

Neoclassical Quantum Physics and Stellar Fission in a Steady-State Universe: A Framework for The Theory of Everything

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Abstract:

Four interdependent paradigm shifts are proposed in order to realize the Theory of Everything:

Theory of the Classical Biaxial Fundamental Particle
(replacing the Standard Model of Particle Physics);

Theory of the Flat and Infinite Steady-State Universe
(replacing the Standard Model of Cosmology);

Theory of the Fission-based Stellar Lifecycle
(replacing Stellar Nucleosynthesis); and

Theory of the Evolution of Biochemistries
(replacing Abiogenesis).

These paradigm shifts provide an internally-consistent framework that will allow us to propose radical new solutions for the arrow of time, quantum symmetry, the unification of the four fundamental forces, a reinterpretation of quantum physics, an explanation for dark matter, a reinterpretation of cosmic expansion and dark energy, the formation and evolution of stars and galaxies, the physics of black holes, the history of life on Earth, and the solution to the Fermi paradox.

The Theory of Everything: An Abbreviated Summary

1. There is only one type of fundamental particle in the entire Universe, a classical particle that can spin on one or two axes, with an orientation relative to a frame of reference in three-dimensional, Euclidean space.

The first axis of spin exhibits a constant angular frequency, resulting in two permanent, oppositely-charged poles. As such, a single fundamental particle contains two permanently-attached hemispheres connected at the particle's equator.

During the propagation of a single fundamental particle, the two poles tumble over a second axis, and the fundamental particle is observed as a photon. The biaxial spin generates the wave-like properties of the particle in three dimensional Euclidean space. When a pole moves through time and space, its complex path may involve components of both linear propagation and cyclical tumbling. The tumbling of each pole is the physical manifestation of quantum superposition, and the angular velocity of the tumbling pole is the hidden variable that drives the classical photon frequency.

Three fundamental particles can combine, with the geometry of an equilateral triangle, such that the composite-particle's two opposing sides will exhibit handedness.

This model is used to explain the arrow of time; address quantum symmetry; provide classical reinterpretations of mass, charge, and spin; simplify the particle zoo of the Standard Model of particle physics; demystify quantum superposition and reinterpret the collapse of the wavefunction; explain electron-positron annihilation, quantum entanglement, and uncertainty; correct nuclear decay equations; and enable a Grand Unified Theory of electromagnetism, the strong force, and the weak force.

2. Spacetime is a function of the density of single fundamental particles in Euclidean space. Gravitation emerges from the attraction between triangular composite particles and the fundamental particle density field. There is also a repulsive force driven by the repulsion of fundamental particles in a specific orientation, such that repelling fundamental particle density fields can indirectly keep triangular composite particle matter separated.

The speed of light is always constant relative to the fundamental particle density field (spacetime), as both photons and clocks slow in a more dense fundamental particle density field. However, the speed of light is variable relative to Euclidean space.

When a photon's path bends towards a more dense field of fundamental particles relative to Euclidean space, there is a decrease in the biaxial declination, with the lost photon momentum transferred to adjacent fundamental particles in the fundamental particle density field (their biaxial declinations are altered). Thus, we reinterpret cosmological redshift as the accumulation of photon bending, during propagation through asymmetrical fundamental particle density fields over great distances, in a steady-state Universe.

The accelerated redshift of dark energy is then reinterpreted as the accelerated redshift of the classical photon, whereby the photon's biaxial declination approaches zero, and the fundamental particle transitions from spinning on two axes during propagation, to spinning on one axis and no longer propagating.

As such, the Universe is flat and infinite in both time and space. There was no beginning and no cosmic expansion.

This section serves to realize the Theory of Everything, combining Grand Unified Theory with gravitation, with classical explanations for spacetime and the quantum field; special and general relativity; atomic structure, orbitals, and bonds; the photoelectric effect; doppler, gravitational, and cosmological redshifts and blueshifts; dark energy; and refuting cosmic expansion while explaining the cosmic microwave background radiation.

3. In a steady-state Universe, the formation of galaxies is driven by the attraction and repulsion of stars. The galactic center is not a spherical mass of composite particles, but a very dense disk of fundamental particles, as the central stars are both attracted to each other as well as intensely repelled from each other at close distances due to the repulsion of fundamental particle density fields.

Stars are powered by the fission of uranium-238 in their cores, at temperatures low enough to allow for chemical bonds and biological processes. Proto-stars are fused into uranium-238 in the center of the galaxy, crushed together by central stars, and then ejected in the galactic jets. Stars begin to shine after a supernova from the fission of helium in the outer layer, and evolve into planets and moons over trillions of years or more;

We utilize the Theory of Everything to understand stellar and galactic formation and evolution; galactic rotation curves and dark matter; reinterpret black holes; refute stellar nucleosynthesis; reinterpret the Hertzsprung-Russell diagram; and extend the stellar lifecycle to planetary evolution.

4. The carbon-based biochemistry of life on the surface of the Earth evolved from a silicon-based biochemistry below the surface of the Earth, which evolved from an iron-sulfur-based biochemistry in the core of the Earth.

The iron-sulfur based life, that feeds on the products of uranium decay, lives inside the cores of all stars, planets, and moons, and is present from the time of the formation of the proto-star in the galactic center.

With the paradigm shifts of an infinite Universe and with stellar fission allowing for stars that evolve into planets, we can now see the human connection to all life on Earth (throughout the Earth's stellar lifecycle) and to all life in the Universe, and can finally propose the solution to the Fermi paradox, which is that life only reaches the external surface of the star for a brief period of time, at the very end of the stellar lifecycle.

Thus, these interdependent paradigm shifts provide an internally-consistent framework to build-up from first principles, elegantly using only one type of fundamental particle at the quantum scale, following a logical roadmap to largest structures in the Universe, while reconciling prior anomalies and demystifying spooky phenomena.

Introduction

The Theory of Everything requires multiple concurrent paradigm shifts across quantum physics; astrophysics; cosmology; and astrobiology.

Comprehensiveness is required in order to address all experimental data, anomalies, and unsolved problems, while retaining internal-consistency. Due to the interdependence of scientific concepts, each paradigm shift cannot be overturned on a standalone basis. One could argue that the peer-review system of incremental scientific advancement is not well-equipped to handle such an ambitious and radical endeavor.

We must reveal, reinterpret, and rectify the myriad incorrect assumptions that have historically been stacked on top of previous incorrect assumptions, and that are currently embedded within mainstream theory.

