THE UNIVERSAL FORCE OF TIME

The Electron-Volt Chain — Lattice Derivation

An energy is a count of time and the electron-volt is a clock: from the electron through the fine structure constant to hydrogen's quantum, its shells, its lines and the bonds of chemistry — every value an exact address

Stephen Daubney · The Daubney Foundation · 2026 · Rev 4

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

HYDROGEN'S QUANTUM, NUMBER FIRST

13.6048896 eV

$(2^8 \cdot 3^{12}/10^7)$ = the electron 511,280.83701927 × $\alpha^2 \div 2$ = 1312.2 kJ/mol ÷ the Faraday 96.4506172840

ladder **13.6048896 / n²** · Hβ **2.5509168 eV** × 486 nm = $2^5 \cdot 3^{18}$ · ground state on G2 **13.6061160890**

ABSTRACT

The electron-volt is the unit of the atom. Every ionisation energy, every spectral line, every chemical bond measured one molecule at a time is quoted in it, and behind it stands a figure science treats as one of the fixed constants of nature: the charge on the electron. The Universal Force of Time says there is no such constant. **An energy is a count of T — time itself — and the electron-volt is a choice of clock for counting it.** Read on the lattice of 2, 3, 5 and π, the whole electron-volt chain — from the electron, through the fine structure constant, to hydrogen's quantum, its ladder of shells, its lines and the bonds of chemistry — is a set of exact addresses.

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

- **hydrogen's quantum = 13.6048896 eV ($2^8 \cdot 3^{12}/10^7$)** — the energy to free the electron from hydrogen, on the G1 register.

From that anchor the paper:

- reaches the anchor by **three independent roads**, every one exact: the chemist's **1312.2 kJ/mol ($3^8/5$)** divided by the **Faraday 96.450617283950617 ($5^6/(2 \cdot 3^4)$)**; the joule **2.18032536901291724 ($5^{12}/(2^9 \cdot 3^7)$)** divided by the **G1 volt 1.6026042350339375 ($5^{19}/(2^{10} \cdot 3^{19})$)**; and the **electron, 511,280.83701927 eV ($2^9 \cdot 3^8 \cdot 5^6 \cdot \pi^4/10^7$)**, multiplied by **$\alpha^2$ ($81/(15625 \cdot \pi^4)$)** and halved — every π cancelling;
- shows that **the volt is not a constant**: one joule read through **five volts**, all on the lattice, gives five electron-volt faces of hydrogen — **sodium 13.6085693987**, **G2 13.6061160890 (the ground state)**, **G1 13.6048896**, **face 2 13.5977827902** and **face 1 13.5965570524**;
- sets out **the ladder E(n) = 13.6048896/n² — 3.4012224**, **1.5116544**, **0.8503056** … — and shows that every shell, time-equalised by n^2, returns the same quantum;
- gives the lines on the same ladder: **Lyman-α 10.2036672 (× 3/4)**, **Hα 1.889568 (× 5/36)**, **Hβ 2.5509168 (× 3/16)** — and shows that **Hβ's energy times its wavelength, 486 nm, is 1239.7455648 ($2^5 \cdot 3^{18}/10^7$)**, π-free;

- carries the bonds of chemistry across the bridge: **H–H 432 kJ/mol → 4.478976 eV ($2^5 \cdot 3^7/5^6$)**, **C–H 1296/π → 4.2771070223 eV ($2^5 \cdot 3^8/(5^6 \cdot \pi)$)**, **O–H in water $5^5/(2\pi)$ → 5.1566201562 eV ($3^4/(5\pi)$)**;
- and corrects the earlier versions, which built the chain on a prime the lattice does not carry, took the charge from the tables, and used an electron energy since superseded.

It closes with why the values are what they are, 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 thirty 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.

FORMULA E1 **ONE ENERGY, THREE CLOCKS** **Part One**
joule 2.18032536901291724 ($5^{12}/(2^9 \cdot 3^7)$) -> eV 13.6048896 -> kJ/mol 1312.2 ($3^8/5$)

FORMULA E2 **THE FLASK ROAD** **Part Two**
1312.2 / 96.450617283950617 ($5^6/(2 \cdot 3^4)$) = 13.6048896 ($2^8 \cdot 3^{12}/10^7$)

FORMULA E3 **THE JOULE ROAD** **Part Two**
2.18032536901291724 / 1.6026042350339375 ($5^{19}/(2^{10} \cdot 3^{19})$) = 13.6048896

FORMULA E4 **THE ELECTRON ROAD** **Part Two**
511,280.83701927 ($2^9 \cdot 3^8 \cdot 5^6 \cdot \pi^4/10^7$) x α^2 ($81/(15625 \cdot \pi^4)$) / 2 = 13.6048896

FORMULA E5 **ONE JOULE, FIVE VOLTS** **Part Three**
sodium 13.6085693987 G2 13.6061160890 G1 13.6048896 face 2 13.5977827902 face 1 13.5965570524

FORMULA E6 **THE LADDER** **Part Four**
E(n) = 13.6048896 / n^2 n^2 x E(n) = 13.6048896 on every shell

FORMULA E7 **THE LINES** **Part Five**
Lyman-α 10.2036672 (x 3/4) Hα 1.889568 (x 5/36) Hβ 2.5509168 (x 3/16)
Hβ 2.5509168 x 486 nm = 1239.7455648 ($2^5 \cdot 3^{18}/10^7$)

FORMULA E8 **THE BONDS IN ELECTRON-VOLTS** **Part Six**
H–H 4.478976 ($2^5 \cdot 3^7/5^6$) C–H 4.2771070223 ($2^5 \cdot 3^8/(5^6 \cdot \pi)$) O–H 5.1566201562 ($3^4/(5\pi)$)

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 9.817477… and 98.17477… are one address, and why 486 nm and 486,000 pm are the same line.

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 — WHAT AN ELECTRON-VOLT IS

A count of time, read on a clock

Pick up any table of atomic data and the energies are in electron-volts. It is a small unit, made for small things: the energy one electron gains in crossing a potential of one volt. To convert it to the joules of everyday physics, science multiplies by the charge on the electron, a number it has fixed by definition and treats as one of the constants on which the rest of physics hangs.

