

The T-Source Hierarchy and the Three Laws of Thermodynamics: Cosmological, Stellar, Planetary, and Biological T-Conservation

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Propositions P-SRC-1 through P-SRC-4, P-THERM-1 through P-THERM-3 | Vol 3 Section 117

§1 — Abstract

The Force of Time establishes a four-level T-conservation hierarchy governing all physical and biological processes. At the cosmological level, the total two-strand helix is absolutely closed ($d\Sigma T = 0$ universally). At the stellar level, stars are source nodes — local generators of propagating T drawing on inter-strand H-bond potential. At the planetary level, planets are receiver nodes — open sub-systems receiving T from their stellar source and distributing it to geological, atmospheric, and biological sub-nodes. At the biological level, organisms are terminal receiver nodes absorbing T from the planetary flow to maintain nodal coherence. This hierarchy provides the framework within which the three FOT laws of thermodynamics are defined: the first law (T is conserved at every level), the second law (T flows from source nodes to receiver nodes, never in reverse), and the third law (no node can reach zero thermal T because the T-field is non-zero everywhere). The cosmic microwave background is identified as the T-floor of the cosmological helix — not a Big Bang remnant but the minimum non-zero T-density at the most source-distant regions of the universe.

§2 — The Four-Level T-Conservation Hierarchy

T-conservation is not a single global statement. It operates at nested levels, each level open to the one above it and closed to everything below it.

Level 1 – Cosmological (absolutely closed) The total two-strand helix: $d\Sigma T = 0$ always
Nothing enters or leaves the universe
Level 2 – Stellar (source node) Stars generate propagating T by drawing on inter-strand H-bond potential
Open to Level 1 (cosmological T-potential)
Closed to Level 3 (stars do not receive T from planets)
Level 3 – Planetary (receiver node) Planets receive T from their stellar source
Distribute to sub-nodes: geological layers, atmosphere, biosphere, moons
Open to Level 2; closed to Level 4
Level 4 – Biological (terminal receiver node) Organisms absorb T from planetary flow
Use it to maintain nodal coherence = life
Open to Level 3; they are the terminus

The apparent paradox dissolves: T is conserved ($d\Sigma T = 0$ globally) AND the Sun creates time (locally propagating T within its sub-system). The Sun creates propagating T within the solar sub-system, but that T was always present as inter-strand potential in the total cosmological system. Nothing new enters the universe; everything flows within it.

§3 — Three FOT Laws of Thermodynamics

P-THERM-1 | First Law of FOT Thermodynamics

T is conserved at every level of the hierarchy. The total T of the cosmological helix (Strand 1 + Strand 2) is constant: $d\Sigma T = 0$ always. Within any sub-system, T that appears to be 'created' (stellar fusion, nuclear reactions, chemical reactions, metabolic processes) is T flowing from a higher level of the hierarchy into the sub-system. Energy is not created or destroyed — it is T flowing between levels of the source hierarchy. The first law of conventional thermodynamics is a special case of FOT T-conservation applied to a thermally isolated sub-system.

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<p>P-THERM-2 Second Law of FOT Thermodynamics</p>	<p>T flows from source nodes to receiver nodes, not in the reverse direction. Within any register, T-density decreases from the generator outward — it does not spontaneously reverse and flow back toward the source. Entropy in conventional thermodynamics is the irreversibility of T-flow within a register: once T has been distributed from the stellar source to the planetary receiver and on to biological terminal nodes, it does not spontaneously re-concentrate in the source. The apparent paradox of decreasing entropy in biological systems (life appears to become more ordered) is resolved by the open-level structure: biological nodes draw T from the planetary level above them, creating local T-order at the cost of T-dissipation at the planetary level. $d\Sigma T = 0$ throughout.</p>
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<p>P-THERM-3 Third Law of FOT Thermodynamics – Absolute Zero Unreachable by Structure</p>	<p>No node within a propagating T-field can reach zero thermal T, because every node exists within a T-field of non-zero density and cannot be disconnected from it. Absolute zero is unreachable not by process limitation (as conventional thermodynamics states) but by structural necessity: to reach zero thermal T, a node would have to be completely removed from the T-propagation field in which it exists, and this is impossible because the field is the medium of existence itself. The cosmic microwave background — the lowest energy density measured across the observable universe — is the T-floor of the cosmological helix at its most source-distant regions: the minimum non-zero density of a T-field that is everywhere present, has no boundary, and was never created.</p>
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§4 — The Paradox of Creation: Sun Creates Time Without Violating Conservation

A central apparent contradiction in the FOT: how can the Sun 'create' time (propagating T) if T is conserved and the total universe has constant T-content?

