THE UNIVERSAL FORCE OF TIME

# The Flip

*The twenty-one centimetre line of hydrogen, Mercury's two orbits, ten roads to one radio line, and the atom read as the Sun and its innermost planet*

Stephen Daubney · The Daubney Foundation · 2026 · Rev 5

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 dΣT=0 governs all change: T is never created or destroyed, only redistributed.

**THE LINE, NUMBER FIRST**

## 21.106677145807496640 0 cm

= Mercury's G1 orbit 87.9444881075312360002 days × 24 ÷ 100 ($2^4 \cdot 3^8 \cdot \pi / 5^6$)

## 299,789,233.6830892680 m/s

= wavelength 0.211066771458074966400 m × frequency 1,420,352,581.375593731 Hz — the G1 light speed ($2^3 \cdot 3^5 \cdot 5^6 \cdot \pi^2$)

## ABSTRACT

Point a radio telescope along the plane of the Galaxy and it hears hydrogen: a faint, steady signal at a wavelength of about twenty-one centimetres, the line that maps the cold gas of the whole Milky Way. Science calls it a flip: the electron's spin turning over against the proton's. This paper sets out the position of the Universal Force of Time, which is that the line is not an accident of one atom. It is **the innermost planet's clock, read in hydrogen**.

The work is built number first, with each lattice form placed behind its number. The line has one address:

- **21.106677145807496640 0 cm**, which is Mercury's orbit on its G1 face, 87.9444881075312360002 days, × 24 ÷ 100, exactly; and
- **1420.352581375593731 MHz**, its frequency, which × the wavelength gives the G1 light speed, 299,789,233.6830892680, to every digit.

From that address the paper:

- shows that the line sits on the **road** face of Mercury's orbit, not the **room** face we watch going round, so the framework never asked the visible orbit to flip;
- shows that **Mercury is the one planet that does flip after every orbit**: three rotations in two orbits turn its face half a turn against the Sun each time round;
- gives **ten roads to the one line**, each exact, each through an operator the framework already uses:
- from hydrogen's atomic weight;
- from the ionisation ladder;
- from the G2 Balmer limit;
- from the gear 0.0279936 that turns the F line into the ionisation energy;
- from the energy-to-mass gear;
- from the G1 face below seven;
- from the Lyman-10 address;

- from hydrogen's blue line read one helical turn up, through the first O–H bond of water;
- from the Lyman-limit frequency;
- and from Mercury itself;
- names **one source**, the proton, which carries the line into the hydrogen spectrum, the Fraunhofer lines, the ionisation energy and the DNA helix;
- shows Mercury on **a perfect circle with the Sun moving** by one fixed amount — near point 46,009,267.30 km, far point 69,802,404.28 km on the G1 face — and the same arrangement in the atom, where the proton moves and is observed to move;
- sets out **the mirror** Stephen Daubney drew between the atom and the Solar System: proton and Sun, electron and Mercury, with the line as the register crossing between them;
- sets out **the antimatter reading**: the flip is one electron seen first on the matter strand and then on the antimatter strand, and the line × Mercury's own rotation seed = 7776 exactly, one step in its two orientations;
- and answers, in its conclusion, **why the line is where it is and not anywhere else**.

It closes with 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 fifty digits, π carried as a symbol. Where this paper says *symbolic zero*, the two forms subtract to zero as symbols, not as decimals.

# THE FORMULAS OF THIS PAPER, NUMBER FIRST

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

**FORMULA L1 THE LINE ON MERCURY'S ROAD Part Two**

87.9444881075312360002 days x 24 = 2110.66771458074966400 -> 21.1066771458074966400 cm
( $2^4 \cdot 3^8 \cdot \pi / 5^6$ )

**FORMULA L2 THE FREQUENCY, AND THE LIGHT SPEED IT MAKES Part One**

1420.352581375593731 MHz ( $5^8 \cdot \pi / 864 = 2 \cdot 5^{14} \cdot \pi / 3^3$ Hz )
0.21106771458074966400 m x 1,420,352,581.375593731 Hz = 299,789,233.6830892680
the G1 light speed ( $2^3 \cdot 3^5 \cdot 5^6 \cdot \pi^2$ )

**FORMULA L3 THE SECOND FACE Part One**

1420.352581375593731 x 1.000090150603356201 = 1420.480627017783278 MHz ( $5^{18} / (2^9 \cdot 3^{12} \cdot \pi^2)$ )

**FORMULA L4 FROM HYDROGEN'S ATOMIC WEIGHT Part Four**

1.007860451037484037 x $2^7 \cdot 3^8 \cdot \pi^4 / 5^8$ = 211.066771458074966400 -> the line at its decade

**FORMULA L5 FROM THE IONISATION LADDER Part Four**

364.5328598949233351 x 48π/625 = 87.9524163561959822 days ( Mercury, G2 )
x $2^5 \cdot 3^{10} \cdot \pi^3 / 5^{12}$ = 21.1066771458074966400 cm

**FORMULA L6 FROM THE G2 BALMER LIMIT, AS FREQUENCY Part Five**

364.5328598949233351 x $\pi^4/25$ = 1420.352581375593731 MHz

**FORMULA L7 FROM THE GEAR THAT TURNS THE F LINE INTO THE ENERGY Part Four**

0.0279936 x π = 0.0879444881075312360 ( Mercury's G1 orbit )
x 24 = 2.110667714580749664 -> the line at its decade ( gear = $3^7/5^7$ )

**FORMULA L8 FROM THE ENERGY-TO-MASS GEAR Part Four**

14657.41468458853933 x 1.44 = 21106.67714580749664 -> the line at its decade ( $6^6 \cdot \pi / 10$ )

**FORMULA L9 FROM THE LYMAN-LIMIT FREQUENCY Part Four**

3,287,853,197,628,689.19 Hz x 432 = 1,420,352,581,375,593,731.2
-> the line's frequency at its decade

**FORMULA L10 FROM THE LYMAN-10 ADDRESS, THROUGH MERCURY'S ROTATION Part Four**

920.952525874450231 x 4/2π = 586.296587383541573 -> 58.6296587383541573 days
( Mercury's G1 rotation )
x 3/2 = 87.9444881075312360 days x 24 -> the line

**FORMULA M1 MERCURY ON A CIRCLE, THE SUN MOVING Part Seven**

radius 57,905,835.79096706897 km ( $2^{11} \cdot 3^2 \cdot \pi$ ) near 46,009,267.29868700550 km ( $2^{20} \cdot 3^{12} / (5^8 \cdot \pi^3)$ )
the Sun's movement 11,896,568.49228006347 km far 69,802,404.28324713244 km

**FORMULA L11 FROM THE G1 FACE BELOW SEVEN Part Four**

6.9984 x 2π x 2 = 87.9444881075312360 days x 24 -> the line
( 6.9984 = $2^5 \cdot 3^7$ at its decade )

**FORMULA L12 FROM Hβ, ONE HELICAL TURN UP Part Four**

486 / ( 868.0555... x 180/π ) x 60 = 0.586296587383541573 -> Mercury's G1 rotation
x 3/2 x 24 / 100 -> 21.1066771458074966400 cm ( divisor = $5^5/(2\pi)$ x 100, water's O-H bond )

# THE TERMS THIS PAPER USES

**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 that needs any other prime — 7, 11, 17 — is not on the lattice.

**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.

**A register.** A register is a level at which T is read — the celestial register of the Sun and planets, the atomic register of the proton and electron, the biological register of DNA. The names G0, G1 and G2 mark neighbouring registers. **The G-bond step** is the smallest structural step between adjacent faces of one value, **1.000090150603356201 ($5^{10}/(2^4 \cdot 3^9 \cdot \pi^3)$)** — the amount by which a G1 face is multiplied to give its G2 face.

**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 21.1066... and 2110.66... are one address.

**The veil.** The veil is 180/π = 57.29577951308232, the number that turns radians into degrees.

**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.

**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 ($5^6/(2^6 \cdot 3^5)$)**.

**The 612 step and the 703 step.** The 612 step is helium divided by four, **1.000612842467910952 ($2^9 \cdot 3^5 \cdot \pi/5^8$)**; the 703 step is the span of hydrogen's ionisation faces end to end, **1.000703048319385397 ($800/(81 \cdot \pi^2)$)**. They are named so that the reader meets the family of small steps of which the G-bond step is the smallest.

**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, one value with the speed of light read in a different unit of time: **9.817477042468104 ($5^2 \cdot \pi/2^3$)**.

**The radial mass.** A radial mass is a mass spread over a radius rather than held at a point; dividing a node mass by 9375 turns it into a radius.

**Why a value can be carried from one kind of quantity to another.** 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. A wavelength, a period and a weight can likewise be one count read at different registers — which is why a mass can be carried into a wavelength and a wavelength into a day.

**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.

# PART ONE — WHAT THE TWENTY-ONE CENTIMETRE LINE IS

Point a radio telescope almost anywhere along the plane of the Galaxy and it picks up a faint, steady signal at a wavelength of about twenty-one centimetres. It is the most important line in radio astronomy: it maps the cold hydrogen gas of the whole Milky Way. And science describes it as a flip.

