THE UNIVERSAL FORCE OF TIME

The Universal Fraunhofer Lines

Hydrogen, the 486 wavelength fixed by the proton, and a galaxy addressed for life

Stephen Daubney · The Daubney Foundation · 2026 · Rev 7 · 27 September 2026

Tau (T) is the living fabric of time itself — the sole substance of which all physical reality is composed. Every particle, force, wavelength, and conscious experience is a structured configuration of T-flow. There is no gravity, no electromagnetic force, no strong nuclear force as separate entities: all are registers of the single T-field operating across dimensional levels. The conservation law $d\Sigma T=0$ governs all change: T is never created or destroyed, only redistributed.

Abstract

The dark lines Fraunhofer mapped in the Sun in 1814 are not the Sun's. The same lines — hydrogen's Balmer series, the sodium D doublet, the ionized-calcium H and K lines, the magnesium and iron lines — stand at the same rest wavelengths in the spectrum of every star yet measured, from Proxima Centauri to Vega to Arcturus. What changes from star to star is only which lines are strong and how far the whole pattern is shifted by motion; the wavelengths themselves are fixed, and the constant that fixes them, the fine-structure constant $\alpha = 9/125\pi^2$, is a ratio of the lattice and so the same in every star. In the Force of Time this is the universality of the lattice: the $\{2,3,5,\pi\}$ structure of T is the same in every star. One line carries a further meaning. Hydrogen's visible line at **486.1390710 nm** is fixed by the proton itself — the line times the proton's mass is exactly $(12/\pi)^5$, and the same proton opened out lands, figure for figure, on the line's G2 face 486.0438132 nm, where hydrogen's ionisation energy lands too, so the Fraunhofer lines, the hydrogen spectrum and the ionisation energy share one source — and its integer node, $2\times3^5 = 486$, converted to an energy, is the first electron level of the water molecule, the structural register of the living Earth. The 486 line is therefore woven into water, and through water into life. And 486 is everywhere: every star with hydrogen broadcasts it. By the logic of this theory — that life is the default configuration of T, and the address of life is carried in the register of water — a galaxy filled with the 486 line is a galaxy addressed for life. Life is not rare; it is written into the light of the stars. And the lines do not all come in from one register: the hydrogen lines stand on the proton, while the sodium doublet and the oxygen A band stand on the surface register G1 — the Fraunhofer lines are emitted from different space-time dimensions, and each is read on the face of its own.

1 · The Dark Lines That Are Everywhere

In 1814 Joseph von Fraunhofer passed sunlight through a prism and found the rainbow crossed by hundreds of fine dark lines — gaps in the colour where light was missing. He mapped over five hundred and seventy of them and labelled the strongest with letters, A through K, from the red to the violet. He did not know what they were. We now know each dark line is a wavelength of light absorbed by a particular kind of atom in the Sun's outer layers: the C line is hydrogen, the D lines are sodium, the H and K lines are ionized calcium, and so on down the alphabet.

The decisive fact — the one this paper is built on — is that these lines are not peculiar to the Sun. Turn a spectrograph on any other star and the same lines appear, at the same wavelengths. This is not a marginal claim; it is the entire foundation of stellar astronomy. Empirical spectral libraries — the MILES collection of nearly a thousand stars, the ELODIE and X-shooter libraries, the high-resolution Arcturus Atlas — catalogue the spectra of stars across every type, and they show one thing over and over: the same lines, at the same rest wavelengths, differing only in strength. The Sun is one entry in that catalogue, not a unique object with lines of its own.

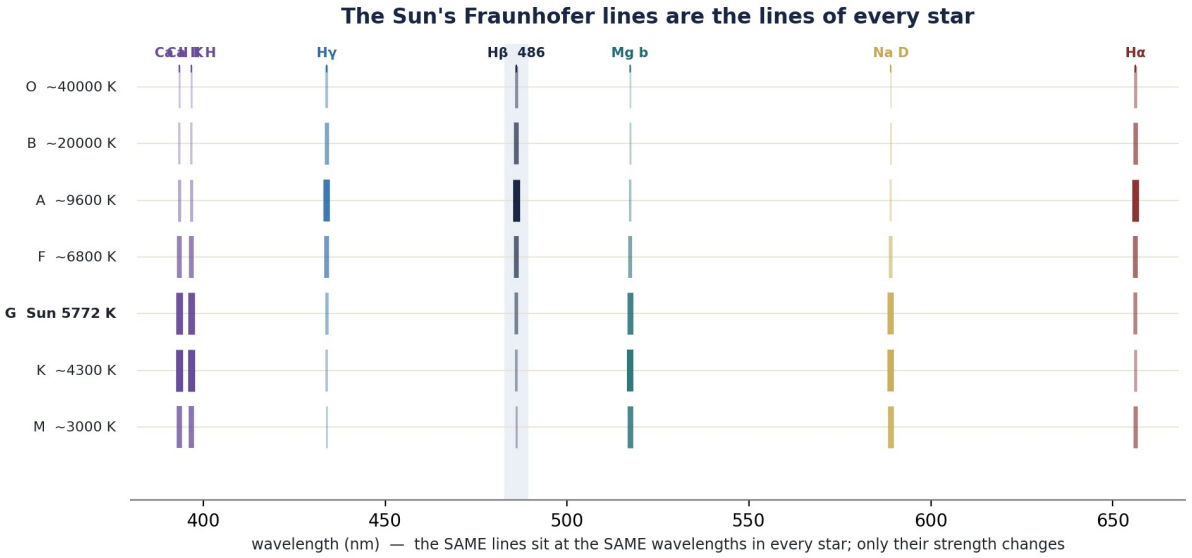


Figure 1 — The Sun's Fraunhofer lines are the lines of every star. The principal absorption lines — Ca II H and K, the hydrogen Balmer lines, the Mg b group, Na D, Hα — sit at fixed wavelengths across the whole sequence of stellar types (hot O stars at the top, the cool M dwarfs at the bottom, the Sun a G star in the middle). Only the strength of each line changes with the star's temperature; the wavelengths do not move. The 486 line of hydrogen is picked out in the shaded column.

The lines that fill the Sun's spectrum, then, fill the spectrum of the Galaxy. To read them is to read something universal.

2 · Hydrogen: the First Node of the Flow of Time

Of all the lines, the hydrogen lines matter most, because hydrogen matters most. Hydrogen is the first element — the simplest atom, one proton and one electron — and in the Force of Time it is the first node of the sweep, the first address the flow of time reaches as it counts the elements into being. It is also, by an enormous margin, the most abundant substance in the universe. Every star is mostly hydrogen; every star, therefore, carries the hydrogen lines.

Hydrogen's visible signature is the Balmer series — the set of lines produced when its electron falls to, or rises from, the second level. Four of them lie in the visible: **Hα deep red at 656.2877458 nm, Hβ blue-green at 486.1390710 nm, Hγ violet at 434.0527420 nm, Hδ at 410.1798411 nm.** These are Fraunhofer's C, F, G′ and h. They are the fingerprint of the first element, and they appear wherever hydrogen is lit — which is to say, everywhere.

