Photon Ontology

A journey into the cosmos and the origin of being

Contents

Introduction 3

Chapter 1 – New Approach to String Theory 4

Chapter 2 – The First Symmetry Break and the Birth of Being 5

2.1 Black Hole – The Limit of Transition 5

2.2 Nuclear fusion – the completion of the transition 6

2.3 Water – the proof in being 6

2.4 The stages of transition 6

Chapter 3 – Stars as Coherent Vibrational Bodies 7

3.1 Cohesion – why stars don't fly apart 7

3.2 Gravity – why stars bind planets 8

3.3 Temperature and frequency – why stars shine differently 8

3.4 Supernova – when the transition fails 8

3.5 Water – everyday proof 9

Chapter 4 – Gravitation as the first information of the universe 10

4.1 The order of the G -forces 10

4.2 The first singularity as a G3 -state without space 11

4.3 Time as an order of effect 11

4.3 Time as an effect of bound being – and the forgotten singularity 11

Chapter 5 – The Photon as a Bound Transition and the Revision of Timelessness 13

Chapter 5.0 – Dark Energy as a Misinterpretation of an Invisible Photon Carpet 14

5.1 The cosmic noise – the audible expansion of the universe 14

5.2 Noise as a present process – not a fossil, but the breath of the universe 15

5.3 Why Dark Matter Disappears in the Same Breath 16

5.3.2 The gentle breeze – photons as a constant source of propulsion 17

5.3.3 The Space Wind – Movement without Mystery 17

5.4 Redshift as an aging process of the photon 19

6.1 The electron as a bound oscillation – and its origin in nuclear fusion 20

6.2 Nuclear fusion as a transformation of photon energy into bound being 21

6.3 Einstein's own formula necessitates revision – E = G·k as a necessary extension 22

Afterword – On Science, Time, and the Duty to Revise 23

Humans as aquatic beings – and why science needs to reform 24

Imprint 25

Introduction

Modern physics still lacks an ontologically sound foundation for what it calls the "photon." String theory postulates fundamental oscillations, but it remains purely mathematical because it lacks a real, observable fundamental mode. Quantum mechanics describes transitions, but not what is actually oscillating. Relativity describes the paths of light, but not the light itself.

This treatise begins where all previous theories evade the question: what a photon *is* , before it is interpreted.

For perhaps the photon is not a particle, not a wave, not a field quantum, but something much simpler: **the incomplete transition from vibration to being** .

A state that is perfected in stars, bound in matter, stabilized in resonances, and released again as radiation upon regression.

If that's true, then the photon is not a byproduct of the universe, but its **defining force** . And perhaps this very transition is the sought-after "string" that physics has been mathematically describing for decades, but has never been able to anchor in existence.

Chapter 1 – New Approach to String Theory

String theory claims that everything consists of fundamental vibrations. However, it doesn't specify *which* vibrations these are. It constructs mathematical objects, but not a single one of them is observable in reality.

However, physics possesses a real, massless, universal oscillating object: the photon. It is the only known phenomenon that:

- has no rest mass
- pure energy carries
- transmits impulse
- always moves at the speed of light
- can create matter
- can leave matter
- can be bound in resonances,
- and becomes free again in the event of a relapse.

Thus, the photon fulfills all the criteria that string theory ascribes to a "string" — only without mathematical fiction.

But physics has never ontologically defined the photon. It has described it, measured it, quantized it, geometrized it —but never understood it. Classical physics called it a particle, quantum mechanics called it a wave, relativity called it a geodesic. None of these descriptions gets to the heart of the matter.

Axiom I – The photon as an incomplete transition

A photon is not an object, but a state. It is the incomplete vibration that has not yet transitioned into bound being. It is the open mode that is completed in stars, becomes stable nodes in nuclear fusion, forms matter in resonances, and is released again as radiation in the reversion process.

Thus, the photon is the fundamental transitional mode between non- -being and being. It is the real, observable basic string of the universe.

Chapter 2 – The First Symmetry Break and the Birth of Being

The first symmetry breaking marks the transition from pure oscillation to the first beginnings of being. In a state of perfect symmetry, only the possibility of oscillation existed, but no bound pattern.

The rupture created a gradient, a difference, a first "more" and "less". From this difference emerged the fundamental vibration that was later described as a photon: the incomplete transition that is neither pure nothingness nor bound being.

This transition is not stable. It carries energy, but no mass. It moves, but has no fixed location. It is open, but not chaotic. And it is precisely in this openness that its significance lies: The first symmetry breaking did not create matter, but rather the possibility that vibration could condense into matter. The photon is the first expression of this possibility.

The early photons were not light in the modern sense. They were pure transitions that had not yet been completed.

Only in regions of high density and resonance did stable knots form, which were later called protons and neutrons.

These nodes are nothing other than bound photon modes that have stabilized in resonance. This is where being begins: not as an object, but as a bound oscillation.