The flip is not an orbit. The line comes from hydrogen's ground state, n = 1, the 1s state — the state with nothing below it. There is no orbit in it at all. What has two states is the relative alignment of two spins, the proton's and the electron's:

```
F = 1     the two spins parallel        the upper state
F = 0     the two spins antiparallel    the ground
```

The photon leaves when the pair goes from parallel to antiparallel. It is the alignment that changes, not the electron's place. And it is not frequent: one atom, left alone, makes the transition about once in eleven million years. The line is seen at all only because the Galaxy holds so much hydrogen that, somewhere in the beam, some atom is always making the transition. It is not a cycle. It is the rarest thing hydrogen does, and in the language of this framework it is a road, not a room: a transport between states, not a state that goes round.

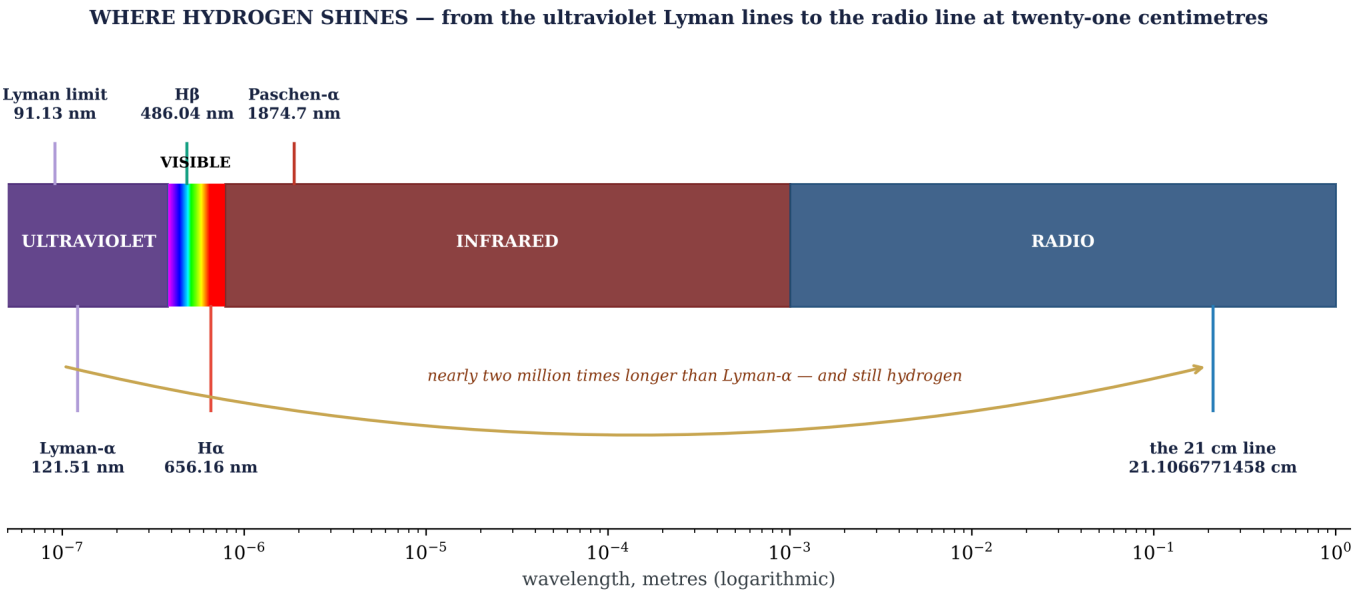



**Figure 1** — Where hydrogen shines. The Lyman lines sit in the ultraviolet, the Balmer lines in visible light, Paschen in the infrared, and the twenty-one centimetre line far out in the radio — nearly two million times longer than Lyman-α, and still the light of the same atom.

### The address, as a wavelength and as a frequency

The framework gives the line one address, and it can be read two ways. As a length, it is a wavelength; as a count, it is a frequency. The two are joined by the speed of light of the register they are read on, and they join here exactly.

```
FORMULA L2     THE FREQUENCY, AND THE LIGHT SPEED IT MAKES

  the wavelength     21.1066771458074966400 cm                  ( 2⁴·3⁸·π/5⁶ )
  the frequency      1,420,352,581.375593731220 Hz              ( 2·5¹⁴·π/3³ = 5⁸·π/864 MHz )

  0.21106771458074966400 m  x  1,420,352,581.375593731220 Hz
                            =  299,789,233.6830892680470977 m/s    the G1 light speed    ( 2³·3⁵·5⁶·π² )
                                                                   SYMBOLIC ZERO

FORMULA L3     THE SECOND FACE, ONE G-BOND STEP ON

  1420.352581375593731220 x 1.000090150603356200676  =  1420.480627017783278115 MHz   ( 5¹⁸/(2⁹·3¹²·π²) )
  and the second face x the same wavelength  =  the G2 light speed,  299,816,259.8633854916
```

**The wavelength and the frequency are one object.** Multiply them and the G1 light speed comes out to every digit; the second face of the frequency, one G-bond step on, gives the G2 light speed with the same wavelength. The frequency's denominator is 864 — the ground state of the DNA helix — and that is not the last time 864 will turn up in this paper.

# PART TWO — THE FACE WE WATCH IS NOT THE FACE THE LINE IS ON

A natural objection follows: if the line were a flip once per orbit, some planet should be seen to flip after each orbit, and none is. The framework's own grammar gives that objection a precise form, and answers it.

Every value in the Universal Force of Time has an address, $2^a \cdot 3^b \cdot 5^c \cdot \pi^d$, and the power of π — the π-degree — decides its kind. An even degree is a room: a state, a thing that simply is, or simply goes round. An odd degree is a road: a transport between states.

| object | value | address | π-degree | kind |
|---|---|---|---|---|
| the 21 cm line | 21.106677145807496640054684915 4 cm | $2^4 \cdot 3^8 \cdot \pi / 5^6$ | +1 | road |
| Mercury's orbit, G1 face | 87.9444881075312360002278538142 d | $2^3 \cdot 3^7 \cdot \pi / 5^4$ | +1 | road |
| Mercury's rotation seed | 368.414220120128092057601304103 | $2 \cdot 5^6 / (3^3 \cdot \pi)$ | −1 | road |
| Mercury's orbit, G2 face | 87.952416356195982156145367 3696 d | $5^6 / (2 \cdot 3^2 \cdot \pi^2)$ | −2 | room |
| Mercury's rotation in hours | 1407.2386616991357144983258779 1 h | $2^3 \cdot 5^6 / (3^2 \cdot \pi^2)$ | −2 | room |
| the precession | 5599.2247279860224278510508139 9 | $2^2 \cdot 5^8 / (3^2 \cdot \pi^3)$ | −3 | road |

Mercury's orbit has two faces, one G-bond step apart, and they have opposite parity. The G2 face is a room: the thing that goes round, the orbit we watch and see no flip in. The G1 face is a road. And the twenty-one centimetre line sits on the G1 face:

**The line on Mercury's road.** T_G1 × 24 = $\lambda_{21}$ × 100. Worked: 87.944488107531236000227853814 2 × 24 = 2110.667714580749664005468491 54, and 21.106677145807496640054684915 4 × 100 = 2110.667714580749664005468491 54. The two addresses, $2^3 \cdot 3^7 \cdot \pi / 5^4$ and $2^4 \cdot 3^8 \cdot \pi / 5^6$, differ only by 24 and the handle 100, so the identity is exact, not approximate.

So the framework never claimed that the thing we watch going round should flip. It placed the twenty-one centimetre line on the other face of the same orbit — the face that is a transport. The face we watch is not the face the line is on. Part Six shows what that crossing is.

**And Mercury's distance and its rotation are read on different registers too.** Mercury's distance comes from the node 36864: 36864 × 2π ÷ 4 = 57,905,835.79 km, the radius of its circle. Its orbit and rotation come from the node 36841.42201201280920576013 — the rotation seed 368.4142201201280920576013 at its decade. The two nodes are one named step apart, exactly:

```
36864  /  36841.42201201280920576013  =  1.000612842467910951824815
       =  the 612 step   ( 2⁹·3⁵·π/5⁸ )   EXACT
```

The 612 step is the step between the G2 and G0 readings of light speed. So the planet's distance, and the turning we time it by, are not read in the same space-time dimension; they stand one register apart. The face we watch is not only not the face the line is on — the distance we measure is not on the same register as the turning we watch.

