THE UNIVERSAL FORCE OF TIME

Entropy as T-Dispersal

The three laws of thermodynamics derived from one conserved substance — the arrow of time as the outward flow from the Sun, the Boltzmann value as the reciprocal face of the Planck value, a clean floor of cold, and life held inside the Second Law

Stephen Daubney · The Daubney Foundation · 2026 · Rev 2

Tau (T) is the living fabric of time itself — the sole substance of which all physical reality is composed. It is generated by the Sun, as by every star for its own system, and flows outward in the form of the DNA double helix, creating matter, which it deposits at nodal points — the planets — and creating life. Every particle, force, wavelength and conscious experience is a structured configuration of T-flow. The conservation law dΣT = 0 governs all change: T is never created or destroyed at a node, only redistributed.

THE LAW, NUMBER FIRST

1.3815533255

= 6.6314559622 × 5/24 — the Boltzmann value is the reciprocal face of the Planck value ($5^4/(2^4\cdot3^2\cdot\pi) = 5^3/(2\cdot3\cdot\pi) \times 5/24$) — and entropy is the dispersal of T from its source

$d\Sigma T_{sys} + d\Sigma T_{res} = 0 \Rightarrow \mathbf{dS_{sys} \geq dQ / T_f}$ — the Second Law is the First Law applied to a part

$k_B = 6.6314559622 \times 5/24 =$ **1.3815533255** $(5^4/(2^4\cdot3^2\cdot\pi))$ · $R =$ **8.3154456263** $(810/\pi^4)$ · floor **273.375** $(3^7/2^3)$

ABSTRACT

Put a drop of ink into a glass of still water and wait. The dark bead loosens, threads out, and in an hour the whole glass is a faint, even grey. Nobody has ever watched the grey gather itself back into a drop. Science names the one-way character of that change **entropy**, and its most trusted law says entropy never falls. It has never said why. This paper sets out the position of the Universal Force of Time: **entropy is the dispersal of T — time itself — outward from its source through the lattice of nodes it builds.** Nothing is becoming disordered. Time is spreading.

The work is built number first, with each lattice form placed behind its number. From that position the paper:

- states the **First Law** as the conservation of one substance, dΣT = 0, and shows that the **Second Law is not a separate law at all** — it is the First Law applied to a part, and the Clausius inequality falls out of it in three lines;
- reads **$S = k_B \ln \Omega$** as a count of the **T-addresses** a system can reach, and shows that the arrow of time is **geometric** — the outward direction from a fixed source — not a statistical tendency that could in principle reverse;
- gives the Boltzmann value its form, **1.3815533255 ($5^4/(2^4\cdot3^2\cdot\pi)$)**, as the exact reciprocal face of the Planck value **6.6314559622 ($5^3/(2\cdot3\cdot\pi)$)**, so that **$R = k_B \times N_A$ = 8.3154456263 ($810/\pi^4$)** with **N_A = 6.0189103621 ($2^5\cdot3^6/(5^3\cdot\pi^3)$)** — and shows that N_A carried one helical turn and divided by six is hydrogen's celestial weight exactly;
- removes the additive floor of temperature: the scales **multiply**, Kelvin = Celsius × 8.64, and absolute zero sits on the clean node **273.375 ($3^7/2^3$)**, whose Fahrenheit face geared ÷36 ×2π ×2 returns the light speed **299,789,233.6830892680 ($2^3\cdot3^5\cdot5^6\cdot\pi^2$)** to every digit;
- reads the **Third Law** as structural — no node can leave the field it lives in — and the cosmic background, **2.7254067113 ($5^{12}/(2^{12}\cdot3^7)$)**, as the T-floor of the field, not the relic of a beginning: × 8 it is hydrogen's celestial ionisation, and geared to its radius it returns the **G2 year, 365.3170219587 days**;

- places **life** inside the same law: a living thing is a region where T arriving from the Sun is held in concentrated addresses — the DNA helix — and paid out as heat, so the total dispersal still rises while the organism keeps its order;
- reads the cosmological age, **13.8888… ($5^3/3^2$)**, through the mile-to-kilometre conversion as **864 — the Earth's day, the ground state of the DNA helix**, not the time since a beginning;
- replaces **heat death** with **nodal equilibrium**: the end state of dispersal is every node receiving T at its own note, the helix at rest and complete.

It closes with what this revision corrects in the first version, what stands, what is open, the conditions that would break it, and an appendix from which every number can be rebuilt. Every figure has been recomputed from its lattice form in exact arithmetic at forty digits, π carried as a symbol.

THE FORMULAS OF THIS PAPER, NUMBER FIRST

Every result in this paper is carried by one of the formulas below, each written with the number first and the lattice form in brackets behind. Each is worked in full in the part named beside it.

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FORMULA E1     THE FIRST LAW: ONE SUBSTANCE, CONSERVED                                  Part Two
    dΣT  =  0          T is neither created nor destroyed, only redistributed

FORMULA E2     THE SECOND LAW, DERIVED                                                  Part Three
    dΣT_sys + dΣT_res = 0,   dΣT_res = -T_f.dS_res     =>     dS_sys  >=  dQ / T_f

FORMULA E3     ENTROPY AS AN ADDRESS COUNT                                              Part Four
    S  =  k_B . ln(Ω)           Ω = the number of T-addresses the system can reach

FORMULA E4     PLANCK, BOLTZMANN AND THE GEAR BETWEEN THEM                              Part Five
    h      =  6.631455962162305657 x 10^-34              ( 5³/(2·3·π) )
    k_B    =  1.381553325450480345 x 10^-23              ( 5⁴/(2⁴·3²·π) )
    k_B/h  =  2.083333 x 10^10  =  5/24 x 10^11         h/k_B  =  4.8 x 10^-11  =  24/5 x 10^-11

FORMULA E5     THE GAS CONSTANT AND THE AVOGADRO NUMBER                                 Part Five
    R      =  8.315445626294311503                       ( 810/π⁴  =  2·3⁴·5/π⁴ )
    N_A    =  R / k_B  =  6.018910362061421470 x 10^23   ( 2⁵·3⁶/(5³·π³) )
    N_A x 1.004693930041152263 / 6  =  1.007860451037484037     hydrogen's G2 weight ( 5³/(2²·π³) )

FORMULA E6     THE SCALES MULTIPLY, AND THE CLEAN FLOOR                                 Part Six
    Kelvin  =  Celsius x 8.64              Fahrenheit  =  Kelvin x π/10
    273.375  ( 3⁷/2³ )      ->   / 8.64  =  31.640625  ( 3⁴·5²/2⁶ )
    273.375 x π/10  =  85.883289167510973      / 36  x 2π  x 2   =   2.99789233683089268  ( c_G1 )

