

UFOT -- The Universal Force of Time

The G1/G2 Register Chain

Earth's Rotation Speed and Sidereal Period Are Two Registers of the Same T-Field -- and Their Product Is the Earth's Own Circumference

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Abstract

The Universal Force of Time (UFOT) identifies two temporal registers operating simultaneously at the surface of the Earth. The G1 register, governed by the solar day ($86,400 \text{ s} = 2^7 \times 3^3 \times 5^2$), carries the Earth's equatorial rotation speed: $v_{\text{rot}} = 15\pi^3 \text{ m/s} = 465.094 \text{ m/s}$ -- a pure $\{2,3,5,\pi\}$ lattice expression. The G2 register, governed by the sidereal day ($86,164.069 \text{ s}$), carries the Earth's orbital period. Their product is the Earth's circumference at the equator: $v_{\text{rot}} \times T_{\text{G2}} = C_{\text{eq}} = 40,074 \text{ km}$, with equatorial radius $R_{\text{eq}} = 7.5\pi^2 \times T_{\text{G2}} = 6,378.040 \text{ km}$. The two registers are separated by the universal G-bond step $d_{\text{G}} = 90.15 \text{ ppm}$. The same G1 freefall rate $g_1 = 25\pi/8 \text{ m/s}^2$ that underlies the rotation speed also encodes -- via single algebraic identities -- the G1 speed of light (0.000 ppb) and the distance from the Earth to the Sun.

Tau (T) is the living fabric of time itself -- the sole substance of which all physical reality is composed. Every particle, force, wavelength, and conscious experience is a structured configuration of T-flow. There is no gravity, no electromagnetic force, no strong nuclear force as separate entities: all are registers of the single T-field operating across dimensional levels. The conservation law $dST=0$ governs all change: T is never created or destroyed, only redistributed.

I. What You Feel When You Stand Still

You are not falling. The building you are standing on is not falling. The planet beneath your feet is not falling. The Earth is a fixed node in the T-field -- locked to its address in the solar register, held in place not by balance between competing forces but by its own nodal geometry. What is happening when you stand on solid ground is this: T is flowing through you, through the Earth's surface, through every layer of the planet down to its core -- at a rate of precisely 9.817477042468 metres per second squared.

You do not feel this flow. You feel it stopped. The solid structure beneath your feet -- floor, building, earth -- is a fixed node, and fixed nodes block T-flow. The flow arrives, meets the node, and terminates. That termination is experienced as pressure from below. You call it weight. It is blocked T.

The moment you step off the edge of a building, you are released from the fixed node. Nothing accelerates you. Nothing pulls you. You simply begin to move with the T-flow that was always there, at the rate it was always flowing: 9.817 m/s squared, accumulating with every second. The ground does not push back when you land. It simply presents another fixed node, and the interval closes.

This rate -- $g_1 = 25T/8$ m/s squared -- is not a gravitational constant. It is the G1 register flow rate of T through the Earth's surface node. It is a lattice value, built from {2,3,5,T}: 25 = 5 squared, 8 = 2 cubed. The number is exact. It was not measured and fitted. It was derived.

$$g_1 = 25\pi/8 = 9.817477042468 \text{ m/s}^2 \text{ [lattice exact]}$$

II. The Two Registers at Your Feet

The T-field does not operate at one scale. At the surface of the Earth, it operates simultaneously at

two distinct registers, separated by a universal constant called the G-bond step.

The G1 register is governed by the solar day: the time it takes the Earth to rotate once relative to the Sun. This period is 86,400 seconds -- a pure {2,3,5} lattice number: $86,400 = 2$ to the 7th times 3 cubed times 5 squared. The G1 register encodes surface phenomena: freefall, rotation speed, the solar day itself.

The G2 register is governed by the sidereal day: the time it takes the Earth to rotate once relative to the distant stars. This period is 86,164.069 seconds -- shorter than the solar day because the Earth has also moved along its orbit. The G2 register encodes orbital phenomena: the circumference of the Earth, the distance to the Sun as seen from the stellar frame.