# PART THREE — MERCURY IS THE PLANET THAT FLIPS AFTER EVERY ORBIT

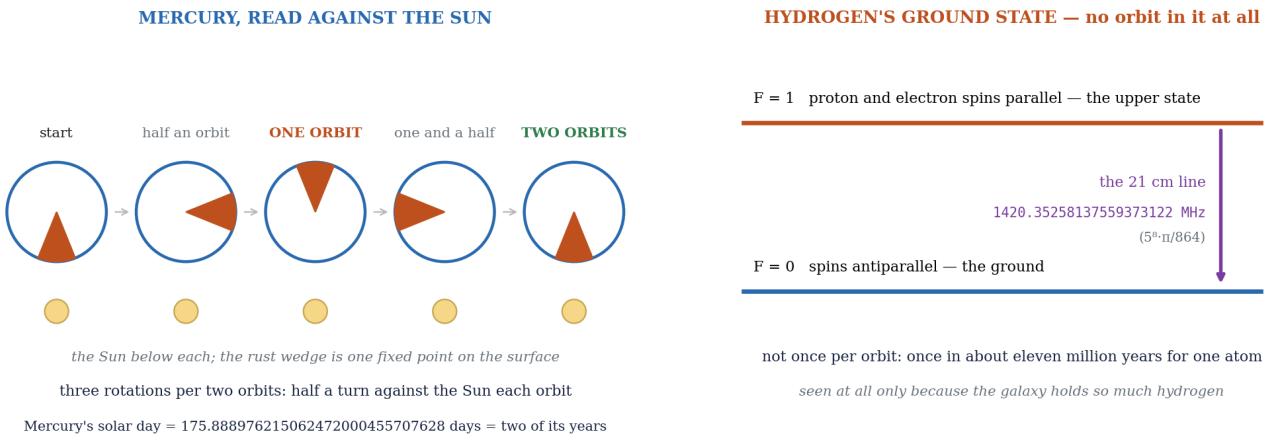



**Figure 2** — Two two-state systems, and only one of them turns. Left: one fixed point on Mercury's surface, read against the Sun, over two orbits — half a turn each orbit, home after two. Right: hydrogen's ground state, with no orbit anywhere in it, and about eleven million years between flips for one atom.

And the observation said to be missing is not missing. It belongs to Mercury, and only to Mercury.

```
Mercury's orbit (G1)            87.944488107531236000227853814 2 days
Mercury's rotation              58.629658738354157333485235876 1 days   = orbit × 2/3
rotations in one orbit          1.5
rotations in two orbits         3
Mercury's solar day             175.88897621506247200045570762 8 days   = two of its years
```

Three rotations in two orbits means that, read against the Sun, the planet turns half a turn each orbit. After one orbit the face that faced the Sun faces away. After two orbits it is restored. Every other planet brings its Sun-facing hemisphere back after one rotation; Mercury needs two orbits to come home — and Mercury is the planet the twenty-one centimetre address points at.

**Two turns to come home.** A spin-one-half object needs two full turns, 4π, to return to itself; one turn of 2π takes it to minus itself. The proton and the electron of the twenty-one centimetre pair are each spin-one-half. Mercury needs two orbits to return its face to the Sun. The shapes match. The spinor's two turns are a property of rotation itself, while Mercury's two orbits are a ratio between two periods; the derivation that joins them — the two-turn return produced from the three-to-two lock, with its two sheets shown to be the helix's two strands — is the next step, and Part Eight reads the two sheets as matter and antimatter. The three-to-two lock is not assumed in the framework; it is arrived at. On the G1 face the rotation is reached from the Lyman-10 address, 920.952525874450231 × 4/2π = 58.6296587383541573 days, and the orbit is reached separately, from the gear 0.0279936 × π and from the face below seven, 6.9984 × 2π × 2 = 87.9444881075312360 days. The two roads do not share a step, and they stand at exactly three to two.

**Which face belongs with the line, and which face is the planet we observe.** Mercury's orbit and rotation each have two faces, one G-bond step apart. On Stephen Daubney's ruling, the domains divide cleanly. **The G1 face belongs with hydrogen: the twenty-one centimetre line and the Lyman wavelength.** Its rotation is 58.6296587383541573 days and its orbit 87.9444881075312360002 days. **The G2 face is the Mercury we observe: its rotation is 58.6349442374639881 days and its orbit 87.9524163561959821561 days.** These are not approximations to a measured value. On this account the observed orbit *is* the G2 face, and where published figures for Mercury's rotation and orbit disagree with one another and with it, it is the measurement that has not settled.

And on both faces the three-to-two lock is exact: rotation × 3/2 = orbit, to every digit. The lock is usually quoted for Mercury, but the rotation and orbit figures that are quoted with it do not themselves give three to two exactly. The framework's figures do, on the G1 face and on the G2 face alike.

```
MERCURY'S TWO FACES, AND THE LOCK ON EACH

  G1 face   rotation  58.6296587383541573335 d
            x 3/2  =  87.9444881075312360002 d   the orbit          ( 2³·3⁷·π/5⁴ )
            x 24 / 100  =  21.1066771458074966400   the 21 cm line
  G2 face   rotation  58.6349442374639881041 d   ( 1407.2386616991357145 h )
            x 3/2  =  87.9524163561959821561 d   the observed orbit ( 5⁶/(2·3²·π²) )

THE OBSERVED ORBIT CARRIES HYDROGEN AND THE PRECESSION

  87.9524163561959821561 / π  =  27.9961236399301121393
                                 the silicon rung = hydrogen x helium x lithium
  x 200                       =  5599.2247279860224279
                                 Mercury's perihelion advance, arcsec a century   ( 2²·5⁸/(3²·π³) )
  x 36                        =  1007.8604510374840370
                                 hydrogen's weight, middle face, at its decade    ( 5³/(2²·π³) )
```

**So the two faces of Mercury carry two different things.** The G1 face carries hydrogen's radio line. The G2 face — the planet as it is observed — carries hydrogen's atomic weight, 1.007860451037484037, and the perihelion advance, 5599.2247279860224279 seconds of arc a century, by plain operators from its own orbit. One planet, one G-bond step, and both faces landing on hydrogen.

# PART FOUR — TEN ROADS TO ONE RADIO LINE

The line's address can be reached from nine different starting points in the framework, and every road is exact. Each one is set out below with its stations, forwards, and the last station is always the same: 21.1066771458074966400 at its decade, or its frequency.

**NINE ROADS TO ONE RADIO LINE — every road exact, every operator one the framework already uses**

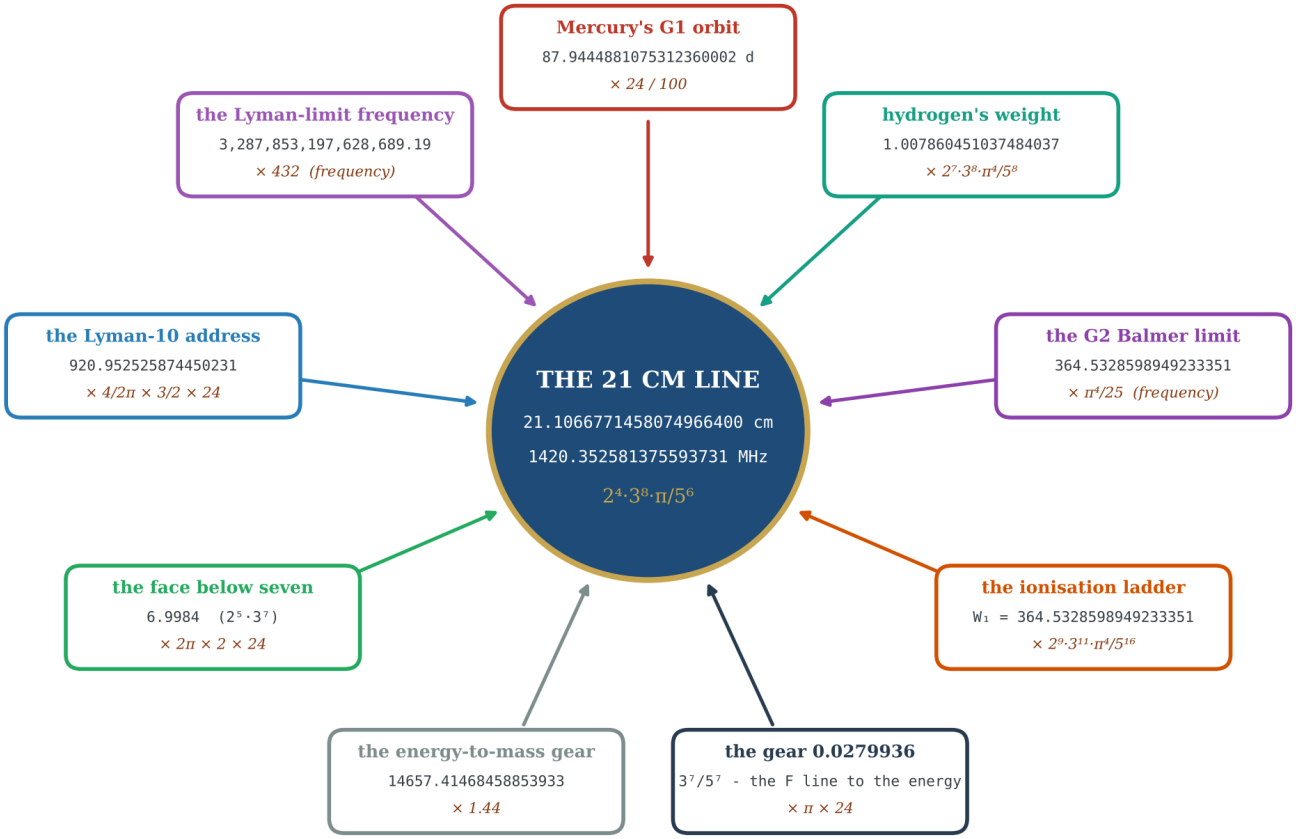



**Figure 3** — Nine of the ten roads to one radio line. Each box is a starting point the framework already holds; each arrow is an operator the framework already uses; every road lands on the same address, $2^4 \cdot 3^8 \cdot \pi/5^6$.