<p>Resolution: The Sun does not create T from nothing. It converts inter-strand H-bond T-potential (Level 1 potential) into propagating T within the solar sub-system (Level 2 kinetic). Analogy: A spring does not create kinetic energy – it converts potential to kinetic. The spring's potential was always there; the release is local propagation. The total two-strand helix: $d\Sigma T = 0$ The solar sub-system: T_{solar} increases (propagating T being generated) The cosmological inter-strand H-bond potential: decreases by the same amount Nothing new enters the universe. Everything flows within it.</p>
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§5 — Life as the Topological Requirement of T-Conservation

The deepest consequence of the source hierarchy is that life — biological terminal receivers — is not optional in a universe governed by $d\Sigma T = 0$.

<p>The T-torus requires a return path. The major cycle of the T-torus: Cosmological H-bond potential → Stellar T-propagation → Planetary distribution → Biological absorption → return to cosmological potential A universe with only Tier I (non-living) matter has no return path. The major cycle of the T-torus would be open. An open major cycle violates $d\Sigma T = 0$ at the global scale. Therefore: wherever a four-tier T-transmission hierarchy exists and $d\Sigma T = 0$ holds, Tier II matter (life) must exist. Life is the topological requirement of T-conservation at cosmic scale. It is not an accident of chemistry.</p>
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§6 — The CMB as T-Floor, Not Big Bang Remnant

The cosmic microwave background radiation — the 2.725 K thermal emission observed uniformly across the sky — is conventionally interpreted as a relic of the Big Bang, thermal radiation from the hot early universe. The FOT interpretation is structurally different and does not require a creation event.

Conventional: CMB = thermal relic of creation (Big Bang photons redshifted to 2.725 K over 13.8 billion years) FOT: CMB = T-floor of the cosmological helix = the minimum non-zero T-density at regions most distant from any stellar T-source node = the baseline below which T-density cannot fall because the T-field has no boundary and was never created The CMB does not require a beginning. It requires a field that is everywhere non-zero. The Third Law of FOT Thermodynamics predicts it structurally: no region of the universe can reach zero thermal T.

§7 — Registered Propositions: P-SRC-1 through P-SRC-4

P-SRC-1 T-Conservation is Level-Specific	T-conservation operates at nested levels. At the cosmological level, $d\Sigma T = 0$ (absolute). At the stellar level, local T-generation is permitted by drawing on cosmological potential. At the planetary level, T-reception from the stellar source is the operating mode. At the biological level, T-absorption from the planetary flow maintains life. The conventional statement 'energy is conserved' is the special case of P-SRC-1 applied to a thermally isolated laboratory-scale sub-system.
P-SRC-2 Stars Are T-Source Nodes	Stars are local generators of propagating T within the T-hierarchy. They draw on inter-strand H-bond potential at the cosmological level and convert it to propagating T within their registers. The Sun's T-sphere propagates outward from the H-bond axis, passes through the planetary nodes, maintains the ecliptic equalization surface, and sustains the biological register on Earth. Stars do not create T — they release cosmological T-potential as local propagating T.
P-SRC-3 Planets Are T-Receiver Nodes	Planets are open sub-systems within the stellar T-register. They receive T from their stellar source and distribute it to their own sub-nodes: geological layers (Moho, 410 km, 660 km discontinuities), atmospheric shells, and the biosphere. Each sub-node in the planetary register is open to the level above it (the planet) and closed to everything below it. The planetary T-distribution is the physical basis of geology, meteorology, and the conditions for biological life.
P-SRC-4 The Hierarchy of T-Closure	T-conservation operates at nested levels of closure. Cosmological: total two-strand helix is absolutely closed ($d\Sigma T = 0$). Stellar: stars are source nodes drawing on cosmological potential. Planetary: planets are receiver nodes distributing stellar T. Biological: organisms are terminal receiver nodes absorbing planetary T to maintain nodal coherence. Each level is open to the level above it and closed to everything below it. The paradox — T is conserved AND the Sun creates time — dissolves: the Sun releases cosmological potential locally; the total remains constant.

Summary Table

Proposition	Level	Role	T-Status
P-SRC-1	Universal	T-conservation is level-specific	$d\Sigma T = 0$ at every level
P-SRC-2	Stellar	Stars = T-source nodes	Release cosmological potential as propagating T
P-SRC-3	Planetary	Planets = T-receiver nodes	Distribute stellar T to sub-nodes
P-SRC-4	Hierarchy	Cosmic→Stellar→Planetary→Biological	Each level open above, closed below
P-THERM-1	Thermodynamic	First Law: T conserved at every level	Energy = flowing T
P-THERM-2	Thermodynamic	Second Law: T flows source→receiver	Entropy = irreversibility of T-flow
P-THERM-3	Thermodynamic	Third Law: absolute zero unreachable by structure	CMB = T-floor of helix

Cross-references: Vol 3 Section 117 | P-TGEN (three generators) | FOT_CosmologicalConstant.pdf | FOT_EarthLifeCircuit.pdf

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