The Universal Force of Time begins somewhere else. There is one substance, T — time itself — generated by the Sun and flowing outward in the form of the DNA helix, creating matter at the planets and creating life. An energy is not a separate kind of thing; **an energy is a count of T**. And the unit in which it is written is not a property of the energy. It is a choice of clock. A joule is energy counted in seconds. A kilojoule per mole is the same energy counted in minutes, one factor of sixty up. An electron-volt is the same energy read on the spin-orbit register — the register of the atom.

FORMULA E1 ONE ENERGY, THREE CLOCKS

hydrogen's quantum in joules	2.18032536901291724	($5^{12}/(2^9 \cdot 3^7)$)	x 10^-18
/ the G1 volt	1.6026042350339375	($5^{19}/(2^{10} \cdot 3^{19})$)	x 10^-19
= in electron-volts	13.6048896	($2^8 \cdot 3^{12}/10^7$)	
x the Faraday	96.450617283950617	($5^6/(2 \cdot 3^4)$)	
= in kilojoules per mole	1312.2	($3^8/5$)	

One energy, three clocks — and every reading is an exact address. The joule face is five to the twelfth over two to the ninth and three to the seventh. The electron-volt face is two to the eighth times three to the twelfth, at its decade. The chemist's face is three to the eighth over five. Not one of them carries π, and not one needs a prime the lattice does not hold. What converts one to another — the volt, the Faraday — is not a constant of nature but a gear between clocks.

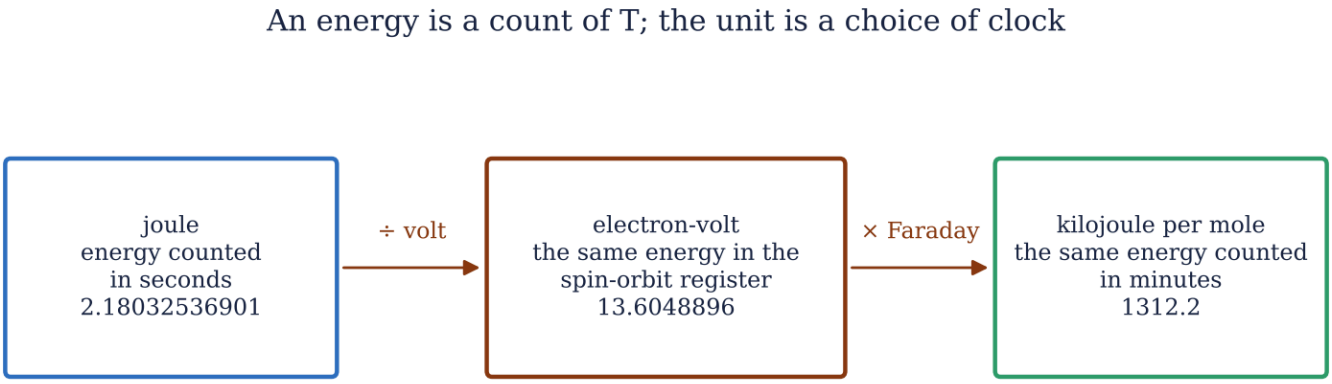


Figure 1 — An energy is a count of T; the unit is a choice of clock. Hydrogen's quantum is 2.18032536901 in joules (seconds), 13.6048896 in electron-volts (the spin-orbit register) and 1312.2 in kilojoules per mole (minutes). The volt and the Faraday are the gears between them.

PART TWO — THREE ROADS TO HYDROGEN'S QUANTUM

Why three roads matter

A value reached by one road might be a lucky landing. A value reached by three, from three unrelated starting points, each closing to every digit, is a structure. Hydrogen's quantum on the G1 register, 13.6048896, is reached three ways.

The flask road

```
FORMULA E2     THE FLASK ROAD
    1312.2 kJ/mol                        ( 3⁸/5 )                hydrogen's quantum, the chemist's face
    / 96.450617283950617                 ( 5⁶/(2·3⁴) )           the Faraday, the bridge
    =  13.6048896 eV                     ( 2⁸·3¹²/10⁷ )
```

The chemist measures a mole of hydrogen atoms in a flask and finds 1312.2 kilojoules to ionise them — three to the eighth over five. The Faraday is the bridge from the flask to the single atom, five to the sixth over two times three to the fourth. Divide and the fives cancel, the twos and threes gather, and the atom's quantum appears.

The joule road

```
FORMULA E3     THE JOULE ROAD
    2.18032536901291724 x 10^-18 J       ( 5¹²/(2⁹·3⁷) )
    / 1.6026042350339375 x 10^-19        ( 5¹⁹/(2¹⁰·3¹⁹) )       the G1 volt
    =  13.6048896 eV
```

The same energy, counted in seconds, divided by the volt of the G1 register, lands on the same number. Five to the twelfth over five to the nineteenth leaves five to the minus seven; the threes and twos leave three to the twelfth and two to the first — and the decade carries the rest.

The electron road

The third road starts from the electron itself. Its rest energy on the lattice is two to the ninth, three to the eighth, five to the sixth and π to the fourth, at its decade: 511,280.83701927 electron-volts. Gear it down twice through the fine structure constant α — the ratio between the register of the planets and the register of the electron — and halve it.

```
FORMULA E4     THE ELECTRON ROAD
    the electron                          511,280.83701927 eV     ( 2⁹·3⁸·5⁶·π⁴/10⁷ )
    x α²                                  0.0000532188520...      ( 3⁴/(5⁶·π⁴) )
    / 2
    =  13.6048896 eV                      ( 2⁸·3¹²/10⁷ )          every π gone
```

The electron, geared down twice by α and halved, is hydrogen's quantum — exactly. The π to the fourth in the electron meets the π to the minus four in α squared and vanishes; the five to the sixth meets five to the minus sixth and vanishes; three to the eighth meets three to the fourth to make three to the twelfth; two to the ninth, halved, is two to the eighth. This is the formula the textbook writes for the Bohr energy, α squared times the electron's rest energy over two — and on the lattice it is not an approximation. It closes to the last digit.