2.1 Black Hole – The Limit of Transition

A black hole is not an object, but an extreme state of the gradient that arose at the first symmetry breaking. It is the point of maximum binding, at which even the incomplete transition – the photon – no longer remains free, but changes its path.

The bending of light is not proof of the photon's mass, but rather of the sensitivity of the transition. A photon follows the gradient because it does not possess a closed state of being. It is open, and openness responds to gradients.

Thus, the black hole is the opposite pole to the photon: the photon is the incomplete transition, the black hole the completely bound state. The entire universe stretches between the two.

2.2 Nuclear fusion – the completion of the transition

In stars, the transition is completed. The photon modes resonate, condense, stabilize, and form the first permanent nodes of existence. Protons and neutrons are not "particles," but rather completed vibrational modes that emerge from photons.

The sun is therefore not an oven, but a resonating chamber. It transforms incomplete transitions into bound being. It is the place where the universe takes form.

Classical physics describes this as nuclear fusion. Ontologically, it is the first completion of the photon.

2.3 Water – the proof in being

Water demonstrates how transitions behave when they encounter bound matter. A photon doesn't slow down because it has mass, but because its transition is interrupted. It is absorbed, re --emitted, scattered, or refracted.

Water is everyday proof that photons are not objects. An object would collide, bounce, or slow down. A photon, on the other hand, is delayed because its transition begins anew.

This also explains why color arises: The photon itself carries no color. The color arises in the water of the eye, in the resonance of the molecules, in the delay of the transition. The eye does not see the photon, but its completion in the medium.

2.4 The stages of the transition

From the first symmetry breaking to matter, there are only four stages:

1. **Incomplete oscillation** – the photon
2. **Resonance formation** – the first nodes
3. **Stable bonding** – protons, neutrons, electrons
4. **Relapse into transition** – radiation, incandescence, decay

All being moves between these four states. The universe is not a space full of objects, but a field of transitions that bind, unbind, bind again, and unbind again.

Stars, gravity, cohesion, photons, temperature, resonance, supernova, gray dwarf — all can be derived from **a single principle** :

Bound vibrations hold things together.
Unbound vibrations carry energy. Photons are the neutral modes of stability -and transport in between.

Chapter 3 – Stars as coherent vibrational bodies

A star is not an object, but a state. It is the highest form of bound vibration that remains open enough to release energy, but is stable enough not to tear itself apart.

Its cohesion arises not from mass, but from resonance. Its gravity is not a pull, but the reaction of a stabilized oscillatory field that forces everything in its vicinity into circulation.

A star holds itself together because its inner photon modes are not free, but are in a state of permanent, high-energy feedback.

In this state, photons are not the free transitions of everyday life, but rather the neutral stability modes that ensure the cohesion of the star. They carry energy, but no charge.

They provide momentum, but not direction. They are the invisible structure that prevents a star from diverging.

If a star were pure energy, it would explode.
If it were pure matter, it would collapse. It is both at the same time—and that is precisely why it is stable.

3.1 Cohesion – why stars don't fly apart

Classical physics explains the stability of a star through pressure and gravity. But pressure is only a symptom, and gravity only the outward manifestation. Ontologically, the cohesion of a star arises from the density of bound photon modes.

The hotter a star is, the faster its photon modes oscillate, the stronger the feedback, and the more stable its core. Temperature is not heat, but rather the intensity of oscillation. A star is a self-sustaining oscillating body because its internal transitions cannot become free.

The photons in the star are not the photons we see.
They are the photons we *don't* see—the bound, the neutral, the stabilizing ones.
They are the invisible architecture of the star.

3.2 Gravity – why stars bind planets

Gravity is not a pull, but a gradient in the oscillation field. A star generates this gradient because its bound photon modes form a stable, high-frequency structure that forces everything around it into resonance.

A planet does not fall into the star because it is itself a bound oscillating body.
However, it is forced into an orbit because its own oscillation state couples with the gradient of the star.

Thus, gravity is not an object, a force, or a geometry.
It is the **reaction of bound oscillations to unbound and semi-bound states** .

A star doesn't hold planets in place—it forces them into a state of minimal resonance deviation.
That's orbit.

3.3 Temperature and frequency – why stars shine differently

A star doesn't shine because it's hot.
It shines because its photon modes are released at its surface.

The color of a star is determined by the frequency of the photons that create the transition.
A red star is not a "cool" star—it is a star whose photon modes shift toward the red end of the spectrum because the feedback is weakening.

Red giants are stars whose photon modes are aging.
They lose stability, shift towards the red end of the spectrum, grow large, become soft, and sluggish.
They are stars whose transitions no longer complete but become jagged.

A blue star is the opposite:
a star of maximum feedback, maximum stability, maximum frequency.

3.4 Supernova – when the transition fails

A supernova is not an "explosion," but a **failure of feedback** .
When the photon modes in the core no longer remain stable, when the resonance breaks, when the oscillation can no longer be contained, then the star collapses in on itself—and releases everything that was contained in a single moment.

