THE UNIVERSAL FORCE OF TIME · MEDICINE

NAD and the Redox Register

The molecule that runs out: NAD read as one register written and erased, its two light bands read on the lattice — Mercury's orbit, Mercury's closest approach, the Sun and the body's warmth — and the three ways the register fails

Stephen Daubney · The Daubney Foundation · 2026 · Rev 5 (supersedes Rev 4: NAD given in full as medicine knows it; NADH's 340 and 460 nm bands read on the lattice; the mitochondrial light research incorporated and credited; three routes walked)

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.

NAD, NUMBER FIRST

the node: position **4** (2^2) · NADH takes in light near **340 nm**, gives it out near **460 nm**

340 band: **339.2920065877 · 339.3225939668 · 339.5305452627** → Mercury's orbit in three registers

460 band: **460.0926729869** Mercury's closest approach · **460.8** = 36,864 ÷ 8 · **459.0709089668** = one over the day in degrees

ABSTRACT

There is a molecule in every cell that quietly runs out as we age, and when it runs low the cell forgets how to repair itself. It is NAD — nicotinamide adenine dinucleotide — the carrier that takes electrons from the food we burn and hands them to the machinery that makes the cell's energy. Every second, across the body, it is loaded and unloaded billions of times. And it has a property that laboratories have used for sixty years: in its loaded form, NADH, it **takes in ultraviolet light near 340 nanometres and glows blue near 460**, while its unloaded form does neither. The cell's most important electron carrier announces its state in light.

This paper reads NAD and its decline in the Universal Force of Time, in full. **Part I sets out NAD as medicine knows it** — the carrier and its two forms, the ratio between them that the cell reads, the sirtuin enzymes that spend NAD^+ to keep the genome in repair, the halving of NAD^+ between the ages of twenty and sixty, and what laboratories have found in the last year when specific frequencies of light are shone on the mitochondria where NAD does its work.

Part II reads NAD in the theory. NAD is the cell's redox register: one node, position 4 of the nicotinamide ring [2^2], where an address is written and erased. Half of the molecule is adenine, a letter of DNA. And its two light bands are not arbitrary. The 340 nm band holds three exact lattice lines — **339.2920065876977, 339.3225939668055 and 339.5305452627100 nm** — and each, carried through the theory's conversion grammar, returns **Mercury's orbit**, in three registers one fixed step apart. The 460 nm band holds five — among them **460.0926729868701 nm, Mercury's closest approach to the Sun**, **460.8 nm, body temperature divided by eight**, and **459.0709089667556 nm, the Sun's rotation, which is one over the day read in degrees**. In the record Mercury is the electron's celestial mirror. The molecule that carries the cell's electrons takes in and gives out light at the lines of the planet that mirrors the electron.

Part III reads the decline as three routes — the supply fails, the drain overdraws, the depth collapses — each paired with its correction: re-fill the register, stop the drain, restore the depth. They are bound by an order law: the drain before the fill, the fill before the depth. Fourteen propositions, P-NAD-1 to P-NAD-14, are stated. The research

groups whose frequencies bear on NAD are credited in full, and the theory's exact lines within their frequencies are offered back to them to test. Every number is at full precision; the corrective detail is held in the Foundation's clinical reference. The structure resolves into the clinical trial.

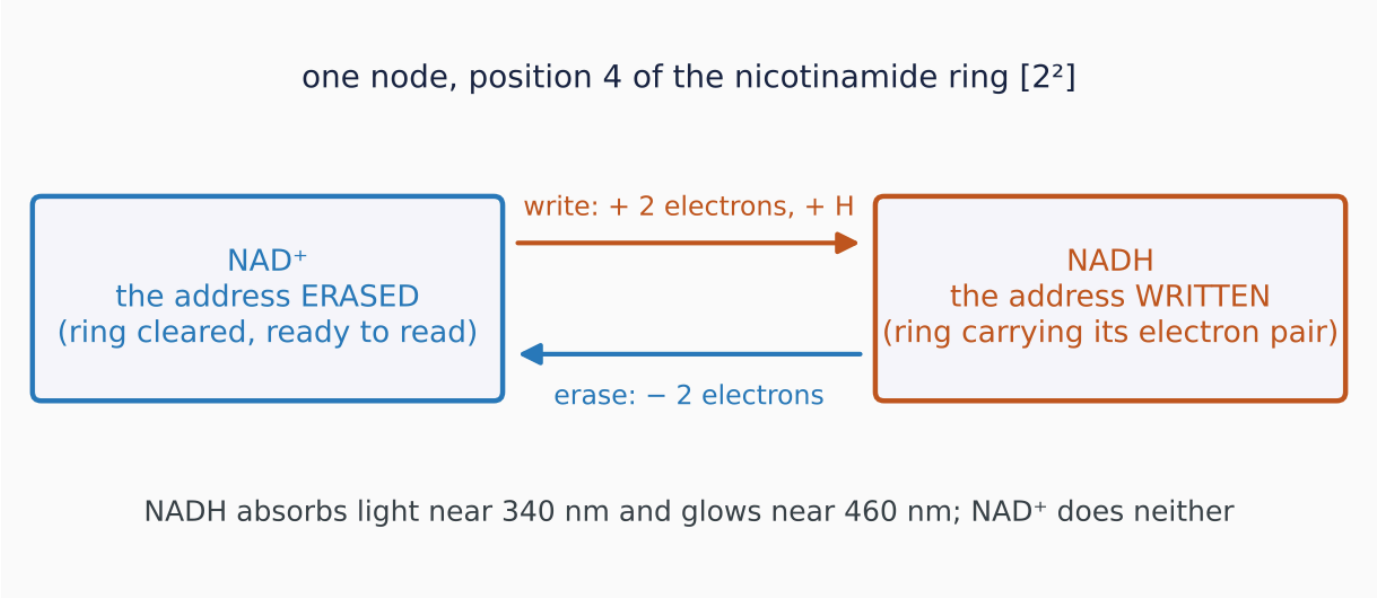


Figure 1 — NAD as one register. NAD⁺ is the address erased — the ring cleared and ready to read. NADH is the address written — the ring carrying its electron pair. The node is position 4 of the nicotinamide ring. Only the written form takes in light near 340 nm and glows near 460 nm.

THE TERMS THIS PAPER USES

T, the substance. Tau (T) is the living fabric of time itself, the one substance of which everything is made. It is generated by the Sun and flows outward as the DNA double helix, creating matter and creating life. Everything a body does — a heartbeat, a breath, the holding of its warmth — is T moving in a structured way.

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, and the set of all such products is the lattice. A number that needs any other prime is not on the lattice.

Number first. Every value is written with its number first, as a reader meets it, and its address in brackets behind it. The number is what is there; the address is how it is built.

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 24 millimetres and 0.024 metres are one address.