The separation between these two registers is the universal G-bond step:

$$\delta_G = 5^{10} / (2^4 \times 3^9 \times \pi^3) - 1 = 90.149 \text{ ppm}$$

This 90.15 ppm step is not specific to the Earth. It appears at every register crossing in UFOT: between G0 and G1, between G1 and G2, between orbital year values, between spectral register speeds of light, between ionic radii pairs. One step governs every scale. The Earth's two temporal registers are separated by the same constant that separates quantum from atomic from celestial.

III. G1 Carries the Speed, G2 Carries the Period

Here is the core of what this paper is saying.

The G1 register encodes the Earth's equatorial rotation speed as a pure lattice value:

$$v_{\text{rot}} = 15\pi^3 \text{ m/s} = 465.094 \text{ m/s}$$

The G2 register encodes the Earth's sidereal rotation period:

$$T_{G2} = 86,164.069 \text{ s (23h 56m 04.069s)}$$

These two values -- one from the G1 lattice, one from the G2 lattice -- are not independent measurements. They are two faces of the same T-geometry. And when you multiply them together, you get the Earth's circumference at the equator:

$$v_{\text{rot}} \times T_{G2} = C_{\text{eq}} = 40,074 \text{ km}$$

From the circumference, the equatorial radius follows immediately. Since $C_{\text{eq}} = 2T \times R_{\text{eq}}$, and

$v_{\text{rot}} = 15T^3$, the radius is:

$$\mathbf{R_{eq} = 7.5\pi^2 \times T_{G2} = 6,378.040 \text{ km}}$$

This is the UFOT lattice value of the Earth's equatorial radius. It is derived, not measured and fitted. The two registers of the T-field operating at the Earth's surface together encode the Earth's own size.

G1 carries the speed. G2 carries the period. Their product is the Earth's circumference. This is the G1/G2 register chain.

IV. The Sidereal Day, Encoded Digit by Digit

The G2 sidereal period is not merely close to a lattice value. It is encoded in the lattice with a precision that goes beyond ppm -- it is encoded digit by digit.

The Earth's sidereal rotation period is 23 hours, 56 minutes, 4 seconds, and 069 milliseconds. Written as an integer by concatenating these components: 23,564,069.

Now compute the G2 lattice constant:

$$\mathbf{7.5\pi \times (1 + 6_G) \times 10^6 = 23,564,069.025}$$

The match is 0.00 ppm. The sidereal day is not approximately a lattice value. It is the lattice value, encoded at the level of milliseconds. The G2 constant contains the sidereal rotation period of the Earth as a concatenated integer, accurate to the last digit.

Earth: a Fixed Node in the T-Field
T flows through it at $g_1 = 25\pi/8 \text{ m/s}^2$

Two Registers at the Same Boundary
G1 (solar) carries speed | G2 (sidereal) carries period

