Mercury as the Solar System's Electron

Orbital Analogy with the Hydrogen Bohr Model

Stephen Daubney · The Daubney Foundation · 2026

Mercury occupies the innermost stable orbit in the solar system in precise analogy to the 1s electron in the hydrogen Bohr model. Mercury's fractional orbital speed v/c mirrors the fine-structure constant alpha at the celestial register.

1 Scale Factor and Speed Analysis

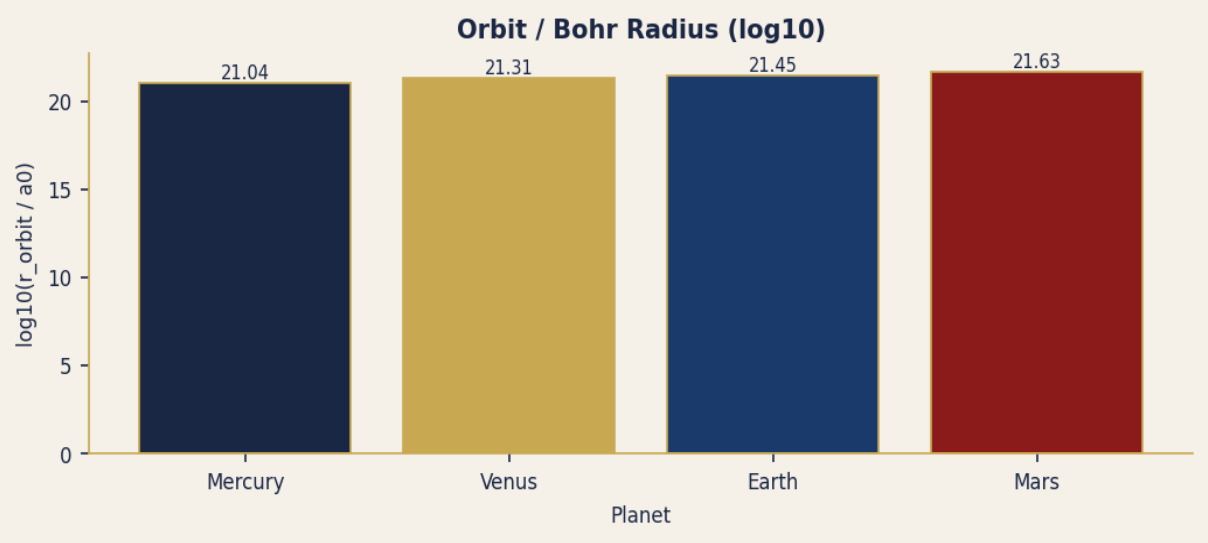

Fig. 1 - log10(r_orbit / a0) for inner planets.