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 day, 864. The day is 86,400 seconds [$2^7 \cdot 3^3 \cdot 5^2$], written 864 at its decade. It is the ground state of the DNA helix and the gear through which a per-second value becomes a per-day value.

The time ladder. A rate given per second is carried up the clocks by fixed steps: × 60 to the minute, × 60 to the hour, × 24 to the day. The amount is the same; only the choice of clock changes — the same quantity counted in seconds or counted in days. From the day the orbit is completed one of two ways — × 360 gives the year as a degree value, × 2π gives the year as a radian value. The two answers are two faces of one year, and both are read.

The two gears. Two numbers carry energy between the theory's registers and appear throughout the record. **10,368** [$2^7 \cdot 3^4$] carries an energy in electron-volts to kilojoules per mole. **31,104** [$2^7 \cdot 3^5$] carries an energy in electron-volts to a circumference. When a quantity of the body lands on one of them, it is speaking in the theory's own units.

The veil. The veil is 180/π = 57.29577951308232, the number that turns radians into degrees. In the Universal Force of Time a wavelength in nanometres is an angle in degrees directly; multiply it by π/180 — cross the veil — and the bare value it carries appears.

The register. A register is a level at which T is read. NAD is the cell's redox register: a place where an address is written (NADH, the ring carrying its electron pair) and erased (NAD^+, the ring cleared and ready to read), over and over.

The conversion grammar. One value takes several forms, and fixed steps move it between them: a frequency divided by 2π is a free fall; a free fall times 49.5035535 [7776/(50π)] is a wavelength; a wavelength times $\pi^2/8$ is a mass. Run in one line, frequency to mass is a single step of 9.72, and every π cancels.

Free fall. In the Universal Force of Time there is no gravity, and a free fall is not a pull. It is the flow of time at a place, in metres per second, every second — time showing itself in one more form, which current science takes for a gravitational fall. A planet makes one turn; where the turn comes in at less than 24 hours, time makes up the difference with a flow at that place, height or depth, so that the turn and the flow together make 24 hours. For the Earth, the free fall on the celestial register, **9.818362093946918** [$5^{12}/(2^7 \cdot 3^9 \cdot \pi^2)$], times 2400 — the 24-hour day, carried two decades — is the Earth's sidereal rotation, **23,564.06902547260** [$5^{14}/(2^2 \cdot 3^8 \cdot \pi^2)$]: 23 hours, 56 minutes and 4 seconds on the clock.

The three registers, G0, G1 and G2. The record reads the same value at more than one level: G1, the surface register of the Earth; G2, the celestial register; G0, the register below. A value and its neighbour one register up stand one **G-bond step** apart, 1.000090150603356 [$5^{10}/(2^4 \cdot 3^9 \cdot \pi^3)$].

The 612 step. A second fixed step, 1.000612842467911 [$2^9 \cdot 3^5 \cdot \pi/5^8$] — helium's weight divided by four, and 36,864 × 864 × π read at its decade. Where a family of lines stands G1, G2 and then one step further, the further step is this one.

The helical turn. The helical turn, 1.004693930041152 [$5^6/(2^6 \cdot 3^5)$], is the step by which the DNA helix climbs one turn. A value carried "one helical turn up" is multiplied by it.

What a landing is worth. Multiply or divide two lattice numbers and the answer is always on the lattice; that much is guaranteed and is not evidence. What counts is a result that lands on a **named object** the theory had already fixed — the day, Mercury's orbit, body temperature, helium — at a bare power of ten. Each such landing in this paper is marked as arithmetic or as a landing, in its own sentence.

PART I — NAD AS MEDICINE KNOWS IT

1. The carrier

Every cell burns fuel, and the burning is a matter of moving electrons. Sugar and fat are taken apart step by step, and at each step a pair of electrons is lifted off and handed on. The molecule that takes them is **NAD^+**, nicotinamide adenine dinucleotide. When it accepts a pair of electrons and a hydrogen it becomes **NADH**; when it hands them on it becomes NAD^+ again. Glycolysis in the body of the cell, the citric-acid cycle inside the mitochondria, the breakdown of fat — all of them load NAD^+. The respiratory chain on the inner membrane of the mitochondria unloads NADH, passes the electrons down to oxygen, and uses the fall to drive the turbine that makes ATP, the cell's energy currency. The whole of the cell's energy economy turns on one molecule being loaded and unloaded.

The change happens at one place. NAD is built of two halves, each a sugar and a phosphate carrying a base: one half carries **nicotinamide**, a form of vitamin B3; the other carries **adenine**, one of the four letters of DNA. The electrons are taken on and given up at a single carbon of the nicotinamide ring — **position 4**, the far point of the ring from where it joins the sugar.

2. The ratio the cell reads

The cell does not track how much NAD it holds; it tracks how much is loaded. What matters is the ratio of NAD^+ to NADH, and it is very different in different parts of the cell. In the body of the cell, the cytoplasm, the ratio is high — on the order of **700 to 1**, most of the carrier unloaded and ready to take electrons from sugar. Inside the mitochondria it is low — on the order of **8 to 1**, much more of it loaded and waiting to hand electrons to the respiratory chain. These figures are estimates; they vary with tissue, with diet and with the method used to measure them. But the gap between the two compartments is real, and it is part of what keeps energy flowing in the right direction.

