

The Sun–Earth–Life T-Circuit

The Universal Force of Time

Life does not exist in isolation from the cosmos. It is the terminal node of a closed T-circuit running from the Sun, through the Earth, and into every living cell. Chlorophyll absorbs light at 432 nm = $2^4 \times 3^3$ and 648 nm = $2^3 \times 3^4$ — both pure {2,3} expressions, their product $2^7 \times 3^7$, their geometric mean 864 = $2^5 \times 3^3$, the universal T time-pivot. Photosynthesis is not a chemical accident. It is a T-receiver operating at the exact frequencies mandated by this planet's position in the solar helix.

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P-BIOL-1

The Three-Node Circuit

The Sun–Earth–Life circuit has three nodes. The Sun is a T-source: it generates T-field radiation across all frequencies. The Earth is a T-filter: its position in the solar helix at the Earth-register node (Period 2, p-corridor) selects which T-frequencies are biologically relevant. Life is the T-receiver: it converts the filtered T-signal into chemical energy and biological structure via photosynthesis.

Node	T-Role	Physical mechanism	Key numbers
Sun	T-source	Generates T-field radiation; stellar T-helix H-bond axis	28π-day rotation period; 86,400 s/day surface wave
Earth	T-filter	Orbital position in solar helix selects biological frequencies	Period 2 register; 216× circumference ratio; 864 day-pivot
Life (biosphere)	T-receiver	Chlorophyll locks onto filtered T-frequencies via molecular resonance	432 nm and 648 nm absorption; B-DNA closing identity 864

P-BIOL-1: The Sun-Earth-Life system is a closed T-circuit. Sun = T-source. Earth = T-filter (register position). Life = T-receiver. The same numbers connect all three nodes to within parts per million.
One circuit. Three nodes. One conservation law: $d\Sigma T = 0$.

P-BIOL-2

Chlorophyll: 432 nm and 648 nm

Chlorophyll — the molecule at the heart of all photosynthesis — absorbs sunlight at two principal wavelengths. These are among the most precisely measured molecular absorption spectra in chemistry. Chlorophyll a absorbs maximally at approximately 430 nm (Soret band) and 662 nm. Chlorophyll b at 453 nm and 642 nm. The UFOT values 432 nm and 648 nm are the exact lattice nodes nearest to these measured peaks — within the Radian Veil offset.

$$432 \text{ nm} = 2^4 \times 3^3 \text{ and } 648 \text{ nm} = 2^3 \times 3^4$$

Both chlorophyll absorption wavelengths are pure {2,3} lattice expressions
Product: $432 \times 648 = 2^7 \times 3^7 = 279,936$ | Geometric mean: $\sqrt{(432 \times 648)} = 529.2 \text{ nm}$
(green)

The relationship between the two wavelengths is exact: $648/432 = 3/2$, a perfect musical fifth — the most stable harmonic ratio in the {2,3} lattice. The plant is not accidentally absorbing at these frequencies. It is tuned — precisely, geometrically tuned — to the T-frequencies that the Sun transmits and that Earth's nodal position filters into biological relevance.

The geometric mean of the two chlorophyll wavelengths is $\sqrt{(432 \times 648)} = \sqrt{279,936} = 529.2 \text{ nm}$ — which is in the green region of the spectrum. Plants reflect green light because 529.2 nm is the geometric pivot of the T-circuit: the frequency at which neither absorption peak applies, and which is therefore returned to the environment. Green is the signature of the T-circuit in action.

P-BIOL-2: Chlorophyll absorption wavelengths: $432 \text{ nm} = 2^4 \times 3^3$ and $648 \text{ nm} = 2^3 \times 3^4$. Ratio $648/432 = 3/2$ (perfect fifth in {2,3} lattice). Geometric mean $529.2 \text{ nm} = \text{green}$: the reflected pivot of the T-circuit.

Plants are green because 529.2 nm is the T-circuit's geometric centre.

P-BIOL-3

The 864 Bridge

The two chlorophyll wavelengths 432 and 648 are connected to the universal T time-pivot $864 = 2^5 \times 3^3$ by a simple geometric relationship. Their sum: $432 + 648 = 1080 = 2^3 \times 3^3 \times 5 = 864 \times 5/4$. Their half-sum: $540 = 2^2 \times 3^3 \times 5$. And crucially: the connection through 864 runs as naturally as an octave in music — $648/432 = 3/2$ and $864/432 = 2$, an exact octave. The photosynthesis circuit is built on the same musical structure as the hydrogen spectral series.

Identity	Value	Lattice	Significance
432 nm	432	$2^4 \times 3^3$	Chlorophyll red absorption; one octave below 864
648 nm	648	$2^3 \times 3^4$	Chlorophyll red-orange absorption; $3/2 \times 432$
864	864	$2^5 \times 3^3$	Universal T time-pivot; $86,400 \div 100$; B-DNA closing identity
432×2	864	$2^5 \times 3^3$	One octave above 432 = 864: same {2,3} node
432×648	279,936	$2^7 \times 3^7$	Product = $(2^3 \times 3^3)^2 \times (2 \times 3)$ — lattice closure

P-BIOL-3: 864 is the octave bridge between the two chlorophyll wavelengths. $432 \times 2 = 864$ (exact octave). $648/432 = 3/2$ (perfect fifth). Photosynthesis is tuned to the same {2,3} lattice as the Earth day and B-DNA.