And the four are not free numbers. They are fixed by the proton. The blue line times the proton's mass is a pure power of the lattice:

$$H\beta \times m_p = (12/\pi)^5 = 813.124162828260014$$

$$\text{the proton } m_p = 3\cdot 5^5 \cdot \sqrt{(10^{11}/\pi)} = 1.6726163588932229199 \times 10^{-27}\ \text{kg}$$

$$\text{so } H\beta = (12/\pi)^5 \div m_p = \sqrt{(2^{27}\cdot 3^8 \,/\, (5^3\cdot\pi^9))} = 486.1390709859537637\ \text{nm}$$

The rest of the series follows from the same line by the Balmer rule, with nothing further chosen. The series limit is three-quarters of Hβ, and each line is that limit carried by $n^2/(n^2-4)$:

$$\text{the limit } \tfrac{3}{4} \times 486.1390709859537637 = 364.6043032394653228\ \text{nm}$$

Hα	n = 3 × 9/5	= 656.2877458310375811 nm
Hβ	n = 4 × 4/3	= 486.1390709859537637 nm
Hγ	n = 5 × 25/21	= 434.0527419517444319 nm
Hδ	n = 6 × 9/8	= 410.1798411443984882 nm

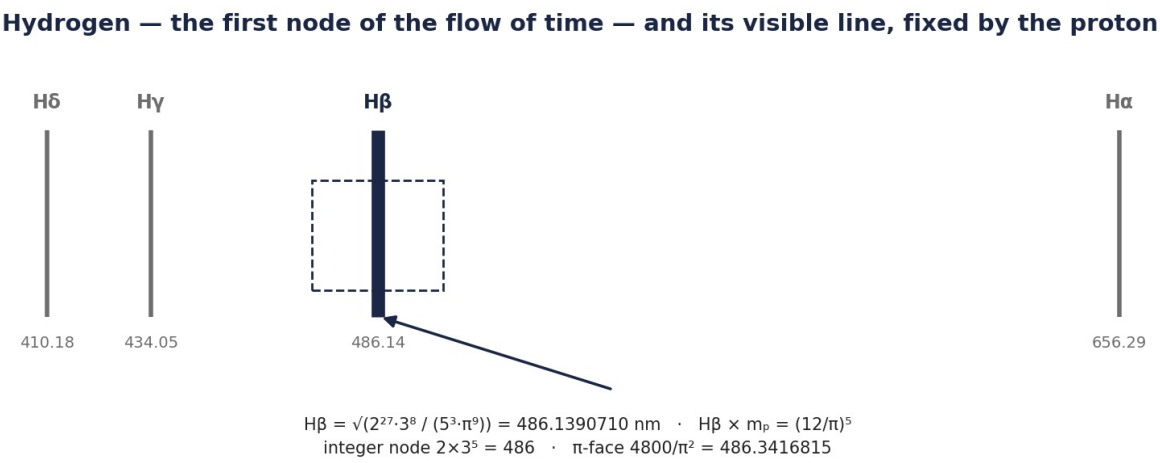


Figure 2 — The visible hydrogen (Balmer) lines, fixed by the proton, with the 486 line marked: Hβ = $\sqrt{(2^{27}\cdot 3^8/(5^3\cdot\pi^9))}$ = 486.1390710 nm. Its integer node is $2\times3^5 = 486$ and its π-face $4800/\pi^2$ = 486.3416815 — the same line read on other registers of the lattice.

Because hydrogen is the first node and the commonest atom, its lines are the surest thing in the sky. And one of them, the blue-green line at 486, turns out to reach much further than a colour in a prism.

3 · One Source: the Proton, the Line and the Ionisation Energy

The proton fixes the four hydrogen lines as it stands. **Opened out, it reaches hydrogen's ionisation energy as well** — so the Fraunhofer lines, the hydrogen atomic spectrum and the ionisation energy are not three subjects but one, with the proton at the centre. Every route below is exact to every figure printed, and each lands with nothing left over. The step between the two registers is the G-bond, $\delta_G = 5^{10}/(2^4\cdot3^9\cdot\pi^3) - 1$.

The proton opened out gives the G2 face of the same line. Carry the mass down to a wavelength and a free fall, square it, and carry it back up by the day's gears:

```
mₚ                          1.6726163588932229
÷ π²/8          wavelength  1.3557717541007887
÷ 49.50355350   free fall   0.0273873622854140
squared                     0.00075006761295252
× 864                       0.64805841759097482
× 360                       233.30103033275093
÷ 24                        9.7208762638646223
÷ 2                         4.8604381319323111
```

That is **486.0438131932311135 nm** at its decade — the G2 face of the blue line, $486 \times (1 + \delta_G) = 5^{10}/(2^3\cdot3^4\cdot\pi^3)$ — and the landing is exact, with nothing left over.

The ionisation energy gives the same G2 line. Hydrogen's ionisation energy on the G2 register is

```
IE_G2   =   3³·5³/(2³·π³)   =   13.606116089006034500 eV
```

Take its third rung, one-ninth, and carry it through the gear that turns an energy into a circumference, $31104 = 2^7\cdot3^5$:

```
13.606116089006034500 ÷ 9    =   1.5117906765562260555
÷ 31104                      =   0.0000486043813193231
                             =   486.0438131932311135 nm at its decade
```

The same number the opened-out proton gave, to every figure. On the G1 register the same two steps take 13.6048896 eV to 486 exactly — the blue line's integer node, $2\cdot3^5$.

So the three close on one ring:

```
the proton, as it stands      486.1390710   the spectrum; Fraunhofer's C, F, G′ and h
the proton, opened out        486.0438132   Hβ on the G2 register
the ionisation energy, G2     486.0438132   the same line, the same register
the ionisation energy, G1     486           the line's integer node, 2·3⁵
```

The two registers stand one G-bond step apart on both sides of the ring at once: 486 to 486.0438132 is × (1 + δ_G), and 13.6048896 to 13.6061161 eV is × (1 + δ_G), exactly.

The line the proton gives as it stands and the line it gives opened out are not a named step apart, and they should not be: one is the proton's square root and the other its square — the source and the node of one object.

> ***Hβ × m_p = (12/π)^5.*** *Forward: 813.124162828 ÷ 1.6726163589 = 486.1390710 nm. Back: 813.124162828 ÷ 486.1390710 = 1.6726163589, the proton. Opened out, the proton lands on 486.0438132 — and so does the G2 ionisation energy ÷ 9 ÷ 31104.*

And the ring does not stop at three. It carries on to the twenty-one centimetre line and to the helix of DNA, and it does so from the same place: the G2 face of the blue line, 486.0438131932311135 nm, where the opened-out proton and the G2 ionisation energy both land.

To the twenty-one centimetre line. Take three-quarters of the G2 blue line, which is the Balmer limit on that register, and carry it by $\pi^4/25$, the join that carries the Balmer limit into the radio band:

```
G2 Hβ              486.0438131932311135      5¹⁰/(2³·3⁴·π³)
× 3/4              364.5328598949233351      5¹⁰/(2⁵·3³·π³)    the Balmer limit
× π⁴/25            1420.352581375593731 MHz  5⁸·π/(2⁵·3³)      the 21-cm line
```

The line's frequency is $5^8{\cdot}\pi$ divided by 864 — and 864 = $2^5{\cdot}3^3$ is the ground state of the DNA helix. Its second face, 1420.480627017783278 MHz = $5^{18}/(2^9{\cdot}3^{12}{\cdot}\pi^2)$, stands one G-bond step on, × (1 + δ_G), exactly.