## Road one — from Mercury's orbit

```
Mercury's G1 orbit              87.9444881075312360002 days     ( 2³·3⁷·π/5⁴ )
x 24                            2110.66771458074966400  hours
/ 100                           21.1066771458074966400 cm       THE LINE      SYMBOLIC ZERO

the twenty-one centimetre wavelength is the number of hours in one G1 orbit of Mercury
```

## Road two — from hydrogen's atomic weight, nine stations

```
hydrogen's weight, middle face     1.007860451037484037013        ( 5³/(2²·π³) )
/ the veil 57.29577951308232       0.01759048327123919643         a radian value
/ π²/8                             0.014258308687061576651 6      a wavelength
/ 49.50355349930312524             0.000288025963373766585795     a free fall          ( 3888/(25π) )
x 2π                               0.001809720501156295929 14     a frequency
x 60                               0.108583230069377755748
inverted                           9.209525258744502314407        the Lyman-10 address, at its decade
x 4/2π                             5.862965873835415733349        Mercury's G1 rotation, at its decade
x 24                               140.7111809720499776004        the same rotation in hours
/ 2  x 3                           211.0667714580749664005        the line, at its decade

THE WHOLE ROAD AS ONE OPERATOR:   the weight  x  2⁷·3⁸·π⁴/5⁸  =  the line        SYMBOLIC ZERO
```

The last step, × 3/2, is Mercury's three-to-two lock: the road reaches Mercury's rotation and then turns it into the orbit. **The line is hydrogen's own weight, carried down the framework's grammar to a wavelength, a free fall and a frequency, inverted, and read as Mercury's clock.**

## Road three — from the ionisation ladder

```
the first rung of the wavelength ladder, the G2 Balmer limit   364.53285989492333514 66   ( 5¹⁰/(2⁵·3³·π³) )
x 48π/625                          87.952416356195982156 1 days     Mercury's G2 orbit     ( 5⁶/(2·3²·π²) )
x 2⁵·3¹⁰·π³/5¹²                    21.106677145807496640 0 cm       THE LINE
and as one step:  364.5328598492333514 66 x 2⁹·3¹¹·π⁴/5¹⁶  =  21.106677145807496640 0
```

## Road four — from the gear that turns the F line into the energy

```
the gear                           0.0279936                      ( 3⁷/5⁷ = 6⁷/10⁷ )
  it takes the F line 486.04381319323111 35 to hydrogen's ionisation energy 13.606116089006034499 68
x π                                0.087944488107531236 0         Mercury's G1 orbit, at its decade
x 24                               2.110667145807496640           THE LINE, at its decade
```

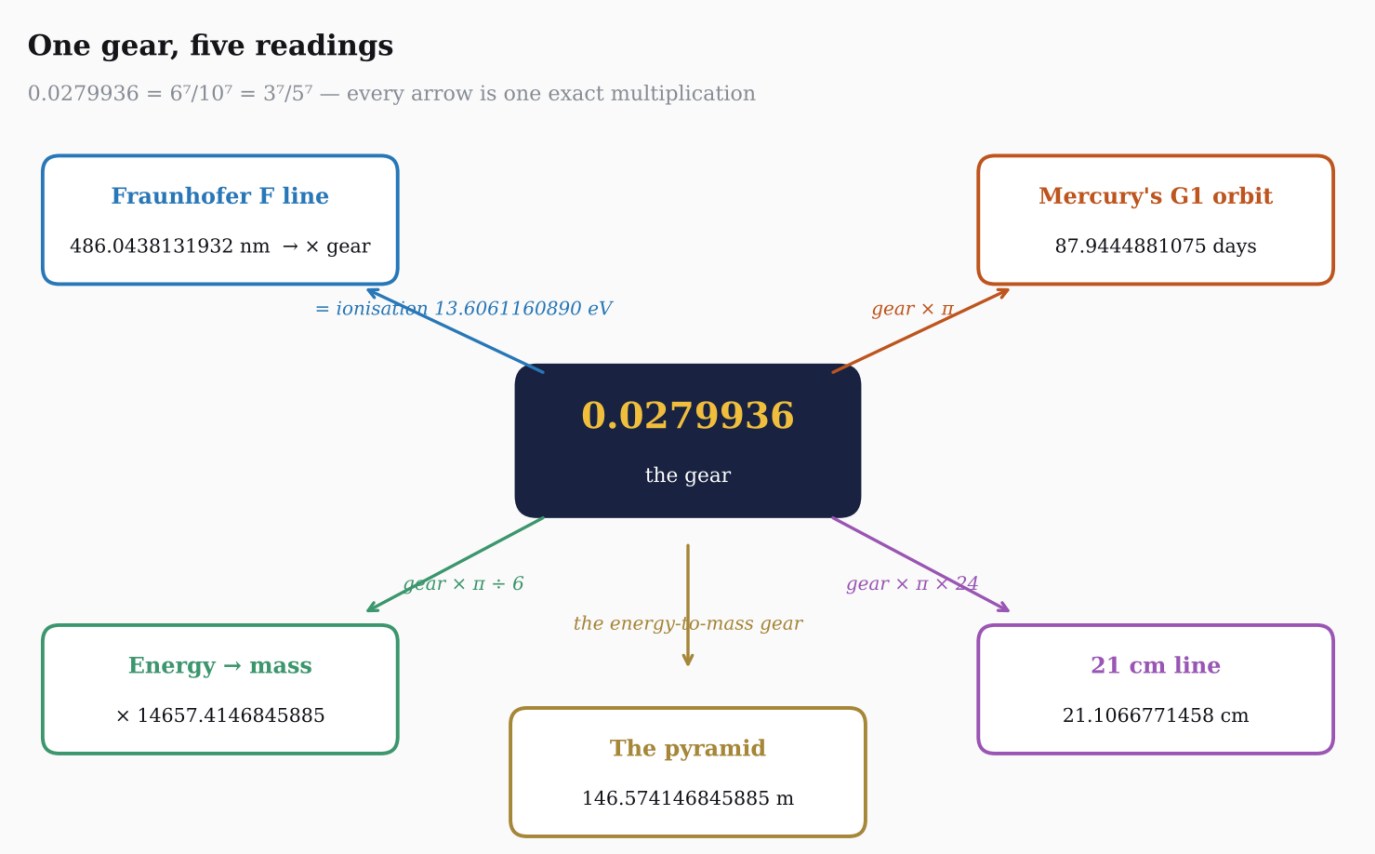



**Figure 4** — One gear, five readings. The gear 0.0279936 carries the F line of the Sun to hydrogen's ionisation energy with no π; times π it is Mercury's orbit; times 24 it is the twenty-one centimetre line; and the energy-to-mass gear, which is the same gear × π/6, sets the height of the Great Pyramid and, × 1.44, the line again.

## Road five — from the energy-to-mass gear

```
the energy-to-mass gear            14657.41468458853933337        ( 6⁶·π/10 )
  = 0.0279936 x π / 6 at its decade  =  Mercury's G1 orbit / 6
x 1.44                             21106.67714580749664005        THE LINE, at its decade
```

## Road six — from the G1 face below seven

Seven is not a member of the alphabet, and the framework places two faces either side of it. The G1 face just below it is 6.9984, which is $2^5 \cdot 3^7$ at its decade and carries no π at all.

```
the G1 face below seven            6.9984                         ( 2⁵·3⁷ )
x 2π  x 2                          87.9444881075312360002 days    Mercury's G1 orbit
x 24                               2110.66771458074966400         THE LINE, x 100
```

## Road seven — from the Lyman-10 address, through Mercury's rotation

```
the Lyman-10 address               920.952525874450231441         ( 2⁴·3⁶·π²/5³ )
x 4/2π                             586.296587383541573335         Mercury's G1 rotation,
                                                                  58.6296587383541573 days
x 3/2                              879.444881075312360002         Mercury's G1 orbit
x 24 / 1000                        21.1066771458074966400         THE LINE
```

## Road eight — from the Lyman-limit frequency

```
the Lyman-limit frequency          3,287,853,197,628,689.1926 Hz   ( 10²³·π/(2¹⁷·3⁶) )
x 432                              1,420,352,581,375,593,731.22    THE LINE'S FREQUENCY, at its decade
                                                                   ( 432 = 2⁴·3³, half the helix ground 864 )
```

### Road nine — from the G2 Balmer limit, as a frequency

```
the G2 Balmer limit                364.5328598949233351466 nm
x π⁴/25                            1420.352581375593731220 MHz    THE LINE'S FREQUENCY      SYMBOLIC ZERO
```