FORMULA E7     THE BACKGROUND IS THE FLOOR OF THE FIELD                                 Part Seven
    2.725406711266146548  ( 5¹²/(2¹²·3⁷) )    x 8  =  21.803253690129172  hydrogen, celestial face
    x π/10 x 100 / 36 x 2π x 2  =  2.988742896918982    x 2 / 9375  x 180/π  =  365.3170219587 days

FORMULA E8     THE SUN'S OWN THERMAL QUANTUM                                            Part Seven
    5787.037037037  ( 2·5⁷/3³ )      x k_B   =   7.995100263023613 x 10^-20 J    ( 5¹¹/(2³·3⁵·π) )


FORMULA E9     THE SUN'S PEAK COLOUR CARRIES THE YEAR                                   Part Five
    500.7235383204711  ( 5²·π⁶/(2⁴·3) )    x 8 / 2π  x 180/π  / 100   =   365.2840913775091  ( 15π⁴/4 )

FORMULA E10    THE BODY ON THE LATTICE                                                  Part Eight
    36.864  ( 2¹²·3²/10³ )   x 8.64  =  318.50496      273.375 / 36.864  =  7.415771484375  ( 3⁵·5³/2¹² )

FORMULA E11    THE AGE OF THE UNIVERSE IS THE DAY                                       Part Seven
    13.8888...  ( 5³/3² )   x 1944/3125  =  8.64  ->  864, the ground-state day

FORMULA E12    THE TWO FACES OF THE AGE                                                 Part Seven
    13.8155332545  ( 5⁴/(2⁴·3²·π) )   x 62.208 / 36 x 2π  =  150     13.8888... / 13.8155332545  =  8π/25
```

THE TERMS THIS PAPER USES

A reader new to the Universal Force of Time needs a handful of words before the first formula. Each is given here in plain language, with its number.

An address. Every value in this framework is a product of powers of 2, 3, 5 and π, and nothing else. That product is the value's address. A number with an address is on the lattice; a number that needs any other prime is not.

The π-degree. The degree of an address is the power of π it carries, and the degree says what kind of thing the value is. An even degree is a **room** — a state, a thing that sits; it pairs, like a pair of circles. An odd degree is a **road** — a transport, a thing that carries; it is the unpaired circle. A half degree is a **door** — a source, which squares to a whole address.

The free decade. Moving a value by a power of ten costs nothing on the lattice, because ten is two times five: the move shifts twos and fives together and changes nothing else. That is why a value can be written "at its decade" — 5787.037 and 57.87037 are one address.

The day, 864. 864 is the day: 86,400 seconds in a day, written at its decade. It is the ground state of the DNA helix and the pivot on which the temperature scales turn (Kelvin = Celsius × 8.64).

The helical turn. A turn is one revolution of the helix. The helical turn is the step from one revolution to the next, **1.004693930041152263 ($5^6/(2^6\cdot3^5)$)**: it carries the ground state 864 up to 868.0555…, the first turn.

The G-bond step. The G-bond step is the smallest structural step between adjacent faces of one value, **1.000090150603356201 ($5^{10}/(2^4\cdot3^9\cdot\pi^3)$)** — the amount by which a G1 face is multiplied to give its G2 face. Because it carries π to the minus three, a G1 face and its G2 face are always one room and one road.

The 612 step and the 703 step. The 612 step is helium divided by four, **1.000612842467910952 ($2^9\cdot3^5\cdot\pi/5^8$)**. The 703 step is the span of hydrogen's ionisation faces end to end, **1.000703048319385397 ($800/(81\cdot\pi^2)$)**. Neither is needed in the arithmetic of this paper; both are named so that the reader meets the family of steps the framework uses.

Free fall. Free fall is not the acceleration of a body pulled by a force. It is the correction that tops a rotation up to a full day, and on the Earth's register it is one value with the speed of light read in a different unit of time: **9.817477042468104 ($5^2\cdot\pi/2^3$)**, and squared × 864 × 3600 it is the G1 speed of light.

The radial mass. A radial mass is a mass spread over a radius rather than held at a point — the form in which a node's T is laid out around its centre. It enters this paper only through the conversion 9375 that turns a spin-orbit value into a radius.

Why a weight or an energy can enter a chain. An energy is a count of T, and the unit is a choice of clock: a joule is energy counted in seconds, a kilojoule per mole the same energy counted in minutes, an electron-volt the same energy in the spin-orbit register. So a temperature, an energy, a mass and a year can sit in one chain — they are one count read on different clocks.