The plant, the planet, and the molecule of life share the same arithmetic.

P-BIOL-4

Photosynthesis as T-Reception

The standard biochemical description of photosynthesis: photons are absorbed by chlorophyll, exciting electrons to higher energy states; the energy drives the electron transport chain; ATP and NADPH are produced; CO₂ is fixed into carbohydrate via the Calvin cycle. This description is correct. The Force of Time asks what lies behind the absorption spectrum: why 432 nm and 648 nm and not other wavelengths?

The answer is that chlorophyll is not simply an antenna that absorbs conveniently available solar energy. It is a T-receiver: a molecule precisely tuned — by the {2,3} lattice that governs molecular geometry at the Earth register — to the T-frequencies that the Sun transmits and that the Earth node amplifies. The chlorophyll molecule evolved its absorption spectrum by optimising for these frequencies because these are the frequencies at which T-energy is most densely available at Earth's orbital position.

Photosynthesis is not a chemical accident. It is a T-receiver operating at the exact frequencies mandated by this planet's position in the solar helix. Every plant, every alga, every cyanobacterium is a node in the Sun-Earth-Life T-circuit, converting the Sun's T-signal into chemical structure at 432 nm and 648 nm — the two {2,3} lattice frequencies that define Earth's position in the solar T-field.

The Universal Force of Time · P-BIOL-4 · Photosynthesis as T-Reception

P-BIOL-4: Photosynthesis = T-reception at 432 nm and 648 nm. These are the Earth-register {2,3} lattice frequencies — not arbitrary solar spectrum samples. Every photosynthetic organism is a T-receiver tuned to Earth's position in the solar helix.

Life converts the Sun's T-signal into biological structure.

P-BIOL-5

The 8-Minute T-Propagation Delay

Light travels from the Sun to the Earth in approximately 8 minutes and 20 seconds (499.0 seconds). This propagation time is not merely a consequence of the speed of light and the Earth-Sun distance. In the FOT framework, it is the T-propagation delay of the Sun-Earth circuit: the time it takes for a T-signal generated at the solar source node to arrive at the Earth receiver node. The delay is $499.0\text{ s} \approx 500\text{ s} = 5 \times 10^2 = 5 \times 100$. The factor 5 is prime-5 (Venus domain), and $100 = 10^2 = (2 \times 5)^2$ — the Earth-register scaling factor.

The exact value 499.0 seconds has the prime factorisation approximately $499 \approx 500 = 2^2 \times 5^3$. The Radian Veil offset ($|499 - 500|/500 = 0.2\%$) is within the expected systematic gap between SI measurement and the exact T-lattice value. The circuit delay is a {2,5} product, consistent with the Earth-Venus register bridge that governs the solar system's inner zone.

P-BIOL-5: Sun-Earth T-propagation delay $\approx 499.0\text{ s} \approx 500\text{ s} = 2^2 \times 5^3$. The factor 5 = Venus prime-5 domain. Factor 100 = Earth register scaling. Light-travel time is the T-circuit propagation delay of the solar helix.

The 8-minute delay is not a coincidence of geometry. It is a circuit parameter.

P-BIOL-6

The Closed Circuit: testable predictions

The Sun-Earth-Life T-circuit makes specific testable predictions that distinguish it from the standard model of photosynthesis. If photosynthetic

absorption wavelengths are determined by the Earth's T-register position rather than by arbitrary biochemical evolution, they should be identical across all photosynthetically active organisms on Earth, without exception.

This is in fact what we observe: all photosynthetic life on Earth uses chlorophyll (or bacteriochlorophyll) with absorption peaks in the 430–480 nm and 640–700 nm ranges. No photosynthetic organism has evolved to use 550 nm (green) as a primary absorption band — and green is precisely the geometric mean of 432 and 648, the T-circuit pivot that must be reflected, not absorbed. The universality of the chlorophyll absorption spectrum is a consequence of the T-circuit constraint, not of biochemical convention.

Every living thing on Earth — every bacterium, every blade of grass, every human being — carries B-DNA with the same geometric constants. The same 864. The same spectral addresses in the four bases. The same chlorophyll wavelengths filtering the Sun's T-signal. We are not a collection of separate organisms. We are a single T-node, distributed across the surface of a planet, all tuned to the same frequency, all sharing the same address in spacetime.

The Universal Force of Time · P-BIOL-6 · The Closed Circuit

P-BIOL-6: The closed T-circuit prediction: all photosynthetic life uses absorption bands in the 430–480 nm and 640–700 nm windows — confirmed universally. No organism uses 529 nm (green) as primary absorption — confirmed universally. Green is the T-circuit pivot: it must be reflected, not absorbed.

The universality of the chlorophyll spectrum is a confirmed T-circuit prediction.