To the helix of DNA. The ring reaches the helix twice. First, the opened-out proton is carried up by × 864, and 864 is the helix at turn zero. Second, the G2 ionisation energy, turned into joules by the elementary charge e = $5^9{\cdot}\pi^3/(2^6{\cdot}3^{10}) \times 10^{-20}$ C, loses its π entirely and lands on turn two of the helical ladder:

```
IE_G2 × e     =   3³·5³/(2³·π³)  ×  5⁹·π³/(2⁶·3¹⁰)
              =   5¹²/(2⁹·3⁷)
              =   218.0325369012917238 × 10⁻²⁰ J

the helix, turn 2     864 × r²  =  872.1301476051668953      r = 5⁶/(2⁶·3⁵)
a quarter of it                    218.0325369012917238      the same number
```

So the ring now closes on five of the six domains:

```
the proton, as it stands       486.1390710 nm        the spectrum; Fraunhofer's C, F, G′ and h
the proton, opened out         486.0438132 nm        Hβ on the G2 register, through × 864
the ionisation energy, G2      486.0438132 nm        ÷ 9 ÷ 31104
the 21-cm line                 1420.3525814 MHz      G2 Hβ × ¾ × π⁴/25 = 5⁸·π/864
the DNA helix                  864 and 218.0325369   turn 0; turn 2 = IE_G2 × e
```

The sixth, the periodic table, is not yet on the ring. It is reached from the ionisation energy through the atomic weights, not from the proton, and that route is open.

> ***One source, five domains.*** *The proton opened out and the G2 ionisation energy meet at 486.0438132 nm. Three-quarters of it, × $\pi^4/25$, is the 21-cm line, $5^8{\cdot}\pi/864$ MHz; the ionisation energy times the charge is 218.0325369 × 10^{-20} J, turn two of the helix whose ground is 864.*

4 · The Rest Wavelengths Are Fixed — the Lattice Is Universal

Why are the lines at the same wavelengths in every star? Because a line's wavelength is set by the atom, not by the star. The dark line is the energy an electron gains or loses in jumping between two fixed levels of the atom, and that energy — and so the wavelength — is a property of the atom itself. A hydrogen atom in Proxima Centauri has exactly the levels of a hydrogen atom in a laboratory on Earth. As one standard reference puts it, the lines "appear at the same wavelengths as those from a hydrogen discharge tube in the laboratory." The rest wavelengths are universal.

The Force of Time says why they are what they are: the wavelengths sit on the lattice of {2,3,5,π}, the structure of T — and the hydrogen lines, as the section above showed, are fixed by the proton itself. And the constant that governs the exact positions, the fine-structure constant $\alpha = 9/125\pi^2$ (its reciprocal 137.0778389), is a pure ratio of the lattice. It carries no reference to any star, so it is the same in every star; and every star that has been examined shows the same lines at the same places. The lattice is not an Earth-effect or a Sun-effect; it is universal, exactly as a theory in which T is the one substance requires.

Two things do change from star to star, and neither touches the rest wavelength. The first is line strength. Which lines are strong depends on temperature: the hot A-type stars like Vega blaze in the hydrogen Balmer lines because their heat holds many atoms in the second level; the Sun, cooler, shows strong calcium, sodium, magnesium and thousands of iron lines; the cold M dwarfs bury their spectra in the molecular bands of titanium oxide. The same lattice of lines is lit differently at each temperature. The second is a shift: a star moving toward or away from us slides its whole

pattern to bluer or redder wavelengths by the Doppler effect (the shift is the star's speed divided by the speed of light), and the Sun's own T-density bends its light a little further — what science calls the gravitational redshift, measured at 638 metres per second. Neither effect changes the wavelength the atom would emit at rest; both are the register moving or weighing on a lattice that stays put.

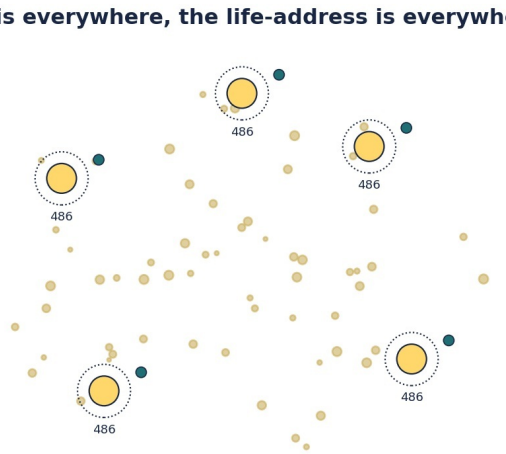
> ***KEY POINT.*** *The rest wavelength of a spectral line is a property of the atom, fixed by the lattice of T, and identical in every star. The constant that governs it, $\alpha = 9/125\pi^2$, is a ratio of the lattice and so the same in every star. What differs star to star is only which lines are lit (temperature) and how far the pattern is shifted (motion). The lattice is universal.*

5 · Proxima Centauri: the Same Lattice, Read From Another Register

Take the nearest star to the Sun. Proxima Centauri is a red dwarf of type M5.5, about a hundred and twenty times less massive than the Sun and far cooler — a surface near 2,900 K. Its spectrum looks nothing like the Sun's at first glance: it is dominated by the molecular bands of titanium oxide and crowded with the lines of neutral metals. Yet the lattice beneath it is the same. The hydrogen lines are there; the calcium H and K lines are there; every line sits at its universal wavelength.

What Proxima shows is the register reading that lattice from a very different place. Proxima is a flare star — small, dense, magnetically violent — and its hydrogen lines are not dark absorption lines at all but bright emission lines: the whole Balmer series, Hα through the higher members, pours out of its active chromosphere, the Hα line carrying an emission strength of about 2.65 ångström. Its calcium H and K lines are in emission too. The same 486 line the Sun shows as a dark gap, Proxima shows as a bright glow — the same lattice node, the flow of T reversed.

And the whole spectrum is shifted. Proxima approaches the Sun at 22.204 kilometres per second, which slides every line toward the blue by about seventy-three parts in a million — the 486 line moves by roughly 0.036 nm, the 656 line by 0.049 nm. The lines are not at different rest wavelengths; they are the same wavelengths, carried by a moving register. Proxima is one node of the T-field, in motion and aglow, reading the one universal lattice from where it stands.



Every star with hydrogen broadcasts the 486 line — the same wavelength woven into water and life.
By the logic of the Force of Time, the planetary nodes that read it carry life, as the Earth does.

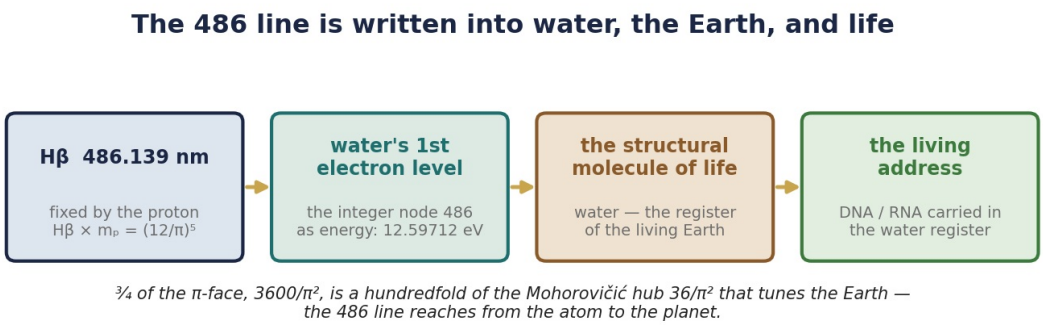
> **Figure 3** — A galaxy of nodes, each broadcasting the same lattice. Every star with hydrogen carries the 486 line; the planetary nodes around them read the same wavelength woven into water and life. By the logic of the Force of Time, the address of life is carried to every such node.