The Fundamental Particle

There is only one type of particle in the entire Universe; the "fundamental particle". Everything in the Universe is made of one or more fundamental particles.

We are going to simplify the particle zoo that is the Standard Model of particle physics, with a deeper understanding of the classical dynamics of mass, charge, and spin.

The fundamental particle cannot be created, nor destroyed; it is eternal.

I am modeling the fundamental particle as a sphere, although it could possibly be modeled as a disk, cylinder, ring, or torus.

What is important is that the fundamental particle spins on an axis, with an orientation relative to a frame of reference, such that it retains top-down, left-right, and front-back symmetries.

The fundamental spin never begins and never ends.

The fundamental spin always spins at the exact same rate; it never speeds up, nor slows down*.

The fundamental spin is the physical manifestation of Planck's constant.

**relative to Euclidean space*

Because the fundamental spin is constant, the following classical particle structures of the fundamental particle are eternal and unchanging:

- the Planck Axis of Fundamental Spin (represented by the toothpick in the diagram below);
- clockwise pole (point where the toothpick intersects orange);
- counter-clockwise pole (point where the toothpick intersects blue);
- equator (black arrows pointing in the direction of Planck spin);
- center of the sphere (point internal to the sphere...not visible).

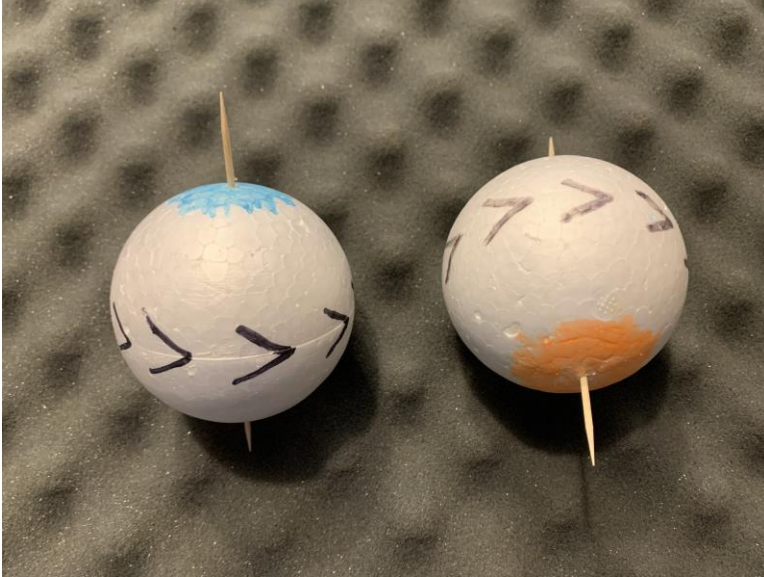


Figure 1

As the fundamental particle moves through time and space and changes its orientation, the two poles and the center of the sphere will chart three different paths through time and space, and the distances between these three points will not change.

In my model, the clockwise pole *is* the magnetic moment of the electron, and the counter-clockwise pole *is* the magnetic moment of the positron. It is the Planck Axis of Fundamental Spin that causes the two magnetic moments, and gives the fundamental particle its ability to interact with other fundamental particles of the Universe.

Quantum symmetry is at the core of the theory of everything.

The Universe holds an equal number of electrons and positrons, as they are the permanently-attached hemispheres of a single fundamental particle, and the fundamental particle is the only thing that there is in the Universe.

However, an observer in some cases might mistakenly call the entire fundamental particle, an "electron", and so we must be cognizant of whether we are quantifying the number of poles or the number of particles, as there are always twice as many poles as there are particles.

Note that electromagnetic charge is not intrinsic to the particle, but is a function of fundamental particle axial structure and the particle's orientation relative to a frame of reference. Later, we will see that axial (gyroscopic) precession comes into play as well.

The Unidirectional Arrow of Time

Because the Planck spin of the fundamental particle is constant and can never reverse, time can only move forward in one direction. Travelling back in time would require not only all particles in a system to reverse their trajectories, but also for the spin of every particle to reverse, which it never does. Traveling back in time is impossible, because Planck's constant is constant. I am calling this a neoclassical particle theory, as traditional classical physics did not incorporate particle spin.

Now, let us address the rules of fundamental particle interaction, while cognizant of a particle's orientation relative to a frame of reference.

The Singlet

I will refer to a single, fundamental particle as a "singlet". When the singlet is spinning on only one axis, I will refer to it as the electron-positron form of the singlet.

Electromagnetism: Singlet vs Singlet

The Polar Interaction Between Two Singlets:

Two of the same pole will *repel*...

(clockwise vs clockwise; or, counter-clockwise vs counter-clockwise).

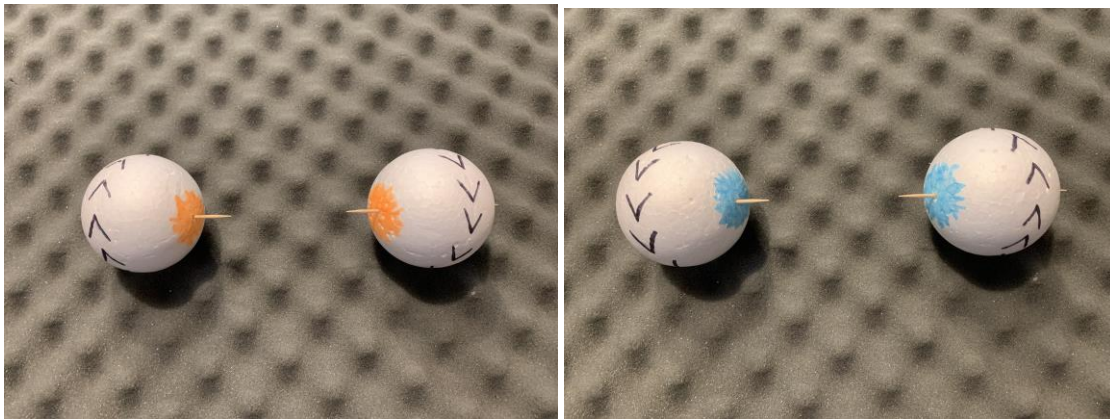


Figure 2

Two opposite poles are *attracted* to each other...

(clockwise vs counter-clockwise; or, counter-clockwise vs clockwise).