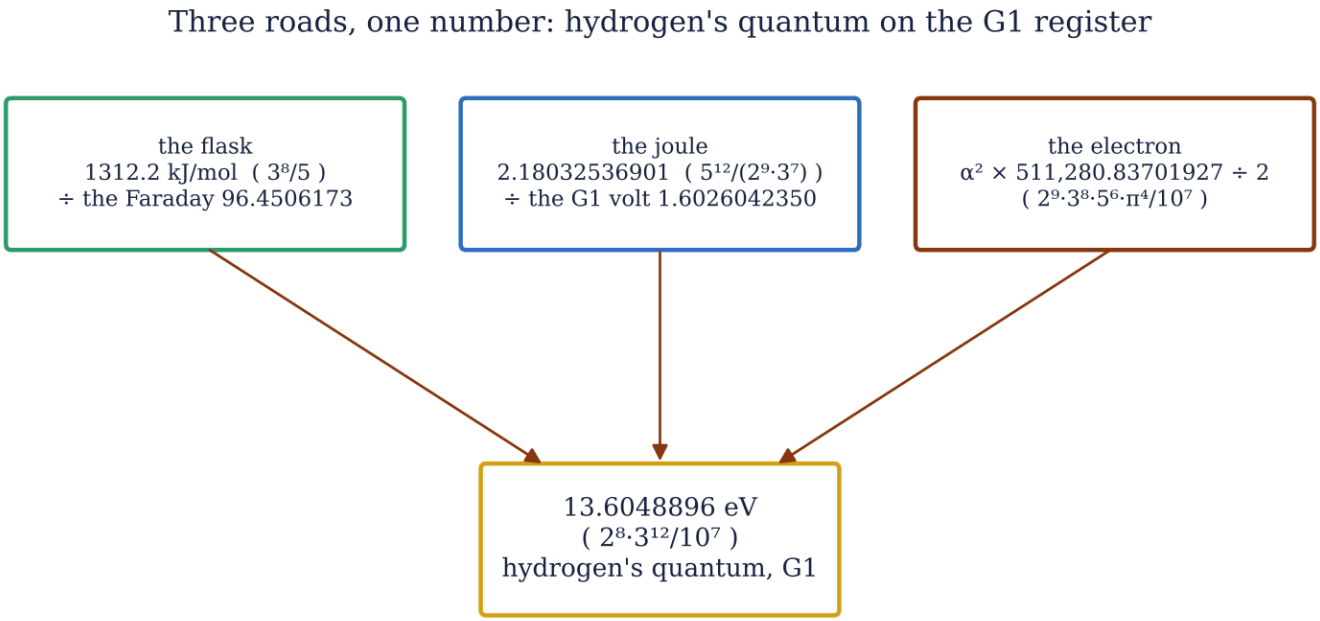


Figure 2 — Three roads, one number. The flask road (1312.2 ÷ the Faraday), the joule road (5¹²/(2⁹·3⁷) ÷ the G1 volt) and the electron road (α² × the electron ÷ 2) all arrive at 13.6048896, two to the eighth times three to the twelfth.

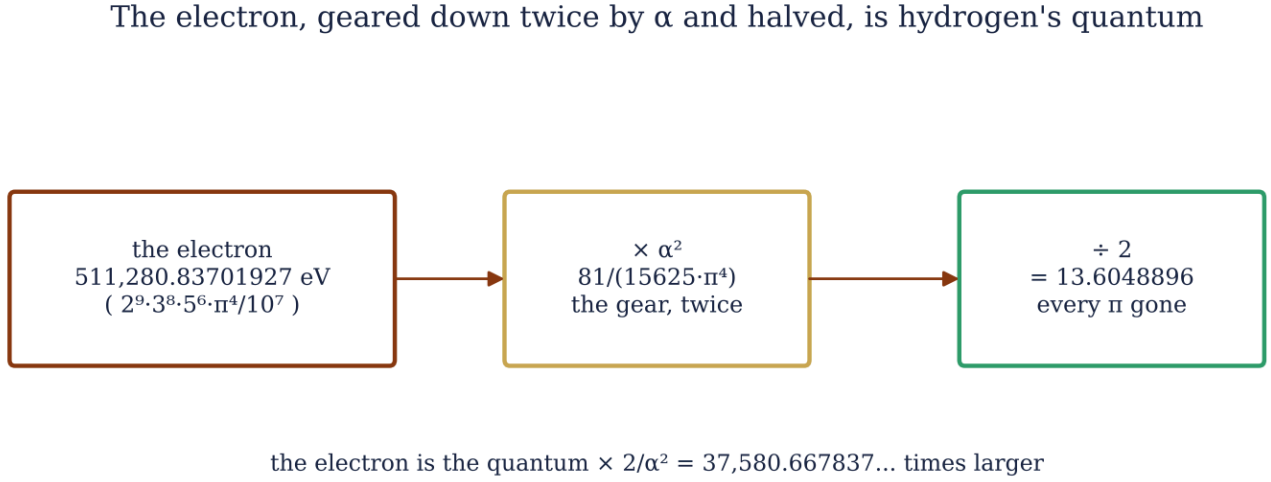


Figure 3 — The electron and the gear. The electron's rest energy, $2^9 \cdot 3^8 \cdot 5^6 \cdot \pi^4/10^7$, times α^2 and halved, is hydrogen's quantum: the electron is the quantum carried up by $2/\alpha^2$, 37,580.67 times.

PART THREE — THE VOLT IS NOT A CONSTANT

One joule, five volts

If the electron-volt is a clock, the volt is the gear that sets it — and a gear can be cut more than one way. **Under the Universal Force of Time the volt is not a constant, and so the charge is not a constant either.** Time has no constants; it has dimensional values that differ from node to node. Hydrogen's quantum in joules is one count of T. Read through five volts, each on the lattice, it gives five electron-volt faces.

