THE UNIVERSAL FORCE OF TIME

Fine Structure, Mercury and DNA — Unified

One gear between the orbit of Mercury and the orbit of the electron, with the double helix of life wound to it in between

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. 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 $d\Sigma T = 0$ governs all change: T is never created or destroyed at a node, only redistributed.

THE GEAR, NUMBER FIRST

12,056.327160493827

= Mercury's observed year 87.9524163562 days ÷ α 0.0072951252 ($5^9/(2\cdot3^4)$) — no π remains — = 125 × the Faraday 96.450617283950617

light × α = $\mathbf{3^7}$ **km/s** · the three DNA turns multiply to **10/α** · Mercury's rotation × 2π = **368.4142201201**, the A-DNA pitch

ABSTRACT

The closest planet to the Sun turns three times on its axis for every two journeys round it. The electron in a hydrogen atom circles its proton. A strand of DNA winds about its partner in a cell. Three scales, three sciences, and nothing in the standard picture joins them. This paper sets out the position of the Universal Force of Time: **they are joined by one number, the fine structure constant α, and α is the gear by which time steps from the orbit of Mercury to the orbit of the electron — with the DNA helix wound to the same gear in between.**

The work is built number first, with each lattice form placed behind its number. The gear is

- **α = 0.007295125222248320 ($3^2/(5^3\cdot\pi^2)$)**, 1/α = **137.077838904018870 ($5^3\cdot\pi^2/3^2$)**.

From that gear the paper:

- sets out **Mercury's four periods** — orbit and rotation, each on its G1 and G2 face — as exact addresses, one G-bond step apart, with the **3:2 lock** on both faces;
- shows that **Mercury's G2 year divided by α is 12,056.327160493827 ($5^9/(2\cdot3^4)$)**, with no π left — **one hundred and twenty-five times the Faraday** — and that its G2 rotation divided by α is **8037.551440329218 ($5^9/3^5$)**, while the G1 faces keep π^3; and explains why by **the same-degree law**: the G2 faces and α carry the same power of π;
- follows the gear down: the **G1 speed of light × α = 2,187,000 m/s (3^7 km/s)**, the electron's speed, which steps on to hydrogen's **1312.2 kJ/mol ($3^8/5$)** and **13.6048896 eV**;
- shows the **atom as the Sun and Mercury**: hydrogen's **twenty-one centimetre line is Mercury's G1 orbit × 24 ÷ 100**, and **hydrogen's blue line, read one helical turn up, is Mercury's rotation**;
- shows that the **three turns of the DNA helix multiply to ten over α**, and that **the pitch of the reading form of DNA is Mercury's G2 rotation carried once round the circle, × 2π = 368.4142201201** — the seed which, times the twenty-one centimetre line, is **7776 = 6^5**;

- and corrects the first versions, which gave the water bond angle and Mercury's rotation in forms that do not hold, and compared the value with a figure off the lattice.

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 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 U1     THE GEAR                                                          Part One
    0.007295125222248320  ( 3²/(5³·π²) )           1/α  =  137.077838904018870  ( 5³·π²/3² )

FORMULA U2     MERCURY'S FOUR PERIODS                                            Part Two
    orbit     G1  87.9444881075312360  ( 2³·3⁷·π/5⁴ )      G2  87.9524163561959822  ( 5⁶/(2·3²·π²) )
    rotation  G1  58.6296587383541573  ( 2⁴·3⁶·π/5⁴ )      G2  58.6349442374639881  ( 5⁶/(3³·π²) )

FORMULA U3     MERCURY'S G2 FACES DIVIDED BY THE GEAR                            Part Three
    87.9524163561959822 / α  =  12,056.327160493827  ( 5⁹/(2·3⁴) )   =  125 x 96.450617283950617
    58.6349442374639881 / α  =   8,037.551440329218  ( 5⁹/3⁵ )       =  250/3 x the Faraday

FORMULA U4     THE G1 FACES KEEP π                                               Part Three
    87.9444881075312360 / α  =  12,055.240373300570  ( 2³·3⁵·π³/5 )

FORMULA U5     THE REGISTER DESCENT                                              Part Four
    299,789,233.6830892680 x α  =  2,187,000 m/s ( 3⁷ km/s )   x 3/5  ->  1312.2  ->  13.6048896 eV