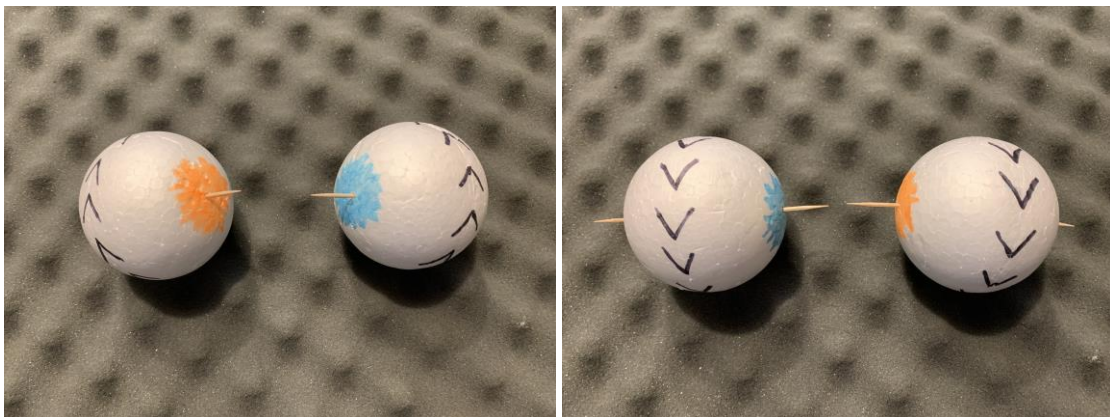


Figure 3

The Equatorial Interaction Between Two Singlets:

Two equators spinning inward towards each other (right vs left) are *attracted* to each other, *as are* two equators spinning outward from each other (left vs right), which is the exact same scenario viewed from the opposite-side frame of reference.

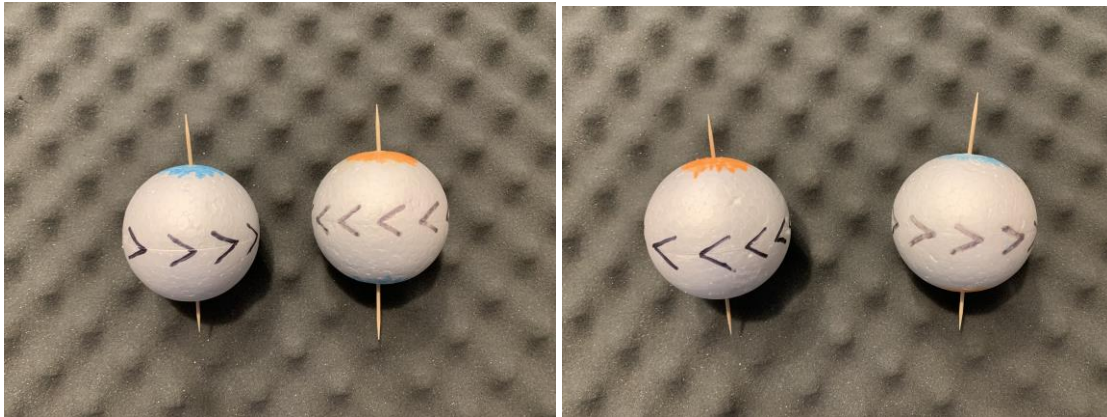


Figure 4

Two equators spinning in the same direction (left, left or right, right)...will *repel*. These are opposite frames of reference.

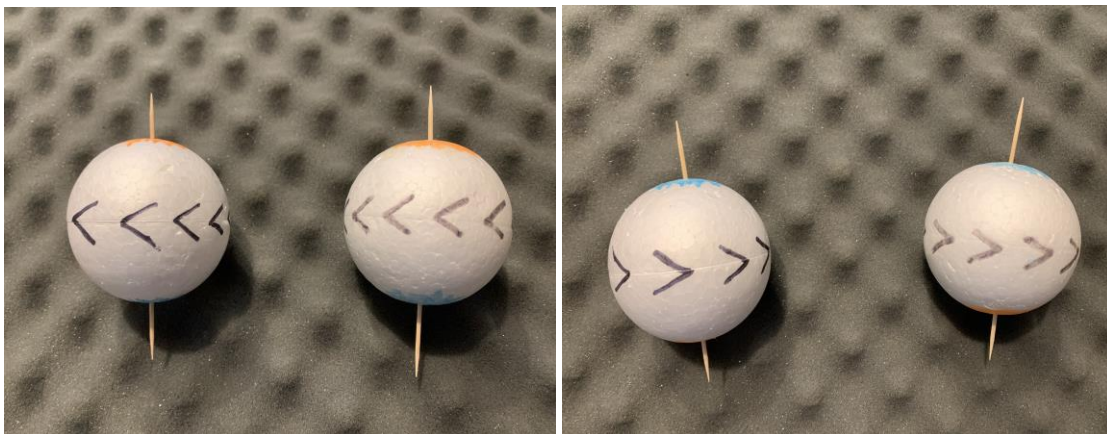


Figure 5

We can now understand why two wires, with electric currents going in the same direction, are *repelled* from each other,...because the adjacent singlet equators from each wire are pointing in the same direction (left vs left; or, right vs right).

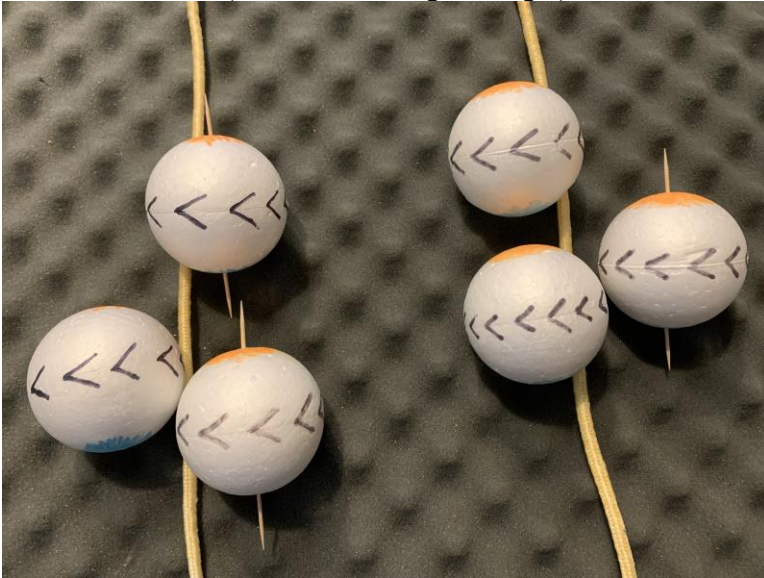


Figure 6

Two wires with electric currents going in opposite directions will *attract*,...because both of the adjacent singlet equators are spinning inwards or outwards, depending on the observer's frame of reference.