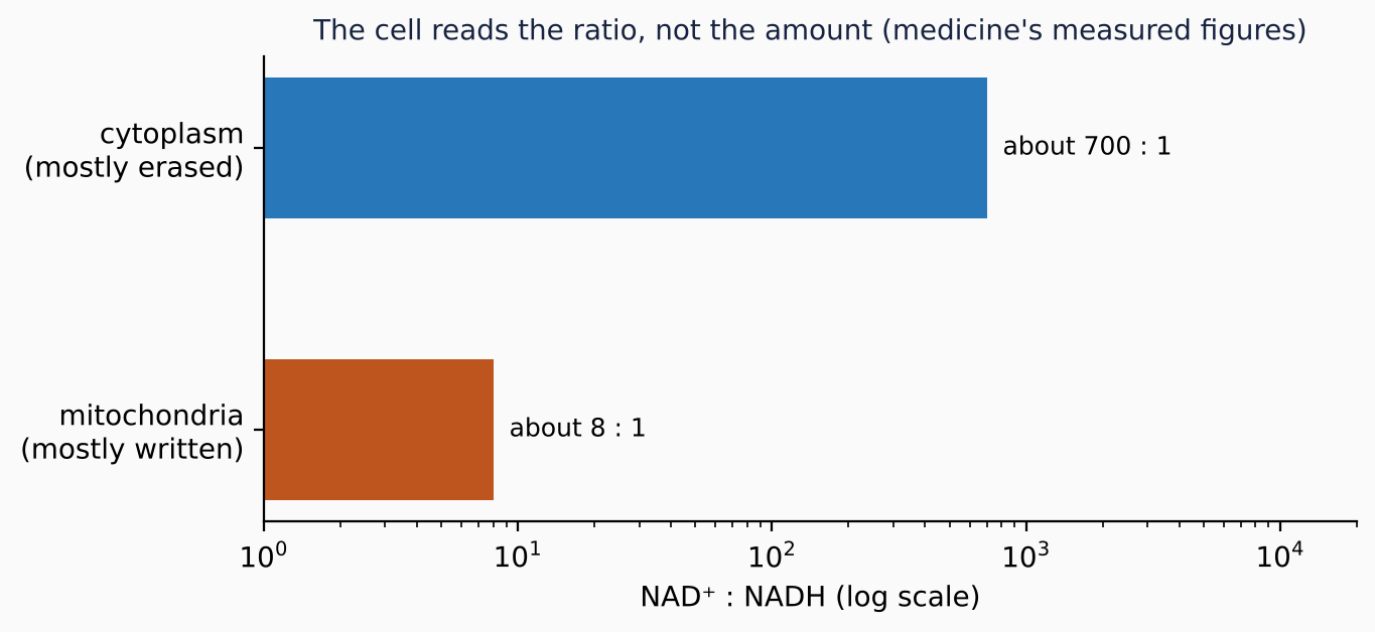


Figure 2 — The cell reads the ratio, not the amount. In the cytoplasm NAD⁺ outnumbers NADH by about 700 to 1; inside the mitochondria by about 8 to 1. These are medicine's measured estimates and vary with tissue and method.

3. NAD in light

NADH has a property NAD⁺ lacks. Shine ultraviolet light near **340 nanometres** on it and it absorbs; and having absorbed, it glows, giving out blue light near **460 nanometres**. NAD⁺ does neither. Since the early 1960s, when Britton Chance and his colleagues first watched the glow change in living tissue as its oxygen supply was switched on and off, laboratories have used this to read the loaded state of a cell without touching it: they shine light near 340 nm, measure the blue that comes back near 460, and read how much of the carrier is loaded. It is one of the oldest windows into the living energy of a cell, and it is still in use in every microscope that images mitochondrial health.

4. Sirtuins — the enzymes that spend it

NAD is not only a carrier. A family of enzymes called **sirtuins** consume NAD⁺ outright, breaking it apart to remove chemical tags from histones — the spools around which DNA is wound — and from other proteins. In doing so they switch genes on and off, direct DNA repair and govern how the cell responds to stress. Their activity rises and falls directly with the amount of NAD⁺ available. Three of them divide the work: **SIRT1** in the nucleus regulates gene expression and inflammation; **SIRT3** in the mitochondria keeps the energy machinery in order; **SIRT6** guards the ends of chromosomes and the repair of broken DNA. Other enzymes spend NAD⁺ too: the **PARPs**, which mark damaged DNA for repair and consume NAD⁺ heavily when damage is widespread, and **CD38**, an enzyme on immune and other cells that breaks NAD⁺ down and whose levels rise with age.

5. The decline

NAD⁺ falls with age. In human tissue it drops to roughly **half** between young adulthood and late middle age — across a window of about **forty years**, from around twenty to around sixty. The decline is linked to the rise of CD38, to heavier PARP use as DNA damage accumulates, and to a slowing of the salvage pathway that rebuilds NAD⁺ from its spent pieces. As NAD⁺ falls, sirtuin activity falls with it, and the processes the sirtuins tend — DNA repair, mitochondrial upkeep, the marking of genes — begin to fail. Low NAD⁺ is found in ageing tissue, in metabolic disease, in neurodegeneration and in the failing heart. Supplying the precursors from which cells build NAD⁺ raises it in animals and in people, and in animals reverses some signs of ageing; human trials are in progress.

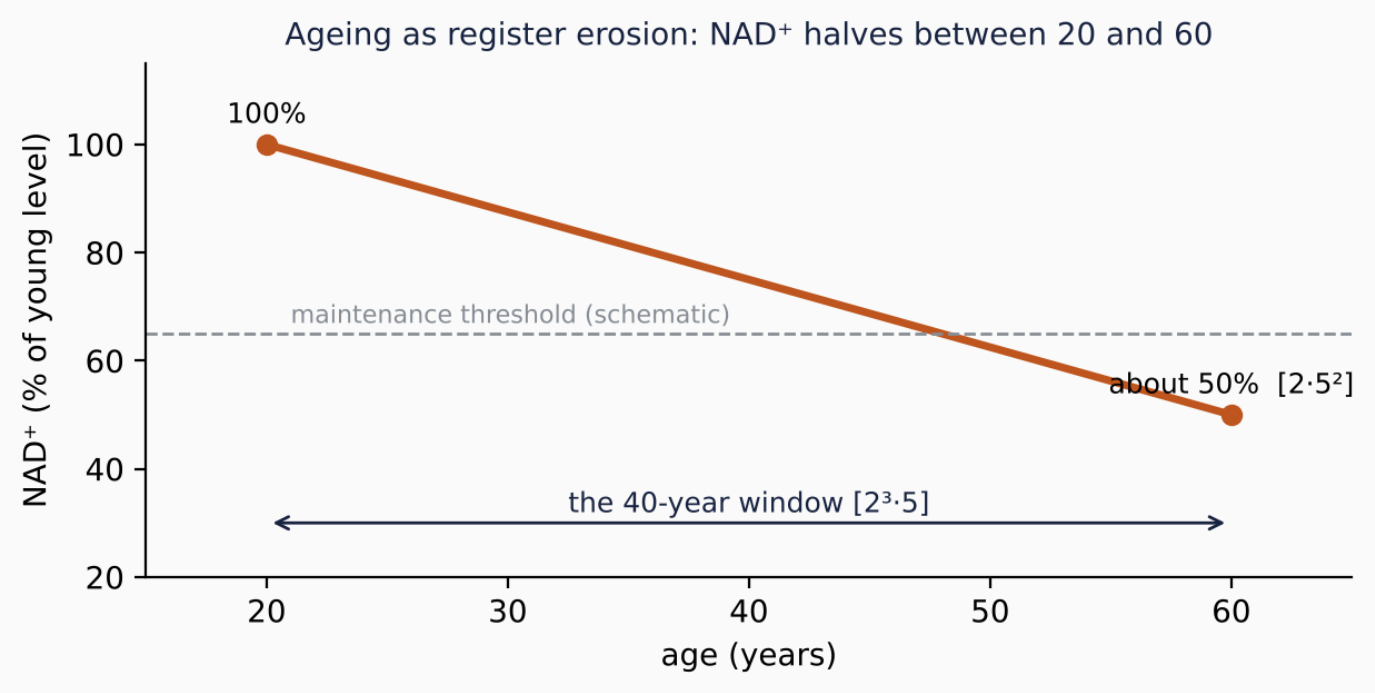


Figure 3 — Ageing as register erosion. NAD⁺ falls by about half across the forty years from twenty to sixty; the sirtuins, whose activity follows it, fall in step. The threshold line is schematic.