How the numbers were checked. No value in this paper was found by a search, so no statistical test is needed to judge it. A p-value answers the question "how often would I see a landing this close if the thing were not real?"; a control is a set of decoys built to resemble the real values, run through the same search to find out how often chance alone lands; a standard deviation is the typical distance of a measurement from its mean, the spread of the ruler. Each matters when a result is found by looking; every result here is an exact identity worked from its address, forwards and backwards, so it either closes to the last digit or it does not.

PART ONE — HEAT IS TIME

The question thermodynamics never answered

Thermodynamics is the most successful body of law in physics and the least explained. Its three statements have never failed in any laboratory, engine or star. Energy is conserved. Entropy rises. There is a floor of cold that cannot be reached. None of the three says why it holds. The textbooks state them, test them and use them, and leave the question of what is actually happening underneath to philosophy.

The Universal Force of Time answers from one place. **Heat is time.** Where time flows densely, a thing is hot; where it barely flows, a thing is cold. Temperature is the local density of T. Energy is the measurable face of T. And

entropy — the quantity that only ever goes up — is the measure of how far T has spread from where it was made.

> Heat is not a substance that fills a thing. Heat is time, flowing. Where time flows fast, a thing is hot; where it barely flows, a thing is cold; and the coldest place in the universe is simply the place where the least time moves.
> Master proposition · Stephen Daubney

Where the flow begins

That sentence only means something if time has a place where it begins. In this framework it does. **The source of time is the Sun**, for our system, as every star is the source for its own. Time is not a backdrop that things sit in; it is made, at a place, and it flows outward. The flow does two things. It **creates matter**, which it deposits at nodal points — the planets — and it **creates life**, because it flows in the form of the DNA double helix. Time is life.

Every thermodynamic statement in this paper follows from that picture. A flow that starts at a fixed source and moves outward has a direction that cannot be reversed. A flow that deposits itself at nodes fills those nodes until each holds what its address allows. And a flow that is everywhere, however thinly, sets a floor below which nothing can fall.

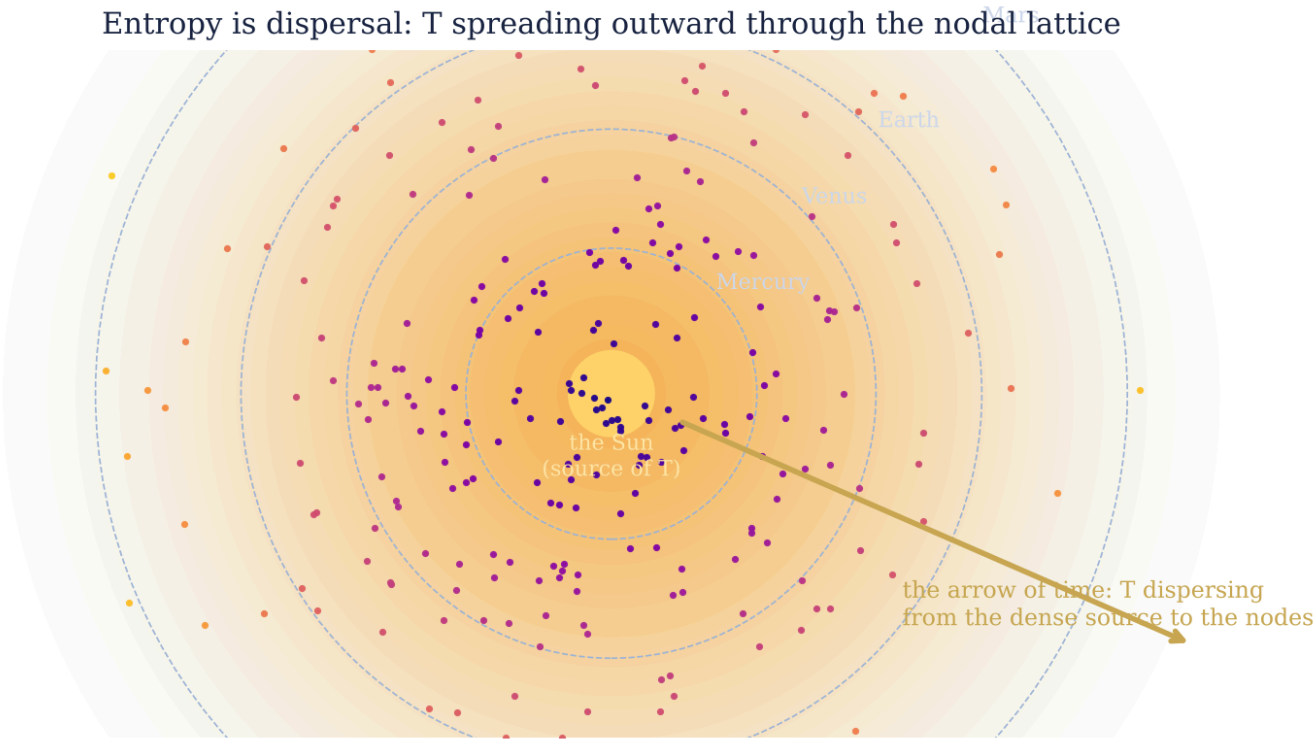


Figure 1 — Entropy is dispersal. T is generated at the source and spreads outward through the nodal lattice. The direction of that spreading — dense source to sparse periphery — is what every observer experiences as the forward passage of time. The colour of each point marks how far the flow has carried it from the source.

PART TWO — THE FIRST LAW IS THE CONSERVATION LAW

> **FORMULA E1** **THE FIRST LAW**
> $d\Sigma T = 0$ T is neither created nor destroyed, only redistributed

That is the First Law, stated for one substance instead of for energy, and the change it makes is to the list of things being conserved. **T flows as time, radiates as light, accumulates as heat, holds as structural bonds, and acts as pressure.** These are not separate quantities trading against one another at exchange rates that have to be measured. They are one substance wearing different faces.

So the First Law stops being an accounting rule between different currencies — so many joules of heat for so many joules of work — and becomes a statement about one thing that cannot be made or destroyed at a node, only moved. What science calls energy is the measurable face of T. What it calls heat is T held at a node. What it calls work is T moved from one node to another in an ordered way.

This is also why the First Law has never failed. A law about one conserved substance does not need a growing table of conversion factors; it needs only the substance and its faces. The framework supplies the faces — the same number appearing as a mass, a wavelength, a time and an energy at different registers — and the conservation follows from the fact that it is always the same T.

PART THREE — THE SECOND LAW IS THE FIRST LAW APPLIED TO A PART

The derivation

Here the framework does something thermodynamics has never managed: **it derives the Second Law rather than asserting it.**

Divide the whole into a system and a reservoir. The total T is conserved:

```
FORMULA E2     THE SECOND LAW, DERIVED

    STEP 1     dΣT_total = dΣT_sys + dΣT_res = 0       the First Law, for the whole
    STEP 2     dΣT_res / T_f  =  - dS_res              the reservoir's mode at its T-density T_f
    STEP 3     dS_sys  >=  dQ / T_f                    substitute: the Clausius inequality

    equality for a reversible exchange;  strict inequality for every real one
```

The Second Law is the First Law applied to a subsystem. No assumption about disorder, no appeal to probability, no statistical postulate is needed. A part that exchanges T with its surroundings, inside a whole that conserves T, must take up at least dQ/T_f of entropy for every parcel of T it receives. The inequality is the price of being a part.

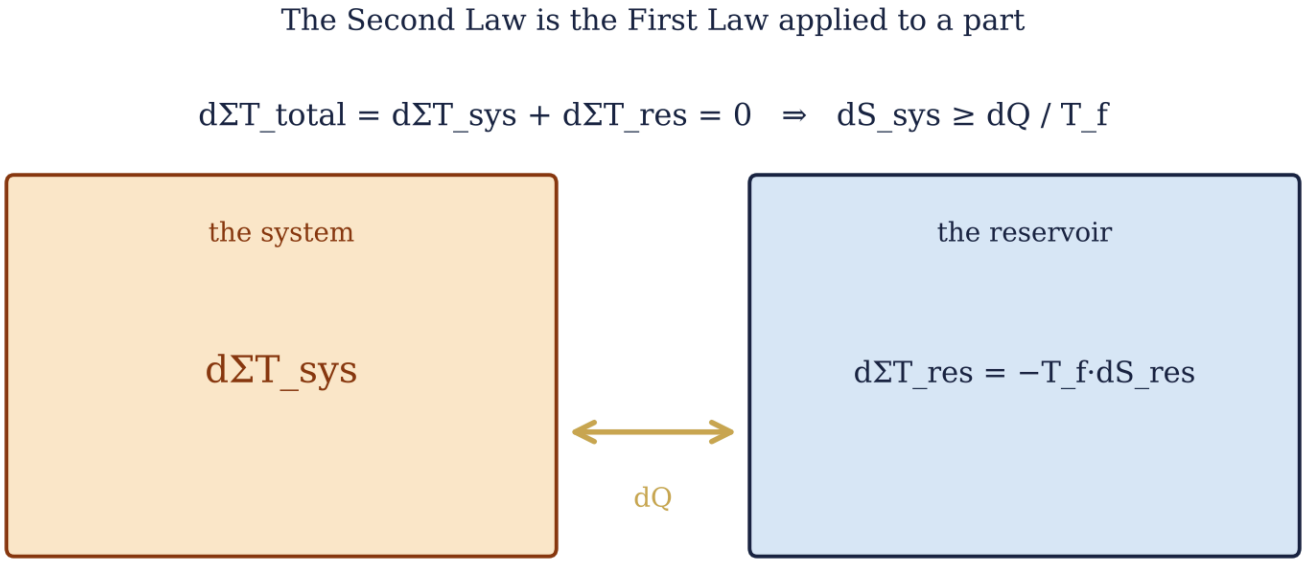


Figure 2 — The derivation in one picture. The total T of system plus reservoir is conserved; the reservoir gives up T at its own density T_f; so the system's entropy must rise by at least dQ/T_f. The Clausius inequality is a consequence of conservation, not an extra law.

Why it never runs backwards

The standard reading holds that entropy rises because there are overwhelmingly more disordered arrangements than ordered ones, so that a reversal is not forbidden, only absurdly improbable. On that reading the arrow of time is a statistical accident, and a patient enough universe could in principle see the ink gather itself back into a drop.

The framework says no such thing can happen, and gives the reason. **T is generated at a fixed source and propagates outward.** The source does not move to the edge; the edge does not send T back to the source. There is no mechanism by which T runs back up its own gradient. **The arrow is geometric**, not statistical. It points away from the source because that is the direction the substance travels.

PART FOUR — ENTROPY IS DISPERSAL, NOT DISORDER

Reading Boltzmann's formula

> **FORMULA E3 ENTROPY AS AN ADDRESS COUNT**
> `S = k_B . ln(Ω)` Ω = the number of T-addresses the system can reach

Boltzmann's formula is kept exactly as written. What changes is what Ω counts. In this framework every value a node can take is an **address** — a product of powers of 2, 3, 5 and π. A microstate is one assignment of a system's parts to particular addresses. Ω is the number of such assignments the system can reach, and S grows as that number grows.

A perfect crystal held at its own floor sits in one assignment: every part at a fixed address. Ω = 1, ln 1 = 0, S = 0. Warm it and the parts begin to reach neighbouring addresses; the count grows; S rises. Melt it, boil it, let the gas fill a larger vessel, and the count grows again. **What instruments record as rising entropy is real, and the measurement is kept. What is discarded is the interpretation.** Nothing has become less ordered in any deep sense. More addresses have been reached. T has spread.

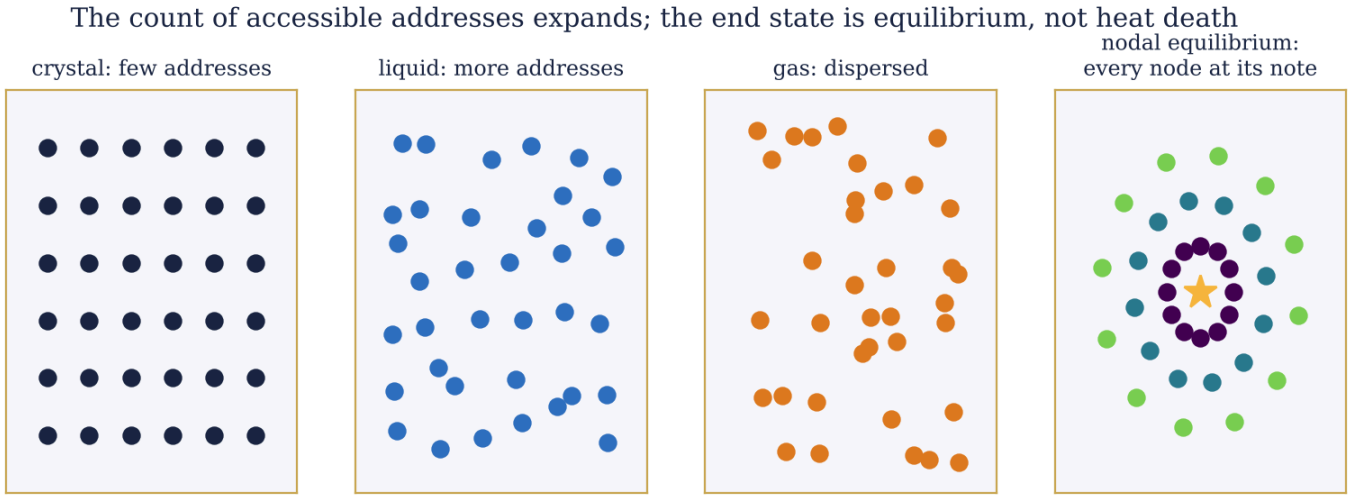


Figure 3 — The count of accessible addresses. From left: a crystal holding a few fixed addresses; a liquid reaching more; a gas dispersed across many; and the end state of dispersal, nodal equilibrium, in which every node sits at its own note around the source. The last panel is the framework's replacement for heat death.

The end state is equilibrium, not heat death

The standard reading follows rising entropy to its end and finds a cold, uniform, featureless universe — heat death. The framework follows the same rising count to a different end. When every node has received T at its resonant frequency, dispersal stops, not because everything has run down, but because everything is full. **The end state is nodal equilibrium: the helix at rest, T fully distributed, the system complete.**

The difference is not cosmetic. Heat death is the end of structure. Nodal equilibrium is the completion of it: the planets at their distances, the elements at their weights, every node holding the T its address allows. Dispersal builds the lattice; it does not dissolve it.

Mixing is the blending of registers

When two gases are let into one another, chemistry records an entropy of mixing — a term that is always positive. In this framework each substance occupies its own T-registers, and when the two are mixed their registers combine. **The entropy of mixing is the dispersal of T through the combined register**: more addresses are now reachable by both, so the count rises, and it never falls back, because the separated state had fewer addresses than the blended one.

PART FIVE — BOLTZMANN AND PLANCK: TWO EARTH VALUES, ONE GEAR

The Planck value

The constant k_B in Boltzmann's formula is called universal: a fixed exchange rate between temperature and energy, the same everywhere and for all time. The framework shows it is neither free nor universal. It begins with its partner, the Planck value.