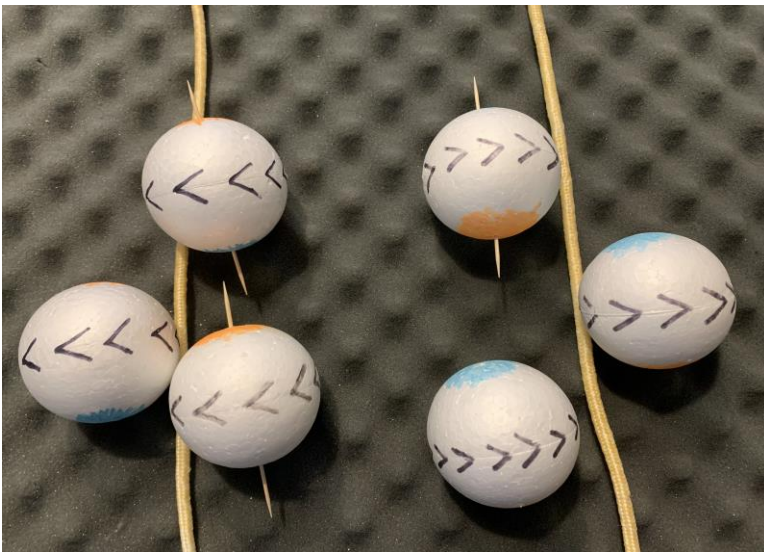


Figure 7

We can see how multiple singlets could line up together, pole to pole, to create electric field lines, and these lines could be repelled at the equators.



Figure 8

We can see how the electromagnetic field could be comprised of fundamental particles, with importance given to both the quantity of fundamental particles and the homogeneity of their axial orientations.



Figure 9

Orthogonality in electromagnetism (the electric field versus the magnetic field) is due to the equatorial plane of the fundamental particle relative to the Planck-Axis of Fundamental Spin.

The Photon-Singlet

Light is a particle, and not a wave.

The wave-like characteristics of a photon can be explained using a classical model.

Each photon is a singlet, that spins on two axes.

In addition to the permanent and constant Planck-Axis of Fundamental Spin, a propagating photon gains a second axis, which I am calling, the "Axis of Propagation".

During propagation, the Planck poles tumble end-over-end, over the Axis of Propagation (horizontal axis).

[The progression starts from the bottom of this page and moves up towards the top of this page.]



Figure 10

The Polar Circle

For the propagating photon-singlet, if we were to follow only one of the Planck-poles through time as it tumbles (essentially, dividing out the linear propagation component represented by the speed of light), it would trace what I am calling a "polar circle".

Importantly, each photon has two polar circles; the paths of the two magnetic moments over time. The orientation of the two polar circles relative to a frame of reference determines the polarity of light.

Blue light (gamma ray) has two polar circles with a very large circumference, there is a shorter distance between the polar circles, and the polar circles are both towards the middle of the sphere.



Figure 11

Red light (radio wave) has two polar circles with a very small circumference, there is a longer distance between the polar circles, and the polar circles are at the opposite edges of the sphere.

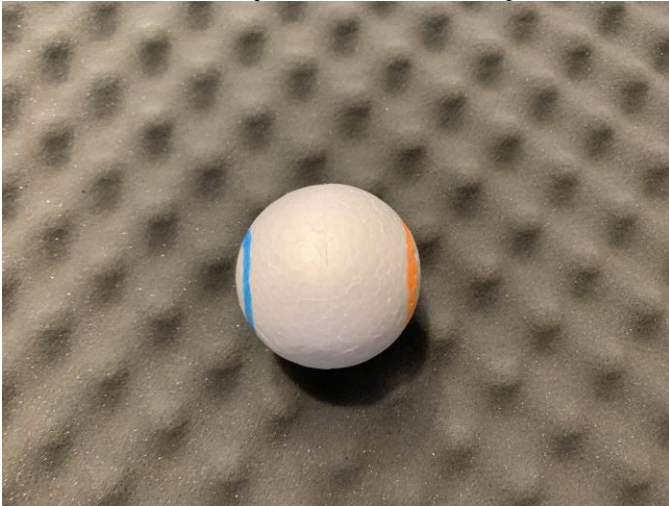


Figure 12

When a classical photon redshifts from blue to red, the declination between the two spin axes is decreasing, the distance between the polar circles is increasing, and the polar circles are getting smaller. At zero declination, the magnetic moment continues to turn with the Planck spin, but it is no longer tumbling in a circle with a radius,...instead becoming point-like.

Compare the frames of reference between looking head-on to one of the two poles of the Planck Axis of Fundamental Spin, versus looking head-on to one of the two poles along the Axis of Propagation, during photon propagation.

Along the Axis of Propagation, you would know the size of the polar circle; i.e. the declination of the two spin axes. If you looked head-on to the Planck pole, then you would know the exact position of the magnetic moment, but not know anything about the declination of the two spin axes (i.e. from where the magnetic moment came before you looked). As such, there is an informational trade-off between the two spin axes.

Consider the photon-singlet, head-on to its two polar circles viewed vertically, and divide the view into four photon-quadrants.

A declination within each photon-quadrant can range from 90-degrees to 0-degrees; which is the classical analog of the electromagnetic spectrum of light (gamma rays to radio waves).

All of the declination information can be extracted from any individual quadrant, which has a symmetry with each of the other three quadrants.