6 · The 486 Line: Hydrogen Written Into Water, the Earth, and Life

Now the heart of it. Among all the universal lines, one has a meaning the Force of Time has already established at home: the blue-green hydrogen line at 486. **Its wavelength, fixed by the proton, is 486.1390710 nm = $\sqrt{(2^{27}\cdot 3^8/(5^3\cdot\pi^9))}$; its integer node is $2\times 3^5 = 486$, and its π-face is $4800/\pi^2 = 486.3416815$.** Each is a clean lattice value — and the line does not stay in the star.

In the earlier work on the photoelectron spectrum of water, the first electron level of the water molecule — the energy it takes to free water's least-bound electron — was found to be, exactly, the integer node of hydrogen's Balmer line converted into an energy: 12.59712 eV, the 486 line read as a binding energy. The 486 wavelength is therefore not merely a line in the Sun; it is the first rung of the water molecule, the structural register of the living Earth. And water, as the Register of the Earth showed, is the medium of life — the molecule in which the living address of DNA and RNA is written and read. Three-quarters of the π-face, $3600/\pi^2$, is a hundredfold of the Mohorovičić hub $36/\pi^2$ that tunes the whole planet: the 486 line

reaches from the atom to the water to the Earth in one unbroken chain.



> **Figure 4** — The 486 line written into water, the Earth, and life. Hydrogen's 486 line, fixed by the proton, has an integer node that, read as an energy, is the first electron level of water; water is the structural register of the living Earth; and the register of water carries the living address. The same line that a star broadcasts is the line woven into life.

So the 486 line is a life-line in the most literal sense the theory can give: it is the wavelength of the first element, tuned to the first rung of the molecule of life. Where 486 goes, the address of water — and of life — goes with it.

7 · If 486 Is Ubiquitous, Life Is Ubiquitous

Put the two facts together. First: the 486 line is universal. Every star burns hydrogen, and every star with hydrogen carries the 486 line — in absorption if it is a quiet star like the Sun, in emission if it is an active one like Proxima. The 486 line is as common as starlight. Second: the 486 line is the wavelength woven into water and into life, the first rung of the molecule in which the living address is carried.

The conclusion follows by the plain logic of the theory. In the Force of Time, life is not a fragile accident that had to be lit once, against the odds, on one lucky world. Life is the default configuration of T — the flow of time settling, wherever it can, into the self-copying address that DNA and RNA carry in the register of water. The Sun broadcasts the addresses of that register to the Earth, and the Earth, a planetary node reading them, carries life. But the Sun is one star among hundreds of billions, and the 486 line it broadcasts is the line every other star broadcasts too. Every star pours the 486 wavelength onto its own planetary nodes exactly as the Sun pours it onto the Earth.

If the 486 line is the carrier of the water-and-life address, and the 486 line falls on planetary nodes throughout the Galaxy, then the address of life is delivered throughout the Galaxy. The planetary nodes that read it carry life, as the Earth does. This is not a hope or a probability estimate; it is what the theory says must follow. Life is not rare. It is written into the light of the stars, and the stars are everywhere.

> ***KEY POINT.*** *The 486 line is universal — every star with hydrogen broadcasts it. The 486 line is also the wavelength woven into water and life — the first electron level of the molecule that carries the living address. Therefore the address of life is broadcast to planetary nodes throughout the Galaxy, and life follows on them as it followed on the Earth. Life is the default of the field, and the field fills the sky.*

8 · What Differs Is the Register, Not the Lattice

A discipline must be kept, and keeping it makes the argument stronger, not weaker. Because the atomic lines are demonstrably the same in every star, the Fraunhofer wavelengths — the sodium D lines, the Balmer lines, the 486 line, the whole α-governed set — are universal lattice nodes. They are not Earth-values or Sun-values; they belong to the atom, and the atom is the same everywhere. This is the right reading, and it is what the evidence demands.

The quantities that are specific to a node — the calibrations that tie a value to the Earth's own register — are a different set: the speed that matches light into the Earth's register, the surface free-fall, the applications of the veil 180/π that convert between the measured and the true. Those belong to the Earth as a node. The atomic lines belong to the lattice as a whole. The difference between the Sun's spectrum and Proxima's is entirely a difference of register — which nodes are lit, whether they glow or absorb, how fast the star moves — laid over one lattice that never changes. The universality of the lines is the universality of the lattice; the diversity of the stars is the diversity of the registers that read it.

9 · Each Line Is Read on Its Own Register

Section 8 kept a discipline: the lines belong to the lattice, and what differs is the register. Carried one step further, it says something sharper. A line does not only sit on the lattice. It sits on one particular face of it, and the face is the register the line comes in from. **The Fraunhofer lines are not**

one family read in one register. They are emitted from different space-time dimensions.

The test. Take the proton's own 486 line, 486.1390709859537637447 nm, and the same line as the catalogue gives it, observed at the Earth, 486.134 nm. Their ratio is the step that carries an Earth reading onto the proton's register:

```
the proton step   =   1.000010431251370535170779
                  =   486.1390709859537637447 ÷ 486.134
```

If every line came in from one register, that one step would carry every line onto its face. The hydrogen lines are the test of it, because each already has a proton face fixed by the same route as Hβ: the Balmer limit × 9/5 for Hα, × 25/21 for Hγ, × 9/8 for Hδ.

It carries hydrogen. One step lifts each catalogued hydrogen line onto its proton face:

```
line     catalogued   x the proton step          proton face

H alpha  656.281      656.2878458320807061924    656.2877458310375810554
H gamma  434.047      434.0515276533636266793    434.0527419517444319149
H delta  410.175      410.1792786385309092637    410.1798411443984881596
```

Hydrogen is read on the proton because the hydrogen nucleus is the proton, the time-creator of the atomic register.