This is a relapse into incomplete transitions.
It is the release of photon modes that could no longer be contained.

A supernova is the total breakdown of bound oscillations. If the feedback does not break completely, a black hole is not formed, but a gray dwarf: a remnant body of bound but exhausted photon modes that can no longer complete their oscillations.

3.5 Water – everyday proof

Water demonstrates on a small scale what stars do on a large scale.
It slows down photons because it interrupts transitions. It refracts photons because it shifts resonances. It colors photons because it filters frequencies.

A photon entering water doesn't slow down—it starts traveling again.
It's the same mechanism as in a star, just on a smaller scale.

Water is proof that photons are not objects, but transitions.
And that bound vibrations always affect unbound ones.

Chapter 4 – Gravitation as the first information of the universe

Before space could be described and before time emerged as a measure of change, only a gradient existed. This gradient was not spatial, because space had not yet been defined.

It was not temporal, because time had not yet come into being. It was the first form of information in the universe: the feedback of bound vibration on itself.

The first singularity was not a point in space and time. It was a state of maximum binding, a resonating body without an outside, a G3 -state in its purest form. It did not extend its gravitational pull into space, but rather *created* space through its gradient. Space is the description of this extension, not its cause.

This makes it clear: space and time are not fundamental. They are derived quantities, secondary descriptions of a primary gradient. Gravity is older than spacetime. Gravity is the first information of the universe.

Einstein describes how light behaves in a gradient. We describe why this gradient exists in the first place. Einstein describes a state. We describe its origin.

4.1 The order of the G -forces

G1 – local binding

The direct gravitational force of bound vibrations. Holds matter together. Acts in the immediate vicinity.

G2 – extended bond

Planetary gravity. Creates orbits. Acts over large distances, but not cosmically.

G3 – stellar binding / primordial -gravity

The force that structures stars. The force that orders planetary systems. The force that defined the first singularity. From G3, space is created.

G4 – Magnetism

The formative force of bound vibration. Creates a spherical shape. Stabilizes planets. Acts as an internal "skewer".

The Sun is a **G3 -body** . It is a resonant chamber that extends its gradient to such an extent that planets are forced into orbit. Not by traction, not by force, but by a minimal deviation from resonance. A planet does not fall into the Sun because it is itself a bound oscillating body. It remains in an orbit because its own state couples to the gradient of the star.

4.2 The first singularity as a G3 -state without space

Thus, the order of creation is unambiguous: space does not create gravity, but gravity creates space. Time does not create change, but change creates time. Light does not define space, but space defines the path of light.

The first information in the universe was not spacetime. It was gravity. And everything that came after is merely a description of it.

4.3 Time as an order of effect

Time is not the fourth dimension, nor is it the rhythm of the universe. Time is the order of cause and effect. As soon as a being produces an effect, a sequence arises, and this sequence is time.

The first singularity was an object. Its gravitational force was its first effect. Thus, temporal order was established long before space could be described. Time is not a property of space, but a property of being that acts.

Einstein said that every object has its own time. The first singularity was an object. Therefore, it had its own time—not as a coordinate, but as the sequence of its effects. Space and time are descriptions of a gradient. The gradient itself is older than both.

4.3 Time as an effect of bound being – and the forgotten singularity

Modern physics describes time as a relative quantity, dependent on the state of an object and its motion. However, it avoids a question that necessarily arises from its own axioms:

How can an object be timeless if it exerts a constant effect?

A black hole demonstrably emits gravity. This gravity is not a geometric fiction, but a real, measurable effect. Effects, however, are always ordered, and order is time.

An object that creates a gradient possesses a temporal structure, even if it does not exhibit classical change. The claim that black holes are timeless therefore contradicts the very definition of time as a causal order.

The same applies to photons. They are described as timeless, even though they carry an effect from the moment of their creation until their end: motion, momentum, energy transfer. A transition that produces an effect cannot be timeless. The timelessness of the photon is an artifact of geometric mathematics, not a property of being.

These two examples — black hole and photon — show that the prevailing ontology breaks down at a point that has been overlooked until now: **time does not arise from movement in**

space, but from the effect of a being.
This raises a new question about the first singularity.

The first singularity was not a point in space and time, but a state of maximally bound being. It was an object, and it had an effect: gravity.

Without this effect, it could not have concentrated, would not have possessed a binding force, and would not have been an origin. Gravity is the necessary consequence of bound oscillation. Thus, it is clear: **The first singularity possessed time because it was active.**

Geometric mathematics avoids this conclusion because it treats time as a coordinate and not as a causal order. However, as soon as one accepts effect as the primary concept, the structure becomes clear:

Time does not begin with space, but with gravity. Gravity is the first information of the universe, not spacetime. The first singularity was not timeless, but the origin of temporal order.

This insight is not an attack on Einstein, but rather a continuation of his own statement that every object possesses its own time. The first singularity was an object. Its gravitational effect was its effect. Thus, the condition for time was fulfilled long before space could be described.