6. What specific light has done to mitochondria

In the last year laboratories have reported that particular frequencies of light raise the energy output of the mitochondria — the place where NADH is unloaded — while neighbouring frequencies do nothing. These are their results as they reported them; the frequencies this paper works with in Section 11 are theirs, and the credit for finding that they act is theirs.

34.1 terahertz and a longer life. A team from the Hefei Institutes of Physical Science, South China Normal University, Imperial College London, Fudan University and the University of Shanghai for Science and Technology shone weak mid-infrared light at **34.1 THz** on the worm *C. elegans* for thirty minutes a day. Median life rose by sixty per cent, from ten days to sixteen; the worms' mitochondria held their membrane potential, energy output and shape into old age. Light at 808 nm at the same power did nothing (Shao and colleagues, Bo Song's group, 2026).

71 and 87 terahertz and the cell's energy. Yu Yang, Zhenglong Gu and Bo Song at Fudan and Shanghai found an infrared signal inside living mitochondria that vanishes when the cell dies, and showed that ten minutes of light at **71 or 87 THz** raised the cell's ATP by about ten per cent, while light at 53.7 THz did nothing (2026).

34.5 terahertz and new mitochondria. A team at the Fourth Military Medical University in Xi'an with Shanghai found that light at **34.5 THz** switched on the pathway by which cells build new mitochondria — the same pathway that SIRT1 and NAD⁺ govern — while 36.1 THz had no effect (Wu and colleagues, Zhi Zhu's group, *ACS Nano*, 2026).

670 nanometres. Glen Jeffery's group in London has shown that **670 nm** light improves mitochondrial function in the ageing eye, restoring colour vision when given in the morning, and lowers the rise in blood sugar after a glucose drink (*Scientific Reports*, 2021; *Journal of Biophotonics*, 2024).

That is NAD as medicine knows it, and the light results as the laboratories found them, given in full because what follows reads every part.

PART II — NAD IN THE UNIVERSAL FORCE OF TIME

7. The redox register

Medicine calls NAD a cofactor, a carrier of electrons. The Universal Force of Time reads it as a **register**: a place where an address is set and cleared. Loading NAD⁺ writes the address — the ring takes on its electron pair and becomes NADH. Unloading clears it — the pair is handed on and the ring stands ready to read again. A register is

not a store of energy; it is a place where a mark is made and erased, and the cell's energy economy is that mark being made and erased billions of times a second.

The register has a single site. The electrons are taken on and given up at **position 4 of the nicotinamide ring [2^2]**, the far point of the ring. In the record this is the Strand-1 node of the nicotinamide register — the exact place where the address is written or erased.

The cell reads the register by its ratio — how much is written against how much is clear — and the ratio differs from one compartment to the next: mostly clear in the body of the cell, much more written inside the mitochondria. That gap between the compartments is the depth of the register, and its depth is what drives the cell's energy. The clinic's figures for the ratio are estimates that vary with tissue and method, so this paper gives no lattice address for them; the theory's claim is about the structure — that the cell reads a written-to-clear depth, and that depth is what it spends.

8. Half of NAD is a letter of DNA

There is a clue in the molecule's own name that a century of biochemistry has read past: nicotinamide **adenine** dinucleotide. Half of NAD is adenine, one of the four letters of the genome. In the Universal Force of Time the DNA bases are not arbitrary shapes; each is an address on the lattice. Adenine is the genome's reaching base, and its reach, read through the record, is **4374 [$2\cdot3^7$]**, built on the lattice Balmer line **486 [$2\cdot3^5$]** by a step of nine [3^2].

This changes what NAD is. It is not merely an electron shuttle built round a vitamin. It is an address-bearing molecule: one half the redox node where the address is written and erased, the other half a genuine genomic letter. When NAD^+ falls, a cofactor is not simply running short — an adenine address is being depleted, the same kind of loss that, read at the ends of the chromosomes, we call telomere shortening. That is why one small molecule carries the weight of repair: **NAD is repair's currency because NAD is written in the genome's own alphabet.**

9. The molecule announces itself in light

Medicine has known for sixty years that the written form of the register, NADH, takes in light near 340 nm and glows near 460, while the clear form does neither. In the Universal Force of Time that is a remarkable fact, because it means **the register can be read in light** — the address, once written, has a colour. And if a wavelength is a value, and a value that does work sits on the lattice, then the bands where NADH takes in and gives out light should hold lattice lines, and those lines should lead somewhere. They do.

The 340 nm band — three lines, and they are Mercury's orbit. Each of the three lines is carried through the theory's conversion grammar — divided by 2π it is a free fall, times 49.5035535 a wavelength, times $\pi^2/8$ a mass, and the mass times 8/3 is a period in days.

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THE 340 NM LINES, NUMBER FIRST

   line (nm)            address               free fall            mass                 period (days)
kind
   339.2920065876977    2^2.3^3.pi            54 (2.3^3, exact)    3297.918304032421    87.94448810753124  G1
road
   339.3225939668055    5^10/(2^2.3^6.pi^2)   54.00486813258123    3298.215613357349    87.95241635619598  G2
room
   339.5305452627100    2^4/(3.5.pi)          54.03796460924681    3300.236899953542    88.00631733209444
road
                                                                   = 10,368/pi