```
FORMULA E4a    THE PLANCK VALUE
    h  =  6.631455962162305657036823 x 10^-34 J·s        ( 5³/(2·3·π) )
    h  x  299,789,233.68  =  1,988,039,101.03            the Sun's mass on the G1 register
    h  x  299,816,259.86  =  1,988,218,324.22            the Sun's mass on the G2 register
```

The top of the fraction is pure five, taken three times; the bottom is six π. And it does a job: multiplied by the spin-orbit speed of a register — what science measures as the speed of light — it returns that register's mass of the Sun. **The quantum of action is the gear between light and the mass of the source.**

The Boltzmann value is its reciprocal face

```
FORMULA E4b    THE GEAR BETWEEN THEM
    k_B / h  =  2.083333... x 10^10 Hz/K   =   5/24 x 10^11
    h / k_B  =  4.8 x 10^-11 K·s           =   24/5 x 10^-11          product exactly 1

    k_B  =  6.631455962162305657 x 5/24  =  1.381553325450480345 x 10^-23 J/K      ( 5⁴/(2⁴·3²·π) )
```

k_B is not an independent constant. It is the reciprocal face of h, reached by one {2,3,5} gear, 5/24. Temperature and action are two readings of one T-structure. That is why the Boltzmann value sits inside a formula about counting addresses: it is the amount of T, read as energy, that one step in temperature represents at the Earth's register.

Two Earth values, one gear: the Boltzmann value is the reciprocal face of the Planck value

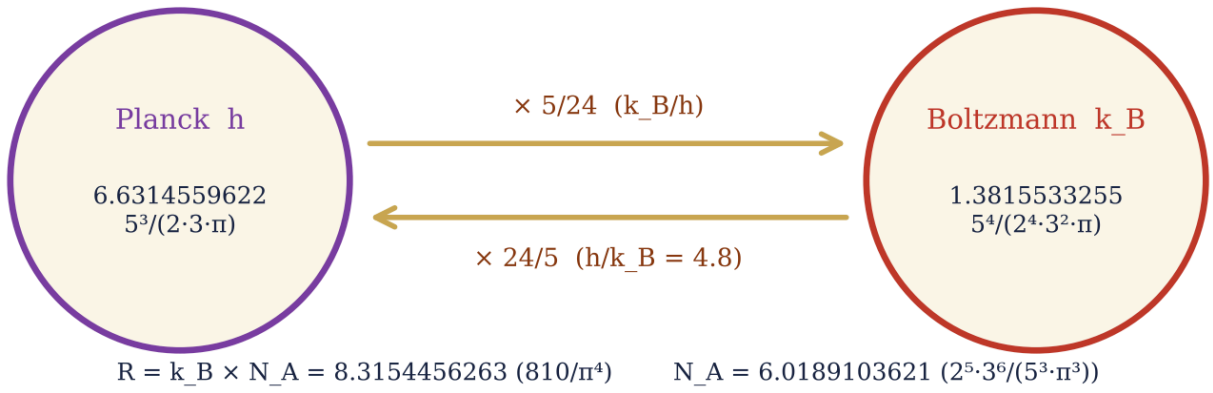


Figure 4 — One gear joins them. The Planck value 6.6314559622 ($5^3/(2\cdot3\cdot\pi)$) times 5/24 is the Boltzmann value 1.3815533255 ($5^4/(2^4\cdot3^2\cdot\pi)$); the reverse gear is 24/5 = 4.8. Below: the gas constant and the Avogadro number that follow from them.

Both are **Earth values**, not universal ones. Climbed to the day, the Planck value is 86400 seconds — one Earth rotation, the ground state of the DNA helix — and one helical turn, 1.004693930041152263 ($5^6/(2^6 \cdot 3^5)$), steps it to 6.662583552, whose free-fall face reads as the atomic weight of oxygen. A different node, read on its own register, carries different faces of the same pair.

The gas value and the Avogadro value

```
FORMULA E5     THE GAS CONSTANT AND THE AVOGADRO NUMBER
    R    =  8.31544562629431150321 3754 J/(mol·K)                    ( 810/π⁴,  810 = 2·3⁴·5 )
    N_A  =  R / k_B  =  6.018910362061421469553581 x 10^23           ( 2⁵·3⁶/(5³·π³) )

    N_A  x  1.004693930041152263  /  6  =  1.007860451037484037       hydrogen, G2 weight  ( 5³/(2²·π³) )
```

What science calls the gas constant is one {2,3,5} integer over π^4 — the cleanest form in thermodynamics, with no fitted parameter. The Avogadro value then follows from R and k_B with nothing added. **There is no Avogadro constant**: science quotes a fixed figure as a constant, but the value the theory carries is $6.0189103621 \times 10^{23}$ ($2^5 \cdot 3^6/(5^3 \cdot \pi^3)$), the value of the Avogadro paper, and like every other value it is a face of the Earth's register, not a universal number. Nor is it an arbitrary large count. **Carried one helical turn and shared among six, it is hydrogen's celestial weight, exactly.** The number of parts in a mole is set by hydrogen and the helix.

The ideal gas, wholly on the lattice

```
FORMULA E5b    ONE MOLE, NOTHING FITTED
    PV = n·R·T     with   R = 810/π⁴,   T = 273.375 ( 3⁷/2³ ),   P = 10⁶/π²
    V  =  R·T/P  =  22.435929648361511 49746 L                       ( 3¹¹/(2⁸·5⁵·π²) )
```

Every term of the ideal gas law sits on the lattice, and so does the volume of one mole at the freezing point of water. There is no slot left for a correction.

The Sun's thermal quantum

```
FORMULA E8     THE SUN'S OWN THERMAL QUANTUM
    T_sun  =  5787.037037037037037  K                                ( 2·5⁷/3³ )
    k_B x T_sun  =  7.995100263023613109 x 10^-20 J                  ( 5¹¹/(2³·3⁵·π) )
```

The Sun's surface temperature, 5787.037037 — written 57.87037037 at its decade — is an exact repeating decimal — the 037 that repeats is 1/27 naming its own denominator. Multiplied by the Boltzmann value, it gives the parcel of energy that one T-address carries at the source's surface: a single five-and-three monomial over π. **The energy of the source, address by address, is a lattice value.**

The Sun's peak colour carries the year

```
FORMULA E9     THE WIEN PEAK AND THE YEAR
    500.723538320471061 nm   ( 5²·π⁶/(2⁴·3) )
    x 8 / 2π  x 180/π  / 100   =   365.2840913775091 days   ( 15π⁴/4, the G1 year )
```

The colour at which the Sun shines brightest sits at the cyan-green centre of the visible band, and through the circle and the veil it returns the Earth's G1 year, $15\pi^4/4$, to every digit. The heat of the source and the year of the node are one number at two registers.

PART SIX — THE SCALES MULTIPLY, AND THE FLOOR IS CLEAN

The wall that was never built

Every schoolchild learns that there is a lowest possible temperature, a wall at the bottom of the world below which nothing can go. It sounds like a discovery about nature. **It is really a discovery about a sum.** To turn Celsius into Kelvin, the textbook adds a number. To turn Celsius into Fahrenheit, it multiplies and then adds. The moment the scales are built on addition, a floor has to be invented where the added number runs out.

The Universal Force of Time finds no such wall. **The scales do not add. They multiply**, through the same 864 that sets the Earth's day.