### Road ten — from hydrogen's blue line, read one helical turn up

Every wavelength in this framework is turned into a free fall by dividing it by the ground state of the helix, 864, read in degrees: 864 × the veil = 49,503.5535. Divide by the **first helical turn** in degrees instead, 868.0555... × the veil, and the same blue line of hydrogen lands not on the Earth's free fall but on Mercury's rotation.

```
the ground-state divisor     864 x 180/π       =  49,503.55350 ...
    486 / 49,503.5535...                       =  9.8174770424681039      the G1 free fall  ( 5²·π/2³ )

the first-turn divisor   868.0555... x 180/π  =  49,735.9197162172924   ( 5⁵/(2π) x 100, water's O-H bond )
    486 / 49,735.9197162...                    =  0.00977160978972569
    x 60                                  =  0.586296587383541573    Mercury's G1 rotation
    x 24                                       =  14.0711180972049978     at its decade, 1407.11180972 hours
    x 3/2                                      =  87.9444881075312360     Mercury's G1 orbit
    x 24 / 100                                 =  21.1066771458074966400  THE LINE
and the rotation x 2π / 4                      =  920.952525874450231     the Lyman-10 address of Road seven
```

**Hydrogen's blue line read on the ground state of the helix is the Earth's free fall; read one helical turn up, it is Mercury's rotation, and through the 3:2 lock the twenty-one centimetre line.** The two readings differ by exactly the helical turn, 1.004693930041152263, so Mercury's spin is the free fall one turn higher. And the divisor that makes the step is not a new number: $5^5/(2\pi)$ is the first bond of the water molecule, the degree face of the bond whose radian face is the helix's first turn. The road runs from hydrogen's light, through water, to Mercury and back to hydrogen's radio line, and it meets Road seven at the Lyman-10 address.

### The honest weight of ten roads

Ten roads to one value is striking, and it should be weighed honestly. **Between any two values that are both built from 2, 3, 5 and π, a single operator built from 2, 3, 5 and π always exists.** So the existence of a road is guaranteed and proves nothing on its own. What carries weight is something else: whether each operator on the road is one the framework already uses for another purpose — 24, 100, the veil, $\pi^2/8$, the free-fall gear, 2π, 60, the three-to-two lock, 432, $\pi^4/25$ — and whether the stations along the way are objects it already holds. On these ten roads, the operators are all of that kind, and the stations include Mercury's orbit and rotation, the Lyman-10 address, the F-line gear, the energy-to-mass gear and the Balmer limit. **That is what the ten roads show: not that a road exists, but that the framework's ordinary gears, applied to things it already holds, all arrive at the same radio line.**

# PART FIVE — ONE SOURCE: THE PROTON

The line's source can be named. Hydrogen's ionisation energy, the hydrogen spectrum, the Fraunhofer lines, the twenty-one centimetre line and the helix of DNA share one source, and it is the proton. The step between the G1 and G2 registers is the G-bond, 1 + δ_G = 1.000090150603356200676414 ($5^{10}/(2^4\cdot3^9\cdot\pi^3)$).

> **The proton.** $m_p$ = 1.67261635889322291988028097428 × $10^{-27}$ kg ($3\cdot5^5\cdot\sqrt{(10^{11}/\pi)}$). It carries a square root, and that decides what follows: read as it stands, the proton gives one face of hydrogen's blue line; squared — opened out — it gives the other.

**As it stands, the proton gives the spectrum.** The blue line times the proton's mass is a pure power of the lattice:

> **Hβ × $m_p$ = $(12/\pi)^5$ = 813.124162828260013925032610104.** Hβ = $(12/\pi)^5$ ÷ $m_p$ = 486.139070985953763744711509159 nm ($\sqrt{(2^{27}\cdot3^8/(5^3\cdot\pi^9))}$). From that one line the series follows by the Balmer rule: the limit is ¾ × Hβ = 364.60430323946532280853363 1869 nm; Hα = limit × 9/5 = 656.28774583103758105536053 7365 nm, Fraunhofer's C; Hγ = limit × 25/21 = 434.05274195174443191492099032 nm, Fraunhofer's G′; Hδ = limit × 9/8 = 410.17984114439848815960033 5853 nm, Fraunhofer's h.

**Opened out, the proton gives the same line on the G2 register.** Carry the mass down to a wavelength and a free fall, square it, and carry it back up by the day's gears:

```
mₚ                          1.67261635889322291988028 1
÷ π²/8       wavelength     1.35577175410078865101626 5
÷ 49.50355350  free fall    0.02738736228541399987786628
squared                     0.00075006761295251715050731 03
× 864                       0.64805841759097481803831 61
× 360                       233.3010303327509344937938
÷ 24                        9.72087626386462227057474 1
÷ 2                         4.8604381319323111352873 7   → 486.0438131932311135 nm at its decade
```

That is 486.043813193231113528737049825 nm, the G2 face of the blue line, 486 × (1 + δ_G) = $5^{10}/(2^3 \cdot 3^4 \cdot \pi^3)$, with nothing left over.

**The ionisation energy gives the same G2 line.** Hydrogen's ionisation energy on the G2 register is 13.606116089006034499678053478 eV ($3^3 \cdot 5^3/(2^3 \cdot \pi^3)$). Its third rung, one-ninth, carried through the gear 31104 = $2^7 \cdot 3^5$ that turns an energy into a circumference: 13.606116089006034499678053478 ÷ 9 = 1.511790676556226055519783719 78; ÷ 31104 = 0.000048604381319323111352873 7049825 — 486.043813193231113528737049825 nm at its decade, the same number the opened-out proton gave. On the G1 register the same two steps take 13.6048896 eV to 486 exactly, the line's integer node $2 \cdot 3^5$. The two registers stand one G-bond step apart on both sides of the ring at once.

**To the twenty-one centimetre line.** Three-quarters of the G2 blue line is the Balmer limit on that register; carried by $\pi^4/25$, the join from the Balmer limit into the radio band, it is the line's frequency:

> **The 21 cm frequency.** $f_{21}$ = G2 Hβ × 3/4 × $\pi^4/25$ = 1420.352581375593731220451471 75 MHz ($5^8 \cdot \pi/(2^5 \cdot 3^3)$ = $5^8 \cdot \pi/864$). Worked: 486.043813193231113528737049825 × 3/4 = 364.532859894923335146552787369 (the G2 Balmer limit, $5^{10}/(2^5 \cdot 3^3 \cdot \pi^3)$); × $\pi^4/25$ = 1420.352581375593731220451471 75 MHz. Its second face, 1420.480627017783278115035922 26 MHz ($(5^{18}/(2^9 \cdot 3^{12} \cdot \pi^2))$, stands one G-bond step on, × 1.000090150603356200676413682 77, exactly.

The line's frequency is $5^8 \cdot \pi$ divided by 864 — and 864 = $2^5 \cdot 3^3$ is the ground state of the DNA helix.

**To the helix of DNA.** The G2 ionisation energy, turned into joules by the framework's elementary charge e = $5^9 \cdot \pi^3/(2^6 \cdot 3^{10}) \times 10^{-20}$ C, loses its π entirely:

> **The ionisation energy in joules.** IE_G2 × e = $3^3 \cdot 5^3/(2^3 \cdot \pi^3) \times 5^9 \cdot \pi^3/(2^6 \cdot 3^{10}) = 5^{12}/(2^9 \cdot 3^7) =$ 218.032536901291723822588020119 × $10^{-20}$ J. And turn two of the helical ladder, 864 × $r^2$ with r = $5^6/(2^6 \cdot 3^5)$, is 872.130147605166895290352080476, of which a quarter is 218.032536901291723822588020119 — the same number.

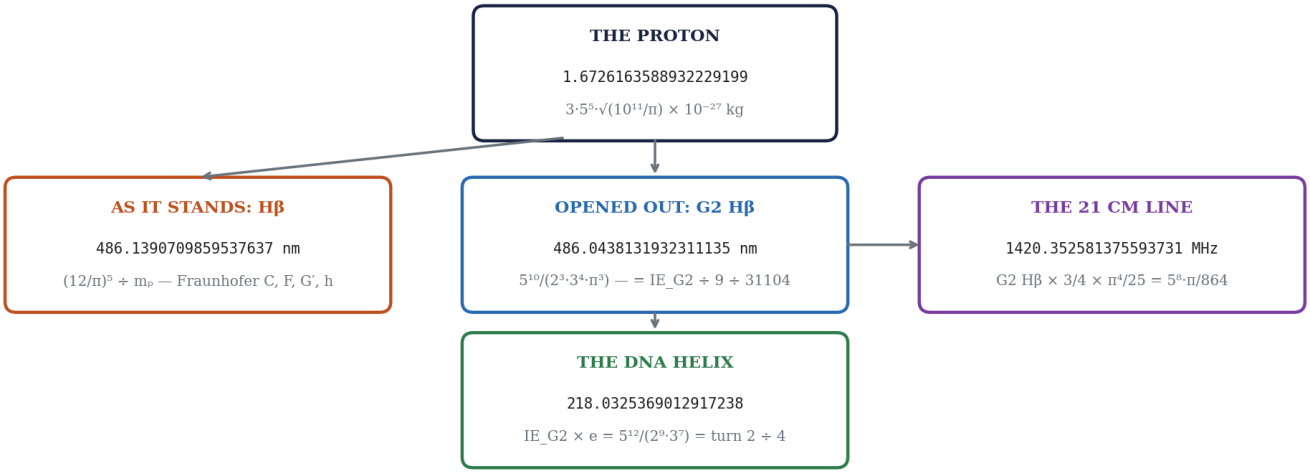



**Figure 5** — One source, five domains. The proton as it stands gives Hβ and Fraunhofer's hydrogen lines; opened out it gives the G2 blue line, where the G2 ionisation energy lands too; three-quarters of that, times $\pi^4/25$, is the 21 cm line, $5^8 \cdot \pi/864$ MHz; the ionisation energy times the charge is a quarter of turn two of the DNA helix.

