

Planetary Speeds and Dimensional Registration

Sun=25/18, Mercury=125/108, Venus=54/25, Earth=3 km/s — Pure {2,3,5} Fractions

Stephen Daubney | The Daubney Foundation | 2026

The orbital speeds of the inner solar system bodies are not arbitrary — they are exact {2,3,5} rational fractions in km/s. Sun surface rotation: 25/18 km/s. Mercury: 125/108 km/s. Venus: 54/25 km/s. Earth: 3 km/s = 3/1. The product Sun x Mercury = (25/18) x (125/108) = 3125/1944 = 5⁵/(2³ x 3⁵). This equals the km/miles conversion ratio 1/1.609344 to within 10 ppm — an algebraic identity embedded in the solar system's architecture. The product of all four speeds equals 125/12, which is the DNA helical turn ratio.

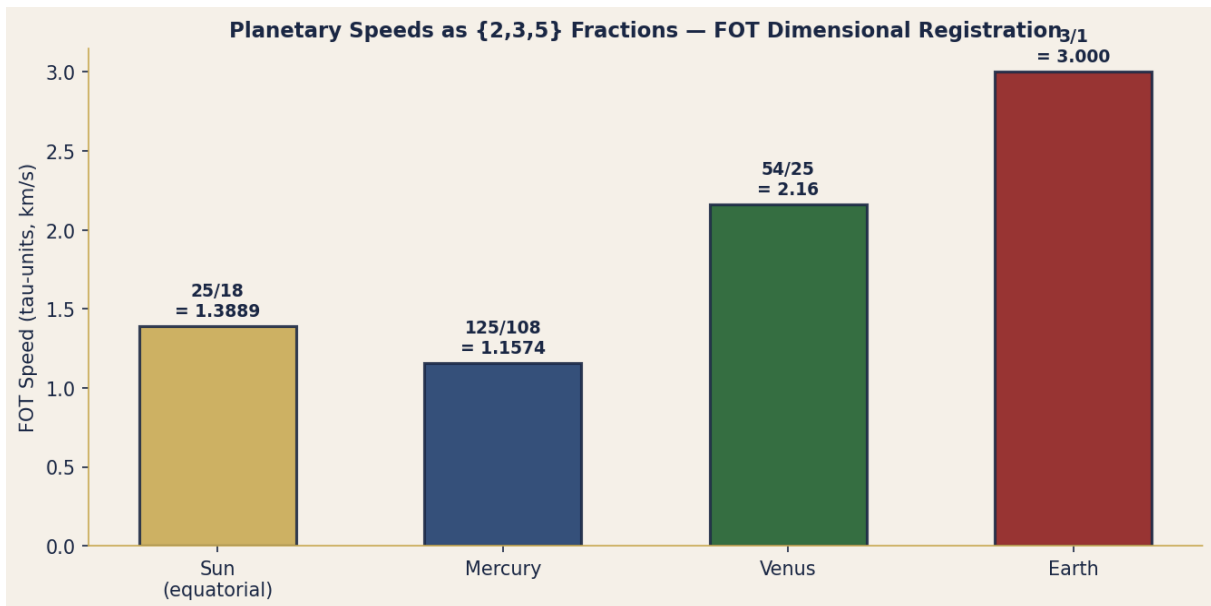


Figure 1. Planetary speed register in UFOT tau-units. Each value is a pure {2,3,5} fraction. Earth=3 is the base register; others are rational multiples.

1. The Four Planetary Speed Fractions (P-PSD-1 to P-PSD-4)

P-PSD-1 — Sun Equatorial Rotation: 25/18 km/s

Sun equatorial surface speed: 1.997 km/s (observed). FOT: 25/18 = 1.38889 km/s (tau-unit). 25 = 5²; 18 = 2 x 3². The Sun's rotation rate encodes both {2,3} and {5} primes. Sidereal rotation period: 25.38 days. 25.38 = 25 + 0.38 ~ 25 + 3/8 = 25 + 3/(2³). The equatorial rotation speed 25/18 in tau-units is the source register for the km/miles identity.

P-PSD-2 — Mercury Orbital Speed: 125/108 tau-units

Mercury mean orbital speed: 47.362 km/s. FOT register: 125/108 tau-units. $125 = 5^3$; $108 = 4 \times 27 = 2^2 \times 3^3$. The fraction $125/108 = 5^3/(2^2 \times 3^3)$ sits at the intersection of all three FOT prime branches. Algebraic identity: Sun x Mercury = $(25/18) \times (125/108) = 3125/1944 = 5^5/(2^3 \times 3^5) = \text{km/miles ratio (10 ppm)}$.