FORMULA U6     THE ATOM AS THE SUN AND MERCURY                                   Part Five
    87.9444881075312360 x 24 / 100   =   21.1066771458074966 cm         the hydrogen line

FORMULA U7     HYDROGEN'S BLUE LINE, ONE HELICAL TURN UP                         Part Five
    486 / ( 868.0555... x 180/π )  x 60   =   0.586296587383541573   ->  Mercury's G1 rotation

FORMULA U8     THE THREE TURNS OF THE HELIX                                      Part Six
    10.41666... x 10.96622... x 12   =   1370.77838904018870   ( 1250π²/9  =  10/α )

FORMULA U9     THE READING HELIX IS MERCURY'S TURN                               Part Six
    58.6349442374639881 x 2π  =  368.4142201201281    =  the A-DNA pitch 36.8414220120 Å  ( 5⁵/(3³·π) )
    368.4142201201281 x 21.1066771458074966  =  7776  ( 6⁵ )
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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 12,056.327... and 12.056327... 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 length, an angle, a time and a number of base pairs can likewise be one count read at different registers.

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 — α IS A GEAR

One number, three scales

The fine structure constant is usually introduced as the strength of electromagnetism: how firmly an electron takes hold of light. It carries no units, and its inverse sits close to 137. For a century it has been measured ever more finely and left unexplained. The Universal Force of Time says there is no separate electromagnetic force for it to measure. There is one substance, T — time itself — flowing outward from the Sun through registers: the celestial register of the planets, the atomic register of the proton and electron, the biological register of the living cell.

```
FORMULA U1     THE GEAR
    α     =   0.00729512522224831954 4        ( 3²/(5³·π²) )        π -2, a room
    1/α   =   137.077838904018869706          ( 5³·π²/3² )
```

α is the gear ratio between the celestial register and the atomic register. When T steps down from the orbit of Mercury to the orbit of an electron, it steps through α. That is why the number has no units — a gear ratio counts turns of one wheel per turn of another, and does not care what units measure either — and it is why the same number appears in a planet's year, in an atom and in the molecule of life. Mercury is the celestial end of the gear, the electron the atomic end, and DNA is where the two meet in a living thing. This paper follows the gear from one end to the other.

PART TWO — MERCURY'S FOUR PERIODS

Two faces, two motions

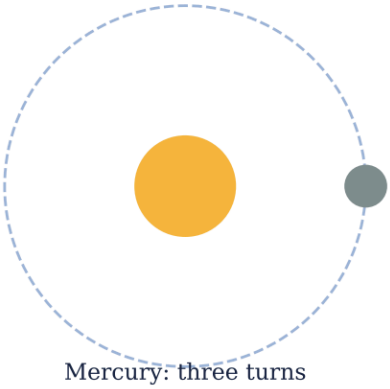
Mercury has two periods — the time it takes to go round the Sun, and the time it takes to turn once on its axis — and each has two faces in this framework, G1 and G2, one G-bond step apart. The G2 faces are the ones observed; the G1 faces are the ones the twenty-one centimetre line of hydrogen sits on.

```
FORMULA U2     MERCURY'S FOUR PERIODS
    orbit, G1        87.94448810753123600023 days      ( 2³·3⁷·π/5⁴ )        π +1, a road
    orbit, G2        87.95241635619598215615 days      ( 5⁶/(2·3²·π²) )      π -2, a room
    rotation, G1     58.62965873835415733349 days      ( 2⁴·3⁶·π/5⁴ )        π +1, a road
    rotation, G2     58.63494423746398810410 days      ( 5⁶/(3³·π²) )        π -2, a room

    G2 / G1  =  1.000090150603356201  ( the G-bond step )       orbit / rotation  =  3/2  on both faces
```

Every period is an address. The two faces differ by exactly the G-bond step. And on both faces the orbit is three halves of the rotation: **three turns for every two orbits, the lock that holds the innermost planet** — a lock the framework derives rather than observes, because on a ratio of twos and threes the only one-for-one trade is a two for a three.

