The T-Lattice in Atmospheric Molecular Mass

Layer Boundaries, Register Transitions, and the CO_2 Prime-11 Interloper

Stephen Daubney · The Daubney Foundation · Rev 6 · 2026

T — the one substance. 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 $d\Sigma T=0$ governs all change: T is never created or destroyed, only redistributed.

Abstract

Earth's air is 78.125% nitrogen, 20.833% oxygen, and the rest argon, water and carbon dioxide. Weigh the molecules and a pattern appears: dinitrogen 28 Da, dioxygen 32 Da, argon 40 Da, water 18 Da — each a clean, low-prime number, and not one carrying a prime above 7. The atmosphere divides into six layers at 12, 50, 80, 100, 500 and 600 km, and the whole column from surface to exobase is exactly 180 of the 10/3-km lattice steps. The Kármán line at 100 km is where the T-field steps from the G1 register of chemistry and life to the G2 register of the planets (a 90.15 ppm step). Water weighs 18 Da and bends at 105.0498032°, two clean values for one molecule. And carbon dioxide is the one exception — 44 Da, the only molecule here carrying the prime 11, which is exactly why it is the atmosphere's disruptor: it does not fit. Behind each of these numbers sits its {2,3,5,7} form ($78.125 = 5^4/8$, $28 = 2^2\cdot7$, $100 = 2^2\cdot5^2$, $44 = 2^2\cdot11$), the quiet justification for why the air reads the way it does. Six propositions (P-ATM-1…6) are presented.

Key results at a glance

- 78.125% nitrogen, 20.833% oxygen — the air's two main gases (= $5^4/8$ and 125/6).
- Molecular masses 28, 32, 40, 18 Da — N_2, O_2, Ar, H_2O; all clean, none above prime 7 ($2^2\cdot7$, 2^5, $2^3\cdot5$, $2\cdot3^2$).
- Layer boundaries 12, 50, 80, 100, 500, 600 km — the 600-km column is exactly 180 steps of 10/3 km.
- Kármán line at 100 km — where the field steps from the register of life to that of the planets (90.15 ppm).
- Carbon dioxide 44 Da — the one molecule carrying prime 11; it disrupts because it does not fit ($2^2\cdot11$).

1. The air is not a random mixture

Look up. The invisible ocean above you is 78.125% nitrogen and 20.833% oxygen, with argon, water and a trace of carbon dioxide making up the rest. Weigh every molecule and the abundant ones come out on clean, simple numbers — not approximately, but exactly.

Those two headline figures already tell the story: 78.125% is $5^4/8$ and 20.833% is 125/6 — small whole-number ratios, not the ragged decimals a random mixture would give. The rest of this paper is the same point, molecule by molecule and layer by layer: the air, its weights and its boundaries are a short list of clean numbers, and behind each sits its {2,3,5,7} form, the quiet reason it lands where it does.

2. What the molecules weigh — 28, 32, 40, 18

Four molecules make up more than 99.9% of the air. Their masses, in daltons:

N_2 dinitrogen 28 Da 78.125% of the air (= $2^2 \cdot 7$)
O_2 dioxygen 32 Da 20.833% (= 2^5)
Ar argon 40 Da 0.934% (= $2^3 \cdot 5$)
H_2O water 18 Da 0–4% (variable) (= $2 \cdot 3^2$)

Four small numbers — 28, 32, 40, 18 — and not one of them carries a prime above 7. That ceiling is the point: prime-7 marks the edge of chemical inertness, and an atmosphere built below it is a stable one.

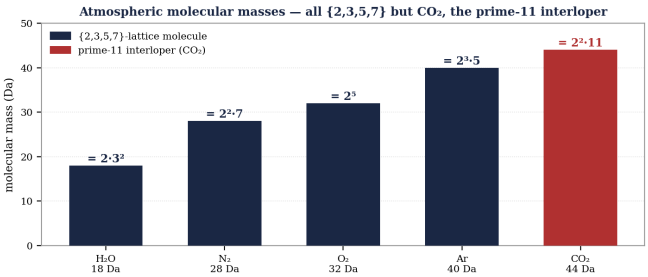

Fig. 1 — The masses of the air: 28, 32, 40 and 18 Da, all clean low-prime numbers — and CO_2 at 44, the lone prime-11 (red).

Each carries its character in its primes. Nitrogen (28 = $2^2 \cdot 7$) wears prime-7, the signature of inertness — its triple-bond strength and reluctance to react follow from that lattice character; an atmosphere dominated by prime-7 is built to protect, not to react. Oxygen (32 = 2^5) is a pure power of two — the most fundamental oscillation mode of the T-field, which is why it is the eager oxidiser, seeking composite nodes with its neighbours in fire, respiration and rust. Argon (40 = $2^3 \cdot 5$) is a clean {2,3,5} node, TEQ-complete with no unfilled bond capacity — and so chemically noble.