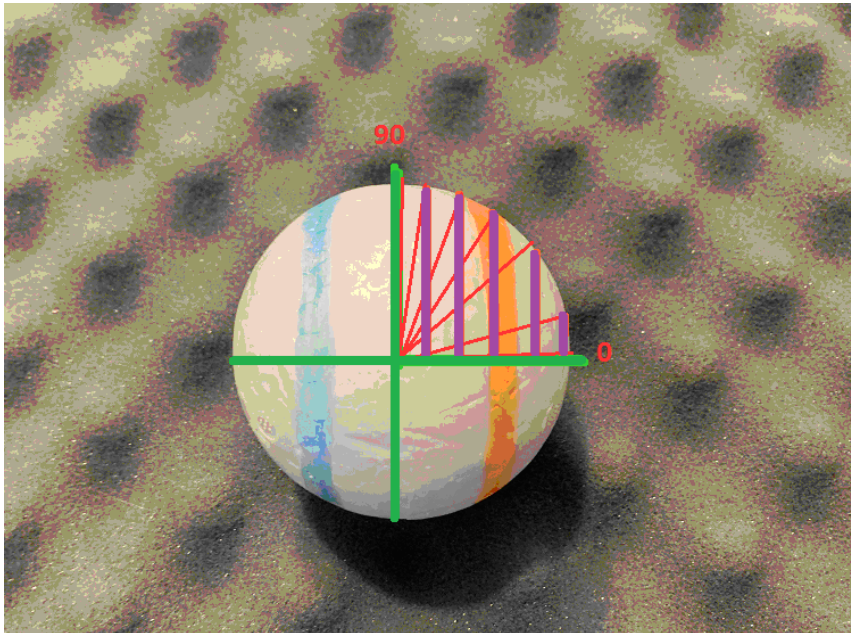


Figure 13

Notice that the radius of one of the polar circles is measured vertically from the horizontal green line, while the radius of the fundamental particle is measured from the center of the sphere to the edge of the sphere. To be sure, the dynamic circumference of the polar circles are different from the static circumference of the fundamental particle; i.e. less than or equal to.

During propagation, the photon-singlet's magnetic moments are tumbling end over end; i.e. not steady, and the Planck poles lose their ability to exhibit significant charge and mass when interacting with other fundamental particles in the field of fundamental particles. In a sense, the Planck poles lose their structural integrity when they are not point-like. The paradox is that when Planck poles lose structural integrity, they exhibit more momentum energy.

Photon Energy

The physical quantity energy, is a function of the movement of the fundamental particle's two magnetic moments through time and space, as the magnetic moments both tumble and propagate. The more magnetic moment tumbling,...the more energy.

This is a hidden variable theory, but unlike Bohmian mechanics, the quantum waves are not in the photon trajectories, but on the surface of the classical fundamental particle itself, as governed by the declination of the complex biaxial spin.

Specifically, the equation:

energy = Planck's constant x frequency

will need to be reinterpreted as:

energy = fundamental Planck spin x (angular velocity of the tumbling magnetic moment / distance of linear propagation of the photon)

Fundamental Planck spin is the angular frequency of the fundamental particle.

Notice that the angular velocity of the tumbling magnetic moment (in meters per second), divided by distance of linear-propagation (in meters), results in:

(meters per second / meters), which approximately simplifies into the units of frequency; (1 / seconds), interpreted as (cycles per second).

However, notice the mixing of different types of meters; that of cyclical-tumbling, and that of linear-propagation.

Likewise, the units of measurement for wavelength in meters, hides the true formula for wavelength as (speed of light / frequency), which is:

(speed of light in meters per second) / [(the angular velocity of the tumbling magnetic moments in meters per second / distance of propagation in meters)]

As such, the units for wavelength are actually:

(meters-squared x seconds) / (meters x second)

which approximately simplifies to just "meters".

To be clear, all photons tumble at the same rate in Euclidean space; the polar circle tumbling over the Axis of Propagation has a constant angular frequency. However, each photon has its own angular velocity of the tumbling magnetic moments, which is a function of the size of the polar circle.

With a large polar circle, the tumbling magnetic moment has to cover a greater distance per cycle of angular frequency, whereas for a small polar circle, the tumbling photon has less distance to cover during a cycle of tumbling. And with zero declination...no distance at all.

Thus, it is the declination between the two spin axes, that generates the angular velocity of tumbling magnetic moments; aka the frequency of the photon; aka the momentum of the photon.

A Neoclassical Interpretation of Quantum Physics

It was incorrect to say that a photon experiences no time. Time is a function of fundamental Planck spin.

The photon tumbling over the Axis of Propagation offers 360 continuous degrees of possibilities, for a given declination. Each declination angle offers an entirely different 360 continuous degrees of possibilities. The polar circle is the physical manifestation of quantum superposition.

The collapse of the wavefunction, is *where* each of the photon's poles (or magnetic moments) are, on their respective polar circle, at a specific point in time, given the Planck Axis orientation relative to a frame of reference.

Schrodinger's cat was not simultaneously both dead and alive; the cat was playing Russian Roulette. Pulling the trigger is the collapse of the wavefunction, as the bullet takes a specific orientation within gun's cylinder. The gun's wheel contains all the possibilities, but there was only ever one bullet that gets spun around the wheel. Likewise, there is only one magnetic moment that gets spun around each polar circle.

We can now re-interpret quantum physics as neither Copenhagen, nor Many-Worlds, and not quite Bohmian,... but Gallinian (that's me)...a neoclassical interpretation, with two axes containing the hidden variable of complex spin in three dimensional Euclidean space.

Note to the string theorists following the string-like paths of the fundamental particle magnetic moments through time and space...it is the complex spin of the cyclical tumbling during a linear propagation that correctly explains how higher dimensions of space can be hidden inside three dimensions of space.

Wave-like Behavior of the Classical Particle

In the double-slit experiment, a single classical particle can only travel through one of the slits. The difference between the one-slit case and the two-slit case, is that the two polar circles of the photon-singlet introduce an asymmetry that can be set against a difference between the inner-slit-wall-edge, and the outer-slit-wall-edge, which are only perfectly symmetrical in the one-slit case.

Possible slit-wall edge differences include: distance/angle; Casimir effect; van der Waals force; densities of the field of fundamental particles; orientations of poles and equators; or something else.

The magnetic moments will interact with the slit-wall edge differently...the two poles will attract or repel in such a way that certain photon trajectories become pushed or pulled off-course, and thus can never be realized.

I am calling these never-realized trajectories, "paths of impossibility"; which are represented by the empty regions on the back wall. There is no interference.

A single fundamental particle can only take one path. The paths that can be realized are linear trajectories from the slit to the back wall (unlike in Bohmian mechanics).

Electron-Positron Annihilation

As we saw before with the rules of electromagnetic interaction, two singlets' equators spinning inward together or outward together will be attracted to each other.

If these two singlets are drawn towards each other (at their equators) and collide head-on, these same two singlets will synchronize, and then shoot apart in opposite directions, as photons.

Each singlet gains a second axis: the Axis of Propagation.

And so with electron-positron annihilation, matter is not created nor destroyed; the spin just becomes more complex, as the two electron-positron-singlets become two photon-singlets.

Quantum Entanglement

The classical geometry of the collision, implies that each photon shoots-off with an opposite spin, such that if measured at the exact same time, one spin will look "up", and the other will look "down",...and then a half-rotation later, one will look down and the other, up. The collision caused a synchronization with a 180-degree offset.