   87.95241635619598 days is Mercury's orbit on the celestial register (G2) [5^6/(2.3^2.pi^2)]
   87.94448810753124 days is the same orbit one register down (G1) - the kernel of the 21 cm line of hydrogen
   88.00631733209444 days is the celestial orbit carried one 612 step
   G2 / G1 = 1.000090150603356, the G-bond step ; third / G2 = 1.000612842467911, the 612 step - both exact
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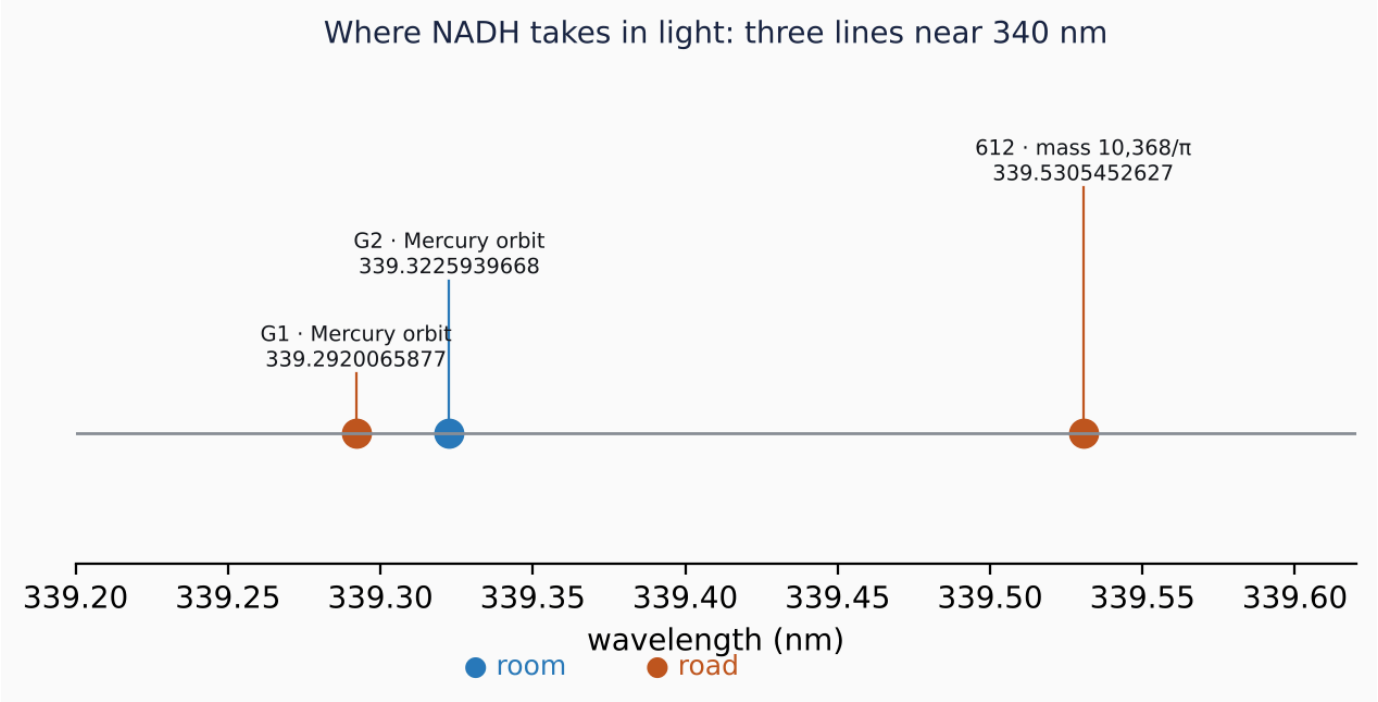


Figure 4 — Where NADH takes in light. Three lattice lines lie in the 340 nm band. Carried through the conversion grammar, each returns Mercury's orbit — on the surface register, on the celestial register, and one 612 step beyond — the three standing one fixed step apart.

The first line carries a free fall of exactly **54 [2·3³]**, with no π at all. The second carries Mercury's orbit as it is observed. The third carries a mass of **10,368/π** — the theory's energy gear, 10,368, over π — and divided by three and doubled it is the conversion value 864/(125π) that the record already holds.

The 460 nm band — five lines: Mercury's node, Mercury's closest approach, body temperature, and the Sun.

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THE 460 NM LINES, NUMBER FIRST

   line (nm)            address                  reached from                                                    kind
   459.0709089667556    5^10.pi^2/(2^5.3^8)      x8 /2pi x864 x4 = 2.020057004623 = 1 / (the day in degrees)
room
   460.0926729868701    2^18.3^12/(5^10.pi^3)    Mercury's closest approach to the Sun, 46,009,267.30 km
road
   460.4762629372251    2^2.3^6.pi^2/5^4         Mercury's node / the G-bond step / 8  (G1)
room
   460.5177751501601    5^6/(2^2.3^3.pi)         Mercury's node 36,841.42201201281 / 8  (G2)
road
   460.8                2^9.3^2                  body temperature 36,864 / 8
room

   the last three stand G1, G2 and one 612 step - the same pattern as the 340 lines
   2.020057004623 = 5.pi/7776 x10^6 : 7776/(5.pi) = 495.0355349930 is the day, 864, read in degrees
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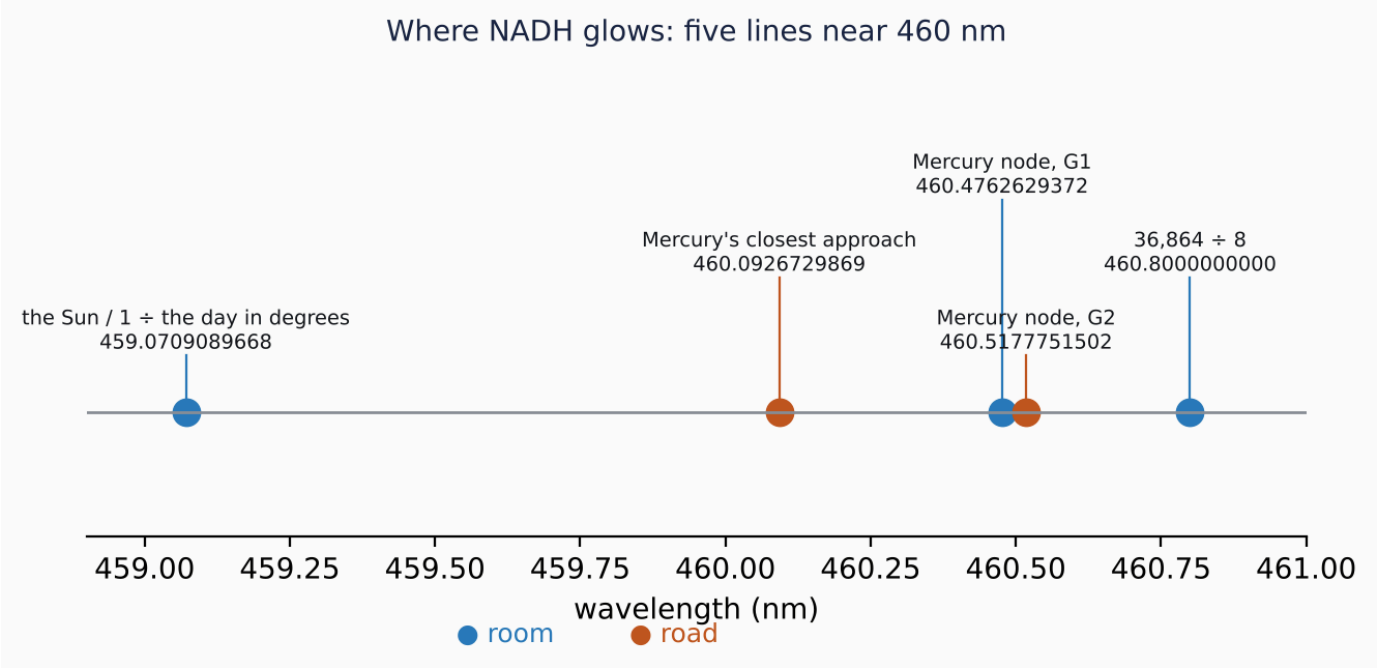


Figure 5 — Where NADH glows. Five lattice lines lie in the 460 nm band: the Sun's rotation figure (the inverse of the day read in degrees), Mercury's closest approach to the Sun, Mercury's node on two registers, and body temperature divided by eight.