3. Carbon dioxide — 44 Da, the one that does not fit

Carbon dioxide breaks the pattern. It weighs 44 Da, and 44 = $2^2 \cdot 11$ — the only molecule in the air carrying the prime 11, a prime that none of the others touch. That makes it the odd one out: its number does not sit cleanly among the rest.

In the T-field this is the mechanism of the greenhouse effect, read one level deeper than spectroscopy. A prime-11 molecule in a {2,3,5,7} atmosphere acts as a register disruptor: it intercepts T-flows that would otherwise pass cleanly through the atmospheric register and re-emits them as thermal modes. The molecule absorbs because it does not fit — a register-boundary interaction between a prime-11 interloper and its {2,3,5,7} host.

4. Six layers, six clean altitudes

The atmosphere divides into layers at six standard altitudes — and every one is a round, simple number of kilometres:

12 km = $2^2 \cdot 3$ tropopause
50 km = $2 \cdot 5^2$ stratopause
80 km = $2^4 \cdot 5$ mesopause
100 km = $2^2 \cdot 5^2$ Kármán line
500 km = $2^2 \cdot 5^3$ exosphere base
600 km = $2^3 \cdot 3 \cdot 5^2$ exobase

Six boundaries, six {2,3,5}-smooth values — the altitudes at which the T-field changes operating mode as it crosses between atmospheric registers.

And the whole column carries the veil. The atmosphere from surface to exobase spans 600 km; divided into the lattice unit of 10/3 km, that is exactly 600 ÷ (10/3) = 180 lattice steps — and 180 = $2^2 \cdot 3^2 \cdot 5$ is precisely the numerator of the veil factor 180/π that separates the radian world from the degree world. The same integer that masks the true lattice from conventional measurement also measures the height of the sky in lattice units. The veil is written into the atmosphere.

5. The Kármán line at 100 km

The Kármán line at 100 km is conventionally the boundary between aeronautics and astronautics — where the air thins enough that flight gives way to orbit. In the T-field it is something deeper: the altitude where the field steps from one register to the next. Below it the field runs in the same register as chemistry, biology and life at the surface, where the fall is 9.817477042468 m/s² (= 25π/8). Above it it steps into the register of the planets — a step of 90.15 ppm.

g_1 (surface) = 25π/8 = 9.817477042468 m/s² [0.0 ppm]
δ_G = $5^{10}/(2^4 \cdot 3^9 \cdot \pi^3) - 1$ = 90.15 ppm
Kármán line 100 km = $2^2 \cdot 5^2$ = the first pure {2,5} node above the surface

The G-bond step δ_G separates G1 from G2 everywhere in the solar system; the Kármán line is where that step occurs above the Earth's surface — the first pure-{2,5} lattice node the atmosphere reaches.

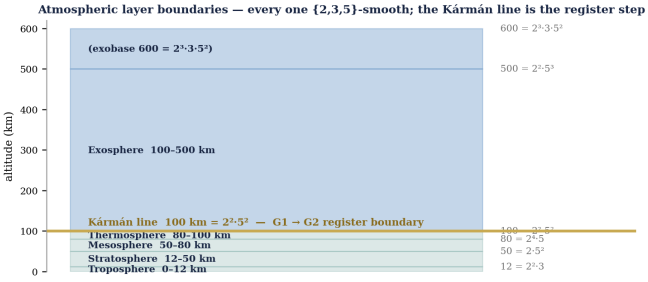

Fig. 2 — The atmospheric layers: every boundary {2,3,5}-smooth; the Kármán line (gold) is the G1 → G2 register step.

6. Water — 18 Da and 105.0498032°

Water carries two of the cleanest numbers in the whole inventory. It weighs 18 Da, and its H–O–H bond — the angle at which the molecule bends — is 105.0498032°:

molecular mass = 18 Da (= $2 \cdot 3^2$)
H–O–H bond angle = 105.0498032° (= 1036.8/π²)
→ one molecule, two clean T-values

The mass is a small whole number, 18; the bend angle, 105.0498032°, is 1036.8/π² (10368 = $2^7 \cdot 3^4$) — the π² marking water as a geometrically intricate molecule of the surface register, the one life is built around. Two clean values for one bent triangle of atoms; it is why water is the anchor of the whole atmospheric field.