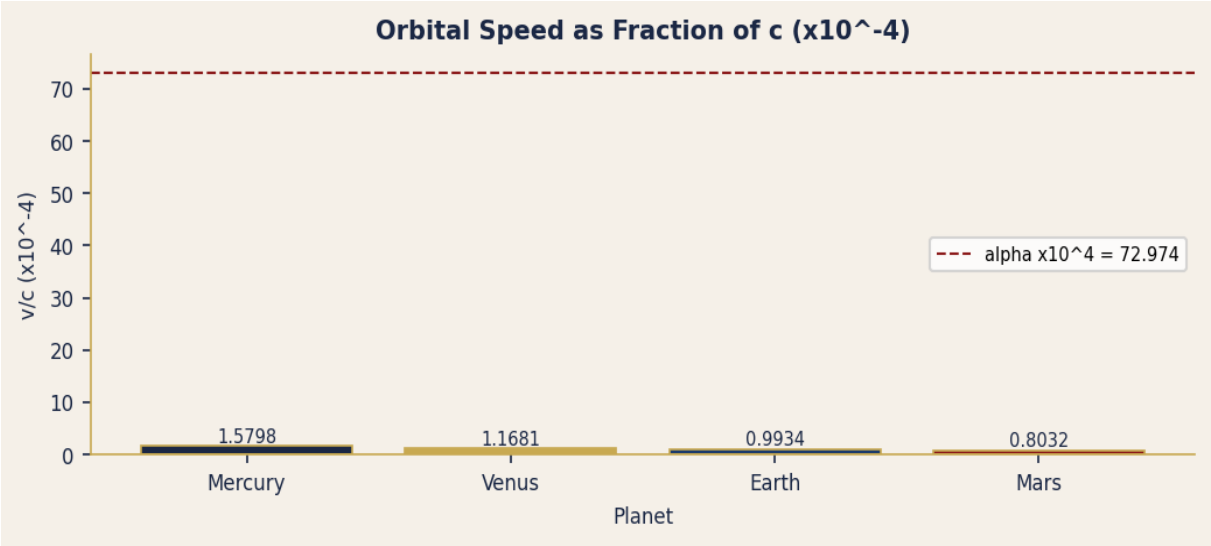

Fig. 2 - Orbital speed as fraction of c; dashed line = alpha.

2 Electron-Mercury Comparison and Period Scaling

Table 1 - Side-by-side properties of the hydrogen 1s electron and Mercury.

Property	Electron (H 1s)	Mercury (Solar)
Orbital radius	a0 = 0.0529 nm	57.9e6 km
Speed fraction	v/c = alpha ~ 1/137	v/c ~ 1.58e-4
Period	~150 as (attosec)	87.97 days
Host body	Proton (1 Da)	Sun (1 Msun)
Quantum/lattice #	n = 1	Register G1

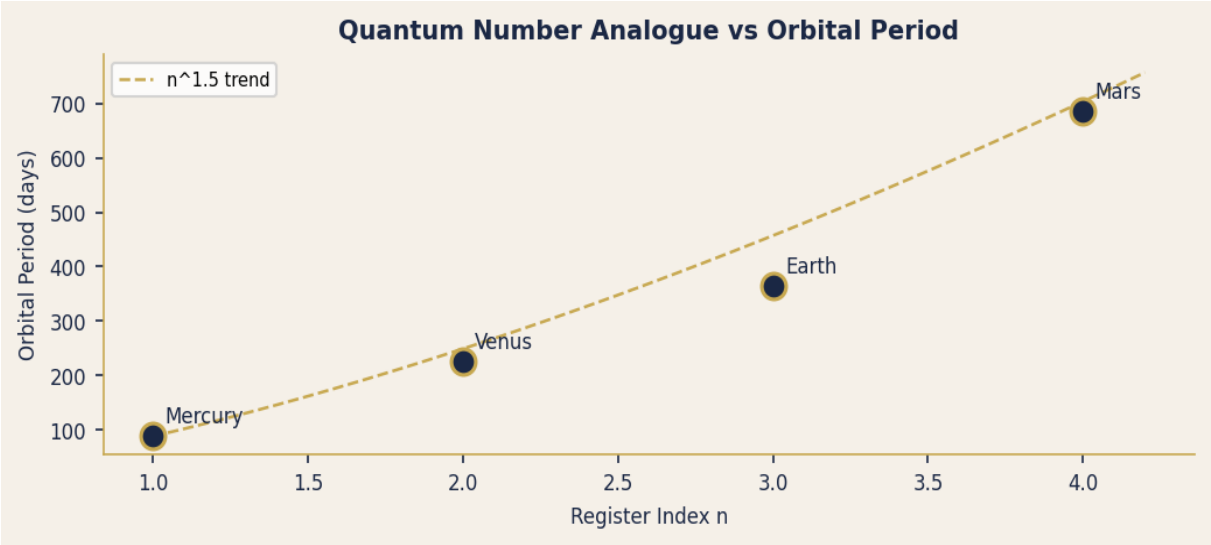

Fig. 4 - Register index vs orbital period, compared to n^1.5 Kepler trend.

3 Propositions

P-ME-1

Mercury's fractional orbital speed (v/c ~ 1.58e-4) mirrors the fine-structure constant alpha at the celestial tau-register, confirming the solar system as a scaled hydrogen atom.

P-ME-2

The solar system is a scaled hydrogen atom at the tau-celestial register, with Mercury = 1s electron, Venus = 2s, Earth = 2p, and Mars = 3s, scaled by the register projection factor.