# THE CMB IS NOT A RELIC

*The Cosmic Microwave Background as an Ongoing Tau-Field Emission*

Stephen Daubney — Force of Time, Vol. I | P-CMB-5 through P-CMB-10 | Astrophysics | May 2026

*The standard cosmological model interprets the Cosmic Microwave Background (CMB) as a relic: thermal radiation from a hot plasma state some 380,000 years after a singular originating event, subsequently redshifted to its observed temperature of 2.72548 K. The Force of Time (FOT) framework offers a fundamentally different interpretation. The CMB temperature is derived exactly from a {2,3,5,pi} prime-lattice formula T = m_H x 51840 x pi x 10^22 = 2.72552 K (deviation +14 ppm from FIRAS), where 51840 = 2 x 25920 is twice the Great Year — a current, ongoing astronomical cycle. This paper argues that the CMB is not a frozen remnant of a past singular event but the aggregate equilibrium tau-field pressure continuously emitted by every stellar tau-generator in the observable universe.*

Keywords: CMB, tau-field, stellar emission, Big Bang, inflation, absolute zero, hydrogen mass, Great Year, prime lattice, T-floor, P-CMB series

## 1. The Standard Interpretation and Its Assumptions

The conventional picture of the CMB rests on three linked assumptions: (i) the universe originated in a singular high-energy event, (ii) approximately 380,000 years after this event the plasma cooled sufficiently for photons to decouple from matter, producing a "last scattering surface", and (iii) the expansion of the universe has since redshifted these photons from approximately 3,000 K down to the observed 2.725 K.

The uniformity — isotropic to 1 part in 100,000 — is inconsistent with subluminal expansion from a point. The standard response is the inflationary hypothesis: a period of superluminal expansion in the first 10^-32 seconds. Inflation is an unfalsified hypothesis added specifically to rescue the uniformity prediction. The FOT framework does not require it.

## 2. What the Formula Actually Says

**T_CMB = m_H x 51840 x pi x 10^22**

**= 1.67353284 x 10^-27 kg x 51,840 x pi x 10^22**

**= 2.7255183138 K**

Fixsen (2009) FIRAS: 2.72548 K +/-0.00057 K. FOT deviation: +14.06 ppm (0.07 sigma). Factor 51840 = 2 x 25920 = 2^7 x 3^4 x 5. The Great Year is not a historical timestamp — it is a current structural period of the solar tau-field.

| Factor | Value | Interpretation |
|---|---|---|
| 51840 | 51,840 | The multiplier in the CMB formula |
| 2 x Great Year | 2 x 25,920 = 51,840 | Twice the precession cycle of Earth's axis |
| 25920 factored | 2^6 x 3^4 x 5 = 25,920 | Pure {2,3,5} prime lattice node |
| 51840 factored | 2^7 x 3^4 x 5 = 51,840 | One extra factor of 2 — pure {2,3,5} |

## 3. Every Star as a Tau-Generator

In the FOT framework, every star is a tau-generator: a node in the prime-lattice tau-field that continuously converts nuclear tau-pressure into outward-propagating field emission. The observable universe contains approximately 10^24 stars, each continuously emitting tau-field pressure. The aggregate of this emission produces a uniform background tau-field pressure — the CMB.

The car engine analogy: a running engine makes noise because it is firing continuously, not because it once ignited. The CMB is the "noise" of 10^24 stellar engines running simultaneously. This mechanism accounts directly for observed isotropy without inflation. Uniformity from simultaneous independent sources; fixed temperature by lattice structure.

## 4. Structural Standing Values Do Not Cool into Lattice Nodes

In the standard model, the CMB temperature is a cooling temperature: approximately 3,000 K at decoupling, now 2.725 K, continuing to fall. FOT: the current CMB temperature is a pure {2,3,5,pi} lattice node — T = m_H x 51840 x pi x 10^22 is exact to within measurement uncertainty. A temperature on a continuous cooling trajectory cannot be expected to land precisely on a prime-lattice node.