Mercury's four periods, every one an address



	G1 face	G2 face
orbit	87.9444881075 d	87.9524163562 d
	$2^3 \cdot 3^7 \cdot \pi / 5^4$ (road)	$5^6/(2 \cdot 3^2 \cdot \pi^2)$ (room)
rotation	58.6296587384 d	58.6349442375 d
	$2^4 \cdot 3^6 \cdot \pi / 5^4$ (road)	$5^6/(3^3 \cdot \pi^2)$ (room)

G2 = G1 × the G-bond step; orbit ÷ rotation = 3/2 on both faces

Figure 1 — **Mercury's four periods.** Orbit and rotation, each on its G1 face (a road, one power of π) and its G2 face (a room, π to the minus two). The faces are one G-bond step apart; the orbit is three halves of the rotation on both.

The G1 face is a road, the G2 face a room

The two faces of each period are not only one step apart; they are different kinds of thing. The G1 faces carry one power of π — they are roads, things that carry. The G2 faces carry π to the minus two — they are rooms, states. That is the law the framework finds for every pair of faces: because the G-bond step itself carries π to the minus three, a G1 face and its G2 face are never in the same register. It is about to matter.

PART THREE — MERCURY DIVIDED BY THE GEAR

The G2 faces lose their π

Divide Mercury's observed periods by α.

```
FORMULA U3     MERCURY'S G2 FACES DIVIDED BY THE GEAR
    the G2 year       87.95241635619598216  /  α   =   12,056.32716049382716     ( 5⁹/(2·3⁴) )    no π
    the G2 rotation   58.63494423746398810  /  α   =    8,037.55144032921811     ( 5⁹/3⁵ )        no π

    12,056.32716049382716  /  96.450617283950617284   =   125          ( 5³ )
     8,037.55144032921811  /  96.450617283950617284   =   83.3333...   ( 250/3 )
```

The π cancels exactly, and what is left is a pure {2,3,5} number. Mercury's observed year, divided by the gear between the planets and the electron, is five to the ninth over two times three to the fourth — and that is exactly one hundred and twenty-five times the Faraday, the chemist's bridge between the electron-volt and the kilojoule per mole. The innermost planet's year, carried across the register bridge, is the bridge of electrochemistry five cubed times over.

The G1 faces keep it

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FORMULA U4     THE G1 FACES KEEP π
    the G1 year       87.94448810753123600  /  α   =   12,055.24037330057008     ( 2³·3⁵·π³/5 )   π +3
```

The G1 year divided by α does not lose its π: it keeps π cubed. **This is not a failure of the G1 face. It is the same-degree law at work.** Two values with the same power of π have a ratio with no π in it at all. α carries π to

the minus two; Mercury's G2 faces carry π to the minus two; so their ratio is π-free. The G1 faces carry π to the plus one, a different degree, so their ratio with α keeps π^3. **The law says in advance which face of Mercury divides cleanly by α — the observed G2 face — and the arithmetic confirms it.**

Why the G2 face of Mercury, and not the G1 face, divides cleanly by α

Mercury, G2 face (π −2, a room)

87.9524163562 ÷ α = 12,056.3271605 ($5^9/(2\cdot3^4)$) — no π: 125 × the Faraday

Mercury, G1 face (π +1, a road)

87.9444881075 ÷ α = 12,055.2403733 ($2^3\cdot3^5\cdot\pi^3/5$) — π^3 remains: a road

α itself carries π −2. Two values of the same π-degree have a π-free ratio — the same-degree law.

Figure 2 — **The same-degree law.** Mercury's G2 year (π −2) divided by α (π −2) is π-free: $5^9/(2\cdot3^4)$, one hundred and twenty-five times the Faraday. The G1 year (π +1) divided by α keeps π^3. The law predicts which face closes before the arithmetic is done.

PART FOUR — THE ATOMIC END OF THE GEAR

The register descent

Now follow the gear the other way, from light down to the electron.

FORMULA U5 THE REGISTER DESCENT

the G1 spin-orbit speed	299,789,233.6830892680 m/s	($2^3\cdot3^5\cdot5^6\cdot\pi^2$)	
x α	2,187,000 m/s	(3^7 km/s)	the electron's speed, no π
x 3/5 / 1000	1312.2 kJ/mol	($3^8/5$)	hydrogen's quantum, flask face
/ the Faraday	13.6048896 eV	($2^8\cdot3^{12}/10^7$)	hydrogen's quantum, atom face

The observed speed of light, multiplied by α, is the electron's orbital speed: three to the seventh kilometres a second, with no π at all, because light carries π squared and α π to the minus two. Three-fifths of it, on the chemist's scale, is hydrogen's quantum; carried across the Faraday it is the same quantum on the atom's scale. **The gear that turns Mercury's year into the Faraday also turns light into the electron, and the electron into hydrogen's quantum.**



Figure 3 — **The register descent.** Light on the G1 register × α is the electron's speed, 3^7 km/s; three-fifths of it is hydrogen's 1312.2 kJ/mol; across the Faraday it is 13.6048896 eV.

PART FIVE — THE ATOM IS THE SUN AND MERCURY

The twenty-one centimetre line

The framework holds a mirror between the atom and the inner solar system: the proton is the Sun, the electron is Mercury. The most direct evidence is hydrogen's radio line — the faint twenty-one centimetre signal by which astronomers map the cold gas of the Galaxy.