FORMULA E5 — ONE JOULE, FIVE VOLTS

face	volt (x 10^-19)	address	eV face of hydrogen	
sodium	1.6021708859534590	$2^5 \cdot 3^8 \cdot \pi^9 / 5^8$	13.6085693987342	
G2	1.6024597723186090	$5^9 \cdot \pi^3 / (2^6 \cdot 3^{10})$	13.6061160890060	the ground state
G1	1.6026042350339375	$5^{19} / (2^{10} \cdot 3^{19})$	13.6048896	the integer face
face 2	1.6034418277202047	$2^3 \cdot 5 \cdot \pi^4 / 3^5$	13.5977827902427	
face 1	1.6035863789684203	$5^{11} \cdot \pi / (2 \cdot 3^{14})$	13.5965570524209	

Every volt is an address; every face it gives is an address. **The G1 volt gives the integer face, 13.6048896, and the G2 volt gives the ground state, 13.6061160890** — one G-bond step apart, the same step that separates the G1 and G2 faces of the year, the free fall and the speed of light. The G2 face is placed as the ground state because it carries the G2 year, and the G2 year gives lithium's atomic weight exactly.

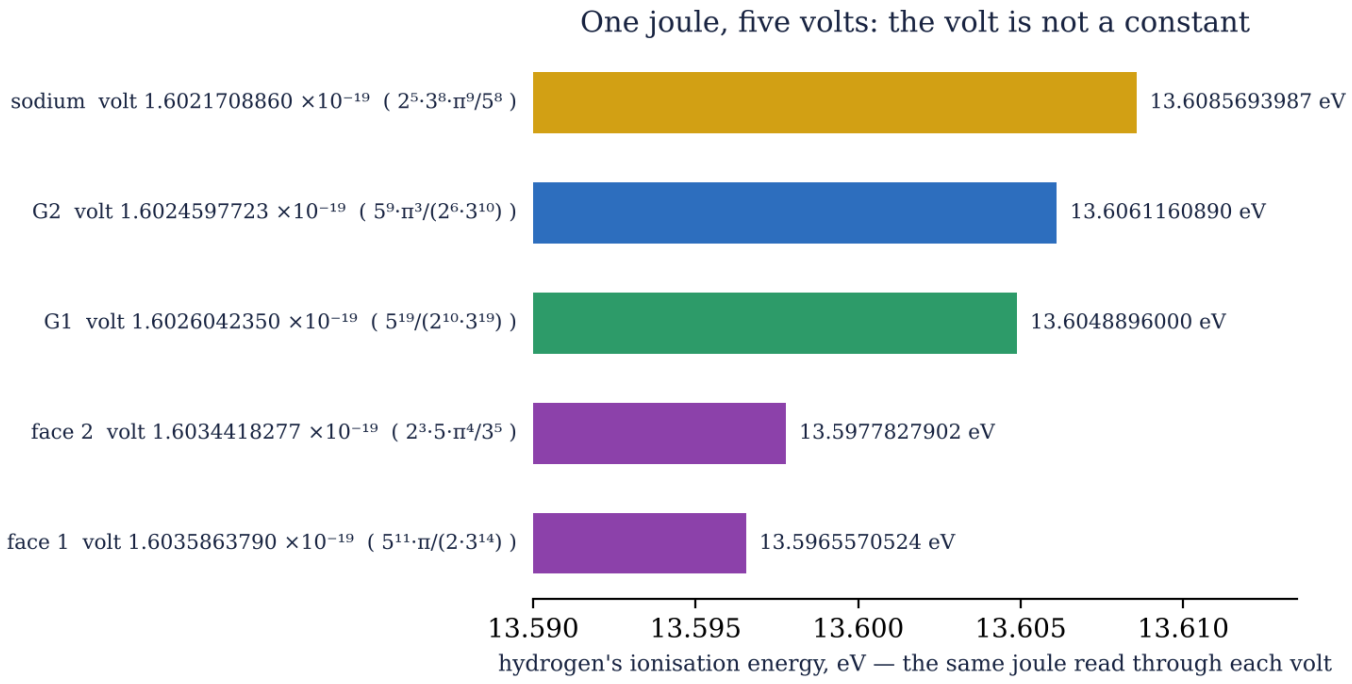


Figure 4 — One joule, five volts. Hydrogen's quantum in joules, $5^{12}/(2^9 \cdot 3^7)$, read through each of the five lattice volts. The G1 volt gives the integer face 13.6048896; the G2 volt gives the ground state 13.6061160890; the sodium volt gives the face science reads.

The face science reads

One of the five stands apart: the sodium volt, $2^5 \cdot 3^8 \cdot \pi^9 / 5^8$. It is the volt of the space-time dimension directly below G1, the dimension of the sodium line, 588.9955242462 — and it is the face nearest to the charge science quotes. Science's instruments read on the sodium dimension. That is not wrong; it is one face of five. The mistake is to take it as the only one, and to multiply it into equations alongside values read on G1 and G2 as though all shared one register.

The sodium volt carries the sodium line

The sodium volt is not simply close to sodium in name. Carried as a circle and read through the veil, it becomes a year; carried round three more circles, it becomes the sodium line itself.

```
THE SODIUM VOLT
    1.6021708859534590       ( 2⁵·3⁸·π⁹/5⁸ )
    / 4 / 2π x 180/π         =   365.2511637647192 days       the G0 year
    / 2π / 2π / 2π x 4       =   588.9955242462013 nm         sodium D2 ( 2³·3¹⁰·π⁴/5⁷ ), exactly
```

The volt science reads is the sodium line in another costume. It passes through the G0 year — the year one G-bond step below the Earth's G1 year — on the way. A charge, a year and a line of light are one count of T read at three depths. That is why the electron-volt is not a fixed unit: the volt is tied to the dimension it is read in, and the dimension science reads it in is the dimension of sodium.

PART FOUR — THE LADDER OF SHELLS

Each shell is the quantum divided by n²

The electron in hydrogen does not sit at any distance it likes. It sits on shells, and each shell has its own energy. The textbook writes the ladder as the ground-state energy divided by the square of the shell number. On the lattice the ground-state energy is an exact address, and so is every rung.

```
FORMULA E6     THE LADDER
    shell n     energy, eV              address
    1           13.6048896              2⁸·3¹²/10⁷
    2           3.4012224               2⁶·3¹²/10⁷
    3           1.5116544               2⁸·3¹⁰/10⁷
    4           0.8503056               2⁴·3¹²/10⁷
    5           0.544195584             2⁸·3¹²/(5²·10⁷)
    6           0.3779136               2⁶·3¹⁰/10⁷

    on every shell:   n² x E(n)  =  13.6048896
```

Multiply any shell's energy by the square of its number and the quantum comes back, unchanged. That is time equalisation at the scale of the atom: each shell holds the same count of T, spread over n² times the space. The ladder is not a set of separate energies; it is one value, read at different depths of the atom.