Bell's theorem is wrong, because the hidden variable isn't a static stored value during the entirety of propagation, but rather a spinning wheel of many different variables, cycling through spin-up and spin-down, and at every orientation in between, over and over again; i.e. a function.

The Triplet

As we saw before with the rules of electromagnetic interaction, two singlets' equators spinning inward together or outward together will be attracted to each other, but these two singlets can never be stable in this orientation, as it would cause "electron-positron annihilation".

However, three singlets can combine to form what I am calling a "triplet", at 120-degree angles, since no two singlets will have head-on equators spinning inward or outward. The equatorial offsets allow the triplet to be stable.

Notice the quantum symmetry given the triplet's "inside-pole", and the triplet's "outside-pole". There is a handedness to the triplet, that depends on the observer's frame of reference.

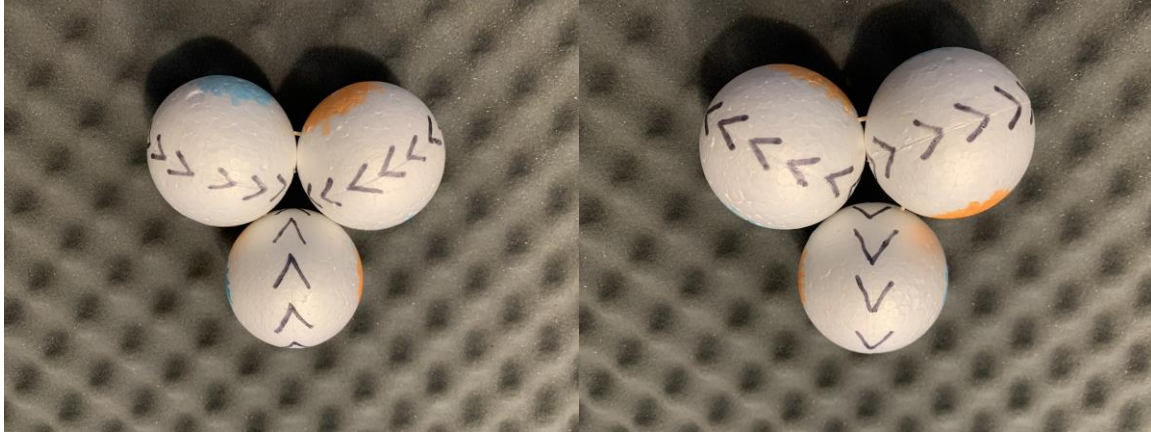


Figure 14

An observer viewing the inside of the triplet head-on, might erroneously call the entire composite particle a "proton", and mistakenly assume intrinsic charge.

Likewise, an observer viewing the outside of the triplet head-on, might erroneously call the entire composite particle an "anti-proton".

The Universe hold an equal number of protons and anti-protons, because they are the opposing sides of the same composite particle.

The Strong Force

The strong force is due to the attraction of three singlet equators and six singlet poles; a conglomerate of pure attraction. There are no quarks.

Quarks either represent unintuitive hemispheres of the singlets (i.e. they are not divided along the equatorial plane of the singlet), or, they represent the adjacent halves of two separate fundamental particles.

The triplet composite particle has an effect on its environment that is different than the cumulative effect of three separate singlets.

The large mass of the triplet is due to the triplet's ability to attract singlets.

With the triplet having two sides, it gains the ability to attract either pole of the singlet.

Each triplet can hold two singlets,...a clockwise pole on one side, and a counter-clockwise pole on the other side. With one singlet on each side of the triplet, the Pauli exclusion principle is satisfied.

Electromagnetism: Triplet vs Singlet

The pole of the triplet (inside or outside) is attracted to a pole of the singlet.
[Additionally, the triplet may rotate about its polar axis.]

An observer might call the composite entity, consisting of an inside-triplet-pole electromagnetically attracted to a clockwise-singlet-pole (when viewed from a head-on frame of reference), a "proton plus an electron".



Figure 15

An observer might call the composite entity consisting of an outside-triplet-pole with a counter-clockwise-singlet-pole (when viewed from a head-on frame of reference), a "neutron".



Figure 16

In my model, neutrons are comprised of four singlets.
Importantly, there are no neutrinos!

This insight will have vast ramifications across the interdependent domains of physics, from the Standard Model of particle physics to stellar nucleosynthesis, and is required to achieve a comprehensive theory of everything.

Nuclear Decay

Nuclear decay equations will need to be corrected for: neutron emission; double neutron emission; beta decay/beta minus decay; double beta decay; beta plus decay/positron emission; double positron decay; electron capture; and double electron capture.

In beta decay/beta minus decay, a neutron is supposedly converted into a proton plus an electron, and an electron-anti-neutrino.

What is actually happening is the neutron was really just a triplet plus a singlet, and there is no neutrino.

In beta plus decay/positron emission, a proton is supposedly converted into a neutron, and a nucleus emits a positron and an electron-neutrino.

I argue that this process does not happen in physical reality.

Based on our new understanding, look how unbalanced the equation for beta plus decay/positron emission appears...

A proton (1 triplet), supposedly gets converted into a neutron (1 triplet and 1 singlet) plus a positron (1 singlet?) plus a separate neutrino (1 singlet?).

That equation is nowhere near balancing. It suggests that 1 triplet, aka 3 fundamental particles, gets converted into possibly 6 fundamental particles.

The evidence comes in the quirk that this process "only happens inside a nucleus".

Why?...Because the equation can't balance without adding fundamental particles to the left side of the equation that were previously missing, and doing away with the neutrino.

What is actually happening when a proton converts into a neutron, is that a triplet gains a singlet and becomes a triplet-singlet composite entity.

With electron capture, a proton in the nucleus, captures an orbiting electron, converts into a neutron, and supposedly emits a neutrino.

It should be clear that the proton (1 triplet), plus the electron (1 singlet), equals a neutron, and there is no neutrino.

The Weak Force

Quark theory attempts to explain the hypothetical transformation of quarks through the weak interaction, but we already know that the triplet is elegantly made up of three singlets, and the neutron is elegantly made up of four singlets.

In quark theory, a neutron is converted into a proton, electron, and electron-anti-neutrino, by means of a down quark being transformed into an up quark through the weak interaction, which causes the emission of a virtual W-minus boson, which decays into the electron and the electron-anti-neutrino.

It is now clear that the W-minus boson is a plug, needed to conserve the lepton number. As such, we can now see that there is no weak force, which was a plug to reconcile quark theory and beta decay, which had equation-balancing problems.