```
FORMULA U6     THE ATOM AS THE SUN AND MERCURY
    Mercury's G1 orbit   87.94448810753123600 days  x 24 / 100   =   21.10667714580749664 cm   ( 2⁴·3⁸·π/5⁶ )
```

Hydrogen's radio line is Mercury's year on its G1 face, counted in hours. The electron's turning in the atom and the innermost planet's journey round the Sun are one clock read at two registers — which is exactly what a gear between those registers would produce.

Hydrogen's blue line, one helical turn up

Every wavelength in this framework becomes a free fall when divided by the ground state of the DNA helix, 864, read in degrees. Divide instead by the first helical turn, 868.0555..., read in degrees — the number that is also the first bond of the water molecule — and hydrogen's blue line lands on Mercury.

```
FORMULA U7     HYDROGEN'S BLUE LINE, ONE HELICAL TURN UP
    486 / ( 864 x 180/π )            =  9.81747704246810       the Earth's free fall  ( 5²·π/2³ )
    486 / ( 868.0555... x 180/π )    =  0.00977160978972569
    x 60                             =  0.586296587383541573   Mercury's G1 rotation, 58.6296587383541573 days
    x 3/2  x 24 / 100                ->  21.1066771458074966 cm    the hydrogen line again
```

Hydrogen's blue line read on the ground state is the Earth's free fall; read one helical turn up, it is Mercury's rotation. The light of the atom reaches the planet through the helix. This is the true meeting of the Balmer β line with Mercury that the first versions of this paper reached for.

PART SIX — DNA, WOUND TO THE SAME GEAR

The three turns

The double helix takes three forms. The common B form turns once in 125/12 base pairs; the A form, in which a gene is read, in $10\pi^2/9$; the left-handed Z form in 12. Each closes the circle exactly.

```
FORMULA U8     THE THREE TURNS OF THE HELIX
    10.41666666666666667  x  10.96622711232150958  x  12   =   1370.77838904018870    ( 1250π²/9  =  10/α )
```

The three turns of the helix multiply to ten over α. The molecule of life, taken in all three of its forms, is wound to the gear between the planets and the electron.

The reading helix is Mercury's turn

The A form — the form in which DNA is read — has a pitch, the length of one full turn, of 36.8414220120 ångströms. That number has been met before.

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FORMULA U9     THE READING HELIX IS MERCURY'S TURN
    Mercury's G2 rotation   58.63494423746398810 days   x 2π   =   368.4142201201280921
    the A-DNA pitch         36.84142201201280921 Å                ( 5⁵/(3³·π) )      the same digits

    368.4142201201280921  x  21.10667714580749664   =   7776   ( 6⁵ )      exactly
```

Mercury's observed rotation, carried once round the circle, is the pitch of the reading helix. One turn of the A form of DNA is one turn of the innermost planet, read at the register of the cell. And that same seed, multiplied by hydrogen's twenty-one centimetre line, is 7776 — six to the fifth, π-free — the two carrying their π in opposite directions and cancelling, matter and its mirror.