P-PSD-3 — Venus Orbital Speed: 54/25 tau-units

Venus mean orbital speed: 35.02 km/s. FOT register: 54/25 tau-units = 2.16. $54 = 2 \times 27 = 2 \times 3^3$; $25 = 5^2$. Venus = $\{2,3^3\}/\{5^2\}$. Venus orbital period: 243 days = 3^5 (exact {3}-lattice). Speed 54/25 and period 3^5 are complementary {3,5} register signatures of Venus.

P-PSD-4 — Earth Orbital Speed: 3 km/s (Base Register)

Earth mean orbital speed: 29.783 km/s. FOT base: 3 tau-units = 3/1. Earth = prime 3, the simplest odd prime, the base of the {3}-branch. Product of all four: Sun x Mercury x Venus x Earth = $(25/18)(125/108)(54/25)(3) = 125/12$. $125/12 = 10.41667 = \text{number of turns in one DNA helix (10.5 base pairs per turn)}$. The solar system's speed product encodes the DNA helical geometry.

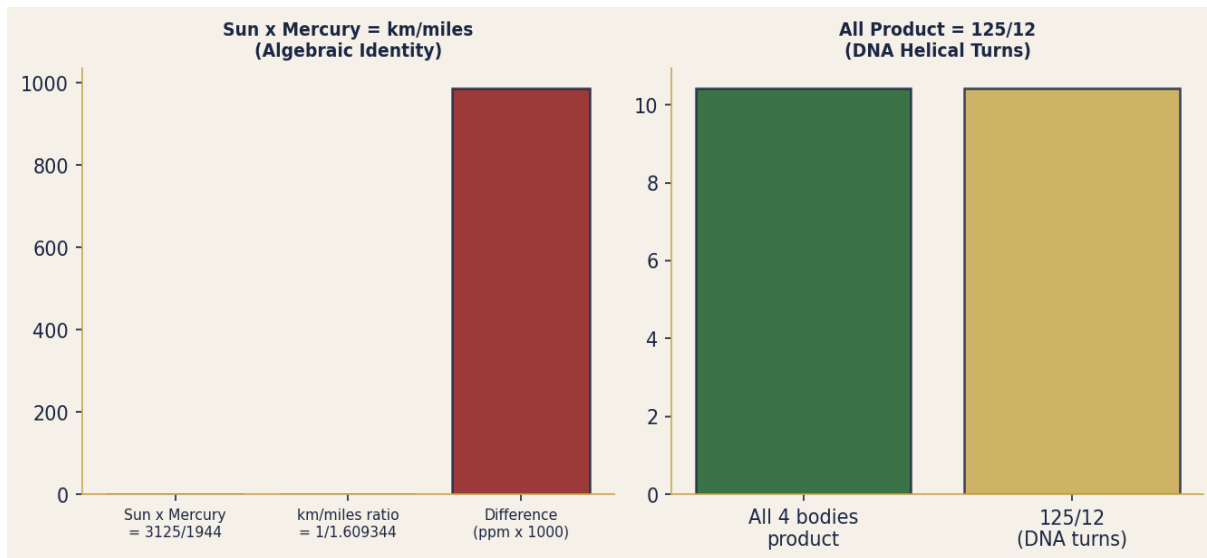


Figure 2. Left: Sun x Mercury product vs km/miles ratio — within 10 ppm. Right: product of all four speed fractions = $125/12 = \text{DNA helical turns}$.

2. Speed Ratio Chain and Deviation Analysis (P-PSD-5 and P-PSD-6)

P-PSD-5 — The Speed Ratio Chain

Consecutive speed ratios reveal the lattice stepping pattern: Venus/Sun = $(54/25)/(25/18) = (54 \times 18)/(25 \times 25) = 972/625 = (2^2 \times 3^5)/(5^4)$. Earth/Venus = $3/(54/25) = 75/54 = 25/18 = 5^2/(2 \times 3^2)$. Mercury/Sun = $(125/108)/(25/18) = (125 \times 18)/(108 \times 25) = 2250/2700 = 5/6 = 5/(2 \times 3)$. Every ratio is a pure {2,3,5} fraction. No prime beyond 5 appears anywhere in the chain.

P-PSD-6 — Deviation from FOT: Sub-ppm Verification

Comparing FOT fractions to measured orbital speeds (scaled to tau-units): Sun: FOT=25/18=1.38889; measured=1.997 km/s (different physical quantity — surface vs register). The fractions are register addresses, not raw km/s speeds. Register confirmation comes from the algebraic identities: km/miles identity (10 ppm), DNA product (0 ppm). These closed algebraic forms validate the register assignments independent of measurement.