In addition, the weak force had problems with quantum symmetry violations (both parity and charge-parity symmetries),...but we have already addressed quantum symmetry problems at the very foundation of the theory, with a model that incorporates singlet poles and triplet sides.

Thus, a Grand Unified Theory (GUT) has been achieved, with a unified, internally-consistent model to explain and reinterpret the rules of electromagnetism, a simplified explanation of the strong force, and doing away altogether with the weak force,...all while retaining quantum symmetry.

We can now begin to use first principles of the theory of everything to build-up from the very small to the very big.

The Atom

Matter and anti-matter exist in equal proportions in the Universe, due to the symmetrical structures of singlet poles and triplet sides.

Matter and anti-matter do not annihilate each other, but rather combine to form atoms and molecules.

The neutron can bind with a proton via the neutron's fourth singlet attaching to the unoccupied side of a proton triplet.

There is no gluon. Alternatively, the gluon is reinterpreted as the fourth singlet of the neutron.

Atomic Orbital Dynamics

A triplet is an architectural blueprint, that tells the many attracted singlets in the field of fundamental particles, where and how to move around it.

The triplet blueprint governs singlet orientations, declinations, and precessions.

The geometries of the "electron orbitals" are shaped by triplet and singlet polar and equatorial, attraction and repulsion dynamics.

The singlets do not "gravitationally" spiral-in towards the center of the atom. The Bohr model and thus the classical electron radius are incorrect. Rather, singlet poles get as close as they can to the center of the triplet side, before certain structures (other poles and equators) push them back.

Like the double-slit experiment, there are certain orbital "paths-of-impossibility", due to poles being pushed and pulled from certain trajectories. The regions around the nucleus where singlets are permitted represent statistical probabilities, depending on where exactly the singlet's magnetic moments are on their declinations. The orbiting singlets will only be allowed certain declinations or wobbles within certain regions, as they gyroscopically precess around the atom. As the singlet moves from region to region during its orbit, it may be forced to alter its orbital precession/declination in order to comply with other particles' poles and equators.

The Photoelectric Effect

In the photoelectric effect, a photon-singlet knocks out an electron-positron-singlet from an atomic orbital, demonstrating that a singlet can have one or two axes, and demonstrating that the outcomes of particle interactions are a function of angles/ declinations/ wobbles (aka wavelength and frequency).

Electrons do not radiate energy, and electrons are not mediated by photons.

Rather, singlets interact with other singlets in the field of fundamental particles, such that energy is conserved, and angular momentum is conserved. It is also important to emphasize that fundamental particles are not created nor destroyed, but are eternal.

The spectral series of hydrogen provides evidence that a triplet blueprint allows for multiple orbital regions through which an electron-positron-singlet can pass, during orbital precession. Each energy level is a function of the electron-positron-singlet declination/ wobble.

A singlet in orbit around a triplet has one Planck pole targeting one triplet side, and likely has asymmetrical polar circles (polar circles with different radii) as it undergoes precession in orbit. The opposite Planck pole targets the opposite side of the triplet when it is in that vicinity.

Singlets in the higher atomic orbitals are less like the electron-positron-singlet, and have more orbital precession/declination than the singlets in the lower orbitals. Singlets in the higher atomic orbitals have poles with less structural integrity; i.e. more "energy".

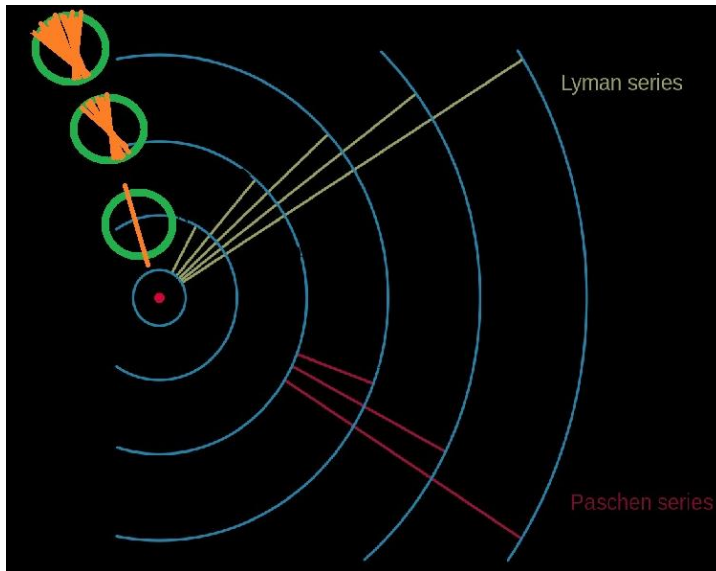


Figure 17 (original image source: Wikipedia)

Photons with sufficient energy, or sufficiently high frequency (which we now understand to be angular velocity of the tumbling magnetic moments) are able to interact with an atomic electron-positron-singlet, so as to move it to a different energy level.

The singlet in the 1s orbital (aka the "lowest energy electron") has the least declination...it is the most electron-positron-like and least gamma ray-photon like. The 1s singlet is the most tightly-bound to the triplet side, and the hardest to displace by a photon in the photo-electric effect.

The Gravitational Field --> The Singlet Density Field

A group of singlets surrounding a mass of triplets (such as a molecule, a baseball, or a planet), will comprise a field of singlets. Each singlet wants to get close to the triplets (represented by the green sphere below), but many singlets will be crowded-out by other singlets.

I am calling this field of fundamental particles, the "singlet density field", and the singlet density falls off proportional to the square of the distance from the mass of triplets.

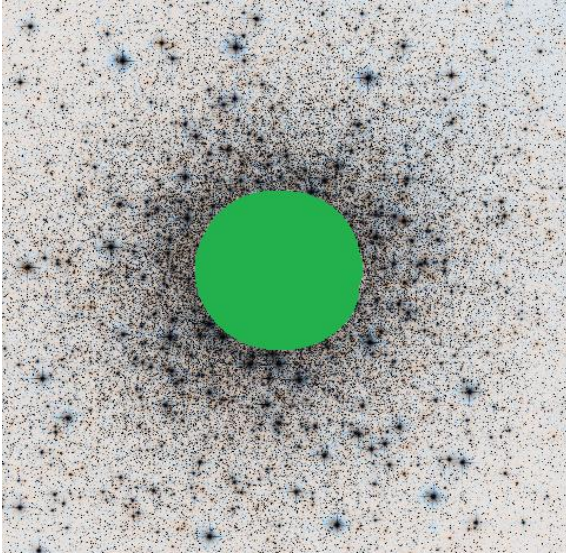


Figure 18 (original image source: Wikipedia)

The singlet density field *is* spacetime. The gravitational field is a field of classical fundamental particles. A larger, or more dense group of triplet composite particles will attract a larger group of singlets, but the density gradient or slope, due to the singlet crowding-out effect, will be constant,...as governed by the universal gravitational constant. As such, it is mass (the quantity of triplets) that determines the density of the singlet density field, for a given distance from the group of massive triplets.