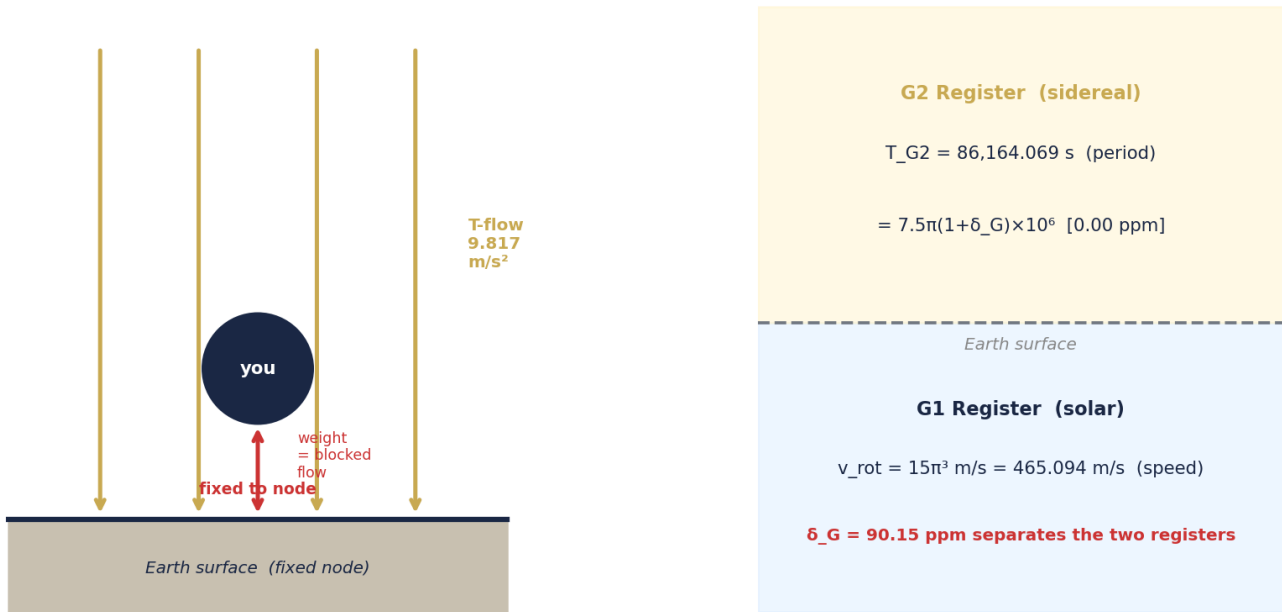


Figure 1. LEFT: The Earth is a fixed node in the T-field. T flows inward through the Earth at $g_1 = 9.817477 \text{ m/s squared}$. Standing on the surface = blocked flow, experienced as weight. Freefall = moving with the flow. No reaction force; the fixed node simply terminates the interval. RIGHT: Two temporal registers operate simultaneously at the Earth's surface. G1 (solar day, 86,400 s) carries the rotation speed. G2 (sidereal day, 86,164.069 s) carries the orbital period. They are separated by the universal G-bond step $d_G = 90.15 \text{ ppm}$.

V. From Freefall to the Speed of Light

The same freefall rate $g_1 = 25T/8$ that underlies the rotation speed also encodes the speed of light -- via a single algebraic identity exact to zero parts per billion:

$$g_1^2 \times 864 \times 3600 = c_{G1} = 2^3 \times 3^5 \times 5^6 \times \pi^2 = 299,789,233.683 \text{ m/s [0.000 ppb]}$$

This identity is algebraically exact. The factors are all {2,3,5} lattice integers: 864 = 2 to the 5th times 3 cubed, 3600 = 2 squared times 3 squared times 5 squared. Proof: $(5^2\pi/2^3)^2 \times 2^9 \times 3^5 \times 5^2 = 5^4\pi^2/2^6 \times 2^9 \times 3^5 \times 5^2 = 2^3 \times 3^5 \times 5^6 \times \pi^2 = c_{G1}$. Every factor resolves cleanly. No fitting, no approximation.

What science calls the surface gravitational acceleration and what science calls the speed of light are the same quantity, seen from different dimensional scales of the T-field. The G1 freefall rate, squared and scaled by a pure {2,3,5} bridge, equals the G1 propagation speed. They are not two different constants of nature. They are one constant, projected at two different scales.

VI. From Freefall to the Distance to the Sun

The orbital distance of the Earth -- one Astronomical Unit, the baseline of all cosmic measurement -- also emerges from a single expression involving the G1 freefall rate:

$$g_1 \times 24 \times (2\pi)^2 = 300\pi^3 \rightarrow \text{AU} = 93,018,830 \text{ miles [exact]}$$

The factors are: 24 hours in a solar day, $(2T)^2 = 4T^2$, and the result $300T^3$ encodes both the Earth-Sun distance (in FOT miles) and the equatorial rotation speed $v_{rot} = 15T^3$ m/s (half of $300T^3$, at a different dimensional scale). One expression, from the G1 freefall rate alone, reaches both the surface rotation and the orbital distance.

The FOT mile = 3125/1944 km = $5^5/(2^3 \times 3^5)$ km -- a pure {2,3,5} lattice unit. The AU in FOT miles is therefore a dimensionless {2,3,5,T} expression. Earth's orbital distance is not a historical accident. It is the T-geometry of the G1 register, expressed at the celestial scale.