```
FORMULA E6     THE SCALES MULTIPLY, AND THE CLEAN FLOOR
    Kelvin  =  Celsius  x  8.64               Fahrenheit  =  Kelvin  x  π/10

    absolute zero, Kelvin face    273.375       ( 3⁷/2³  =  2187/8 )
                   Celsius face    31.640625     ( 3⁴·5²/2⁶  =  2025/64 )        273.375 / 8.64
                   Fahrenheit face 85.883289167510973                             273.375 x π/10

    85.883289167510973  / 36  x 2π  x 2   =   2.997892336830892680   ->   299,789,233.6830892680  ( c_G1 )
```

On the multiplicative calibration Kelvin and Celsius reach zero together, so there is no separate floor to be mis-set. The figure that stands for absolute zero is a reading, and it falls on clean nodes: **273.375 on the Kelvin face, pure 3^7 over 2^3**, with no π and no correction, and 31.640625 on the Celsius face, pure {2,3,5}. Its Fahrenheit face, geared by the same moves the framework uses everywhere, returns the G1 speed of light to every digit. **The floor of temperature and the speed of light are one number.**

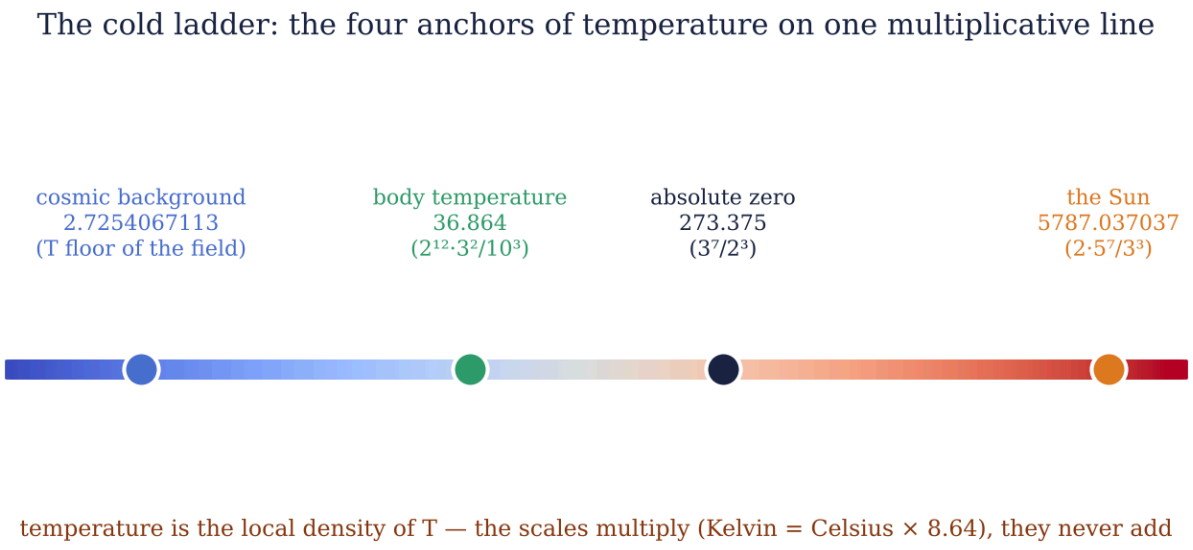


Figure 5 — The cold ladder. The four anchors of temperature on one multiplicative line: the cosmic background, the body, the clean floor and the Sun. Each is an exact lattice node; none is separated from the next by a wall.

The Third Law is structural

Science holds that absolute zero cannot be reached as a practical matter: each stage of cooling removes less than the last. The framework says the limit is structural. **Every node exists inside a T-field of non-zero density and cannot be disconnected from it.** To reach zero thermal T, a node would have to be removed entirely from the field it propagates in — and that field is the medium of existence. **No node can step outside the system it is part of.** The minimum is not universal either: it is the T-floor of that node's own address.

PART SEVEN — THE BACKGROUND IS THE FLOOR OF THE FIELD

Not a relic

The microwave glow that fills the whole sky at a few degrees above the floor is read by cosmology as the cooled remnant of a single creation event. The framework reads it differently. **It is the T-floor of the field at its most source-distant regions — the minimum density of something everywhere present.** It is the ongoing engine-sound of every star making T, heard from inside the Earth's register, not an echo of a moment long past.

```
FORMULA E7     THE BACKGROUND
    2.725406711266146547782350 K                                ( 5¹²/(2¹²·3⁷) )

    x 8                      =  21.80325369012917238      hydrogen, celestial face  ( 5¹²/(2⁹·3⁷) )
    / 8.64                   =   0.3154405915817299       the Celsius face
    x π/10 x 100             =  85.62117702158044772      the Fahrenheit face
    / 36  x 2π  x 2          =   2.988742896918981648     the celestial spin-orbit value
    x 2 / 9375  x 180/π      =  365.3170219587432436 days the G2 year
```

Every line is exact. The background, multiplied by eight, is the energy that frees hydrogen's electron on its celestial face; the same multiple, read in joules, is hydrogen's ground state. Geared through the same three moves that carry absolute zero to the speed of light, it gives the celestial spin-orbit value; carried onto its radius and through the veil, it returns the **G2 year, 365.3170219587 days** — the same year that the Sun's surface temperature yields, and the same year that, one helical turn above the ground-state helix, sets the orbit and rotation of Mercury.

So the coldest reading in the sky and the year of the inner planets are one number. The background is not left over from a beginning. It is the bottom rung of the flow that is building the planets now.

Its wavelength is hydrogen, written large

The background's characteristic wavelength is 3^7 times hydrogen's blue line, Hβ. On the integer face Hβ is 486 nm, and 486 × 2187 = 1,062,882 nm — just over a millimetre. The floor of the field and the blue light of hydrogen are joined by the same 3^7 that sits on top of absolute zero.

The age that is a day

Cosmology gives the universe an age of a little under fourteen billion years, counted back to its single beginning. The framework reads the figure the way it reads every other: as a number wearing a costume. Read on the lattice it is **13.8888..., which is 125/9** at its decade — and carried through the mile-to-kilometre conversion it is the Earth's day.