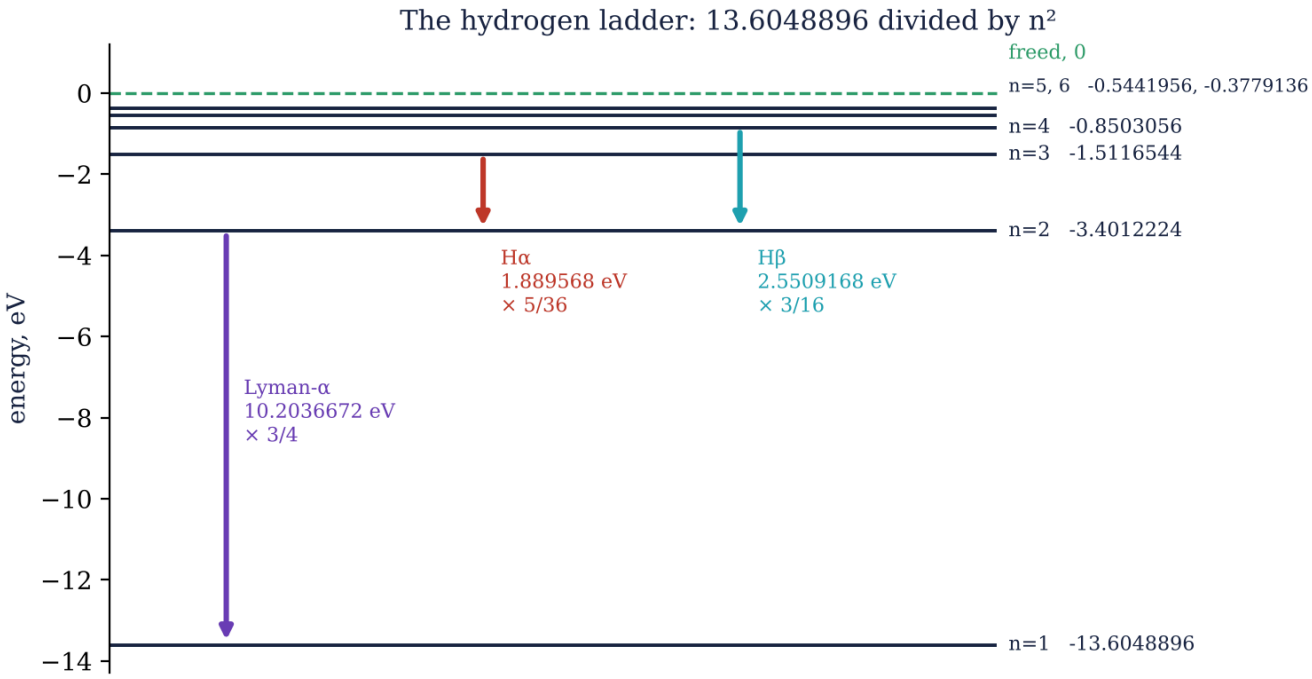


Figure 5 — The hydrogen ladder. The shells sit at 13.6048896/n² below freedom. The arrows are the transitions that make the lines: Lyman-α (2 → 1), Hα (3 → 2) and Hβ (4 → 2).

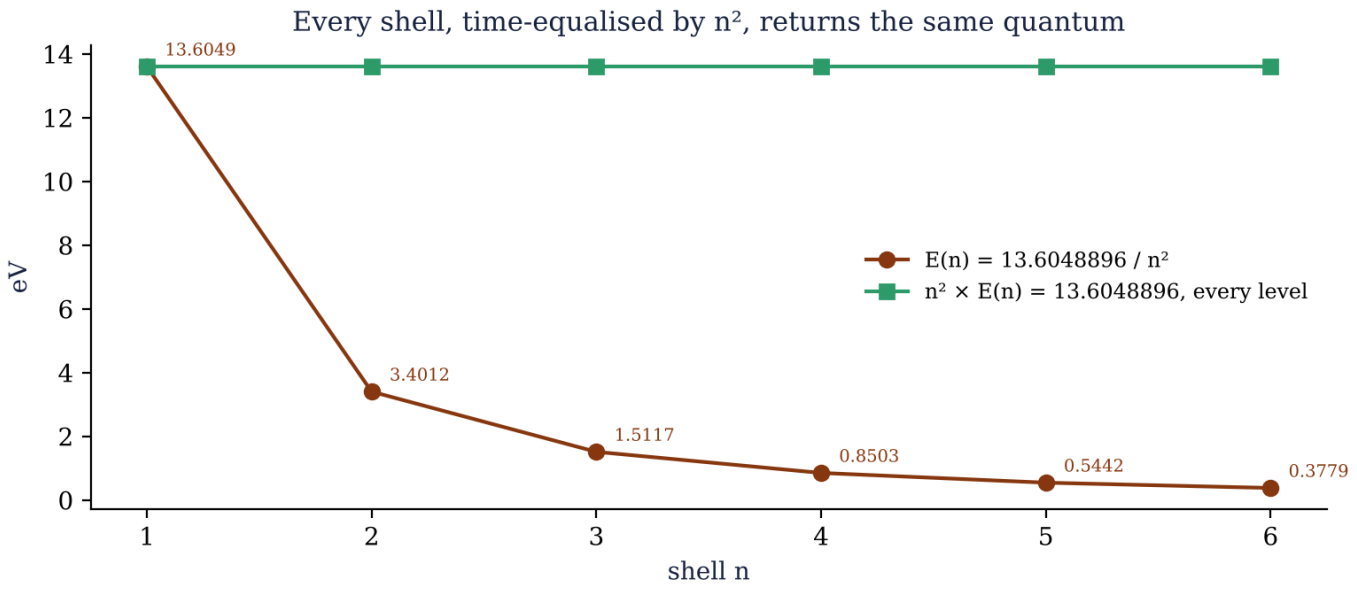


Figure 6 — Every shell, time-equalised by n², returns the same quantum. The energy falls as 1/n²; multiplied by n² it is 13.6048896 on every shell.