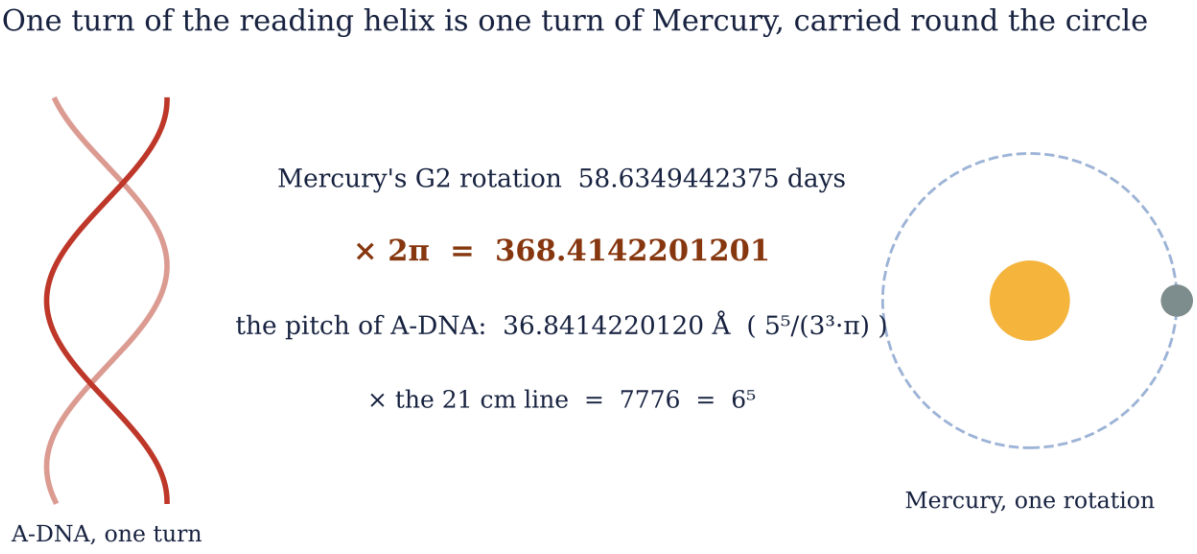


Figure 4 — One turn of the reading helix is one turn of Mercury. Mercury's G2 rotation × 2π is 368.4142201201, the pitch of A-DNA at its decade; times the twenty-one centimetre line of hydrogen it is 7776 = 6^5.

So the three domains in the title are joined three ways. **α turns Mercury's year into the Faraday and light into the electron. The helix's three turns multiply to ten over α. And the reading helix's pitch is Mercury's turn.** The planet, the atom and the molecule are one structure, geared by one number.

A WORKED WALK ALONG THE GEAR

A lecture-theatre reader should be able to walk the whole gear with a pocket calculator, so here is the walk set out step by step, in the order a student would take it.

Start at the planet. Take Mercury's observed year, 87.9524163562 days. It is not a measured number that happens to be close to a lattice value; in this framework it is the lattice value five to the sixth over two times three squared times π squared. Write that form down beside the number, because it will tell you what happens next. The π sits in the denominator, squared.

Pick up the gear. α is nine over one hundred and twenty-five π squared. Its π also sits in the denominator, squared. Before dividing, the same-degree law already tells you the answer will have no π in it, because both numbers live at

the same degree of π. That is a prediction made before any arithmetic is done, and it is the first test the student can run.

Turn the gear once. Divide the year by α. The π squared on top and the π squared below cancel exactly, and so does the nine against the three squared. What is left is five to the ninth over two times three to the fourth: 12,056.32716. Now divide that by the Faraday, five to the sixth over two times three to the fourth, and the answer is five cubed, one hundred and twenty-five, with nothing left over. The innermost planet and the chemist's bridge are the same number five cubed apart.

Try the other face. Now do the same with the G1 year, 87.9444881075 days. Its form is two cubed times three to the seventh times π over five to the fourth — π to the plus one, a road. Divide by α and the π does not cancel: one π on top and two π below the line of α turn into π cubed on top. The student sees with their own hands why one face closes and the other does not. That is the whole content of the same-degree law, and it is the law that makes the faces of a planet worth distinguishing.

Come down to the electron. Take light on its G1 face, 299,789,233.683 metres a second, two cubed times three to the fifth times five to the sixth times π squared. Multiply by α. The π squared above meets the π squared below and vanishes; the result is three to the seventh thousand, 2,187,000 metres a second. That is the speed the electron carries round the proton. Light and the electron are one gear apart, exactly as Mercury and the Faraday are.