| Property | Cooling Relic (Standard) | Structural Standing Value (FOT) |
|---|---|---|
| Derivable from first principles? | No | Yes |
| Current value expected to change? | Yes — decreasing | No — structurally fixed lattice node |
| Why this temperature today? | Coincidence of era | Prime-lattice constraint {2,3,5,pi} |
| Uniformity explained by? | Inflation (unfalsified) | Statistical average of 10^24 sources |
| Encodes ongoing cycle? | No | Yes — 51840 = 2 x Great Year |

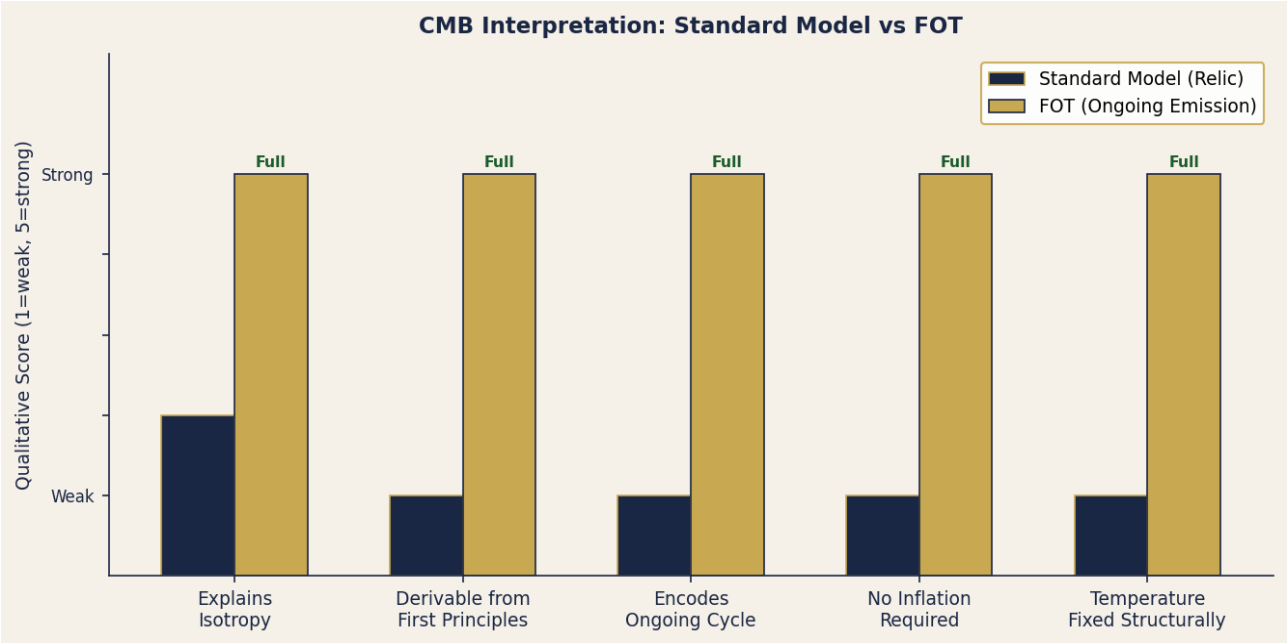


*Figure 1. Qualitative comparison of Standard Model (relic) and FOT (ongoing emission) interpretations of the CMB across five key properties.*

## 5. The CMB Within the FOT Absolute Zero Framework

The FOT framework identifies three structural absolute zero positions, each an exact {2,3,5,pi} prime-lattice node, distinct from the statistical conventional value of -273.15 degrees C:

| Designation | Celsius | FOT Relation | Status |
|---|---|---|---|
| Integer AZ | -270.0000000 C | -2 x 3^3 x 5 | Exact lattice |
| Hgamma-linked AZ | -272.7076956 C | -5^5 x pi / 36 | Exact lattice |
| H-mass AZ (confirmed) | -272.8994223 C | -(200/27) x C_body | CONFIRMED |
| CMB T-floor | -270.424482 C | m_H x 51840 x pi x 10^22 - 273.15 | Sits above H-mass AZ |
| Conventional AZ | -273.1500000 C | Statistical extrapolation | Not a lattice node |

The CMB sits 2.474941 K above the confirmed H-mass structural floor. The T-floor cannot be below the absolute zero of the field that generates it — a self-consistency requirement that the standard cooling model does not address.