The sixth domain, the periodic table, joins the ring through hydrogen's atomic weight, and Part Four gives the road from that weight straight to this line.

# PART SIX — THE MIRROR: THE ATOM IS THE SUN AND MERCURY

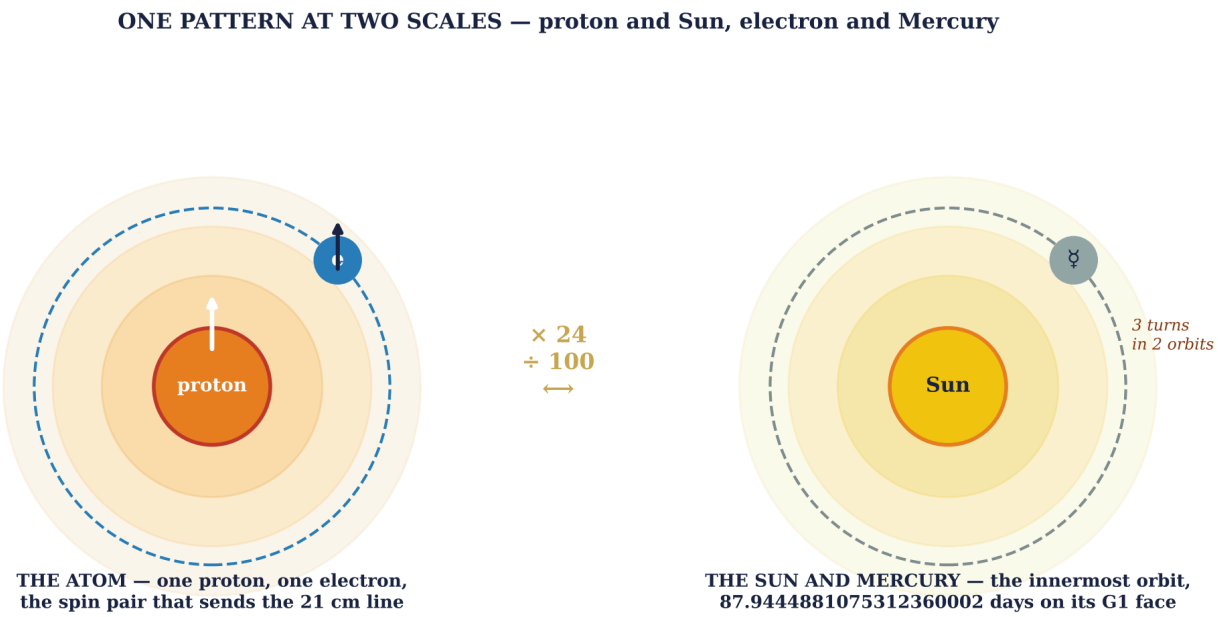



**Figure 6** — One pattern at two scales. Left: the hydrogen atom, a proton and an electron, whose spin pair sends the twenty-one centimetre line. Right: the Sun and Mercury, the innermost orbit, 87.9444881075312360002 days on its G1 face. × 24 ÷ 100 carries one to the other exactly.

Stephen Daubney's reading of the line goes further than an address. **The hydrogen atom and the Sun with its innermost planet are the same pattern of the T-field, read at two scales at once.**

- The **proton** is the **Sun**: the dense node at the centre.
- The **electron** is **Mercury**: the node in the closest register to the centre.
- The two **spin states** of the atom — parallel and antiparallel — are the two arrangements of that pair.
- The **twenty-one centimetre line** is the signature of the crossing between registers.

The address is what makes this more than a picture. The line is Mercury's G1 orbit × 24 ÷ 100, and the same 24 runs the other way from Mercury too: Mercury's rotation angle, 135 degrees — three to the third times five, a quarter of the 540 degrees it turns in one orbit — read through the veil and the day gives the free fall at the Earth's surface.

```
THE SAME 24, BOTH WAYS FROM MERCURY

  up to the atom      Mercury's G1 orbit 87.9444881075312360002 x 24 / 100
                      =  21.1066771458074966400   the line
  down to the Earth   135 / ( 180/π ) / 24 x 100
                      =  9.81747704246810387020   ( 25π/8 ), the free fall at the G1 surface
```

**One question about the mirror is open, and it is printed here rather than smoothed.** In the atom, the parallel arrangement is the upper state: it is the one that decays, and the line is what it gives off. In the Solar System, Mercury's three-to-two lock is the stable arrangement: it persists. So the pattern is the same, but the direction of stability appears reversed between the two scales. Why that should be — whether it belongs to the two strands of the helix reading differently at the two registers — is not settled, and this paper does not settle it.

# PART SEVEN — THE CIRCLE AND THE MOVING CENTRE, IN THE SKY AND IN THE ATOM

The mirror of Part Six says the proton is the Sun and the electron is Mercury. It can be taken one step further, because in both systems the same thing is true of what moves.

## In the sky: Mercury holds a perfect circle, and the Sun moves

In the Universal Force of Time there is no gravitational pull of the Sun; what science reads as gravity is the flow of time, seen as free fall. So nothing is pulling Mercury into an elongated path. **Mercury moves on a perfect circle, and it is the Sun that moves**: by one fixed amount to either side of the circle's centre. Added to the circle's radius, that amount gives Mercury's far point; taken away, it gives the near point. On the G1 face — the face the twenty-one centimetre line sits on — every figure comes from one family:

```
FORMULA M1     MERCURY'S G1 POSITION: THE CIRCLE AND THE SUN'S MOVEMENT

  the circle's radius        36864 x 2π / 4      =  57,905,835.79096706897134 km     ( 2¹¹·3²·π )
  the near point                                 =  46,009,267.29868700550488 km     ( 2²⁰·3¹²/(5⁸·π³) )
  near point / radius                            =  0.7945532029755133900676
                                                    ( 2⁹·3¹⁰/(5⁸·π⁴) )   EXACT
  the Sun's movement  R  =  radius - near point  =  11,896,568.49228006346646 km
  the far point          =  radius + R           =  69,802,404.28324713243781 km

WHERE THE NEAR POINT COMES FROM

  the 639 node   639.0176013706528542 ( 2¹⁵·3¹⁰/(5¹⁰·π³) )  read as a radius,  6.390176013706528542
  x the veil x 2π                                =  2300.463364934350
  x 2                                            =  4600.926729868701    ->  46,009,267.30 km
  and the same 639 node carries to the Earth's radius 6370.0992 km and back to 36864 -
  the near point and the circle are one family
```

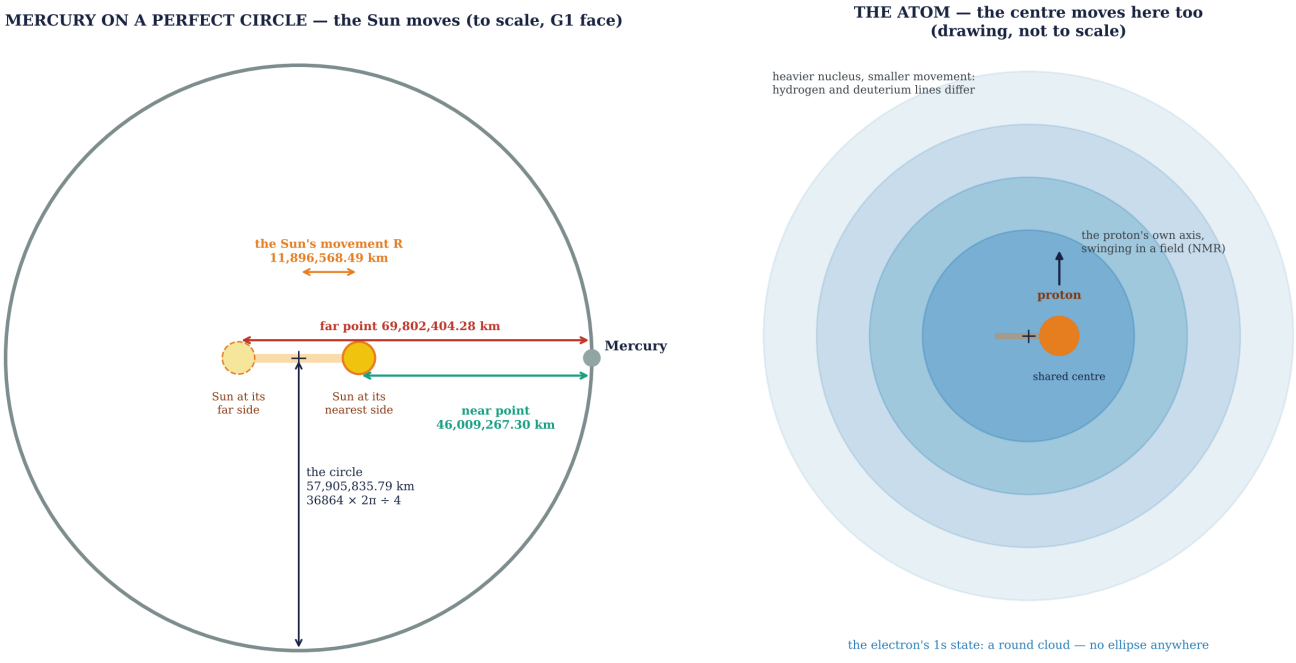



**Figure 7** — Left: Mercury's G1 position to scale. Mercury holds a perfect circle of radius 57,905,835.79 km; the Sun moves 11,896,568.49 km to either side of the centre, and the near and far points are the radius minus and plus that movement. Right: the atom, drawn, not to scale — the electron's ground state is a round cloud with no ellipse anywhere, and it is the proton, the centre, that moves.

