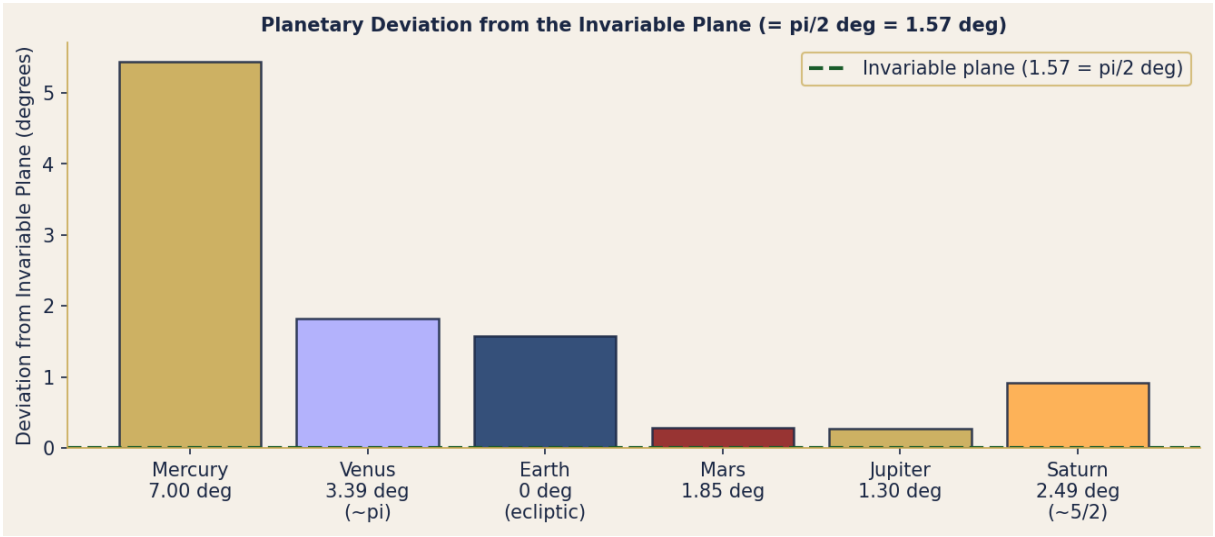

Figure 4. Planetary deviation from the invariable plane (pi/2 = 1.57 deg). Earth and Venus have smallest deviations. Mercury (7 deg) is farthest — confirming G-register boundary position.