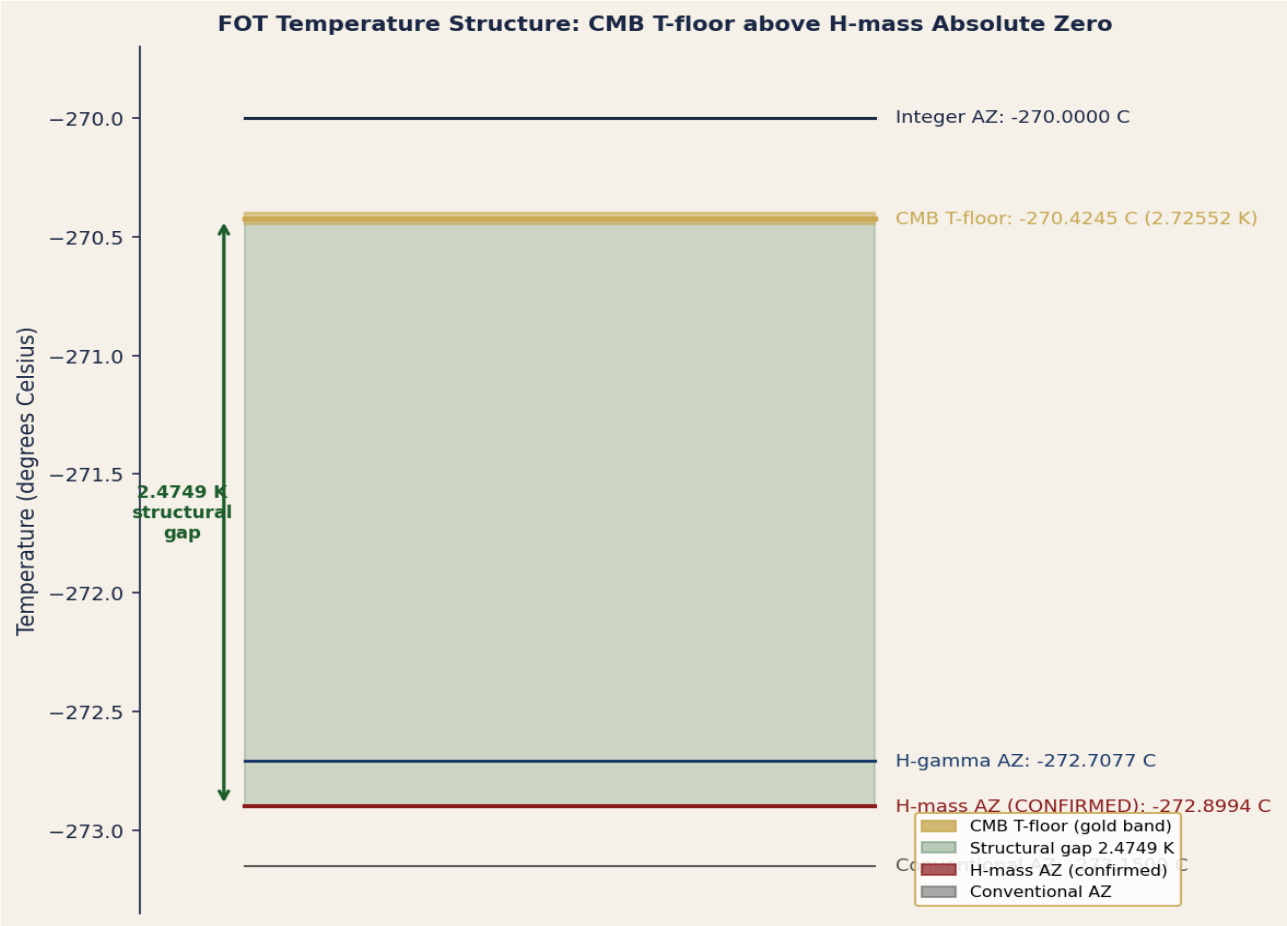


*Figure 2. FOT temperature structure. The CMB T-floor (gold band) sits 2.4749 K above the confirmed H-mass absolute zero (red line). The green shaded region marks the structural gap. All AZ positions are exact {2,3,5,pi} prime-lattice nodes.*

## 6. The Acoustic Peaks as Standing Tau-Field Resonances

The angular power spectrum of the CMB shows a series of acoustic peaks at characteristic angular scales. In the FOT interpretation, the acoustic peaks are standing wave resonances in the ongoing tau-field, not fossilised oscillations. The cavity is the universe itself. Peak positions and amplitudes should be expressible as {2,3,5,pi} lattice ratios — a subject for future FOT investigation.