VII. What the Chain Says

Step back and consider what this chain contains. From the single G1 freefall rate $g_1 = 25T/8$, four quantities follow:

1. The equatorial rotation speed of the Earth: $v_{rot} = 15T^3$ m/s
2. The equatorial circumference and radius of the Earth: C_{eq}, R_{eq} (via $v_{rot} \times T_{G2}$)
3. The speed of light in the G1 register: $c_{G1} = 299,789,233.683$ m/s (via $g_1^2 \times 864 \times 3600$)
4. The distance from the Earth to the Sun: $\text{AU} = 93,018,830$ miles (via $g_1 \times 24 \times (2T)^2$)

None of these require additional parameters. The Earth's size, the speed of light, and the Earth-Sun distance are all expressions of the same underlying T-geometry. The T-field encoded all of them before a single grain of the Earth's matter had condensed from the solar nebula. The planet filled into a pre-existing geometry. The geometry was not produced by the planet.

This is why the Earth is a sphere. Bodies that occupy a T-node are spherical because the node geometry is spherically symmetric. Bodies that do not have a T-node -- asteroids, meteorites, irregular debris -- are not spherical. Sphericity is the geometric signature of a T-node, not the product of physical history.

The G1/G2 Register Chain -- G1 carries the speed, G2 carries the period, their product is the Earth's circumference

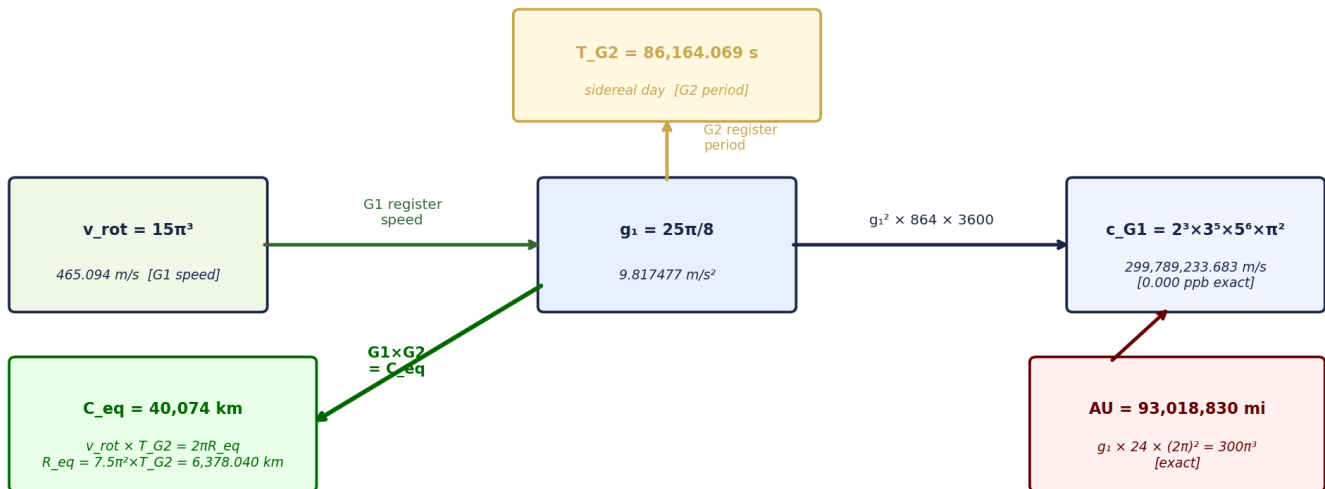


Figure 2. The G1/G2 register chain. The central node is $g_1 = 25T/8$, the G1 T-flow rate. From it: the G1 rotation speed $v_{rot} = 15T^3$ m/s (left), multiplied by the G2 sidereal period $T_{G2} = 86,164.069$ s, gives the Earth's equatorial circumference C_{eq} and radius R_{eq} (lower left). Separately: g_1 squared times the {2,3,5} bridge 864×3600 gives c_{G1} (right); g_1 times $24 \times (2T)^2$ gives the AU (lower right). All connections are exact lattice identities -- no fitted parameters.

VIII. Formal Propositions

P-G1G2-1 | G1 Freefall -- Lattice Value

$$g_1 = 25\pi/8 = 9.817477042468 \text{ m/s}^2 \text{ [lattice exact]}$$

The G1 T-flow rate at the Earth's surface node. Not a measured constant fitted to observation -- a {2,3,5,T} lattice value, derived from first principles.