**What the conventional account does and does not derive.** In the gravitational account, an inverse-square pull gives a family of ellipses, and the particular ellipse — its size and how stretched it is — is set by the energy and the

turning the body happened to start with. Those two quantities are taken from observation; the law allows every eccentricity from a perfect circle to a long thin ellipse equally. So the near and far points are measured first and then written as the semi-major axis times one minus and one plus the eccentricity. **The account explains why the path could be an ellipse; it does not say why it is this one.** Here, the near point is derived from the 639 node with nothing of Mercury's eccentricity going in, and the far point follows by adding back the same movement of the Sun.

### In the atom: the centre moves there too

The same is seen in hydrogen, and it is observed, not inferred.

- **The proton moves round the shared centre.** The electron does not go round a fixed proton: the two move about their common centre, and the heavier the nucleus, the less it moves. That shows directly in the light. The lines of hydrogen and of heavy hydrogen, deuterium, stand at slightly different wavelengths because their nuclei move by different amounts — and it was that shift in the Balmer lines that revealed deuterium in the first place. The framework's own reading of the ionisation energy shared between proton and electron, the proton's share 1836.118108711688719576 over 1837.118108711688719576, is the same motion written as a number.
- **The proton turns on its own axis.** Its axis swings round in a magnetic field, and that swing is read every day: it is what nuclear magnetic resonance, and every magnetic-resonance scanner, measures in the hydrogen of the body.
- **And the electron's ground state is round.** The 1s state of hydrogen is a spherical cloud. No ellipse is drawn in it, because there is none.

**So in the sky and in the atom, the outer body keeps a circle and the centre moves.** The Sun moves for Mercury; the proton moves for the electron. The mirror of Part Six is not only a likeness of shapes. It is the same arrangement of what moves and what holds still.

## PART EIGHT — THE ANTIMATTER READING: ONE ELECTRON, TWO STRANDS

The flip in hydrogen is the electron's spin showing first one way and then the other. Stephen Daubney's reading places the antimatter side of the framework exactly there, and it places it carefully.

**Antimatter enters the first shell properly only with the second electron.** Hydrogen has one electron in its 1s shell, and it is Mercury's. Helium's second 1s electron is Venus — Venus inverted, coming across from the other strand of the helix and registering in the 1s shell as a second electron. It is inverted because it is the antimatter: in this framework a value crossing from one strand to the other is read through its inverse, and Venus is the planet on the other strand.

**So hydrogen's flip is not two electrons. It is one electron seen from both strands.** Observed, it shows on the matter side. When it has done its rotation, it flips and shows its antimatter face. That is why the two spin states of hydrogen cannot be treated as two separate objects a step apart — an earlier version of this paper tried to, and the test was ill-posed for exactly that reason. They are one object, and the flip is the change of strand from which it is read. It is the same shape as Mercury, which after one orbit turns the face that faced the Sun away from it.

**And the inversion is in the numbers.** In the framework's grammar a π-degree taken positively and the same π-degree taken negatively are the two orientations of one step, and the framework reads them as matter and antimatter. The twenty-one centimetre line carries π to the power +1. Mercury's own rotation seed carries π to the power −1. Multiply them:

```
THE LINE AND MERCURY'S ROTATION SEED - ONE STEP IN ITS TWO ORIENTATIONS

  the 21 cm line              21.1066771458074966400 5468        ( 2⁴·3⁸·π/5⁶ )      π-degree +1
  Mercury's rotation seed     368.4142201201280920576013         ( 2·5⁶/(3³·π) )     π-degree -1

  21.1066771458074966400 5468  x  368.4142201201280920576013  =  7776   exactly        ( 2⁵·3⁵ = 6⁵ )

  the π cancels;  the line  =  7776 / Mercury's rotation seed

WHAT 7776 IS

  7776  =  3 x 2592,  and 2592 = 2⁵·3⁴ is Mercury's rotation number in the framework's Hβ chain
  7776 / (5π)  =  495.0355349930312523755  =  the blue | cyan colour boundary,
                  the gear that turns a wavelength into a free fall
```

And it is not the only pair. Mercury's distance on its circle, from 36864, carries π to the +1; its rotation seed carries π to the −1. Their product is clean too:

```
A SECOND PAIR, FROM MERCURY'S DISTANCE

  Mercury's circle radius   57,905,835.79096706897134 km   ( 2¹¹·3²·π )        π-degree +1
  x Mercury's rotation seed  368.4142201201280920576013     ( 2·5⁶/(3³·π) )     π-degree -1
  =  21,333,333.333...  =  (64/3) x 10⁶                    ( 2¹²·5⁶/3 )         the π cancels
```

**The radio line and Mercury's rotation are x and 7776/x: one step, read in its matter orientation and its antimatter orientation.** The constant between them carries no π at all; it is six to the fifth, three times Mercury's own rotation number, and the same number that sets the edge between blue and cyan. As the framework goes on, the inversion between matter and antimatter is expected to show itself in this way again and again: two values on opposite strands whose product is a clean number the framework already holds.

# PART NINE — WHY THE LINE IS WHERE IT IS

## The question

Hydrogen's ultraviolet, visible and infrared lines come from its electron falling between shells. The radio line is different: it comes from the ground state alone, from the two arrangements of one pair. So why does that pair speak at 21.1066771458074966400 centimetres and not at any other length? The framework's answer has four parts, each worked earlier in this paper.

## First: the line is a clock, and the clock is Mercury's

The line is Mercury's orbit on its G1 face, counted in hours and read at its decade. That is road one, and it is exact. **The radio line of hydrogen is the number of hours in one orbit of the innermost planet.** Its length is set by that orbit, not by an accident of the atom.

## Second: the orbit is set by hydrogen, through the lock

Mercury's orbit is not a free number either. It is its own rotation × 3/2, and the rotation is reached from hydrogen: from hydrogen's weight, nine stations down the framework's grammar (road two); from the Lyman-10 address (road seven); from the G1 face below seven (road six). **So the line is hydrogen's own value, carried to the innermost planet's rotation, turned by the three-to-two lock into the orbit, and counted in hours.**

## Third: the scale is the proton, and the floor is the helix

The proton sets hydrogen's blue line, and three-quarters of the G2 blue line, × π⁴/25, is the line's frequency (road nine). That frequency is $5^8 \cdot \pi$ divided by 864, and 864 is the ground state of the DNA helix. The Lyman-limit frequency reaches it × 432, half of 864 (road eight). **The line's frequency is a count of the Sun-side source — the proton — set over the helix's ground.**

## Fourth: it is a road, not a room

The line's address carries one power of π — an odd π-degree. In the framework's grammar that makes it a road, a transport between states, and not a room, a state that simply is or goes round. That is why it is so slow and so rare:

a road has no state to sit in. It is also why the line sits one degree above the DNA helix, which carries no π at all — the arrangement the framework finds when it reads its six domains together.

### So, why this value?

**Hydrogen's radio line is 21.1066771458074966400 centimetres because it is the innermost planet's orbit counted in hours — an orbit set by hydrogen's own value through the three-to-two lock, at a frequency set by the proton over the ground of the helix, on the one face of that orbit that is a road and not a room.** The atom and the Solar System are not two systems that happen to share a number. On this account they are one pattern of time read at two scales, and the radio line is the place where the two readings meet.

The account stops at two places, and it says so. It does not yet say why the stable arrangement in the sky is the decaying one in the atom. And it takes the line back to the proton and to Mercury's lock, but not further: why the proton has its mass, and why the innermost orbit is locked at three to two, are the next questions, and the framework's position is that both resolve onto the Sun's own flow of time.