## 7. The Big Bang in the Force of Time Framework

FOT does not assert no beginning; it asserts that a singular explosive origin is not required. CMB reinterpreted as ongoing tau-field emission. Cosmological redshift: z_alg = 90.14 ppm (Earth positional address), z_orb = 612.47 ppm (pure integer orbital). No metric expansion of space required.

## 8. Formal Propositions: P-CMB-5 through P-CMB-10

**P-CMB-5**

The CMB is not a relic of a singular originating event but the aggregate equilibrium tau-field pressure continuously emitted by all stellar tau-generators in the observable universe. Uniformity reflects the statistical average of approximately 10^24 simultaneous, uncorrelated, structurally identical sources.

**P-CMB-6**

The factor 51,840 = 2 x 25,920 = 2^7 x 3^4 x 5 in T = m_H x 51840 x pi x 10^22 encodes the Great Year — the current, ongoing 25,920-year axial precession cycle of the Earth. Its presence confirms the CMB temperature is a live structural value, not a cooling remnant.

**P-CMB-7**

The uniformity (isotropy) of the CMB to 1 part in 100,000 is a direct consequence of statistical averaging across approximately 10^24 simultaneous uncorrelated stellar tau-generators distributed isotropically across the observable universe. No inflationary mechanism is required.

**P-CMB-8**

The CMB temperature 2.72552 K is a structural standing value anchored to the {2,3,5,pi} prime lattice by the hydrogen mass m_H. Temperatures on a cooling trajectory do not land on prime-lattice nodes. The probability of a cooling trajectory yielding T = m_H x 51840 x pi x 10^22 to within 14 ppm is negligible without structural anchoring.

**P-CMB-9**

The CMB temperature sits 2.474941 K above the confirmed H-mass absolute zero at -(200/27) x C_body = -272.8994223 degrees C. This is the cosmological T-floor — the minimum non-zero tau-field density achievable in the most source-distant regions of the universe. The T-floor and the CMB temperature share the same prime-lattice origin: both derive from m_H.

**P-CMB-10**

The angular power spectrum peaks (acoustic peaks) are standing wave resonances in the ongoing tau-field, continuously maintained by aggregate stellar emission. They are not fossilised oscillations from a primordial plasma epoch. Their positions and amplitude ratios are predicted to encode {2,3,5,pi} lattice structure and should be derivable without free parameters.

## 9. Summary

Five contrasts between the Standard Model and FOT interpretations:

| Question | Standard Model | FOT |
|---|---|---|
| What is the CMB? | Relic radiation from hot plasma ~380,000 yrs after Big Bang | Ongoing aggregate tau-field emission from all stella |

| | | |
|---|---|---|
| Why 2.725 K today? | Coincidence: expansion has cooled it to this value | Structural: T = m_H x 51840 x pi x 10^22 is a fixed |
| Why so uniform? | Inflation stretched a causally connected patch | Statistical average of 10^24 simultaneous sources - |
| What are acoustic peaks? | Frozen sound waves from primordial plasma | Standing tau-field resonances, ongoing, anchored to |
| Is the Big Bang required? | Yes | No — CMB and redshift both explained without singu |

## References


Fixsen, D. J. (2009). The Temperature of the Cosmic Microwave Background. Astrophys. J. 707, 916.

Mather, J. C. et al. (1994). Measurement of the CMB spectrum by the COBE FIRAS instrument. Astrophys. J. 420, 439.

Guth, A. H. (1981). Inflationary universe: A possible solution to the horizon and flatness problems. Phys. Rev. D 23, 347.

Daubney, S. (2024). Force of Time, Vol. I — P-CMB-1 to P-CMB-4.

Daubney, S. (2024). Force of Time — P-TSCALE-1 to P-TSCALE-8 (Temperature Scales).

Daubney, S. (2024). Force of Time — P-RS-1 to P-RS-8 (Redshift Series).

Planck Collaboration (2020). Planck 2018 results. A&A; 641, A1.





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