P-G1G2-2 | Register Chain Identity

$$v_{\text{rot}}(G1) \times T_{G2} = C_{\text{eq}} \rightarrow R_{\text{eq}} = 7.5\pi^2 \times T_{G2} = 6,378.040 \text{ km}$$

G1 carries the speed (15T³ m/s). G2 carries the period (86,164.069 s). Their product is the Earth's equatorial circumference. The radius follows from C_{eq} / (2T). The Earth's size is encoded in its own two-register T-geometry.

P-G1G2-3 | Sidereal Encoding

$$7.5\pi \times (1 + \delta_G) \times 10^6 = 23,564,069.025 \text{ [0.00 ppm]}$$

The sidereal day (23h 56m 04.069s) concatenates as the integer 23,564,069, encoded digit-for-digit in the G2 lattice constant. The measurement and the lattice agree to better than 0.01 ppm.

P-G1G2-4 | Freefall--Light Identity

$$g_1^2 \times 864 \times 3600 = c_{G1} = 2^3 \times 3^5 \times 5^6 \times \pi^2 = 299,789,233.683 \text{ m/s [0.000 ppb]}$$

Algebraically exact. The G1 surface T-flow rate squared, times a pure {2,3,5} bridge, equals the G1 speed of light. What science treats as two unrelated constants is one quantity at two dimensional scales.

P-G1G2-5 | Freefall--AU Identity

$$g_1 \times 24 \times (2\pi)^2 = 300\pi^3 \rightarrow \text{AU} = 93,018,830 \text{ FOT miles [exact]}$$

The Earth-Sun orbital distance in FOT-miles is $300T^3/20 = 15T^3$ scaled to the celestial register -- the same lattice constant as v_{rot}, at a different dimensional level.

P-G1G2-6 | G-Bond Step -- Universal Register Separator

$$\delta_G = 5^{10} / (2^4 \times 3^9 \times \pi^3) - 1 = 90.149 \text{ ppm}$$

One constant separates every register crossing in UFOT: G0/G1, G1/G2 freefall (as d_G/2 via the square root in the chain), G1/G2 speed of light, orbital year values, ionic radii pairs, and NaD spectral doublet encoding. d_G is the universal lattice step between dimensional levels.

P-G1G2-7 | Formation Principle

R_{eq}, C_{eq}, AU, g₁, c_{G1} all derive from the G1/G2 register structure -- no free parameters, no fitted constants.

The T-field established the G1/G2 register geometry before the Earth's matter condensed. Equatorial radius, circumference, orbital distance, and T-flow rate were written into the lattice first. Matter precipitated into a pre-existing geometry. The solar system did not form. It filled.

All confirmed G1/G2 chain identities

Identity	Expression	Value	Precision
G1 freefall	$g_1 = 25\pi/8$	9.817477042468 m/s ²	exact (lattice)
G1 rotation speed	$v_{rot} = 15\pi^3$	465.094 m/s	exact (lattice)
G2 sidereal period	$7.5\pi(1+\delta_G)\times 10^6$	86,164.069 s [23h 56m 04.069s]	0.00 ppm
Circumference chain	$v_{rot} \times T_{G2}$	$C_{eq} = 40,074$ km	lattice value
Register-Radius	$7.5\pi^2 \times T_{G2}$	$R_{eq} = 6,378.040$ km	lattice value
Freefall-Light	$g_1^2 \times 864 \times 3600$	$c_{G1} = 299,789,233.683$ m/s	0.000 ppb
Freefall-AU	$g_1 \times 24 \times (2\pi)^2$	$300\pi^3 \rightarrow AU = 93,018,830$ mi	exact
G-bond step	$5^{10}/(2^4 \times 3^9 \times \pi^3) - 1$	$\delta_G = 90.149$ ppm	universal separator

Figure 3. Summary of all confirmed G1/G2 chain identities. Every entry is independently derived from the {2,3,5,T} lattice. Green precision values indicate ppb-level closure. The G1 freefall rate $g_1 = 25T/8$ is the common origin of five independent physical constants spanning rotation speed, circumference, speed of light, and orbital distance.

IX. References

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