It does not carry sodium. The sodium D_2 line has its own face, and that face is the spin-orbit speed of the surface register brought down the spine:

> ***The sodium line on G1.*** *$D_2 = 588.9955242462013354368$ nm $(2^3 \cdot 3^{10} \cdot \pi^4 / 5^7) = (c_{G1} \times 2 \div 10^5 \div 9375)^2 \times 24 \times 60$. Here $c_{G1} = 299789233.6830892680470977$ m/s $(2^3 \cdot 3^5 \cdot 5^6 \cdot \pi^2)$ is the spin-orbit speed of the surface register, $9375 = 3 \cdot 5^5$ is the transit operator, 24×60 is the minutes of the day, and 10^5 is a decade. Worked: $c_{G1} \times 2 \div 10^5 = 5995.784673661785360942$; $\div 9375 = 0.6395503651905904385005$; squared = 0.4090246696154175940533; $\times 1440 = 588.9955242462013354368$ nm. Backwards: $D_2 \div 1440$, square root, $\times 9375 \times 10^5 \div 2$ returns c_{G1}.*

The catalogued D_2, 588.995 nm, already stands on that face as it is observed; the proton step lifts it off, to 589.0011143954900988 3629. D_1 does the same: its face, D_2 plus the neutron gap, is 589.5925650464625398772, the catalogued 589.592 stands on it, and the proton step carries it to 589.5981501823580565724. **Sodium is read on G1, the surface register — not on the proton.**

And the oxygen A band stands on G1. Its face is 759.375 nm = $3^5 \cdot 5^2 / 2^3$, and it carries the surface register's own spin-orbit speed:

> ***The A band on G1.*** *$759.375 \times \pi \div 3^5 = 9.817477042468103870195761 = g_1$, the surface free fall $25\pi/2^3$; and $4\pi^2 \times 759.375 \times 10^4 = 299789233.6830892680470977 = c_{G1}$ exactly. The line whose own spin-orbit speed is c_{G1} is the one the Earth's own air cuts into the light: made at the node, it carries the node's speed.*

From the source to the Earth. The A band is where a value at the Sun arrives. Start from the G1 series limit and walk out; the three-to-the-seventh at the Sun, $2 \cdot 3^7$, comes down to the Earth as the A band:

```
3645          (3⁶·5)        the G1 series limit
× 12      =   43,740        (2²·3⁷)        the circumference
÷ 2       =   21,870        (2·3⁷)
× 25/18   =   30,375        (3⁵·5³)        the bridge factor
× 1000/864 =  35,156.25     (3²·5⁶/2)      the day operator
× 216     =   7,593,750     (2·3⁵·5⁶)      = 10 × 759,375
```

and 759,375 = 15^5 read as a wavelength is the A band, 759.375 nm. The whole walk is one step, 3645 × 6250/3, and 7,593,750 is also c_{G1} unwrapped twice: $c_{G1} \div 2\pi \div 2\pi = 7593750$ exactly.

What the split is not. The catalogue quotes every line in air, hydrogen and sodium alike, so a line that follows the proton and a line that does not stand on the same basis. Carrying the whole table to vacuum moves every line by nearly the same small proportion and cannot separate one element from another. The split is between registers, not between media.

The split between hydrogen and sodium is arrived at, not fitted: both faces were fixed in the record before the test, and the test could have gone the other way on either element. The A band's register is carried by its routes; its catalogued figure has five digits and cannot decide it by number. The other lines have no face yet, and appendix A0 marks each one open.

> ***KEY POINT.*** *The Fraunhofer comb is not one register. Hydrogen comes in on the proton; sodium and the oxygen A band stand on the surface register G1. One step cannot recalibrate the whole comb, because the lines are emitted from different space-time dimensions — and each is read on the face of its own.*

10 · A Foundation Stone of the Theory

Stephen Daubney, 26 September 2026, in his own words:

> *"The Fraunhofer lines are one of the most important foundation stones of the theory, because the theory proposes that time is created by the Sun, and the propagation of the Fraunhofer lines are a clear indication of the Sun creating time dimensions, which in turn create nodal points: planets, radiuses, rotation speeds, rotation times. And the second most important point: science sees the Fraunhofer lines in many, many stars, and they get the same figures, the same wavelengths being emitted — which is a clear indication that the Force of Time being created in individual stars is ubiquitous, effectively throughout the universe."*

The two points stand on what this paper has shown. **The first** is sharpened by section 9: the Sun does not emit one time dimension but several, and they can be read line by line — the proton register in hydrogen, the surface register G1 in sodium and the A band. Each line is a dimension of time leaving the source, and each carries the nodes it builds. The operator that turns a line into the radius of the node it builds is one lattice number, with nothing of the Sun in it:

> ***Line to node radius.*** *node radius (km, decade-free) = $\lambda \times 4\pi^2/3$, with $4\pi^2/3 = 13.15947253478581149$. Worked: Hβ on the proton face, $486.13907098595376374 47 \times 13.15947253478581149 = 6397.33375272594852237614180858$.*

The second is sections 4 and 5: the same lines at the same wavelengths in Proxima Centauri, Vega and Arcturus. If the lines are time being created, then time is being created in every star, for its own system. And because the operator above carries no solar constant, it makes a prediction that can fail: the comb of any other star, read line by line through the same operator, gives the radii of the nodes in that star's own system.

11 · Conclusion: a Galaxy Addressed for Life

Fraunhofer's dark lines looked, for two centuries, like a property of the Sun — a private barcode of one star. They are nothing of the kind. They are the lattice of T made visible, the same in every star that shines, fixed by a constant that is a ratio of the lattice and so the same in every star. The Sun is not special in its lines; it shares them with Proxima Centauri and Vega and Arcturus and every star between.

And one of those shared lines, the 486 line of hydrogen, is the wavelength of life — the first element tuned to the first rung of water, the molecule that carries the living address. That line is ubiquitous. It falls on every planetary node in the Galaxy as it falls on the Earth. The reasonable conclusion, and the one the Force of Time compels, is that life falls with it. We do not live in a universe that produced life once, by luck, in one place. We live in a galaxy addressed for life — and the address is written, star by star, in the 486 line of the commonest atom there is. When you look up at the field of stars, you are looking at the light of the living.

The Numbers at a Glance

The principal lines and constants of this paper. The hydrogen lines are the framework's own values, fixed by the proton; the sodium doublet and the A band are on their G1 faces; the other lines are catalogued values. The physical number leads, the lattice form follows.

QUANTITY	THE VALUE	THE FORCE OF TIME READING
Hβ, the 486 line	486.1390710 nm	$\sqrt{(2^{27}\cdot 3^8/(5^3\cdot\pi^9))}$, fixed by the proton: Hβ × $m_p = (12/\pi)^5$ integer node $2\times3^5 = 486$ π-face $4800/\pi^2 = 486.3416815$
Hβ, G2 face	486.0438132 nm	$5^{10}/(2^3\cdot3^4\cdot\pi^3) = 486(1 + \delta_G)$: the proton opened out, and IE_G2 ÷ 9 ÷ 31104
IE, G2 register	13.6061161 eV	$3^3\cdot5^3/(2^3\cdot\pi^3)$
the 21-cm line	1420.3525814 MHz	$5^8\cdot\pi/864$ = G2 Hβ × ¾ × $\pi^4/25$
IE_G2 in joules	218.0325369 ×10^{-20} J	$5^{12}/(2^9\cdot3^7)$ = IE_G2 × e: turn 2 of the DNA helix, $864\cdot r^2/4$
Hα	656.2877458 nm	the limit × 9/5
Hγ	434.0527420 nm	the limit × 25/21
Hδ	410.1798411 nm	the limit × 9/8
the Balmer limit	364.6043032 nm	¾ × Hβ
the proton	1.6726163589 ×10^{-27} kg	$3\cdot5^5\cdot\sqrt{(10^{11}/\pi)}$
486 as an energy	12.59712 eV	the integer node as energy: water's first level, the life link
Na D_2, G1 face	588.9955242462013354368 nm	$2^3\cdot3^{10}\cdot\pi^4/5^7$, the c_G1 spine: $(c\_G1\times2\div10^5\div9375)^2\times24\times60$
Na D_1, G1 face	589.5925650464625398772 nm	D_2 + the neutron gap
O_2 A band, G1 face	759.375 nm	$3^5\cdot5^2/2^3$: ×π÷3^5 = g_1, $4\pi^2\times10^4$ → c_G1 exactly
Ca II H & K	396.847 / 393.366 nm	universal lattice nodes
fine structure	1/α = 137.0778389	$9/125\pi^2$, constant across the stars
¾ of the π-face	$3600/\pi^2$	100 × the Mohorovičić hub $36/\pi^2$
Proxima Centauri	M5.5 Ve, ~2900 K −22.204 km/s	same lattice, in emission, register in motion
rest wavelengths	identical in every star	the lattice of T is universal