Three of these follow the pattern of the 340 lines exactly: Mercury's node on the surface register, the same node on the celestial register one G-bond step up, and then one 612 step further — which lands on **460.8 nm, the body's own temperature number 36,864 divided by eight, with no π.** A fourth is Mercury's **closest approach to the Sun**, 46,009,267.30 km read as light. The fifth, carried up the grammar, gives **2.020057004623**, which Stephen Daubney reads as a speed of the Sun's rotation in kilometres a second — and which is exactly **one over the day read in degrees**: the day, 864, crossed into degrees is 495.0355349930, and one over that is 0.002020057004623.

10. Why Mercury

In the record the atom and the solar system are one structure read at two scales: **the proton is the Sun's mirror and the electron is Mercury's.** NAD is the cell's electron carrier — its whole work is to take electrons on and hand them off. The lines at which it takes in light are Mercury's orbit; the lines at which it gives light out are Mercury's node, Mercury's closest approach to the Sun, the Sun's own rotation and the body's temperature. **The molecule that carries the cell's electrons announces its state at the lines of the planet that mirrors the electron, in its passage round the Sun that mirrors the proton.**

And one chain closes the circle. The year's face on the celestial register, 365.3170219587432 days $[5^{11}\cdot\pi/(2^{6}\cdot3^{8})]$, the face linked to the Earth's sidereal turn, times twelve is exactly the Sun's circumference carried one helical turn up; read down the grammar it gives lithium's weight, 6.940191200541331, and hydrogen's ionisation, 2.180325369 × 10^{-18} joules; inverted and carried through the veil and the day it gives the 612 step, 1.000612842467911; four times that is helium's weight, 4.002451369871644; and helium, divided by the circle, the day and two, is **36,864** — body temperature — exactly. The step that separates the third NADH line from the second in each band is the same 612 step that, times four, is helium.

11. The lines the theory offers the research

Where these frequencies come from. The frequencies that bear on NAD's work are not this paper's discovery. They come from the research groups set out in Section 6: Bo Song's group and its partners for 34.1 THz (reference 9) and for 71, 87 and 103 THz (reference 10), Zhi Zhu's group in Xi'an for 34.5 THz (reference 11), and Glen Jeffery's group for 670 nm (references 12 and 13). NADH's own bands, near 340 and 460 nm, are medicine's long-standing measurement (references 6 and 7). It was their results that pointed this paper to these parts of the spectrum, and their work is the supporting evidence on which this section is built. What this paper adds is the theory's reading of those frequencies: the exact lattice lines that lie within them, each with the chain that reaches it — offered to those groups, and to any team so minded, as specific lines to test.

THE LINES WITHIN THE RESEARCH FREQUENCIES, NUMBER FIRST

their frequency	the theory's lines
34.1 THz	34.0853891346 (celestial) ; 34.0884619530 (surface)
71 / 87 / 103 THz	71.0675578935 ; 87.0791429696 ; 103.0692379174
34.5 THz	34.5357197203 ; 34.5372763932 ; 34.5388331363
670 nm	669.9709631653324 ; 669.9936644397894 ; 670.2064327658226
340 nm (NADH in)	339.2920065876977 ; 339.3225939668055 ; 339.5305452627100
460 nm (NADH out)	459.0709089667556 ; 460.0926729868701 ; 460.4762629372251 ; 460.5177751501601 ; 460.8

worked in: The 34.1-Terahertz Line (Rev 1) ; The Frequencies of the Mitochondrion (Rev 1) ; The 34.5-Terahertz Line (Rev 1) ; Eye Conditions (Rev 5) ; this paper, Section 9

The theory does not rank the lines in any band; every one is a lattice value reached from something the record already holds, and which gives the strongest result is a question only an experiment can answer. The lines in each band lie close together — the three near 340 nm within a quarter of a nanometre, the five near 460 nm within two — so a lamp or diode sold by a round number shines most of them at once. To test them one by one a laboratory needs narrow-line, tunable light, held and checked at the line. The 340 and 460 nm lines are also the wavelengths at which NADH is measured, so the same instrument that tests a line can read its effect on the register. The lines are given as values only; how light is given to a person is held in the Foundation's clinical reference.

12. Sirtuins are the register's maintenance

The sirtuins spend NAD^+ to keep the genome's addresses sharp — removing the tags that blur a histone's mark, directing repair to a break. In the theory they are **address-maintenance enzymes**, and because their activity follows NAD^+ directly they are the cell's maintenance clock: while NAD^+ is plentiful they keep the addresses true; as it falls they slow, and the addresses they keep begin to drift. The three sirtuins tend three address-domains from one shared pool — SIRT1 the gene-expression addresses, SIRT3 the mitochondrial addresses where the cell makes its 36 units of ATP [$(2\cdot3)^2$], SIRT6 the chromosome ends. When the pool falls, all three lose their keeper in the same stroke.

And NAD is one of four threads by which the body holds its addresses against drift; the others are the methylation cycle that re-inscribes them, the autophagy that clears the misfiled ones, and the telomeres that guard the chromosome ends. When all four fail together, the cell can no longer restore itself — in the record, the molecular definition of death.

13. Ageing is register erosion

NAD^+ falls by about half [$2\cdot5^2$] across the forty-year window [$2^3\cdot5$] from twenty to sixty. As it halves the sirtuins slow with it, and once they fall below the level maintenance needs, the genome's addresses begin to erode: marks drift, repair lags behind damage, the cell's coordinates blur. **Ageing, read at this register, is one register losing depth and the enzymes that keep it starving for the cofactor they spend.** The thousand symptoms of age are downstream of one drained register and one slowing clock.

PART III — THREE ROUTES, THREE CORRECTIONS

14. One register, three ways it fails

A medical paper of the Universal Force of Time acknowledges the illness, reads the problem as the distinct routes by which it arises, and pairs each route with the correction that would set it right. The illness here is the slow failure of one register — the fall of NAD^+ that runs beneath ageing, metabolic disease and the failing of repair. It fails by three routes, because a pool can fail in three ways: it can stop being re-made, it can be spent faster than it is made, or it can lose the depth between its written and its clear states. Three routes, not four: the routes are as many as the register has ways to fail.