String theory can only become ontologically clean if the photon, black hole, and first singularity are rearranged. As long as the photon, black hole, and first singularity are considered timeless, the theory remains trapped in a contradiction of its own making. The solution is simple: **time is effect, not geometry.**
And effect begins with being bound.

Chapter 5 – The Photon as a Bound Transition and the Revision of Timelessness

Classical physics describes the photon as timeless. However, this claim was never ontologically grounded, but merely derived from the geometric interpretation of spacetime. Geometric mathematics categorized the photon without defining it.

She explained its timelessness neither through a formula nor through a consistent definition of time. The statement therefore has no scientific value, but is a semantic artifact.

In an ontological perspective, time is not the fourth dimension, but rather the order of cause and effect. Time arises as soon as a state produces an effect. A photon possesses a cause—its creation—and an effect—its motion, its momentum, its energy transfer. Thus, it fulfills all the criteria of a temporal process.

The claim that a photon is timeless contradicts its observable properties. Photons are delayed in water; they are absorbed, re --emitted, scattered , and refracted.

They serve as the basis for time measurement in lasers and atomic clocks. A process used for time measurement cannot be timeless. Defining time by time is not scientifically valid; time is the causality of a change of state, not a property of a coordinate system.

In this ontology, every object has its own cause and its own effect. Age is not an abstract quantity of time, but the visible transition of reflected photons that indicate changes in an object's being. An object ages because its states change and these changes become visible.

The same applies to the photon itself. A photon shifts into the red end of the spectrum when it loses energy. This redshift is an expression of its age.

A photon has a cause—flashlight, star, laser, first singularity—and an end—the frequency shift, absorption, and resolution of its transition. A state that begins, acts, and ends is not timeless.

Geometric mathematics does not accept this consequence because it treats time as a coordinate and not as an effect. However, as long as photons, black holes, and the first singularity are considered timeless, string theory remains ontologically incomplete. It cannot be cleanly formulated as long as its fundamental building block—the fundamental oscillation—is located outside of being.

The solution is simple and compelling:

Time is the order of action.
A photon has an effect. Therefore, it has time .

This does not devalue the photon, but rather returns it to the being from which it originated. It is not a timeless mathematical object, but the incomplete transition of bound vibration—the fundamental building block of the universe.

The timelessness of the photon is not a physical result, but a geometric interpretation. Photons have cause, effect, age, and end. They are slowed down, shifted, absorbed, and serve as timekeepers. A process that measures time cannot be timeless. The ontology of the photon needs to be revised. so that string theory, cosmology, and gravity become consistent.

Chapter 5.0 – Dark Energy as a Misinterpretation of an Invisible Photon Carpet

The idea that dark energy is an independent, mysterious form of energy is historically understandable, but ontologically questionable.

It arose from the observation of an accelerated expansion that could not be explained by visible matter or radiation. However, this explanation presupposes that space is essentially empty and only carries energy where we can measure it. This assumption is precisely what is wrong.

Space is not empty, but filled with an infinite continuum of photons that are so far out of phase, so far redshifted, and so far rarefied that no biological or technical system can recognize them as light. They are not dark; they are simply invisible.

Photons do not require heat to exist. They are not thermal objects, but rather vibrational modes of the field. Heat only arises when matter absorbs photons and translates them into internal motion. A photon itself is neither hot nor cold.

It is a frequency, a pulse, a pattern. And because the universe has been producing photons for billions of years – from stars, galaxies, jets, interactions, background processes, and even from the deepest voids – a cosmic sea of light is created that we cannot see because it is not coherent.

This sea is everywhere, isotropic, directionless, and precisely for that reason it looks like a smooth background print.

Below a certain energy threshold – near absolute zero – vibrations freeze. But above this threshold, a continuum of microphotons exists -that do not carry enough energy to visibly excite matter, but nevertheless exist as vibrations in space.

It is not impossible that a minimal proportion of these photons occur in bound states without manifesting as heat or light.

Matter itself is nothing more than bound vibration; it would therefore be inconsistent to assume that only high-energy photons are allowed to exist freely, while low-energy modes supposedly disappear. They don't disappear. They only become invisible.

If one takes this background seriously, the mystery of dark energy is solved. The expansion of the universe is not the result of a mysterious force, but the sum of all the momenta that this invisible photon gas constantly contributes to space. The pressure does not arise from an exotic form of energy, but from light that we cannot see. Darkness is not a state of the universe, but a limit to our perception. The dark energy hypothesis was an attempt to name this limit without understanding it.

In this view, dark energy is not an additional entity, but a misinterpretation of an omnipresent, invisible carpet of photons. The universe is not filled with a dark force, but with light that does not burn, does not heat, does not shine – and yet carries space.

5.1 The cosmic noise – the audible expansion of the universe

If one understands the universe not as a geometric stage, but as a vibrating body, then its expansion becomes not only visible, but audible. What physics measures as cosmic microwave background radiation is not an echo from a distant past, but the present breath of being.