Appendix · The Figures and Tables

The two companion sheets of 21 September are brought into the paper here, rebuilt from source. Every value below is computed from its wavelength by one chain. Each line is carried on the face of its own register, as section 9 sets out: the four hydrogen lines on the proton face, Hβ × $m_p = (12/\pi)^5$; the sodium doublet and the oxygen A band on the surface register G1. The thirty lines are Fraunhofer's own letters and the lines beside them, from nickel t at the violet end to the oxygen band y in the near infrared.

A0 · Each line on its own register

The catalogued wavelength is the line as it is observed at the Earth, in air. The value carried is the one every table below is computed from. Where a line has a face on its own register it is carried on that face; where it has none yet, it is carried as catalogued and its register is left open.

```
line   species     catalogued register           value carried, nm

t      Ni I        299.444    not yet assigned   299.444
T      Fe I        302.108    not yet assigned   302.108
P      Ti II       336.112    not yet assigned   336.112
N      Fe I        358.121    not yet assigned   358.121
L      Fe I        382.044    not yet assigned   382.044
K      Ca II       393.368    not yet assigned   393.368
H      Ca II       396.847    not yet assigned   396.847
h      H delta     410.175    proton             410.1798411443984881596
G      Ca I        430.774    not yet assigned   430.774
G      Fe I        430.79     not yet assigned   430.79
G'     H gamma     434.047    proton             434.0527419517444319149
e (Fe) Fe I        438.355    not yet assigned   438.355
d      Fe I        466.814    not yet assigned   466.814
F      H beta      486.134    proton             486.1390709859537637447
c      Fe I        495.761    not yet assigned   495.761
b4     Mg I        516.733    not yet assigned   516.733
b3     Fe I        516.891    not yet assigned   516.891
b2     Mg I        517.27     not yet assigned   517.27
b1     Mg I        518.362    not yet assigned   518.362
E2     Fe I        527.039    not yet assigned   527.039
e      Hg          546.073    laboratory lamp    546.073
D3     He I        587.5618   not yet assigned   587.5618
D2     Na I        588.995    G1 surface         588.9955242462013354368
D1     Na I        589.592    G1 surface         589.5925650464625398772
a      O2 (air)*   627.661    Earth's air, open  627.661
C      H alpha     656.281    proton             656.2877458310375810554
B      O2 (air)*   686.719    Earth's air, open  686.719
A      O2 (air)*   759.37     G1 surface         759.375
Z      O2 (air)*   822.696    Earth's air, open  822.696
y      O2 (air)*   898.765    Earth's air, open  898.765
```

Seven lines stand on a face: four on the proton, three on G1. Eighteen solar lines — seventeen of the metals and helium D_3 — and four oxygen bands have no face in the record yet, and their registers are open. The mercury line e is not a solar line at all; it comes from a laboratory lamp and is carried in the list as an optical standard.

A1 · The full grammar, run on one line

One wavelength goes in. Out come the node's mass, the spin-orbit, the distance from the source, the creator's mass and the node's own mass, the circumference and the source wavelength, the node's radius and its free fall. Every leg is one multiplication.

```
wavelength λ
  × 1.233700550136169827 (π²/2³)        the nodal mass
  ÷ 2                                   the SPIN-ORBIT
  ÷ 2 again                             the distance from the source
from the spin-orbit, two ways out:
  × 6.631455962162305657 (125/6π)       the CREATOR's mass   (the Sun)
  × 2                                   the NODE's mass      (the Earth)
creator × 2.200157933302361122 (864/125π)  the circumference = 9λ
  ÷ 12                                  the source wavelength = 3λ/4
node ÷ 9375 (3·5⁵)                      the node's radius
spin-orbit ÷ 360 ÷ 864, square root     the free fall
```

Every leg collapses to one formula in λ.

```
spin-orbit          =  λ × 0.6168502750680849137   (π²/2⁴)
creator mass        =  λ × 4.090615434361709946   (5³·π/(2⁵·3))
circumference       =  λ × 9                       (3²)
source wavelength   =  λ × 0.75                    (3/2²)
nodal mass          =  λ × 1.233700550136169827   (π²/2³)
node radius, km     =  λ × 13.15947253478581149   (2²·π²/3, decade free)
free fall           =  50π × √(λ ÷ 124416)        (124416 = 2⁹·3⁵)
```

> ***Worked example — Hβ on the proton face, λ = 486.1390709859537637 nm.*** *Spin-orbit 299.8750196590288. Creator mass 1988.607987021405. Circumference 4375.251638873584. Source wavelength 364.6043032394653. Nodal mass 599.7500393180577. Nodal radius 6397.333752725949 km. Free fall 9.81888159859192889.*

And 124416 ÷ 486 = 256 = 2^8 exactly, which is why the hydrogen beta line is the one that returns a clean fall: at the line's integer node the free fall is $50\pi\cdot\sqrt{(1/256)} = 25\pi/8 = 9.81747704246810387$, the lattice free fall g_1.

The formulas are forced: each is the chain above multiplied through, with no choice left in it.

A2 · The return leg is a fixed three-quarters

Go out from the spin-orbit to the creator, round to the circumference and back to a wavelength, and the loop does not return the line. It returns three-quarters of it, which is the same three-quarters that separates a Balmer line from its limit. On Hβ the return lands on the Balmer series limit exactly.

line	circumference 9λ	source wavelength 3λ/4
486 ($2\cdot3^5$)	4374 ($2\cdot3^7$)	364.5 ($3^6/2$)
486.1390709859537637	4375.251638873583874	364.6043032394653228

4374 is the Sun's circumference the corpus already carries, at its decade, and 364.5 is the pure Balmer limit. The proton-face line returns the proton-face limit of section 2; the pure node returns the Sun.

A3 · Four Hβ faces — four Earths, four free falls

face	wavelength nm	node radius km	free fall
pure node $2\cdot3^5$	486	6395.503651905904	9.817477042468104
the proton face	486.1390709859537637	6397.333752725949	9.818881598591929
$2^3\cdot3^3\cdot5\cdot\sqrt{2}/\pi$	486.1708107248372776	6397.751430948047	9.819202127911615
one 703 step $4800/\pi^2$	486.3416814832213029	6400	9.820927516479827

The two ends of the family are the two named free falls. The pure node returns $25\pi/8$, the lattice free fall g_1. The 703-step face returns $5^3\cdot\sqrt{2}/(2\cdot3^2)$, the lattice free fall out of the spin-orbit speed, and its node radius is $6400 = 2^8\cdot5^2$ kilometres exactly. **The two middle radii are the two route-2 radii of C2706**, the tropopause, arriving again from the spectrum on every digit.