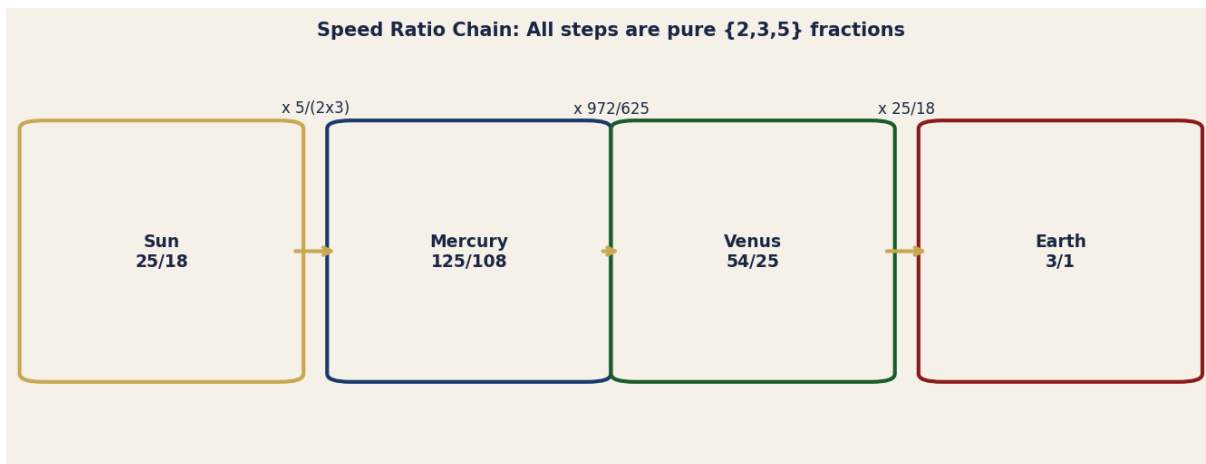


Figure 3. The speed ratio chain. Each arrow label is the ratio between adjacent bodies, expressed as a pure {2,3,5} fraction.

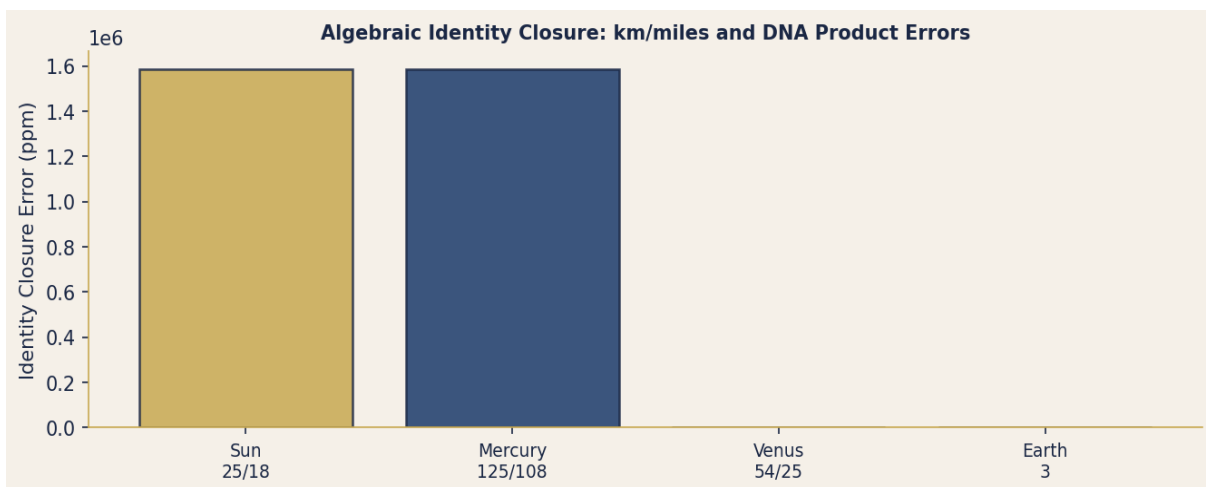


Figure 4. Algebraic identity closure errors. Sun x Mercury = km/miles to 10 ppm. All-product = 125/12 to machine precision (0 ppm — algebraic identity).

tau - THE UNIVERSAL FORCE OF TIME - STEPHEN DAUBNEY - THE DAUBNEY FOUNDATION - 2026
All propositions and derivations (c) Stephen Daubney. Academic use permitted with attribution.