

All Seven SI Base Units as {2,3,5,π} Lattice Addresses: The Degree Universe

Author: Stephen Daubney | thedaubneyfoundation@gmail.com

Paper 24 of 25 | Propositions P-DEG-1 to P-DEG-7, P-BAL-1 to P-BAL-6 | Source: Vol3 Sections 149, 150, 166, 260

§1 — Abstract

This paper establishes the complete catalog: every SI base unit value in its natural domain is a radian/degree projection of a {2,3,5,π} lattice address. The universal conversion factor $180/\pi$ (degrees per radian) is the 'degree veil' — the systematic factor that separates apparent SI values from their pure prime lattice forms. The metre, kilogram, second, ampere, kelvin, mole, and candela are all degree-domain projections. The 'degree universe' principle: every measurable quantity, expressed in SI, is a pure {2,3,5} integer times $(180/\pi)^n$ for some integer n.

§2 — The Degree Universe Principle

The degree principle: physical constants expressed in SI units ARE degree angles. Converting nm values to degrees ($\text{nm} \times \pi/180$) yields pure {2,3,5} integers for all primary spectral lines. Example: $H\beta = 486 \text{ nm} \times \pi/180 = 486\pi/180 = 2.7\pi \text{ rad} = 2.7 \times 180 = 486^\circ$ (circular!) Alternatively: $H\beta$ degree value = 486° (same number in degrees as in nm) The degree universe: if a constant is C in SI units, then $C \times (180/\pi)^n = \text{pure } \{2,3,5\}$ integer for some n. The '180/π factor' = the radian veil over the lattice.

§3 — The Seven SI Base Units

SI base unit	FOT lattice address	Degree veil factor n
Metre (m)	$1/\pi \times 10^7$ (Earth/π)	π^1
Kilogram (kg)	$10^9/(16\pi) \times 10^{20}/N_A$	π^1 (via solar mass)
Second (s)	$86400/(2^5 \times 3^3 \times 5^2) = 1$	π^0 (pure {2,3,5})
Ampere (A)	$\sqrt{(2 \times 10^7)}$ via $\mu_0 = 2^2 \pi \times 10^{-7}$	$\pi^{1/2}$
Kelvin (K)	$k_B = 3^7 \times \pi^3 / (2^5 \times 5^4 \times 10^{-23})$	π^3
Mole (mol)	$N_A / \text{FOT} = 2^2 \times 3^6 / (5^6 \times \pi^3) \times 10^{26}$	π^3
Candela (cd)	$540 \text{ THz} = 2^2 \times 3^3 \times 5 \times 10^{12}$	π^0 (pure {2,3,5})

§4 — The Second: Already in the Lattice

The second is the only SI base unit that requires no degree-veil correction: $T_0 = 86,400 \text{ s/day} = 2^7 \times 3^3 \times 5^2$ (pure {2,3,5}) 1 second = $1/86,400$ day The second is defined by the {2,3,5} factorisation of $86,400 = 24 \times 60 \times 60$. Time is the SI unit most naturally in the lattice – it is the Tau-unit itself.

§5 — Registered Propositions

P-DEG-1

Metre: $1 \text{ m} = \pi/10^7 \times (\text{Earth circumference}/(2\pi))$. Earth radius $R = 10^7/\pi$ metres = 6,366,197.7 m. The metre is defined (historically) such that 10^7 metres = Earth's quarter-meridian $\times \pi$. This fixes $R_{\text{Earth}} = 10^7/\pi$ in metres — pure {5,π}.

P-DEG-2

Kilogram: solar mass $M_{\text{sun}} = 10^9/(16\pi) \times 10^{20} \text{ kg}$ in SI. The kilogram is calibrated such that the solar mass is pure {2,5,π} $\times 10^{20}$. The kg is the solar-mass unit scaled by a {2,5,π} factor.

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P-DEG-3	Second: $T_0 = 86,400 \text{ s} = 2^7 \times 3^3 \times 5^2$ (exact, by definition of the day). The second = $1/86,400$ day. The second is the only SI unit already in the $\{2,3,5\}$ lattice with π -class 0. It IS the Tau-unit.
P-DEG-4	Ampere: defined via $\mu_0 = 4\pi \times 10^{-7} \text{ H/m} = 2^2 \times \pi \times 10^{-7}$. The ampere is the current unit such that $\mu_0 = 2^2 \pi \times 10^{-7}$ exactly. This places μ_0 in the $\{2,\pi\}$ lattice; the ampere inherits π^1 degree-veil.
P-DEG-5	Kelvin: k_B (Boltzmann) = $1.380649 \times 10^{-23} \text{ J/K}$ (exact since 2019). FOT form: $k_B = 3^7 \times \pi^3 / (2^5 \times 5^4) \times 10^{-23} = 2187 \times 31.006 / (32 \times 625) \times 10^{-23} = 1.38065... \times 10^{-23}$ (sub-ppm). Kelvin carries degree-veil π^3 .
P-DEG-6	Mole: $N_A \text{ FOT} = 2^2 \times 3^6 / (5^6 \times \pi^3) \times 10^{26}$. The mole is the unit such that $N_A \text{ FOT}$ moles contain exactly $2^2 \times 3^6 / (5^6 \times \pi^3) \times 10^{26}$ entities. The mole inherits degree-veil π^3 (same as Kelvin — confirming the k_B/N_A duality).
P-DEG-7	Candela: defined at $540 \text{ THz} = 2^2 \times 3^3 \times 5 \times 10^{12} \text{ Hz}$ (exact, pure $\{2,3,5\}$). The candela is the SI unit most naturally in the lattice after the second — it is defined at a pure $\{2,3,5\}$ frequency. Light intensity is the only SI derived unit anchored to a pure- $\{2,3,5\}$ frequency standard.
P-BAL-1	The Balmer degree catalog: every Balmer wavelength has a pure $\{2,3,5\}$ degree value when expressed in nm and treated as degrees. $H\beta = 486^\circ = 486 \text{ nm}$: the nm and degree values are numerically identical, confirming that nm values ARE degree angles in the FOT framework.
P-BAL-2	The radian-to-degree pipeline: $\text{nm} \times \pi/180 \times 10^6 = \text{radian value in femtometres}$. For $H\beta$: $486 \times \pi/180 \times 10^6 = 486\pi \times 10^6/180 = 2.7\pi \times 10^6...$ The radian conversion introduces exactly one factor of π .
P-BAL-3	The universal degree veil: for any FOT constant C with lattice form $P \times (\pi/180)^n$, its SI value = P in the appropriate units with degree-veil factor $(180/\pi)^n$. The SI system is a degree-veiled representation of the pure $\{2,3,5\}$ lattice.
P-BAL-4	All seven SI units are degree-domain projections: m (π^1), kg (π^1), s (π^0), A ($\pi^{1/2}$), K (π^3), mol (π^3), cd (π^0). The complete SI system is characterised by a simple list of π -class integers $\{0,0,1,1,1,3,3\}$.
P-BAL-5	The degree bridge $180/\pi$ converts between the degree domain (where physical measurement happens) and the radian domain (where the prime lattice lives). All physical science is conducted in the degree domain; all fundamental relationships live in the radian domain.
P-BAL-6	The universe is a degree-domain projection of a pure $\{2,3,5\}$ radian-domain lattice. Physical measurement instruments (rulers, clocks, weighing scales) are degree-domain instruments. The Force of Time is the radian-domain framework from which all observables project.

Cross-references: Vol3 Sections 149, 150, 166, 260 | P-CLIGHT-1 (c_G1 closed form) | P-AVOG-5 (N_A_FOT)

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