# PART TEN — WHAT STANDS, WHAT IS OPEN, AND WHAT WOULD BREAK IT

### Stands

- **The address.** Mercury's G1 orbit × 24 = the line × 100, exact, the operator a bare 24 (Formula L1).
- **The frequency and the light speed.** Wavelength × frequency = the G1 light speed, exact; the second face gives the G2 light speed (Formulas L2, L3).
- **The parity.** The line sits on the road face of Mercury's orbit, not on the room face; the framework never asked the orbit we watch to flip.
- **Mercury flips after every orbit** and returns after two, and it is the planet the address points at.
- **The antimatter reading.** The flip is one electron read from two strands; the line × Mercury's rotation seed = 7776 = $6^5$ exactly, the π cancelling: matter and antimatter orientations of one step. The second 1s electron, in helium, is Venus inverted.
- **The circle and the moving centre.** Mercury's G1 position: circle 57,905,835.79096706897134 km, near point 46,009,267.29868700550488 km (near ÷ radius = $2^9 \cdot 3^{10}/(5^8 \cdot \pi^4)$ exactly), the Sun's movement 11,896,568.49228006346646 km, far point 69,802,404.28324713243781 km (Formula M1). In the atom the proton moves, and that motion is observed.
- **Distance and rotation one register apart.** 36864 ÷ 36841.42201201280920576013 = the 612 step, exactly.
- **The two faces of Mercury.** The G1 face carries the 21 cm line and the Lyman wavelength; the G2 face is the observed Mercury, and its orbit ÷ π × 200 is the perihelion advance and ÷ π × 36 is hydrogen's weight at its decade. The three-to-two lock is exact on both.
- **Ten roads**, each exact, each through operators the framework already uses (Formulas L4 to L12).
- **One source**, the proton: as it stands and opened out, the G2 ionisation energy, the twenty-one centimetre line and turn two of the DNA helix close on one ring.

### Open

- **The mirror's direction.** Why the parallel arrangement decays in the atom while the three-to-two lock persists in the sky.
- **The spinor parallel.** Two turns to return, in both the spin-one-half pair and Mercury; the derivation that would join the spinor's two turns to Mercury's two orbits has not yet been written.

### What would break it

1. **A road that does not land.** Any one of the ten roads, recomputed from its stated forms, failing to reach $2^4 \cdot 3^8 \cdot \pi/5^6$ exactly. Each is checked to fifty digits in the appendix.
2. **A light speed that does not close.** The wavelength × the frequency failing to give the G1 light speed exactly, or the second face failing to give the G2 light speed.
3. **A second innermost clock.** Another planet whose orbit, counted in hours, lands on a hydrogen line by the same bare 24. The address points at Mercury alone; a second planet doing the same would make it a

coincidence of the gear rather than a statement about Mercury.

4. **A parity reversal.** The line's address found to carry an even power of π on its own register. It would then be a room, and Part Two would fall.

# REFERENCES

The values, forms and results in this paper are derived on the page. The related papers of the Universal Force of Time, each published at universalforceoftime.org, are:


1. S. Daubney, *One Spectrum, Many Faces — The Hydrogen Atomic Spectrum*, Rev 3 (The Daubney Foundation, 2026).
2. S. Daubney, *Hydrogen's Ionisation Energy — The Master Paper*, Rev 2 (The Daubney Foundation, 2026).
3. S. Daubney, *The Unification of the Six Domains: Hydrogen's Ionisation Energy, the Hydrogen Spectrum, the Fraunhofer Lines, the Periodic Table, the 21 cm Line and the DNA Helix as One Field*, Rev 3 (The Daubney Foundation, 2026).
4. S. Daubney, *Mercury's Perihelion Precession — One Number, Sixteen Roads*, Rev 15 (The Daubney Foundation, 2026).
5. S. Daubney, *The Universal Fraunhofer Lines*, Rev 7 (The Daubney Foundation, 2026).
6. S. Daubney, *Turn One of One Helix*, Rev 3 (The Daubney Foundation, 2026).


Measured values are admissible in this framework, and a reader may look any of them up. Where this paper describes an observation — the rarity of the transition, Mercury's three-to-two lock — it describes it in words and scores the framework against nothing.

# APPENDIX — EVERY NUMBER FROM ITS FORM

Every value below is computed from the lattice form beside it in exact arithmetic, with π carried as a symbol and evaluated only at the end, at fifty digits; twenty-five are printed. Each road is checked against the line's address; "at its decade" means the two agree once a power of ten is set aside.

| QUANTITY | FORM | VALUE |
|---|---|---|
| the line, wavelength (cm) | $2^4 \cdot 3^8 \cdot \pi / 5^6$ | 21.10667714580749664005468 |
| the line, frequency (Hz) | $2 \cdot 5^{14} \cdot \pi / 3^3$ | 1420352581.375593731220451 |
| the second face (MHz) | $5^{18} / (2^9 \cdot 3^{12} \cdot \pi^2)$ | 1420.480627017783278115036 |
| Mercury G1 orbit (d) | $2^3 \cdot 3^7 \cdot \pi / 5^4$ | 87.94448810753123600022785 |
| Mercury G2 orbit (d) | $5^6 / (2 \cdot 3^2 \cdot \pi^2)$ | 87.95241635619598215614537 |
| Mercury G1 rotation (d) | G1 orbit × 2/3 | 58.62965873835415733348524 |
| Mercury solar day (d) | G1 orbit × 2 | 175.8889762150624720004557 |
| the G1 light speed | $2^3 \cdot 3^5 \cdot 5^6 \cdot \pi^2$ | 299789233.6830892680470977 |
| the G2 light speed | G1 × G-bond step | 299816259.8633854915833344 |
| hydrogen weight | $5^3 / (2^2 \cdot \pi^3)$ | 1.007860451037484037013189 |
| the G2 Balmer limit | $5^{10} / (2^5 \cdot 3^3 \cdot \pi^3)$ | 364.5328598949233351465528 |
| the Lyman-10 address | $2^4 \cdot 3^6 \cdot \pi^2 / 5^3$ | 920.952525874450231440684 |
| the Lyman-limit frequency | $10^{23} \cdot \pi / (2^{17} \cdot 3^6)$ | 3287853197628689.192639934 |
| the energy-to-mass gear | $6^6 \cdot \pi / 10$ | 14657.414684585853933337131 |
| the proton (x$10^{-27}$ kg) | $3 \cdot 5^5 \cdot \sqrt{(10^{11} / \pi)}$ | 1.672616358893222919880281 |
| Hβ, G2 face | $5^{10} / (2^3 \cdot 3^4 \cdot \pi^3)$ | 486.043813193231113528737 |
| the G-bond step | $5^{10} / (2^4 \cdot 3^9 \cdot \pi^3)$ | 1.000090150603356200676414 |
| the G1 free fall | 25π/8 | 9.817477042468103870195761 |

CHECKS, EACH A SYMBOLIC ZERO (ratio minus its power of ten)

| | |
|---|---|
| L1 Mercury G1 x 24 / the line | 0, to fifty digits |
| L2 wavelength x frequency / G1 light | 0, to fifty digits |
| L4 weight x $2^7 3^8 \pi^4 / 5^8$ / the line | 0, to fifty digits |
| L5 W1 x 48π/625 / Mercury G2 | 0, to fifty digits |
| L5 Mercury G2 x $2^5 3^{10} \pi^3 / 5^{12}$ / line | 0, to fifty digits |
| L6 W1 x $\pi^4$/25 / frequency | 0, to fifty digits |
| L7 0.0279936 x π x 24 / the line | 0, to fifty digits |
| L8 E->m gear x 1.44 / the line | 0, to fifty digits |
| L9 Lyman-limit freq x 432 / freq | 0, to fifty digits |
| L10 Lyman-10 x 4/2π x 3/2 x 24 / line | 0, to fifty digits |
| L11 6.9984 x 2π x 2 x 24 / line | 0, to fifty digits |
| 135 / veil / 24 x 100 / G1 free fall | 0, to fifty digits |
| M1 near / radius / $2^9 3^{10} / (5^8 \pi^4)$ | 0, to fifty digits |
| M1 radius / $2^{11} 3^2 \pi$ | 0, to fifty digits |
| 36864 / 36841.42... / the 612 step | 0, to fifty digits |
| radius x seed / $2^{12} 5^6 / 3$ | 0, to fifty digits |
| line x seed / 7776 | 0, to fifty digits |

# A Note on the Numbers

Every value in this paper is given at full precision, because the precision is the evidence. A quantity truly on the {2,3,5,π} lattice does not approximate a lattice form; it *is* one. Where a value has not been read onto the lattice the paper says so, rather than rounding until it appears to fit. And a number in this framework is not a measurement of one thing: it is one address that may surface as an energy, a wavelength, a dark line, a weight, a frequency or a turn of a helix, depending only on the register in which it is read. That is why every formula here leads with the number and puts its lattice address behind it: the number is what is checked; the address is why it lands.

# Attribution and contact

**The Universal Force of Time** is an original theoretical framework by **Stephen Daubney**, The Daubney Foundation.

**Correspondence: thedaubneyfoundation@gmail.com · universalforceoftime.org**

*© 2026 Stephen Daubney | The Daubney Foundation. This paper may be freely quoted and referenced provided full attribution is given to Stephen Daubney and The Daubney Foundation as the source.*