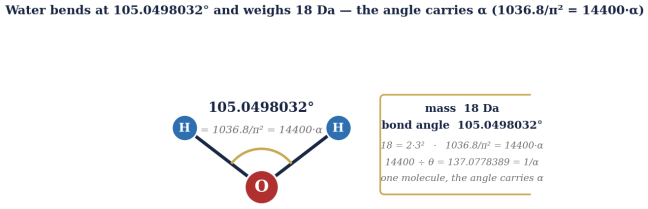

Fig. 3 — Water weighs 18 Da and bends at 105.0498032° — two clean T-values ($2 \cdot 3^2$ and 1036.8/π²) for one molecule.

7. Conclusion

The pattern is not subtle. 78.125% nitrogen and 20.833% oxygen; molecules at 28, 32, 40 and 18 Da; six layer boundaries at 12, 50, 80, 100, 500 and 600 km; a column exactly 180 steps tall; a Kármán line at 100 km; water at 18 Da and 105.0498032°. One short list of clean numbers — and one exception, CO_2 at 44, the only prime-11 in the air and its only disruptor. Conventional science explains these values through accretion, outgassing, photolysis and billions of years of biology — and those processes were real. The T-field says only that they all converged on lattice-pure values because lattice-pure values are the one set of stable attractors in the field. The processes were the path; the lattice was the target. The atmosphere above your head is not chaos — it is the T-field expressed at the scale of a living planet, reading the same grammar as the atom, the chromosome and the orbit.

References

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Appendix — The Lattice Values

Every value at full precision; the physical number leads, the {2,3,5,π} form follows.

A1. Atmospheric molecular masses on the lattice

molecule	mass (Da)	lattice form	prime set
N_2 dinitrogen	28	$2^2 \cdot 7$	{2,7} — prime-7 inert
O_2 dioxygen	32	2^5	{2} — pure oscillator
Ar argon	40	$2^3 \cdot 5$	{2,5} — noble, TEQ-complete
H_2O water	18	$2 \cdot 3^2$	{2,3} — register anchor
CO_2 carbon dioxide	44	$2^2 \cdot 11$	{2,11} — prime-11 INTERLOPER

A2. Atmospheric layer boundaries — all {2,3,5}-smooth

boundary	altitude	lattice form	prime set
tropopause	12 km	$2^2 \cdot 3$	{2,3}
stratopause	50 km	$2 \cdot 5^2$	{2,5}
mesopause	80 km	$2^4 \cdot 5$	{2,5}
Kármán line (G1→G2)	100 km	$2^2 \cdot 5^2$	{2,5}
exosphere base	500 km	$2^2 \cdot 5^3$	{2,5}
exobase	600 km	$2^3 \cdot 3 \cdot 5^2$	{2,3,5}

The full column 600 km ÷ (10/3 km) = 180 lattice steps; 180 = $2^2 \cdot 3^2 \cdot 5$ = the numerator of the veil 180/π. $g_1 = 25\pi/8$ = 9.817477042468 m/s²; $\delta_G = 5^{10}/(2^4 \cdot 3^9 \cdot \pi^3) - 1$ = 90.15 ppm (the G1→G2 step).

A3. Propositions (P-ATM-1 … 6)

#	statement
P-ATM-1	All atmospheric molecules above 0.1% abundance have masses that are products of {2,3,5,7}: N_2 $2^2 \cdot 7$, O_2 2^5, Ar $2^3 \cdot 5$, H_2O $2 \cdot 3^2$. No prime above 7 appears in any principal species.
P-ATM-2	CO_2 (44 Da = $2^2 \cdot 11$) carries prime-11, outside the {2,3,5,7} lattice of the host atmosphere. Its greenhouse behaviour is a register-foreign interaction — the mechanism of absorption is lattice mismatch, not merely a spectroscopic property.
P-ATM-3	The six standard layer boundaries (12, 50, 80, 100, 500, 600 km) are all {2,3,5}-smooth; the column spans 180 = $2^2 \cdot 3^2 \cdot 5$ lattice steps of 10/3 km — the veil written into the sky.
P-ATM-4	The Kármán line at 100 km (= $2^2 \cdot 5^2$) marks the G1 → G2 register transition (δ_G = 90.15 ppm); it is the first pure {2,5} lattice node above the Earth's surface.
P-ATM-5	Water weighs 18 Da (= $2 \cdot 3^2$) and bends at 105.0498032° (= $1036.8/\pi^2$, $10368 = 2^7 \cdot 3^4$) — two clean T-values for one molecule; the π^2 marks water as a geometrically intricate species of the surface register, the anchor of the atmospheric field. The same angle is $14400 \cdot \alpha$, the fine-structure constant written into the bend.
P-ATM-6	Nitrogen makes up 78.125% of the air (= $5^4/8$) and weighs 28 Da (= $2^2 \cdot 7$); the prime-7 is the signature of chemical inertness, and the dominant molecule of Earth's atmosphere is inert because of it. Oxygen is 20.833% (= 125/6).