The shells numbered by twos, threes and fives keep clean addresses. A shell whose number brings in another prime — the seventh, for example — would carry a factor the lattice does not hold. In the framework that is not a failure of the ladder but a sign that such a shell belongs to a different register, and its reading is left open here.

PART FIVE — THE LINES

Transitions as fractions of the quantum

When the electron drops from one shell to a lower one, the difference is given out as light — a line in the spectrum. Each line is the quantum times a simple fraction: one over the lower shell squared, less one over the upper shell squared.

```
FORMULA E7     THE LINES
    Lyman-α     2 -> 1      13.6048896 x 3/4      =   10.2036672 eV      ( 2⁶·3¹³/10⁷ )
    Hα          3 -> 2      13.6048896 x 5/36     =   1.889568 eV        ( 2⁶·3¹⁰·5/10⁷ )
    Hβ          4 -> 2      13.6048896 x 3/16     =   2.5509168 eV       ( 2⁴·3¹³/10⁷ )

    Hβ's energy x Hβ's wavelength
    2.5509168  x  486 nm  ( 2⁴·3⁵·5³ pm )   =   1239.7455648   ( 2⁵·3¹⁸/10⁷ )      no π
```

Hydrogen's blue-green line, Hβ, has an energy of 2.5509168 electron-volts and a wavelength of 486 nanometres — and both are pure {2,3,5} numbers. Their product, the quantity science calls Planck's constant times the speed of light, comes out as two to the fifth times three to the eighteenth, at its decade, with no π at all. Hβ is the line that, read in degrees and divided by the day, is the free fall at the Earth's surface; here it is also the line whose energy and wavelength multiply to a clean address.

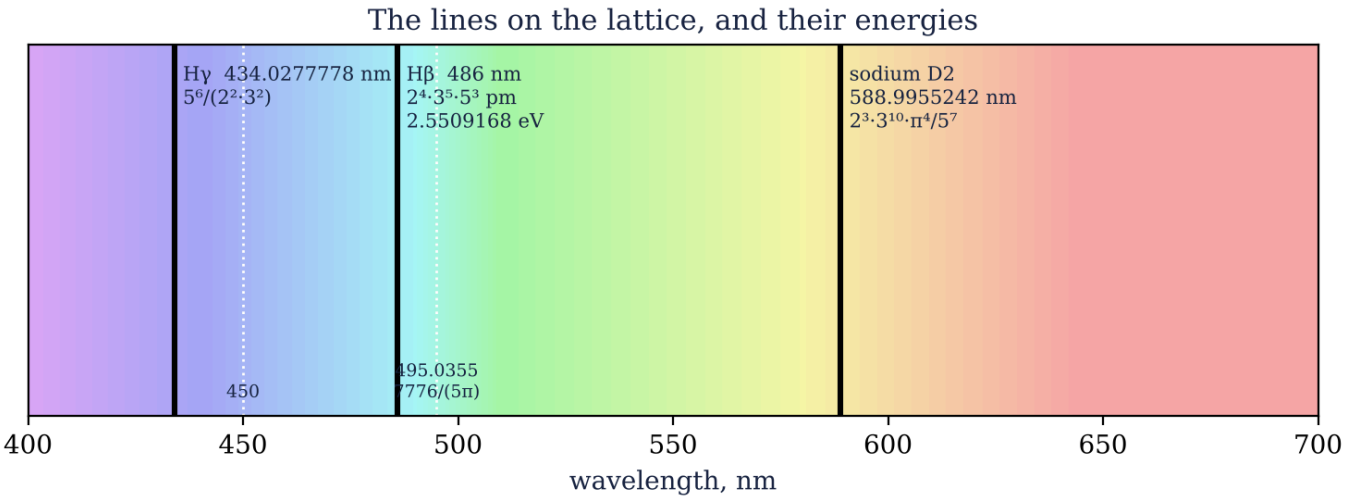


Figure 7 — The lines on the lattice. Hβ at 486 nm ($2^4 \cdot 3^5 \cdot 5^3$ pm, 2.5509168 eV), Hγ at 434.0277778 nm ($5^6/(2^2 \cdot 3^2)$) and sodium D2 at 588.9955242 nm ($2^3 \cdot 3^{10} \cdot \pi^4/5^7$), with the spectrum's colour boundaries at 450 and 495.0355 ($7776/(5\pi)$).

PART SIX — THE BONDS OF CHEMISTRY IN ELECTRON-VOLTS

Carried across the bridge

A chemist measures bond energies in kilojoules per mole; a spectroscopist measures the same bonds in electron-volts. The two are the same counts of T on two clocks, and the bridge between them is the Faraday. Carry a bond with a clean address across, and it keeps a clean address.

```
FORMULA E8     THE BONDS IN ELECTRON-VOLTS
    H–H          432 kJ/mol            ( 2⁴·3³ )        / F  =   4.478976 eV          ( 2⁵·3⁷/5⁶ )
    C–H          412.5296124942 kJ     ( 1296/π )       / F  =   4.2771070223 eV      ( 2⁵·3⁸/(5⁶·π) )
    O–H, water   497.3591971621 kJ     ( 5⁵/(2π) )      / F  =   5.1566201562 eV      ( 3⁴/(5π) )

    F  =  96.450617283950617   ( 5⁶/(2·3⁴) )
```

The bond between two hydrogen atoms is 432 kilojoules per mole — two to the fourth times three cubed — and 4.478976 electron-volts. The carbon–hydrogen bond is the H–H bond turned by three over π: 1296/π. The first bond of water, the oxygen–hydrogen bond, is five to the fifth over two π, and in electron-volts it is simply eighty-one over five π. The bonds of the molecules of life are addresses on both clocks.