A4 · Every Fraunhofer line, all the way through

The thirty lines, ordered outward from the source, in three tables. Rows marked * are the oxygen bands, cut into the light by the Earth's own air on the way in and not made in the Sun. The hydrogen rows h, G′, F and C are on the proton face; sodium D_2 and D_1 and the oxygen A band are on their G1 faces; every other row carries its catalogued wavelength, its register not yet assigned (A0).

line	species	wavelength nm	nodal mass	spin-orbit
t	Ni I	299.444	369.4242275349752	184.7121137674876
T	Fe I	302.108	372.710805800538	186.355402900269
P	Ti II	336.112	414.6615593073683	207.3307796536842
N	Fe I	358.121	441.8140747153153	220.9070373576576
L	Fe I	382.044	471.3278929762229	235.6639464881114
K	Ca II	393.368	485.2983180059649	242.6491590029824
H	Ca II	396.847	489.5903622198886	244.7951811099443
h	H delta	410.1798411443985	506.0390956746112	253.0195478373056
G	Ca I	430.774	531.4461207843584	265.7230603921792
G	Fe I	430.79	531.4658599931606	265.7329299965803
G'	H gamma	434.0527419517444	535.4911065339801	267.74555326699
e (Fe)	Fe I	438.355	540.7988046549407	270.3994023274704
d	Fe I	466.814	575.908688611266	287.954344305633
F	H beta	486.1390709859538	599.7500393180577	299.8750196590288
c	Fe I	495.761	611.6206184360577	305.8103092180288
b4	Mg I	516.733	637.4937863735134	318.7468931867567
b3	Fe I	516.891	637.688711060435	318.8443555302175
b2	Mg I	517.27	638.1562835689366	319.0781417844683
b1	Mg I	518.362	639.5034845696853	319.7517422848426
E2	Fe I	527.039	650.2083042432168	325.1041521216084
e	Hg	546.073	673.6905605145087	336.8452802572543
D3	He I	587.5618	724.8753158989982	362.4376579494991
D2	Na I	588.9955242462013	726.6441022902803	363.3220511451402
D1	Na I	589.5925650464625	727.3806718540163	363.6903359270082
a	O2 (air)*	627.661	774.3457209990185	387.1728604995092
C	H alpha	656.2877458310376	809.6625530793779	404.8312765396889
B	O2 (air)*	686.719	847.2056080889604	423.6028040444802
A	O2 (air)*	759.375	936.841355259654	468.420677629827
Z	O2 (air)*	822.696	1014.960507794826	507.4802538974132
y	O2 (air)*	898.765	1108.806874943135	554.4034374715673

line	species	distance	creator mass	source wavelength
t	Ni I	92.35605688374381	1224.910248127008	224.583
T	Fe I	93.1777014501345	1235.807647644147	226.581
P	Ti II	103.6653898268421	1374.904934874183	252.084
N	Fe I	110.4535186788288	1464.93528996905	268.59075
L	Fe I	117.8319732440557	1562.795083005285	286.533
K	Ca II	121.3245795014912	1609.117212183997	295.026
H	Ca II	122.3975905549721	1623.348463280142	297.63525
h	H delta	126.5097739186528	1677.887989049311	307.6348808582989
G	Ca I	132.8615301960896	1762.130773121731	323.0805
G	Fe I	132.8664649982901	1762.196222968681	323.0925
G'	H gamma	133.872776633495	1775.542845554826	325.5395564638083
e (Fe)	Fe I	135.1997011637352	1793.141728729627	328.76625
d	Fe I	143.9771721528165	1909.556553376127	350.1105
F	H beta	149.9375098295144	1988.607987021405	364.6043032394653
c	Fe I	152.9051546090144	2027.967598354596	371.82075
b4	Mg I	159.3734465933784	2113.755985244029	387.54975
b3	Fe I	159.4221777651087	2114.402302482659	387.66825
b2	Mg I	159.5390708922341	2115.952645732282	387.9525
b1	Mg I	159.8758711424213	2120.419597786605	388.7715
E2	Fe I	162.5520760608042	2155.913867910561	395.27925
e	Hg	168.4226401286272	2233.774642088202	409.55475
D3	He I	181.2188289747495	2403.489367721348	440.67135
D2	Na I	181.6610255725701	2409.354182251478	441.746643184651
D1	Na I	181.8451679635041	2411.79644656397	442.1944237848469
a	O2 (air)*	193.5864302497546	2567.519774146905	470.74575
C	H alpha	202.4156382698445	2684.620782478897	492.2158093732782
B	O2 (air)*	211.8014020222401	2809.103340469439	515.03925
A	O2 (air)*	234.2103388149135	3106.311095468423	569.53125
Z	O2 (air)*	253.7401269487066	3365.332955387641	617.022
y	O2 (air)*	277.2017187357837	3676.501980864102	674.07375

line	species	wavelength nm	node radius km	free fall
t	Ni I	299.444	3940.525093706403	7.706187425849762
T	Fe I	302.108	3975.581928539072	7.740390525016651
P	Ti II	336.112	4423.056632611929	8.164390501758349
N	Fe I	358.121	4712.68346363003	8.427459110058978
L	Fe I	382.044	5027.497525079711	8.704392207452943
K	Ca II	393.368	5176.515392063625	8.832451748951918
H	Ca II	396.847	5222.297197012145	8.87142347206103
h	H delta	410.1798411443985	5397.750353862519	9.019218660507534
G	Ca I	430.774	5668.758621699823	9.242862688115296
G	Fe I	430.79	5668.96917326038	9.243034337785222
G'	H gamma	434.0527419517444	5711.905136362454	9.277971022379492
e (Fe)	Fe I	438.355	5768.520582986034	9.323838492040323
d	Fe I	466.814	6143.026011853504	9.621741744243183
F	H beta	486.1390709859538	6397.333752725949	9.818881598591929
c	Fe I	495.761	6523.953263317949	9.915575810456781
b4	Mg I	516.733	6799.933721317477	10.12313103823848
b3	Fe I	516.891	6802.012917977973	10.12467858064194
b2	Mg I	517.27	6807.000358068657	10.12838975963568
b1	Mg I	518.362	6821.370502076643	10.13907505988453
E2	Fe I	527.039	6935.555245260979	10.22358321948238
e	Hg	546.073	7186.032645488092	10.4065580621064
D3	He I	587.5618	7732.003369589314	10.79464926652375
D2	Na I	588.9955242462013	7750.870424429657	10.80781138896305
D1	Na I	589.5925650464625	7758.727166442841	10.81328772088109
a	O2 (air)*	627.661	8259.687690656197	11.15692033235734
C	H alpha	656.2877458310376	8636.400566180031	11.4085094729187
B	O2 (air)*	686.719	9036.859819615578	11.67001170140837
A	O2 (air)*	759.375	9992.974456102976	12.27184630308513
Z	O2 (air)*	822.696	10826.24541647815	12.77325118464644
y	O2 (air)*	898.765	11827.27333272677	13.35072454569124

The free fall of the hydrogen beta line is the closest of all thirty to the lattice free fall 9.82092751647982673.