```
FORMULA E11    THE AGE OF THE UNIVERSE IS THE DAY
    13.8888...  ( 5³/3² )   x 1944/3125  ( mile-kilometre conversion )  =  8.64  ->  864  ->  86400 s
    1388.888... is twice the ground-state helix 694.444... ( 5⁴/3² ), reached from the Sun's radius
```

The figure that is read as the age of everything is the ground-state day of the DNA helix. When we look out and calculate back to a beginning, what we are measuring is the universe observed in line with the ground state. Had the figure sat one helical turn higher, on 868.0555... ($5^4/(2^3\cdot3^2)$), it would read as about 13.954 billion; it reads 13.888..., so it is the ground state and not the turn. ### Two faces of one figure

The figure science quotes is built from the background's temperature, so it is a thermal reading, and it lands nearer a second face — the Boltzmann face, the same digits as the Boltzmann value.

```
FORMULA E12    THE TWO FACES OF THE AGE
    ground state      13.8888...      ( 5³/3² )           x 1944/3125  =  8.64  ->  864, the day
    Boltzmann face    13.8155332545   ( 5⁴/(2⁴·3²·π) )    x 62.208 ( 2⁸·3⁵/10³ ) / 36 x 2π  =  150
        x 2  =  300  ( the spin-orbit )        x 2  =  600  ( the Earth's mass )
    13.8888... / 13.8155332545   =   1.005309649148734   ( 8π/25 )
```

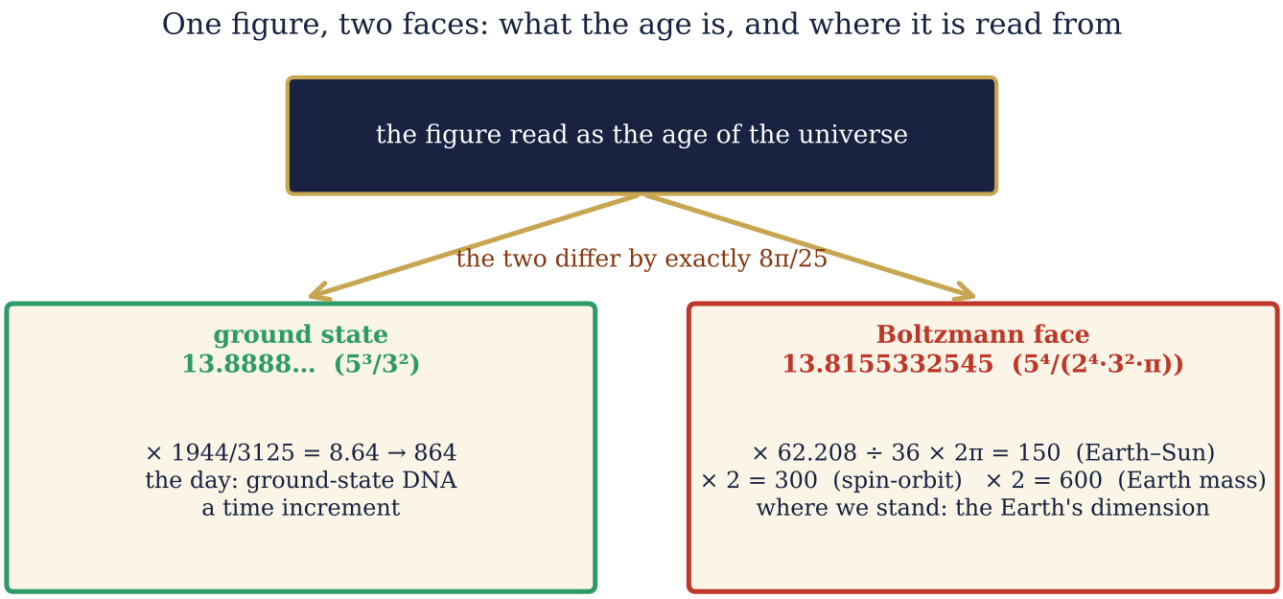


Figure 6 — One figure, two faces. The ground state, 13.8888…, is what the figure is: a time increment, the day of the DNA helix. The Boltzmann face, 13.8155332545, is where it is read from: carried through the Earth's own dimension it gives 150 million kilometres to the Sun, the spin-orbit 300,000 and the Earth's mass of 6. The two differ by exactly 8π/25.

The ground state ties the figure to a specific increment of time, 864 — the ground state of DNA. The Boltzmann face ties it to the Earth's space-time dimension, set by the 150 million kilometres to the Sun. The first is what the figure is; the second is the place it is observed from. There is no evidence in that number for a single moment of creation; there is a day, the unit the flow from the Sun builds into every living thing. Creation, on this reading, is not something that happened once. It is what the source is doing now.

Two floors, two faces

The two hydrogen weights carry two floors. The atomic face, 1.0077696 ($2^2 \cdot 3^9/5^7$), and the celestial face, 1.007860451037484037 ($5^3/(2^2 \cdot \pi^3)$), stand exactly one G-bond step apart, and they map onto the two radii of the seam at the top of the Earth's mantle: 6.365623858 at its bottom edge and 6.366197723676 (20000/π) at its top. **Absolute zero rides the atomic face; the background rides the celestial one.** They are not separated by a thermodynamic wall but joined on a multiplicative cold ladder.

PART EIGHT — LIFE: LOCAL ORDER, GLOBAL DISPERSAL

The apparent paradox

A living thing looks like a standing contradiction of the Second Law. A seed becomes a tree; a single cell becomes a body; out of dust and water come structures of staggering order, and they hold that order for a lifetime. The standard answer is that living things are open systems that export entropy to their surroundings, so the total still rises. The answer is correct and leaves out what is being imported.

What is imported is time

In this framework the answer is direct. **Time flows as the DNA structure, and time is life.** A living thing is a region where T arriving from the Sun — the most concentrated T there is, straight from the source — is held in concentrated addresses. The DNA helix is the most tightly addressed structure in nature: its ground state is the Earth's day, 86400 seconds, and each helical turn steps it by 1.004693930041152263 ($5^6/(2^6 \cdot 3^5)$). The organism keeps its order by taking in source-fresh T and paying out dispersed T as heat.