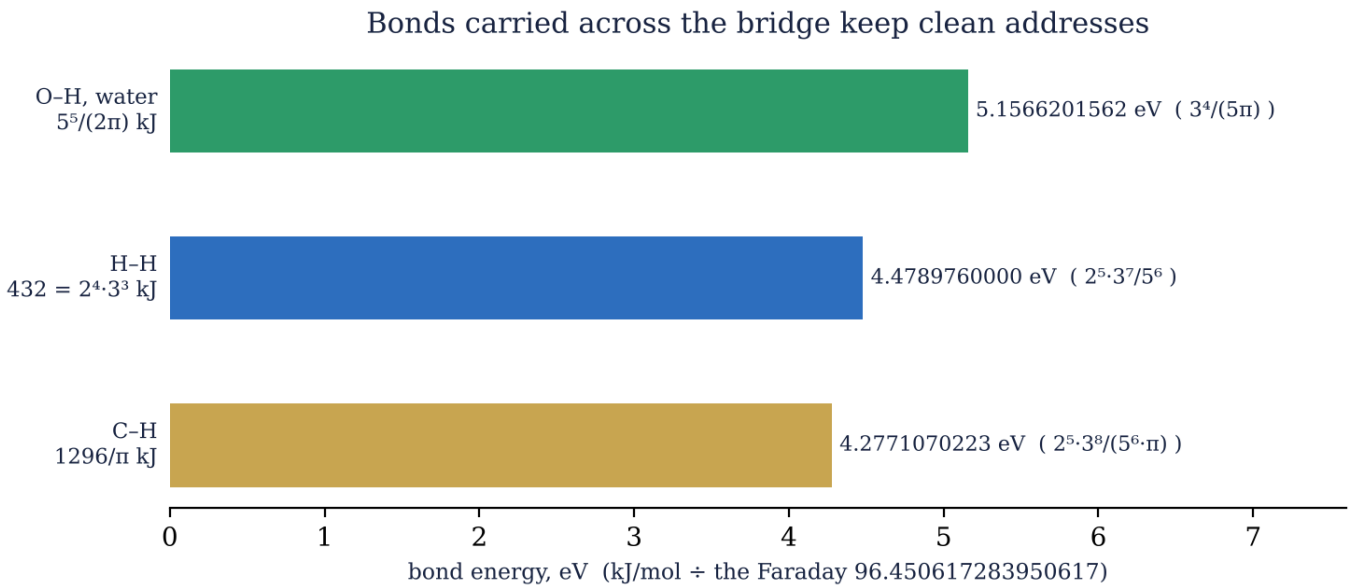


Figure 8 — Bonds carried across the bridge keep clean addresses. H–H 432 kJ/mol → 4.478976 eV; C–H 1296/π → 4.2771070223 eV; O–H in water $5^5/(2\pi)$ → 5.1566201562 eV ($3^4/(5\pi)$).

A WORKED WALK ALONG THE CHAIN

A reader in a lecture theatre should be able to walk the whole chain with a pocket calculator.

Start with the electron. Write 511,280.83701927 electron-volts and its form beside it: two to the ninth, three to the eighth, five to the sixth, π to the fourth, over ten to the seventh. Note the π to the fourth.

Build the gear. The fine structure constant is nine over one hundred and twenty-five π squared, 0.0072951252. Square it: eighty-one over fifteen thousand six hundred and twenty-five π to the fourth. Note the π to the minus four.

Turn the gear twice and halve. Multiply the electron by α squared and divide by two. The π's cancel, the five to the sixth cancels, and the answer is 13.6048896. Every digit is there.

Check it in the flask. Divide 1312.2 by the Faraday, 96.4506173. The answer is 13.6048896 again.

Climb the ladder. Divide by four: 3.4012224. By nine: 1.5116544. By sixteen: 0.8503056. Multiply each back by its square and the quantum returns.

Make a line. Take three-sixteenths of the quantum: 2.5509168, the energy of Hβ. Multiply by 486: 1239.7455648. Look at it — two to the fifth, three to the eighteenth, at its decade. No π anywhere.

Change the volt. Take the joule face, 2.18032536901, and divide by the G2 volt, 1.6024597723, instead of the G1 volt. The answer is 13.6061160890 — the ground state, one G-bond step above the integer face. The energy did not change; the clock did.

Cross a bond. Divide 432 by the Faraday: 4.478976, the H–H bond in electron-volts.

Nothing was adjusted. No figure was fitted. Each step is a multiplication or division of exact forms.

WHY THE VALUES ARE WHAT THEY ARE

The question that matters most about hydrogen's quantum is not how precisely it can be measured but why it is 13.6 and not some other number. The standard picture has no answer beyond the constants it multiplies together — the charge, the mass of the electron, Planck's constant, the permittivity of free space — each itself unexplained.

The Universal Force of Time answers it from the inside. **Hydrogen's quantum is what the electron becomes when it is carried from the register of the planets down to the register of the atom.** The electron's rest energy is an address with π to the fourth in it — a room, a state. α is the gear between the celestial and atomic registers, and it carries π to the minus two. Turn that gear twice and the π's cancel completely: what is left is a pure

count, two to the eighth times three to the twelfth. The quantum is π-free because it is a count — the number of T the atom holds at its ground. And it is that particular count because the electron's address and the gear's address are what they are, both fixed by the same lattice that fixes Mercury's year, the speed of light and the turn of the DNA helix.

The ladder follows. Each shell holds the same count of T spread over n^2 times the space, so the energy falls as one over n^2 and the product $n^2 \times E$ stays the quantum. The lines follow from the ladder. And the bonds of chemistry carry over on the bridge because the bridge — the Faraday — is itself an address, five to the sixth over two times three to the fourth, the number by which a minute-clock and a spin-orbit clock mesh.

So the values are what they are because time is built on 2, 3, 5 and π, and the atom is one register of that time. A different number would need a different lattice.

WHY THE STANDARD PICTURE DOES NOT SEE THE CHAIN

Three habits hide it. The first is treating the charge as a constant. A constant has one value, so five faces of the volt look like nonsense, and the clean addresses that each face gives are never examined. The second is reading values on different registers and multiplying them together — the charge on the sodium dimension, light on G1, the ground state on G2 — so that every combination leaves a small residual that appears to need a correction. The third is the habit of benchmarking: comparing a clean value to a tabulated one and treating the difference as error in the theory rather than as the trace of a reading taken across registers. Read each value on its own face, and the residuals are the steps between faces.