A5 · What the comb says

The operator is the swerve, one more time. Every line whose wavelength has a lattice face returns a distance with a lattice face, and the π-degree rises by exactly two. $\pi^2/2^5$ carries the line to the shell. Nothing leaves the lattice.

line	wavelength nm	form	distance
sodium D_2 G1	588.9955242462013354	$2^3 \cdot 3^{10} \cdot \pi^4 / 5^7$	181.6610255725700854 $3^{10} \cdot \pi^6 / (2^2 \cdot 5^7)$
sodium D_2 G2	589.0486225480862322	$3 \cdot 5^3 \cdot \pi / 2$	181.6774024236317588 $3 \cdot 5^3 \cdot \pi^3 / 2^6$
helium D_3	587.5577947877403903	$2^4 \cdot 3 \cdot \pi^5 / 5^2$	181.2175936666075241 $3 \cdot \pi^7 / (2 \cdot 5^2)$
sodium clock	587.6107634774471438	$5^8 \cdot \pi^2 / 3^8$	181.2339305420153275 $5^8 \cdot \pi^4 / (2^5 \cdot 3^8)$
H-beta	486.1390709859537637	$\sqrt{(2^{27} \cdot 3^8 / (5^3 \cdot \pi^9))}$	149.9375098295144185 $\sqrt{(2^{17} \cdot 3^8 / (5^3 \cdot \pi^5))}$
H-alpha	656.2877458310375811	$\sqrt{(2^{23} \cdot 3^{14} / (5^5 \cdot \pi^9))}$	202.415638269844465 $\sqrt{(2^{13} \cdot 3^{14} / (5^5 \cdot \pi^5))}$

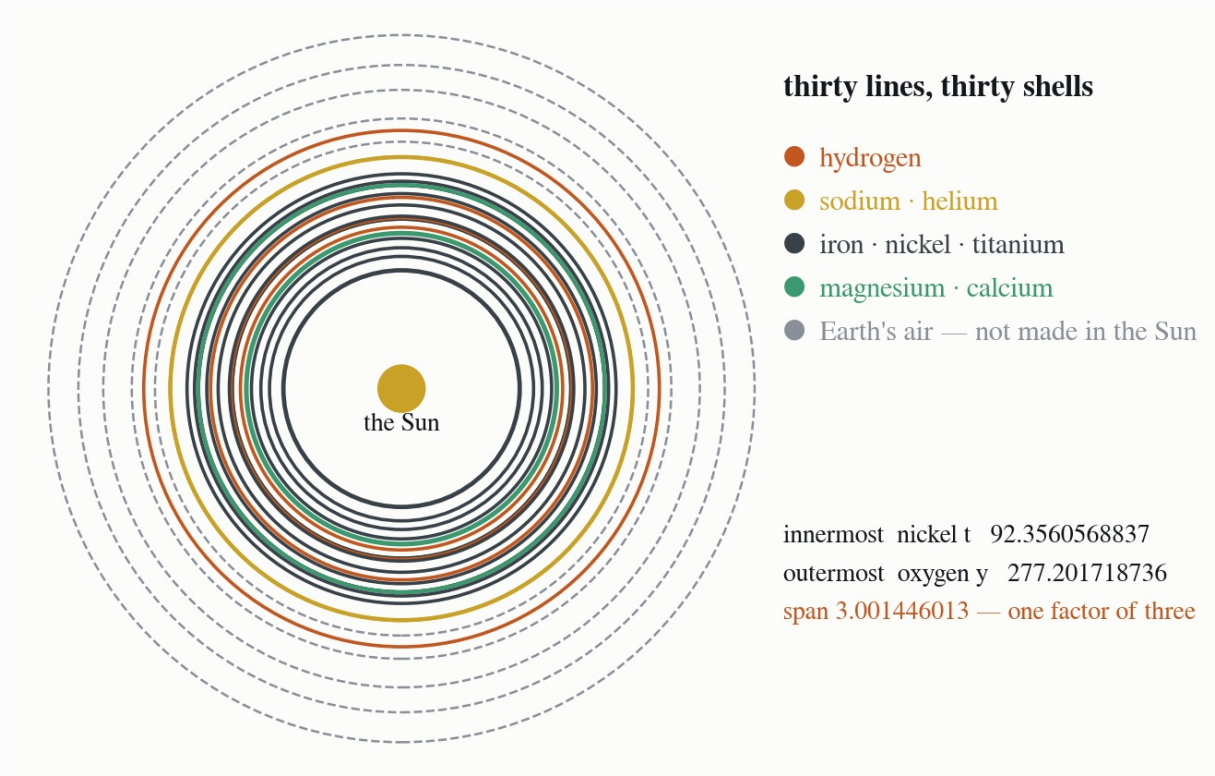


Figure 5 — Thirty lines, thirty shells, drawn at their distances from the source. Every one of them sits inside a single turn of the circle. Hydrogen, sodium and helium, the metals, and the Earth's air are coloured by family; the dashed shells are the oxygen bands, not made in the Sun.

And the whole comb is one turn. The innermost shell is nickel t at 92.35605688374381; the outermost is the oxygen band y at 277.2017187357837. The span is 3.001446013277942 — one factor of three — and that is 0.598023772675 turns of 2π, against log 3 ÷ log 2π = 0.597761574344.

What carries between the lines — the residues that repeat.

H-alpha / H-beta	27/20
H-beta / H-delta	32/27
H-alpha / H-delta	8/5
helium D_3 / iron c	32/27
calcium K / iron T	$5^3/(2^5\cdot 3)$
magnesium b_4 / calcium H	$5^3/(2^5\cdot 3)$
iron d / titanium P	$5^2/(2\cdot 3^2)$
	the bridge factor that carries the lattice free fall

The hydrogen ratios had to hold: the Balmer comb is rational by construction. The other four did not. Helium reads iron by the same step hydrogen reads itself. Calcium reads iron, and magnesium reads calcium, by one and the same residue. Every wrap is zero, because the whole spectrum lives inside one turn.

And the order is not an accident. Six lines in the table are not made in the Sun. The mercury line e comes from a laboratory lamp. The five oxygen bands are cut into the light by the Earth's own air on the way in. Ordered by distance from the source, the oxygen bands come out as five of the outermost six. The one solar line among them is H-alpha. The metals — nickel, iron, titanium, calcium — hold the inside.

The Sun's own place in its own spectrum. The lattice solar face is T = 5787.037037037037037 kelvin = $2\cdot 5^7/3^3$. Through the Wien faces worked on 9 August 2026, the peak of the Sun's light falls between **500.843786362 and 501.01981412 nm** — between iron c at 495.761 and iron E_2 at 527.039, inside its own comb.

A Note on the Numbers

Every value in this paper is given at full precision, because the precision is the evidence: a quantity truly on the {2,3,5,π} lattice does not approximate a lattice form, it is one. The physical number leads and its lattice form follows in brackets. Where a line has no face yet it is carried as catalogued and marked open, rather than rounded until it appears to fit. And a number in this framework is not the measurement of one thing. It is one address that surfaces as a wavelength, a free fall, a spin-orbit speed, a radius or an energy, depending only on the register in which it is read — the same 486

appears in this paper as a line of hydrogen and as the first rung of water.

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Universal Force of Time = the creation of life = the healing of life = the destruction of life