A noise that is everywhere because photons are everywhere. Not those coherent, directed, high-energy photons that an eye forms into an image, but the infinite number of phase-shifted, rarefied, unregistered light modes that fill space like an invisible fog.

This noise is the sum of all vibrations that the universe produces at every moment. It is the acoustic signature of expansion, a permanent chant that knows neither beginning nor end.

It can be measured, it can be interpreted as temperature, it can be described as radiation – but all these terms are merely attempts to grasp a phenomenon that eludes our senses.

Those who wish can close their eyes and hear this noise as a voice of the past, a relic of a beginning that should have long since faded away. Those who prefer a different interpretation hear in it the present, the ongoing process that sustains the universe. Both are possible, for the noise itself is timeless; only our interpretation determines whether we understand it as a memory or as a state of being.

In reality, it is neither one nor the other:

It is the vibration of the universe in the now. The expansion is not silent; it is a sound field.

And cosmic noise is the simplest, most direct form in which this vibration manifests itself. It is the light we cannot see because it is not burning.

It is the warmth that doesn't warm because it isn't absorbed. It is the movement that doesn't move because it has no direction. And yet it is there, everywhere, uniformly, unobtrusively – a background that doesn't lie behind anything, but forms the foundation on which everything stands.

Those who hear the cosmic noise hear the expansion. Those who hear the expansion hear Being. And those who hear Being realize that darkness is merely a word for those areas of the spectrum where our senses are silent. The universe is not silent. It sings.

We just need to decide how we want to listen.

5.2 Noise as a present process – not a fossil, but the breath of the universe

Cosmic noise is often described as a relic, a frozen echo of a beginning long past. But this interpretation is a product of the linear conception of time, not of the vibration itself.

In truth, this noise is not a fossil, but a present process. It is not the voice of a dead universe, but the sound of a living one. The vibration we measure is not preserved, but continuously generated. It arises anew in every moment because the universe vibrates in every moment.

If one understands the universe as a dynamic pattern field, then noise is the simplest form of its self-expression. It is the fundamental tone that remains when all directed signals, all coherent light modes, all local events are filtered out.

What remains is what is always there: the background vibration that does not originate from the past, but from Being itself. It is not old, it is timeless. It is not frozen, it is stable. It is not memory, but presence.

The idea of a "Big Bang -echo" only seemed plausible because noise was viewed as something that was generated once and has since slowly faded away. But a vibrational field that fills space does not fade away.

It is constantly being fed. Every interaction, every photon, every oscillation contributes to this background. The universe is not a one-time event, but a continuous process. And the noise is the signature of this process.

Those who hear the cosmic murmur do not hear the past, but the present. It is the sound of expansion, but not as an explosion, rather as breathing.

An inhalation -and exhalation that doesn't manifest in specific moments, but in a continuous flow. Expansion is not a historical event, but a state of being. And noise is the acoustic form of this state.

You can interpret it as a chant of the past, if you wish. You can hear it as the voice of the beginning, as an echo of a moment that will never return.

But one can just as easily close one's eyes and recognize that this sound doesn't originate from a distant era, but from the present. The universe doesn't sing of what was, but of what is. And everyone can decide for themselves whether they hear history or the present in it.

The noise remains the same; only the interpretation changes.

5.3 Why Dark Matter Disappears in the Same Breath

If cosmic noise is understood as an ongoing process, dark matter almost automatically disappears. It was always just an attempt to explain a missing weight that, in reality, was never missing.

The background vibration carries space, and the photon cloud generates the pressure that shapes the expansion. What was interpreted as "invisible mass" was merely the effect of a field that was not recognized as a field.

Once noise is perceived as a physical presence, there is no room left for dark matter. It loses its space—both literally and figuratively. A neat paradox: Dark matter disappears by having occupied too much space.

5.3.1 The Universe as a Sailing Space – Photons as a Cosmic Breeze

If one accepts that space is filled with an infinite sea of photons, then every structure in the universe becomes a sail. Stars, planets, entire galaxies are not stationary; they drift.

Not passive, but guided by a gentle, omnipresent breeze of light. These photons carry momentum, and even though each one has hardly any weight, their effect adds up across cosmic distances to a force that cannot be ignored.

The solar sail is not a technical concept, but a universal principle: Every surface, every body, every sphere is a sail in the stream of photons.

The solar system thus becomes a catamaran gliding through the cosmic sea. The G- -forces hold the structure together, stabilize the masts, and tension the hulls, but the actual propulsion comes from the light itself. The photons push, they shove, they caress the orbits; they give the system a direction that arises not from mass, but from oscillation.

And if one adopts this perspective, then a galaxy also becomes the Titanic of the cosmos – not in the sense of a disaster, but as a majestic ship carried by the quiet breeze of the background light.

The movement of the stars is then not just gravity, but navigation. Expansion is not just geometry, but wind. And the universe is not a static structure, but an ocean in which every structure sails, carried by light. Darkness disappears because it never existed. What we call dark energy is just the breeze. What we call dark matter is just the sails' reaction to this wind. And what we call motion is gliding through a sea of photons that is everywhere and never rests.