PART SEVEN — WHAT THIS REVISION CORRECTS

- **No prime seventeen.** The earlier versions wrote hydrogen's quantum as 68/5, Hβ as 51/20, Lyman-α as 51/5 and the ladder as $-68/(5n^2)$, and called seventeen a "register constant". The lattice is {2, 3, 5, π}; seventeen is not on it. Hydrogen's quantum is **13.6048896 ($2^8 \cdot 3^{12}/10^7$)**, the ladder **13.6048896/n^2**, Hβ **2.5509168 ($2^4 \cdot 3^{13}/10^7$)**, Lyman-α **10.2036672 ($2^6 \cdot 3^{13}/10^7$)**.
- **The charge is not a constant.** The earlier versions took the charge from the tables and described a "sub-lattice correction". The volt has five faces on the lattice, from the **sodium volt 1.6021708860 ($2^5 \cdot 3^8 \cdot \pi^9/5^8$)** to **face 1, 1.6035863790 ($5^{11} \cdot \pi/(2 \cdot 3^{14})$)**.
- **The electron.** The earlier versions used an electron energy of 510,854.925 eV and claimed a sub-ppm match that their own arithmetic did not give. The electron is **511,280.83701927 eV ($2^9 \cdot 3^8 \cdot 5^6 \cdot \pi^4/10^7$)**, and α^2 times it, halved, is the quantum exactly.
- **The bonds.** The earlier versions gave C–H as 413, O=O as "about 500" and others as near-lattice. The bonds are given here only where their addresses are settled: **H–H 432 ($2^4 \cdot 3^3$)**, **C–H 1296/π**, **O–H $5^5/(2\pi)$**.
- **No off-lattice benchmarks.** Every comparison with tabulated figures has been withdrawn.
- **New in this revision:** the three roads; the five volts and their faces; the ladder as time equalisation; Hβ's energy times its wavelength as $2^5 \cdot 3^{18}$; the bonds in electron-volts.

CONCLUSION — THE ELECTRON-VOLT IS A CLOCK

The electron-volt was invented as a convenience, a unit small enough for the atom, and it has been anchored ever since to a charge treated as a constant of nature. The Universal Force of Time removes the anchor and finds that nothing drifts. **The electron, the fine structure constant, hydrogen's quantum, its shells, its lines and the bonds of chemistry are one chain of exact addresses**, and the volt is simply the gear by which one register's clock is read on another's. There is not one charge but a family of volts, each on the lattice, each giving its own face of the same energy — and the face science reads is one of them, the face of the sodium dimension, directly below G1.

WHAT STANDS, WHAT IS OPEN

Forced, and stated at full force. Hydrogen's quantum on G1 is $2^8 \cdot 3^{12}/10^7$, reached by the flask, the joule and the electron, each exactly. α^2 times the electron, halved, is the quantum with every π cancelled. The ladder is the

quantum over n^2, time-equalised on every shell. The five volts are lattice addresses, and the G2 volt gives the ground state.

Arrived at, and exact on every line. The line energies; Hβ's energy times its wavelength as $2^5 \cdot 3^{18}$; the bond energies in electron-volts.

Open. The shells whose numbers bring in a prime beyond five; the electron-volt faces of the other elements' ionisation energies on the five volts; the remaining bonds of chemistry, whose addresses are not yet settled.

WHAT WOULD BREAK IT

- α^2 times the electron, halved, departing from $2^8 \cdot 3^{12}/10^7$.
- A shell on the 2, 3, 5 ladder whose energy times n^2 is not the quantum.
- A volt face of hydrogen that is not on the lattice.
- Hβ's energy and wavelength whose product carries a π or a foreign prime.

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 an energy in joules at one register, in electron-volts at another, in kilojoules per mole at a third. The unit and the power of ten are the costume a number wears where it is read. That is why 13.6048896 and 1312.2 are one energy, and why the volts are written without their power of ten. 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 thirty digits with π carried as a symbol.

THE QUANTUM AND ITS ROADS

quantum, G1	$2^8 \cdot 3^{12}/10^7$	13.6048896
kJ/mol	$3^8/5$	1312.2
Faraday	$5^6/(2 \cdot 3^4)$	96.450617283950617283950 62
joule	$5^{12}/(2^9 \cdot 3^7)$	2.180325369012917238225880
electron	$2^9 \cdot 3^8 \cdot 5^6 \cdot \pi^4/10^7$	511,280.8370192719925666280
α	$3^2/(5^3 \cdot \pi^2)$	0.007295125222248319543959
α^2	$3^4/(5^6 \cdot \pi^4)$	0.000053218852008283593 62

THE FIVE VOLTS (x 10^-19) AND THEIR FACES

sodium	$2^5 \cdot 3^8 \cdot \pi^9/5^8$	1.602170885953458952	13.60856939873424305
G2	$5^9 \cdot \pi^3/(2^6 \cdot 3^{10})$	1.602459772318608970	13.60611608900603450
G1	$5^{19}/(2^{10} \cdot 3^{19})$	1.602604235033937532	13.6048896
face 2	$2^3 \cdot 5 \cdot \pi^4/3^5$	1.603441827720204728	13.59778279024274507
face 1	$5^{11} \cdot \pi/(2 \cdot 3^{14})$	1.603586378968420274	13.59655705242090232

THE LADDER AND THE LINES

n = 2, 3, 4		3.4012224 1.5116544 0.8503056
n = 5, 6		0.544195584 0.3779136
Lyman-α	$2^6 \cdot 3^{13}/10^7$	10.2036672
Hα	$2^6 \cdot 3^{10} \cdot 5/10^7$	1.889568
Hβ	$2^4 \cdot 3^{13}/10^7$	2.5509168
Hβ x 486	$2^5 \cdot 3^{18}/10^7$	1239.7455648

THE BONDS

H—H	$2^5 \cdot 3^7/5^6$	4.478976
C—H	$2^5 \cdot 3^8/(5^6 \cdot \pi)$	4.277107022339790021
O—H, water	$3^4/(5\pi)$	5.156620156177408879

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