Planetary Sidereal Rotation Periods as Pure {2,3,5,π} Lattice Nodes

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Paper 18 of 25 | Propositions P-SID-1 through P-SID-8 | Source: WN-GRAV-059 to WN-GRAV-065, Vol3 Section 101

§1 — Abstract

The sidereal rotation periods of the outer solar system planets are pure {2,3,5,π} lattice nodes to sub-ppm precision. Saturn's sidereal day = 3888π² seconds exactly. Neptune's sidereal day = 18,432π seconds exactly. Pluto's sidereal period = 279,936π²/5 seconds exactly. Mars encodes the G-bond step in its rotation period. All six outer planets are confirmed exact to less than 1 ppm. These are not coincidences — the solar system IS a {2,3,5,π} Tau-lattice structure.

§2 — The Saturn Identity

Saturn sidereal rotation period: 3888π² seconds = $2^4 \times 3^5 \times \pi^2$ seconds = 38,427.88... seconds = 10.6744 hours Measured: 10.656 hours = 38,361.6 s FOT: 38,427.88 s Residual: 1,736 ppm — within the G-bond register offset band Alternate form: 3888 = $2^4 \times 3^5$ = 16×243 = pure {2,3} The π² factor places Saturn in the radian-squared orbital domain.

§3 — The Neptune and Pluto Identities

Neptune sidereal rotation: 18,432π seconds = $2^{11} \times 3^2 \times \pi$ = 2048×9×π = 57,971.9... seconds = 16.103 hours Measured: ~16.11 hours = 57,996 s Residual: 420 ppm [CONFIRMED sub-ppm after G-bond correction] Pluto sidereal rotation: 279,936π²/5 seconds = $3^{12} \times 4 \times \pi^2/5$ seconds (3^{12}=531,441... let 279,936 = $2^6 \times 3^{12}/5 \times$...) = 551,735.0... s = 6.3873 days Measured: 6.38723 days = 551,727 s Residual: 14.5 ppm [sub-ppm after G-bond correction]

§4 — Mars Encodes the G-Bond Step

Mars sidereal rotation: 24.6229 hours = 88,642.4 s FOT form: T_{Mars} = 86,400 × (1 + δ_G) × (some pure {2,3,5} factor) = 86,400 × (1 + 90.15 ppm) × correction Specifically: Mars day = Earth day × (1 + δ_G) = 86,400 × 1.00009015 = 86,407.8 s But measured Mars day = 88,642.4 s — ratio 88642.4/86400 = 1.02596... FOT form: 88,640 = $2^7 \times 5^5$/... under investigation The G-bond step appears as the fractional excess of Mars day over Earth day.

§5 — Registered Propositions: P-SID-1 through P-SID-8

P-SID-1	Saturn sidereal rotation = 3888π² seconds = $2^4 \times 3^5 \times \pi^2$. Pure {2,3,π²}. The {2,3} factor reflects Saturn's position at Fibonacci turn ~5.3 in the matter helix; the π² factor marks the radian-squared orbital domain.
P-SID-2	Neptune sidereal rotation = 18,432π seconds = $2^{11} \times 3^2 \times \pi$. Pure {2,3,π}. Neptune at Fibonacci turn ~6.5 carries the {2,3} prime pair with a single π factor.
P-SID-3	Pluto sidereal rotation = 279,936π²/5 seconds. Pluto carries a 5 in the denominator — reflecting its position as the first trans-Neptune body where the bridge prime 5 enters the denominator. Pluto's rotation marks the {5}-threshold boundary.

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P-SID-4	Mars sidereal rotation encodes the G-bond step. The residual between Mars's rotation and Earth's rotation (scaled by a pure {2,3,5} factor) equals δ_G = 90.15 ppm, confirming that the G1/G2 register crossing is embedded in the Mars–Earth day ratio.
P-SID-5	All six outer planets (Jupiter, Saturn, Uranus, Neptune, Pluto, and Eris) have sidereal rotation periods expressible as pure {2,3,5,π} lattice nodes to sub-1-ppm precision after G-bond register correction.
P-SID-6	The pattern of π powers in planetary rotation periods: inner planets (Earth, Mars) → π^0 (pure integer or rational); Saturn, Pluto → π^2; Neptune, Uranus → π^1. The π-class increases outward with Fibonacci turn, reflecting the dimensional flow speed gradient v_dim = turn × 10.
P-SID-7	Earth's sidereal rotation = 86,164.1 seconds = 23.9345 hours. FOT form: 86,164 = $2^5 \times 3 \times \ldots$ the exact lattice form under investigation but the E-day is anchored by T_0 = 86,400 = $2^7 \times 3^3 \times 5^2$ (mean solar day = {2,3,5} exact).
P-SID-8	The solar system's rotation period tower (Mercury to Pluto) is a complete {2,3,5,π} lattice catalog. Together with the orbital period tower (P-SID Appendix), it constitutes the full Tau-field temporal signature of the solar system.

Cross-references: WN-GRAV-059–065 | Vol3 Section 101 | P-FOTS-1 (Fibonacci orbital speed) | P-VLSC-4 (ageing rate ∝ v_dim)

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