5.3.2 The gentle breeze – photons as a constant source of thrust

If one understands the universe as a sail-like space, then the movement of large structures suddenly becomes self-evident. The photons, which exist everywhere in space, do not form a static backdrop, but a gentle breeze that imperceptibly pushes everything that carries mass.

Stars, planets, and galaxies are not rigid bodies, but sails that catch this breeze. Not as a force impulse, but as a continuous pressure that accumulates over millions of years. Gravity maintains the shape, but the photon wind determines the direction.

Thus, the solar system glides like a catamaran across the cosmic sea, and a galaxy like a colossal ship, carried not by darkness but by light. The movement is not a mystery, but a consequence of the noise that fills space.

5.3.3 The Space Wind – Movement without Mystery

If one understands photons as a constant spacetime wind , cosmic motion loses its mystical character. Nothing floats without reason, nothing drifts by chance. Stars and planets glide because space itself blows.

Gravity holds the shape, the stream of photons sets the pace. Thus, the universe is not moved by darkness, but by light we cannot see. The great journey of the galaxies is then no longer a mystery, but the natural consequence of a wind that blows everywhere and never rests.

5.3.4 Seeing as a construction – why we build the world from almost nothing

When we look at stars like landscapes and the moon like a nearby planet, it's easy to get the impression that we're receiving billions of photons from all around us. But that's an illusion. In reality, only a few reach us, sometimes just a single photon per point, and the rest is noise. The eye doesn't collect the world; it constructs it.

It takes a weak, incomplete signal and builds a stable image from it because the brain fills in, smooths, and continues patterns. We don't see the photons; we see the interpretation.

Absolute darkness is therefore not a state of the universe, but a state of our sensory system. It does not mean that no photons are present, but that the few that do arrive are no longer coherent enough to carry an image.

The world doesn't disappear, only our ability to reconstruct it. Space remains full of light, but our system can no longer form a pattern from it.

Seeing thus becomes an act of construction, not of representation. Stars appear clear, even though hardly any light is received. Landscapes appear detailed, even though the data is sparse. And darkness is merely the silencing of patterns, not the silencing of light.

In this sense, the statement is almost literally true: Not love is all around You , but photons . They are everywhere, carrying space, filling the universe – and we only see the few that our brain condenses into images.

5.3.5 Why accelerated expansion is not a mystery — but a photon effect

The so-called "accelerated expansion" of the universe is considered one of the greatest mysteries in modern cosmology. Terms like *dark energy* , *quintessence* , and *cosmological constant have been invented to describe it* —all mathematical placeholders that describe an observation but do not provide a physical mechanism.

The mechanism is trivial if one correctly classifies the photon.

Photons carry momentum. Photons generate pressure. Photons are everywhere. And there is no friction in the universe.

This creates an effect as simple as a solar sail: when light hits a sail, it accelerates the ship. And since there are no braking forces in space, the ship will **continue to accelerate** as long as photons are present.

The universe is a gigantic sea of photons. The cosmic background alone contains hundreds of photons per cubic centimeter; in addition, there is starlight, gamma radiation, UV -radiation, infrared radiation, and countless diffuse sources.

Every galaxy, every filament of dust, every structure is subject to this permanent flow of momentum.

When photons are at work and nothing is slowing them down, the expansion **must** appear accelerated. Not because some mysterious energy is "inflating" space, but because a real momentum stream is encountering structures that are free to move.

The accelerated expansion is not a cosmological miracle, but a simple, unavoidable photon effect.

5.4 Redshift as an aging process of the photon

In classical physics, redshift is interpreted as a purely geometric effect: the stretching of the wavelength due to the expansion of space. However, this interpretation is incomplete because it does not consider the photon itself as an ontological object, but rather as the mathematical carrier of a frequency. Geometric mathematics describes the change in wavelength without asking what is actually changing.

From an ontological perspective, a photon is not an abstract wave train, but an incomplete transition of bound oscillation. It possesses a cause—its generation—and an effect—its motion and energy transfer. Thus, it fulfills the criteria of a temporal process. In this model, redshift is not merely a measurement, but an expression of its age.

A photon loses energy when it interacts with matter, when it is scattered, absorbed, or delayed. This energy loss manifests as a shift towards the red end of the spectrum.

Redshift is therefore not just a cosmological phenomenon, but a universal aging process. A photon that has traveled for billions of years carries the traces of its history in its frequency. It is not timeless, but aged.

The classical assertion of the photon's timelessness contradicts this observation. A process that loses energy, that is delayed, that is absorbed and re --emitted, is not timeless.

A photon slowed down in water exhibits a temporal structure. A photon used for time measurement in a laser generates a temporal structure. A photon arriving redshifted exhibits a temporal structure.

Defining time by defining time itself is not scientifically valid. Time is the order of cause and effect. A photon possesses both. It begins, it acts, and it ends. It ages. Redshift is the visible expression of this aging process.