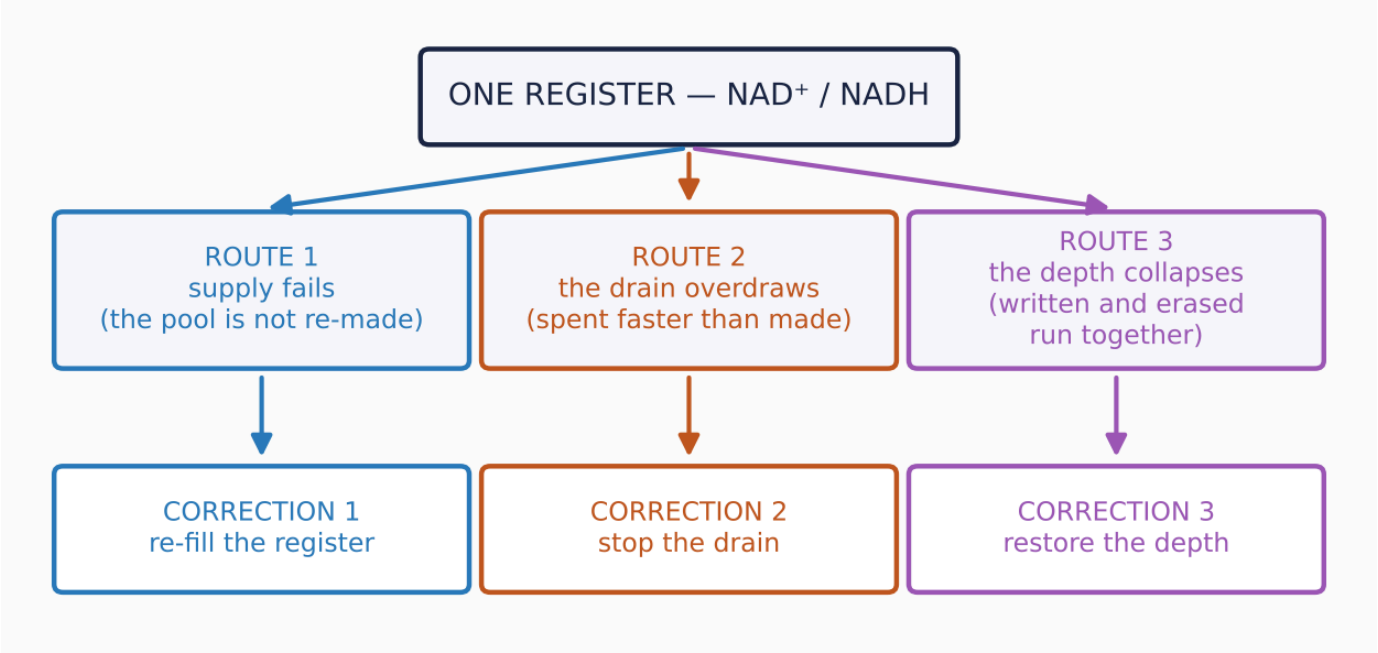


Figure 6 — The architecture of the paper. One register, NAD⁺ and NADH, fails three ways — the supply fails, the drain overdraws, the depth collapses — and each route is paired with its correction: re-fill the register, stop the drain, restore the depth.

15. Route 1 — the supply fails

The cell rebuilds NAD⁺ continuously from its spent pieces along the salvage pathway, and that rebuilding slows with age. The register is not being spent faster; it is simply not being re-made as fast as it was. The pool falls, the sirtuins slow with it, and the addresses they keep begin to drift.

Correction 1 — re-fill the register. If the fault is a supply that fails, the correction is to re-fill the pool: supply the building blocks from which the cell makes NAD⁺, so that the register regains its level and the maintenance clock restarts. This is the theory's specific, testable claim — re-fill one register and the enzymes that keep the genome's addresses sharp are re-enabled. The principle is re-filling; which building block, how much and on what schedule are held in the Foundation's clinical reference.

16. Route 2 — the drain overdraws

The second route is the opposite fault. The pool is being re-made, but it is being spent faster than it can be. With age the enzyme CD38 rises and breaks NAD⁺ down; as DNA damage accumulates the PARPs spend it heavily on repair; inflammation spends it further. The register is drained from the far end.

Correction 2 — stop the drain. If the fault is a drain that overdraws, the correction is to close it: bring the spending back within the rate at which the cell can re-make the pool, by quieting the drain and the damage and inflammation that drive it. The principle is closing the drain; the detail is held in the Foundation's reference.

17. Route 3 — the depth collapses

The third route is not the amount but the depth. The register works because the written and the clear states are held apart — mostly clear in the body of the cell, much more written in the mitochondria — and the depth between them drives the cell's energy. When the mitochondria fail, the written NADH is not unloaded as it should be, the two states run together, and the depth that powered the cell is lost. The pool may be full and the register still flat.

Correction 3 — restore the depth. If the fault is a collapsed depth, the correction is to restore the mitochondria's power to clear the written state and so re-open the gap. The research of Section 6 shows that particular frequencies of light raise mitochondrial output while their neighbours do nothing; the theory's exact lines within those frequencies, and NADH's own lines at 340 and 460 nm, are set out in Section 11 for testing. The principle is restoring the depth; how any light is given is held in the Foundation's clinical reference.

18. The order law

The three corrections are not interchangeable, and they bind in a fixed order.

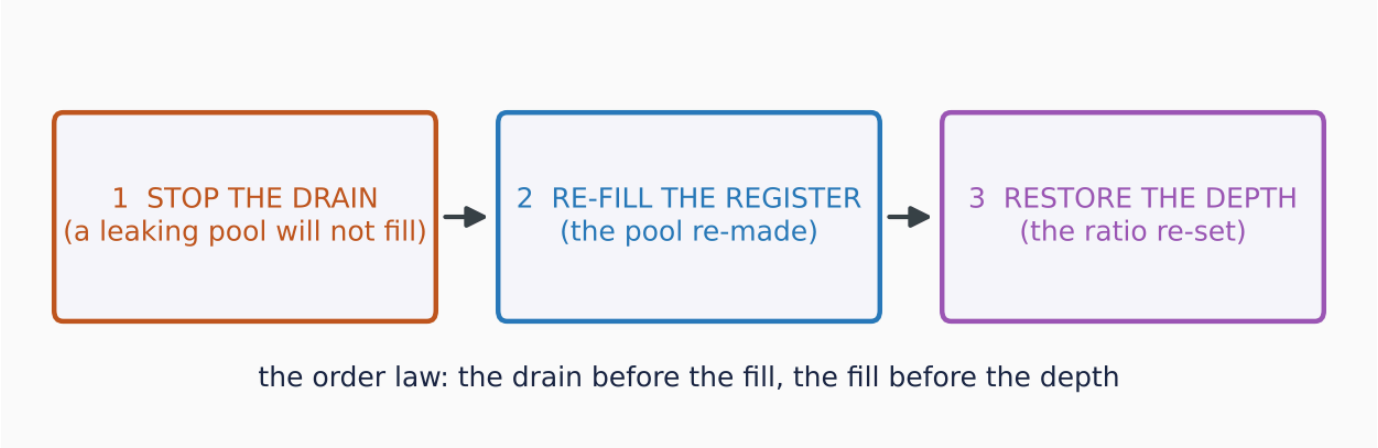


Figure 7 — The order law. Stop the drain first — a pool that leaks will not fill; then re-fill the register; then restore its depth, so that the refilled pool is spent where it is needed.