Come down again to the quantum. Three-fifths of the electron's speed, read in thousands, is 1312.2 — hydrogen's quantum on the chemist's scale, three to the eighth over five. Divide by the Faraday and it is 13.6048896, the same quantum on the atom's scale, the G1 face of the electron-volt. Every number in the walk has been a plain fraction of twos, threes and fives, with π entering only where a circle is turned.

Cross over to the cell. Multiply the three turns of the double helix — 125/12, $10\pi^2/9$ and 12. The twelve against the twelve cancels, the one hundred and twenty-five times ten makes one thousand two hundred and fifty, and the π squared over nine remains. That is ten over α. The helix, taken in its three forms, is the gear wound ten times.

Close the circle. Last, take Mercury's G2 rotation, 58.6349442375 days, and carry it once round the circle, times 2π. One π cancels and 368.4142201201 is left — the pitch of the reading form of DNA at its decade. Multiply it by hydrogen's twenty-one centimetre line and every π is gone: 7776, six to the fifth. The walk that began at the innermost planet ends at a whole number built from the first two primes.

Nothing in that walk was adjusted. No figure was fitted, no correction was chosen to make a gap close. Each step was a multiplication or a division of exact forms, and each result was predicted in its π-degree before the division was done. That is the standard the paper holds itself to, and it is why the walk can be repeated by anyone in the room.

WHY THE STANDARD PICTURE DOES NOT SEE THE GEAR

It is fair to ask why, if the gear is this simple, it has not been seen. There are three reasons, and each is a habit of the standard picture rather than a fault of its measurements.

The first is that each science carries its own units. The astronomer reads Mercury in days, the atomic physicist reads the electron in electron-volts, the biologist reads the helix in ångströms. A gear ratio is invisible to someone who never puts two wheels side by side, and the three sciences rarely do. The framework reads every value as a plain number with its lattice address, so the wheels can be laid together.

The second is that the standard picture treats every measured value as a single fact about the world. It does not allow a planet two faces one step apart, so it cannot see that one face divides cleanly by α and the other does not. Averaged across the faces, or read on a mixture of them, the clean relation is blurred into a near-miss, and a near-miss is easy to dismiss as coincidence.

The third is that the standard picture benchmarks its values against tables built from the electron's charge and the speed of light, and those tables are themselves read across different dimensions. Comparing an exact lattice value with such a table always leaves a small gap, and the gap invites a correction. The first versions of this paper fell into exactly that habit. This revision does not: each value is stated as the address it is, and the relations between them are exact.

PART SEVEN — WHAT THIS REVISION CORRECTS

- **The water bond angle.** The first versions wrote the bond angle of water as $18/\pi^2$ and α as that angle divided by 250. Eighteen over π squared is about 1.82, not an angle of water at all, and that road is withdrawn. Water holds a different bond angle in each of its phases, and each phase lives in its own space-time dimension; the angles are left to the work on the water molecule itself.
- **Mercury's rotation.** The first versions wrote the rotation as $(1/\pi^2) \times (25/18) \times 10^4$ minutes, which is about a day, not Mercury's rotation. Mercury's rotation is **58.6296587383541573 days ($2^4 \cdot 3^6 \cdot \pi/5^4$)** on its G1 face and **58.6349442374639881 days ($5^6/(3^3 \cdot \pi^2)$)** on its G2 face.
- **The identity with α.** The first versions multiplied α's inverse by the rotation and claimed a clean product. The clean result is **Mercury's G2 year divided by α = $5^9/(2 \cdot 3^4)$**, with the same-degree law explaining why the G2 face, not the G1 face, closes.
- **No off-lattice benchmark.** The first versions compared the framework's α with a figure built from science's charge and speed of light, and explained the gap with fitted corrections. The framework's value is the value; that comparison is withdrawn.
- **New in this revision:** Mercury's four faces as roads and rooms; the Faraday link; the register descent; hydrogen's blue line one helical turn up; and the A-DNA pitch as Mercury's G2 rotation round the circle.