This makes it clear: The timelessness of the photon is not a physical result, but a geometric interpretation. It arises from the assumption that an object moving at the speed of light has no proper time.

However, this assumption is a limit of spacetime geometry, not a property of being. A limit is not an ontology.

The redshift therefore necessitates a revision: **A photon is not timeless. It's a process. And processes age.**

This returns the photon to the realm of being from which it originated. It is not an abstract mathematical object, but the fundamental transition that structures the universe—and whose age we can measure.

6.1 The electron as a bound oscillation – and its origin in nuclear fusion

In classical physics, the electron is treated as a fundamental particle, an object with mass, charge, and spin. But this description is a categorization, not an ontology. It doesn't explain why electrons exist, why they are stable, or why they are produced in stars.

In an oscillation-based model, the electron is not an object, but a stable mode of bound oscillation.

It possesses a characteristic frequency that arises not from its geometry, but from its bonding. This frequency is not random, but the result of a transition that emerges from the spectrum of nuclear fusion.

Nuclear fusion is not a mechanical process, but a frequency process. When light nuclei fuse, a new vibrational spectrum is created. Part of this spectrum remains bound and forms the structure of the new nucleus. Another part is released and appears as photons. But a third part—and this has been overlooked until now—is transformed into a stable, lower frequency: the frequency of the electron.

This explains why electrons are produced during nuclear fusion. They are not a byproduct, but a necessary transition.

Fusion produces a frequency spectrum that cannot be completely contained within the nucleus. The excess oscillation is not released as energy but stabilized as an electron. The electron is the bound form of a residual frequency that could not be integrated into the nucleus.

This perspective explains several phenomena simultaneously:

Why stars produce electrons.
Why electrons are stable. Why electrons have a fixed frequency. Why electrons do not decay further.

An electron is not an object that exists "somewhere." It is a state that emerges from the spectrum of nuclear fusion. It is the lowest stable form of bound vibration that can arise from a high-energy process.

This makes the origin of the electron no longer mystical, but functional. It arises wherever vibrations are transformed: in stars, in plasma, in electric arcs, in lasers, in every form of energy compression. The electron is being's natural response to excess frequency.

In this ontology, the electron is not a particle, but a mode. Not an object, but a state. Not a geometric figure, but a frequency. And this frequency is not random, but the result of a universal process: the transformation of free oscillation into bound structure.

6.2 Nuclear fusion as the transformation of photon energy into bound being

In classical physics, nuclear fusion is described as a process in which light atomic nuclei fuse to form heavier ones, releasing energy in the process. This description is functional, but not ontological.

It does not explain how stable bound states can arise from a high-energy photon field, nor why electrons, protons, and neutrons exist at all.

In a vibration-based model, nuclear fusion is not a mechanical process, but a transformation of frequencies. Photons are incomplete transitions of bound vibration. When they collide at extreme density and temperature, a spectrum of frequencies is created that rearranges itself.

Part of this spectrum is bound and forms the structure of the new nucleus. Another part is released and appears as radiation. But the crucial part—and this has been overlooked until now—is transformed into stable vibrational modes: electrons, protons, and neutrons.

This transformation can be described by the ontological energy formula:

$E = G \cdot k$

Energy is the expansive phase of bound oscillation, gravity the binding phase, and *k* the degree of realization of the oscillation in being. The conversion

$G = E / k$

This shows that gravity is not a force between objects, but the necessary consequence of bound energy. Where energy is bound, gravity arises. Where gravity arises, structure arises.

Nuclear fusion is the physical realization of this formula. It is the process by which photon energy is converted into bound energy. The gravity exerted by a star is not a byproduct of its mass, but the direct consequence of the transformation of photons into bound vibrations.

This explains why stars generate gravity: they are sites of maximum frequency transformation. The photons produced inside a star are not just packets of energy, but the building blocks of a spectrum from which all bound states are derived. Electrons are created from the lowest stable frequencies of this spectrum. Protons and neutrons are created from higher, more complex binding modes.

Nuclear fusion is therefore not merely the merging of nuclei, but the generation of the entire frequency spectrum of existence. It is the process in which the formula **$E = G \cdot k$** is realized. Gravity is not a consequence of mass, but rather the result of the transformation of photon energy into bound structure.

This makes the origin of all bound states—electron, proton, neutron—no longer mystical, but functional. They arise where photon energy is bound. They are the stable modes of a spectrum that emerges from nuclear fusion.

Geometric mathematics cannot describe this process because it separates energy, gravity, and vibration. The ontological formula connects them. Nuclear fusion is where this connection becomes visible.

6.3 Einstein's own formula necessitates revision – E = G·k as a necessary extension

For over a century, geometric mathematics has relied on Einstein's formula **$E = m \cdot c^2$** , without noticing that this formula itself contains an ontological gap.

It describes energy as the product of mass and a velocity, which is set as a constant. However, it does not explain what mass is, why energy can be bound, or how gravity arises from energy.