```
FORMULA E10    THE BODY ON THE LATTICE
    body temperature   36.864 °C        ( 2¹²·3²/10³ )        x 8.64  =  318.50496 on the Kelvin face
    273.375 / 36.864   =  7.415771484375   ( 3⁵·5³/2¹² )         the floor-to-body ratio, π-free
```

The body's own temperature is a pure {2,3} node, and its ratio to the floor is π-free — the body sits on the same multiplicative ladder as the background, the floor and the Sun. **The total dispersal still rises; the organism keeps its order; and both are the same flow.** Life does not cheat the Second Law. It is the Second Law seen from inside a node that is still being filled.

Ageing and the maintenance clock

The same reading names what happens when the holding fails. When the clock that maintains a living thing's addresses falters, its T-addresses blur — register entropy accumulates — and the organism drifts toward the dispersed state its surroundings already hold. Ageing is dispersal winning locally after a lifetime of being held back.

PART NINE — WHAT THIS REVISION CORRECTS

The first versions of this paper (May 2026) carried the core idea but several values and readings that the framework has since replaced. This revision corrects them.

- **Absolute zero.** The first version placed the floor at a body-temperature multiple that is superseded. The floor is **273.375 ($3^7/2^3$)** on the Kelvin face and **31.640625 ($3^4 \cdot 5^2/2^6$)** on the Celsius face, on the multiplicative calibration Kelvin = Celsius × 8.64.
- **Body temperature.** The first version wrote the body temperature as $10^5/(864\pi)$; that form gives 36.841, not 36.864. The body temperature is **36.864 ($2^{12} \cdot 3^2/10^3$)**, π-free.
- **The Boltzmann value.** The first version quoted the conventional figure. Here it is **1.3815533255 ($5^4/(2^4 \cdot 3^2 \cdot \pi)$)**, the reciprocal face of the Planck value through 5/24, and an Earth value rather than a universal constant.
- **The gas value and the Avogadro value.** R = **8.3154456263 ($810/\pi^4$)** and N_A = **6.0189103621 ($2^5 \cdot 3^6/(5^3 \cdot \pi^3)$)**, the theory's value in place of the science figure, which is not a constant, with N_A tied to hydrogen's G2 weight by the helical turn.
- **The beginning and the end.** The first version closed on a creation event, a quoted cosmological age and a heat death; the age is read here as 125/9, the day. The framework holds that creation is continuous at the source, that the background is the floor of the field rather than a relic, and that the end state of dispersal is nodal equilibrium.
- **The Second Law** is now derived from the First, not restated.

WHAT STANDS, WHAT IS OPEN

Forced, and stated at full force. The Second Law is the First Law applied to a part; the Clausius inequality is derived, not assumed. The arrow of time is the outward direction from a fixed source. Entropy is the dispersal of T through its addresses, not a growth of disorder. The Boltzmann value is the reciprocal face of the Planck value through 5/24. The temperature scales multiply, and the clean floor is $3^7/2^3$. Each of these is an exact relation in this paper.

Arrived at, and exact on every line. The gas value $810/\pi^4$; the Avogadro value from it, and its tie to hydrogen through the helical turn; the floor's Fahrenheit face to the G1 speed of light; the background × 8 to hydrogen's celestial ionisation and, through its radius, to the G2 year; the Sun's peak colour to the G1 year.

Open. The count Ω is stated as a count of T-addresses; the rule that assigns a given substance its accessible addresses at a given density — the lattice form of a full partition function — is the next derivation owed. The ageing reading is stated as a principle; its clock values belong to the life-science papers.

WHAT WOULD BREAK IT

- A demonstrated, sustained flow of T back up its own gradient toward the source — an isolated system whose entropy falls and stays fallen.
- A temperature-scale relation that requires an additive offset to close between two independently measured anchors, where the multiplicative 8.64 calibration fails.
- A measured background temperature, read on the framework's metre, that cannot be reached from $5^{12}/(2^{12} \cdot 3^7)$ by any of the framework's register faces.

- A gas whose molar volume at the clean floor and the lattice pressure departs from $3^{11}/(2^8 \cdot 5^5 \cdot \pi^2)$ by more than its own face spread.

A NOTE ON THE NUMBERS

The values in this paper are written as plain numbers — not pinned to one unit, and not carried to one particular power of ten. Under the Universal Force of Time a quantity is not the property of one dimension: the same T-value shows up as a temperature at one register, an energy at another, a year at a third. The unit and the power of ten are the costume a number wears where it is read. That is why the background × 8 can be an ionisation energy and, a few moves later, a year — it is one value, read in different registers. Each number is given with its lattice address in brackets, so that the reader can rebuild it from 2, 3, 5 and π alone.

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APPENDIX — EVERY NUMBER, REBUILT

Each value below is rebuilt from its lattice form alone. The arithmetic was run at forty digits with π carried as a symbol; the figures shown are rounded at the last digit printed.

```
THE PLANCK AND BOLTZMANN VALUES
    h        5³/(2·3·π)                  6.631455962162305657036823      x 10^-34
    k_B      5⁴/(2⁴·3²·π)                1.381553325450480345216005      x 10^-23
    k_B/h    5/24                        0.208333...                      x 10^11
    h/k_B    24/5                        4.8                              x 10^-11

THE GAS CONSTANT AND THE AVOGADRO NUMBER
    R        810/π⁴                      8.31544562629431150321375 4
    N_A      2⁵·3⁶/(5³·π³)               6.018910362061421469553581      x 10^23
    N_A x r / 6                          1.007860451037484037013189      = 5³/(2²·π³)
    r        5⁶/(2⁶·3⁵)                  1.004693930041152263374486      the helical turn

THE FLOOR
    Kelvin face      3⁷/2³               273.375
    Celsius face     3⁴·5²/2⁶            31.640625
    Fahrenheit face  3⁷·π/(2⁴·5)          85.88328916751097265647251
    /36 x 2π x 2                         2.997892336830892680470977      = c_G1 (2³·3⁵·5⁶·π²)

THE BACKGROUND
    CMB              5¹²/(2¹²·3⁷)        2.725406711266146547782350
    x 8              5¹²/(2⁹·3⁷)         21.803253690129172382258 80
    Celsius face     / 8.64              0.315440591581729924511846 1
    Fahrenheit x100                      85.621177021580447724998 28
    /36 x 2π x 2                         2.988742896918981647753848
    x 2/9375 x 180/π                     365.3170219587432436266593      the G2 year

THE SUN AND THE YEAR
    T_sun            2·5⁷/3³             5787.037037037037037037
    k_B x T_sun      5¹¹/(2³·3⁵·π)       7.995100263023613108888917      x 10^-20 J
    Wien peak        5²·π⁶/(2⁴·3)        500.7235383204710609532393
    x 8/2π x 180/π / 100                 365.2840913775091396366512      = 15π⁴/4, the G1 year

ONE MOLE, AND THE BODY
    V = R·T/P        3¹¹/(2⁸·5⁵·π²)      22.435929648361511497461 14  L   (T = 3⁷/2³, P = 10⁶/π²)
    body             2¹²·3²/10³          36.864
    floor / body     3⁵·5³/2¹²           7.415771484375
```

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