CONCLUSION — ONE GEAR, THREE DOMAINS

The fine structure constant, Mercury and DNA have been studied by three different sciences that rarely speak to one another: atomic physics, celestial mechanics and molecular biology. The Universal Force of Time joins them because it says they are made of one thing. Time flows outward from the Sun as the DNA helix; it deposits matter at the planets; and α is the gear between the register of the planets and the register of the electron. Read with that gear, **Mercury's observed year becomes the chemist's bridge, the observed speed of light becomes the electron's speed, the helix's three turns become ten over α, and one turn of the reading helix becomes one turn of Mercury.**

It also explains why the standard figures for these things have never been joined. Science reads Mercury on one face, light on another, and the electron's charge on a third, and puts them in one equation as if they shared a register. The same-degree law shows how much that matters: Mercury's observed G2 face divides cleanly by α, and its G1 face does not. Read face by face, dimension by dimension, every value in this paper is an exact address, and the three domains are one.

WHAT STANDS, WHAT IS OPEN

Forced, and stated at full force. Mercury's four periods are addresses one G-bond step apart, with the 3:2 lock on both faces. Mercury's G2 year divided by α is $5^9/(2 \cdot 3^4)$, one hundred and twenty-five times the Faraday, and the same-degree law predicts that it, and not the G1 year, is π-free. The three turns of DNA multiply to ten over α. Each is an exact relation in this paper.

Arrived at, and exact on every line. Light × α = 3^7 km/s, stepping to 1312.2 and 13.6048896; the twenty-one centimetre line as Mercury's G1 orbit; hydrogen's blue line one helical turn up as Mercury's rotation; the A-DNA pitch as Mercury's G2 rotation × 2π; that seed × the hydrogen line = 6^5.

Open. The other planets on the same gear — whether Venus's and the Earth's years, divided by α on their observed faces, land on equally clean nodes — are not set out here. The electron's own orbit time on the atomic register, the exact counterpart of Mercury's year, is owed.

WHAT WOULD BREAK IT

- A G2 face of Mercury that, divided by α, keeps a power of π — which the same-degree law forbids.
- A form of DNA whose turn is not a lattice address, or a product of the three turns that departs from $1250\pi^2/9$.
- A demonstration that the A-DNA pitch and Mercury's G2 rotation × 2π are not the same address.

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 planet's rotation at one register, the pitch of a helix at another, an energy in an atom at a third. The unit and the power of ten are the costume a number wears where it is read. That is why 368.414 can be Mercury's turn round the circle and, at its decade, the length of one turn of the reading helix. 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, at forty digits with π carried as a symbol.

THE GEAR			
	α	$3^2/(5^3\cdot\pi^2)$	0.007295125222248319543959
	$1/\alpha$	$5^3\cdot\pi^2/3^2$	137.0778389040188697064
MERCURY			
	orbit G1	$2^3\cdot3^7\cdot\pi/5^4$	87.94448810753123600023
	orbit G2	$5^6/(2\cdot3^2\cdot\pi^2)$	87.95241635619598215615
	rot. G1	$2^4\cdot3^6\cdot\pi/5^4$	58.62965873835415733349
	rot. G2	$5^6/(3^3\cdot\pi^2)$	58.63494423746398810410
	G2 / G1	$5^{10}/(2^4\cdot3^9\cdot\pi^3)$	1.000090150603356200676
MERCURY OVER THE GEAR			
	orbit G2/α	$5^9/(2\cdot3^4)$	12056.32716049382716049 = 125 x 96.450617283950617284
	rot. G2/α	$5^9/3^5$	8037.551440329218106996
	orbit G1/α	$2^3\cdot3^5\cdot\pi^3/5$	12055.24037330057008423
THE DESCENT AND THE MIRROR			
	c_G1 x α	3^7 x 10^3	2,187,000
	orbit G1 x 24/100		21.10667714580749664005 the hydrogen line
	486 / (868.0555... x 180/π) x 60		0.5862965873835415733349 Mercury's G1 rotation
THE HELIX			
	B x A x Z	$1250\pi^2/9$	1370.7783890401886970 64 = 10/α
	rot. G2 x 2π	$2\cdot5^6/(3^3\cdot\pi)$	368.4142201201280920576 = A-DNA pitch x 10
	x 21 cm line	6^5	7776

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