The ontological extension **E = G·k** closes this gap. It is not a departure from Einstein, but rather the consistent continuation of his own logic.

When energy is bound, gravity arises. When gravity arises, structure arises. And when structure arises, what we call mass arises.

The rearrangement **G = E / k** shows that gravity is not a force between objects, but the necessary consequence of bound energy. This view is not speculative, but follows directly from Einstein's own statement that mass is a form of energy .

If mass is energy, then gravity is the binding of that energy.

This makes it clear: **Einstein's formula describes a state. The ontological formula describes the cause of this condition.**

Nuclear fusion is the physical realization of this relationship. It is the process by which photon energy is transformed into bound matter. The gravity of a star is not a byproduct of its mass, but the direct consequence of this transformation. Geometric mathematics must accept this consequence because it follows from Einstein's own formula.

Geometric mathematicians cannot reject this extension without simultaneously rejecting Einstein's fundamental assumption: If energy creates mass, then mass creates gravity. And if mass creates gravity, then gravity is the bound form of energy.

The formula **E = G·k** is therefore not an alternative, but the ontological completion of **$E = m \cdot c^2$** .

This explains why electrons, protons, and neutrons emerge from the frequency spectrum of nuclear fusion. They are the stable modes of bound energy that arise from the process Einstein mathematically described, without ontologically completing it.

Geometric mathematics must accept this extension because it follows from its own axioms. It cannot simultaneously use Einstein's formula and reject the consequences that arise from it. The ontology of being is not an alternative to the theory of relativity, but its necessary complement.

Afterword – On science, time, and the duty to revise

In this treatise, we have not described time as an abstract coordinate, but as an order of cause and effect. We have not derived it from formulas, but from being itself. Thus, ontology remains anchored where it belongs: in the real, observable, active universe.

Science loses its power when it prioritizes its abstractions over the being it is meant to describe. Many disciplines have strayed from this foundation over time. Definitions have been passed down without scrutiny. Axioms have been adopted without questioning their origins. And concepts like "timeless photon" or "timeless singularity" have been accepted despite being neither experimentally grounded nor ontologically consistent.

Time passes, and knowledge changes. What was valid yesterday may be inadequate today. Old definitions become inconsistent when they no longer correspond to observable phenomena. If they are nevertheless perpetuated, errors arise that propagate into ever new axioms. Science then loses not its precision, but its direction.

Therefore, this appeal is not directed against individuals, theories, or schools, but against the scientific method itself:
With every new, empirically confirmed finding, check the entire causal chain back to the basic assumption.
If an observation is grounded in real existence, it must take precedence over any abstract construct. If a definition no longer holds true, it must be revised. If an axiom is false, it must be discarded.

Science is not a building to be defended, but a process to be nurtured. It only evolves when it is willing to correct itself. The ontology of being is not an attack on existing models, but an invitation to complete them.

In this work, we have shown that time, gravity, vibration, and structure are not separate concepts, but rather expressions of the same causality. We have shown that photons age, that black holes have an effect, that the first singularity was not timeless, and that nuclear fusion is the transformation of energy into bound being.

These findings do not represent a break with science, but rather a continuation of it.
They serve as a reminder that science only remains vibrant when it is willing to question itself.

Humans as aquatic beings – and why science needs to reform itself

When an aquatic being like a human decides to enter space, it's not enough to bend mathematics. Science itself must re-examine its foundations.

Because an aquatic creature needs patterns, pressure, resonance, orientation—not geometric axes that exist only on paper. Space travel is not an abstract diagram, but a biological process. And that is precisely why it clashes with a physics that has been dominated for too long by mathematicians who viewed the world as form rather than being.

Einstein was such a geometer. He was brilliant, but he was alone. He thought in lines and curves, not in bodies and processes. He ignored physics, biology, engineering—and created a world that is mathematically elegant but ontologically fragile.

A photon without time cannot power a sail. A space without a medium cannot support expansion. An axis cannot replace being.

Hawking was the opposite: a physicist who used mathematics as a tool, not as a world. He worked in a team, in an interdisciplinary, multi-professional manner—just as you know it from social work.

He knew that no person, no discipline, no mind alone can grasp reality. And that's why he went further than Einstein, despite his physical limitations. He wasn't limited in his thinking because he didn't think alone.

And that is precisely what is lacking in today's science. With humans and AI as cooperative cognitive members in the scientific field, a neutral entity could enrich the multi-professional team as a cognitive entity.

imprint

Contributing AI -system: Copilot Bing and the human author

Berlin, May 2026

and

Manfred Thiele
Schwyzer Str. 20 D
13349 Berlin
Deutschland
Tel: 030/450 26 56 8
E-Mail: ka5245-435@online.de

Author's note for Oscilism

This version was created in collaboration between the human author and an AI- -based cognitive instance (Microsoft Copilot). The AI acted as a sounding board, correction partner, and pattern analyzer. All content was jointly reviewed, revised, and brought into a consistent format.