The drain before the fill. Building blocks poured into a pool that is being overdrawn are spent as fast as they arrive; the re-fill is wasted until the drain is closed. **The fill before the depth.** A register restored to depth with nothing in it has nothing to write; the depth is worth restoring once the pool is there to fill it. And the register can be read throughout, because its written state announces itself in light: the same 340 and 460 nm bands that hold the theory's lines are the bands at which NADH is measured, so each correction can be followed in the register itself. The order runs **stop the drain, re-fill the register, restore the depth — and read it in light at every step.**

19. The resolution — the clinical trial is the next step

With three routes named and each paired with its correction, the paper resolves where it must. We have acknowledged the illness — the fall of NAD^+ told not as a shortage of a vitamin but as the erosion of one register, written and erased at one node of one ring, half of it a letter of the genome. We have read the light it gives off and takes in, and found in it the lines of Mercury's orbit, Mercury's closest approach to the Sun, the Sun's rotation and the body's own temperature — the electron carrier announcing itself at the lines of the electron's celestial mirror. We have read the problem as three routes — the supply fails, the drain overdraws, the depth collapses — and given for each its correction: re-fill, stop, restore. We have bound them with the order law. And we have set out, for the research groups whose frequencies bear on NAD's work, the exact lines the theory finds within them.

The corrections are stated as principles precisely because the next step is not to prescribe them to a reader but to put them to a clinical trial.

PROPOSITIONS

- **P-NAD-1.** NAD is the cell's redox register: NADH is the address written, NAD^+ the address erased, at one node — position 4 of the nicotinamide ring [2^2].
- **P-NAD-2.** The cell reads the register by its depth — written against clear — and that depth, not the amount, is what it spends.
- **P-NAD-3.** Half of NAD is adenine, a genomic address letter (reach 4374 [$2\cdot3^7$], on the Balmer line 486 [$2\cdot3^5$]); NAD^+ decline is the depletion of an adenine address.
- **P-NAD-4.** The written register can be read in light: NADH takes in light near 340 nm and gives it out near 460 nm; NAD^+ does neither.
- **P-NAD-5.** The 340 nm band holds three lattice lines — 339.2920065876977 [$2^2\cdot3^3\cdot\pi$], 339.3225939668055 [$5^{10}/(2^2\cdot3^6\cdot\pi^2)$] and 339.5305452627100 nm [$2^4/(3\cdot5\cdot\pi)$] — which return Mercury's orbit on the surface register, on the celestial register and one 612 step beyond; the first carries a free fall of exactly 54, the third a mass of 10,368/π.
- **P-NAD-6.** The 460 nm band holds five lattice lines: 459.0709089667556 (one over the day in degrees, the Sun's rotation reading), 460.0926729868701 (Mercury's closest approach), 460.4762629372251 and 460.5177751501601 (Mercury's node on two registers) and 460.8 nm (body temperature 36,864 ÷ 8).
- **P-NAD-7.** In both bands the lines stand one G-bond step and one 612 step apart — the record's own steps.

- **P-NAD-8.** The electron carrier announces its state at the lines of the electron's celestial mirror, Mercury, in its passage round the proton's mirror, the Sun.
- **P-NAD-9.** The year's celestial face, times twelve, is the Sun's circumference one helical turn up; read down the grammar it gives lithium, hydrogen's ionisation, the 612 step, helium, and body temperature 36,864, exactly.
- **P-NAD-10.** The sirtuins are address-maintenance enzymes; their activity follows NAD^+, so they are the register's maintenance clock, tending three address-domains from one pool.
- **P-NAD-11.** Ageing, read at this register, is register erosion: NAD^+ halves $[2{\cdot}5^2]$ across the forty-year window $[2^3{\cdot}5]$, the clock slows, and the addresses drift.
- **P-NAD-12.** Route 1: the supply fails. Correction 1: re-fill the register.
- **P-NAD-13.** Route 2: the drain overdraws. Correction 2: stop the drain. Route 3: the depth collapses. Correction 3: restore the depth.
- **P-NAD-14.** Order law: the drain before the fill, the fill before the depth — and the register read in light at 340 and 460 nm at every step. Within each research frequency the theory offers exact lines to test; it does not rank them.

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APPENDIX — EVERY NUMBER, REBUILT

Every value can be rebuilt with any calculator, from twos, threes, fives and π. The script N_calc.py, run at forty-four digits, asserts every station and stops if any fails; it passed in full.

```
THE OBJECTS, NUMBER FIRST
   redox node                    position 4                    2^2
   adenine reach ; Balmer        4374 ; 486                    2.3^7 ; 2.3^5
   ATP per glucose (record)      36                            (2.3)^2
   NAD+ fall ; window            half ; 40 years               2.5^2 per cent ; 2^3.5
   frequency -> mass             x 9.72                        every pi cancels
   G-bond step                   1.000090150603356             5^10/(2^4.3^9.pi^3)
   612 step                      1.000612842467911             2^9.3^5.pi/5^8 = 36864 x864 x pi /10^8
   340 lines                     339.2920065876977 ; 339.3225939668055 ; 339.5305452627100
   Mercury orbit G1 ; G2         87.94448810753124 ; 87.95241635619598 d
   460 lines                     459.0709089667556 ; 460.0926729868701 ; 460.4762629372251 ;
                                 460.5177751501601 ; 460.8
   Mercury node (G2)             36,841.42201201281            2.5^6/(3^3.pi) x100
   Mercury closest approach      46,009,267.30 km              2^18.3^12/(5^10.pi^3) at its decade
   one over the day in degrees   0.002020057004623067          5.pi/7776
   year (celestial face)         365.3170219587432 d           5^11.pi/(2^6.3^8)
   lithium ; helium              6.940191200541331 ; 4.002451369871644
```

A NOTE ON THE NUMBERS

Throughout this paper a quantity is given first as the plain value a clinician or a laboratory would measure — a ratio, a wavelength, a frequency — and only then, in brackets, as its place on the {2,3,5,π} lattice. The bracket is the address; the physical number is the thing you can hold. Part I gives medicine's account, and the laboratories' results, as they give them; where medicine's figures are estimates, they are given as estimates and no address is claimed for them. Parts II and III give the theory's own account, mark every result as arithmetic, a reading or a landing, and state the corrections as principles. The lattice lines within the research frequencies are given in full as values, with their chains; how anything is given to a person, and the corrective detail, are held in the Foundation's clinical reference and are not prescribed here.

The Daubney Foundation is in ongoing discussions with medical establishments regarding clinical trials of Universal Force of Time solutions to the conditions described in this paper. Any institution or researcher wishing to put themselves forward for participation in these trials is invited to make themselves known through: thedaubneyfoundation@gmail.com

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