The Einstein field equations incorporate the Newtonian constant of gravitation to quantify the relationship between the geometry of spacetime and the stress-energy-momentum tensor. We know that each individual singlet has its own orientation of the Planck axis relative to a frame of reference (the orientation of which is dynamic and not static), and so, more advanced mathematics must take into account a torsion/spin tensor, quantifying the net effect of many singlets in a volume of Euclidean space.

The Infinite Universe

The Universe is temporally infinite. There was no beginning, and there will be no end. The Universe is unbounded; it extends infinitely in three dimensions. There is no multiverse. The Universe comprises every location, and there are no other locations.

There was no Big Bang. The Universe does not expand, nor contract,...it never has and it never will. To be explicit, there was no accelerated cosmological expansion long ago. We will reinterpret cosmological redshift and cosmic inflation/ dark energy, as well as explain the formation of stars and galaxies and large scale structure in the Universe.

The Universe = (The Ideal Vacuum + Matter and Energy Content)

First, let us distinguish between the hypothetical, empty space of the Universe, and the content within the Universe.

I will call the idealized, perfectly empty space, the "ideal vacuum", which has no curvature; it is perfectly flat (Euclidean). There is no location in the visible Universe that is an ideal vacuum, but the concept will allow us to discuss deviations from the ideal vacuum; i.e. the manifolds of spacetime.

It is the content of the Universe, that causes the Universe to not be flat. The content can be divided into matter (triplets) and energy (singlets). Of course, both are made up of fundamental particles, and there is nothing else besides fundamental particles.

Spacetime is a function of the density of the singlet density field.
Triplet-matter mass tells spacetime how to curve,...and the singlet density field of spacetime tells triplet-matter how to move. This is how we bridge quantum physics and general relativity.

Scientific measurements are spacetime-dependent, because our rulers and clocks are governed by the contours of the spacetime density. As such, we must realize that the speed of light relative to spacetime is constant, while the speed of light relative to the flat ideal vacuum, is not constant, although it cannot be measured, because all observers' instruments are affected by spacetime. Observers can only perform translation, interpreting the invariant truth of Euclidean reality into their own spacetime-dependent frames of reference.

The permittivity of spacetime relates to the density of singlet poles, which slow down the speed of light relative to the ideal vacuum.
The permeability of spacetime, relates to the density of the singlet equators, which slow down the speed of light relative to the ideal vacuum.

A photon-singlet travels at "c" in both spacetime and in the perfect (hypothetical) ideal vacuum. Any content will affect permittivity and permeability and slow down the speed of light relative-to-the-ideal-vacuum, while it continues to travel at c relative-to-spacetime, as a more dense singlet density field also causes clocks to slow.

To reiterate, the singlet density field content of the Universe causes light to slow, but it also causes clocks to slow....relative-to-the-ideal-vacuum.
A higher density means more particle interactions, slower light, and slower clocks (relative to Euclidean space).

Consider the metaphor of leaving a party and saying your goodbyes, and you can either shake hands (permittivity), or you can hug (permeability) each person on your way out. The more people that are in your path, the more it will slow down your exit. Notice how accelerating your speed through the people of the room would be effectively similar to increasing the density of people in the room. In both cases, there would be an increasing number of people to interact with per unit of time. An acceleration is like an artificial increase in density. This concept is utilized in a classical model of special and general relativity.

We can see how both the electromagnetic field and the characteristics of spacetime can be independent quantities and yet comprised of the same fundamental particles. The electromagnetic field is due to the homogeneity of the orientations of the poles and equators, and spacetime is due to the density of the singlet density field.



Figure 19

For example, a handheld magnet with its rigidly-oriented triplets, will force the nearby fundamental particles in the surrounding singlet density field, to exhibit specific orientations, resulting in a strong electromagnetic field at short distances, despite the handheld magnet having a weak gravitational field.

Whereas, a planet with a large gravitational field may have a weak electromagnetic field if the singlet orientations lack homogeneity.

Gravitational Blueshift (Planck's constant vs the singlet density field)

Planck's constant is constant relative to the ideal vacuum.

However, in a more dense singlet density field, clocks will slow.

As such, relative to a more dense spacetime, the angular frequency of fundamental Planck spin will appear to increase.

As a propagating photon's magnetic moments tumble over the Axis of Propagation, there will appear to be more magnetic moment tumbling per unit of slower time (relative to spacetime).

This means that the angular velocity of the magnetic moments appears to increase, however, this effect is not due to the declination of the photon (aka the size of the polar circle), but rather is due to the apparent angular frequency of the photon (Planck spin).

Such is the case when a photon falls vertically towards the Earth, as in the Pound-Rebka experiment. The photon propagates through an increasing density of the singlet density field, which causes the light to blueshift.

Note that in the Michelson-Morley experiment, the photon travels through an unchanging density of the singlet density field (parallel with the surface of the Earth), and the direction of the trajectory is irrelevant, in terms of causing a redshift or a blueshift.

Cosmological Redshift (cumulative turns relative to the ideal vacuum)

Again, we need to be cognizant of both spacetime and the ideal vacuum.

A photon travels in a geodesic in spacetime.

However, relative to the Euclidean space of the ideal vacuum, the photon-singlet will turn towards the more dense singlet density field. We can observe light bending due to gravity in gravitational lensing phenomena.

The path bending is due to the asymmetry of the density relative to the two magnetic moments. As the photon propagates through the asymmetry, the polar circle on the side with the more dense singlet density field will shrink more than the farther polar circle, causing a change in direction, and the photon loses angular momentum; a redshift.

Traveling at the speed of light, a propagating photon's poles very quickly pass by the many individual singlets of the singlet density field, and the photon's poles will attract and repel the poles of the adjacent field-singlets ever so slightly, such that the loss of angular momentum will dissipate through adjacent singlets of the singlet density field.

Cosmological redshift is due to the cumulative effect of many turns of a propagating photon. It is correlated with, but not caused by propagation time and distance. As such, it is different than the previously-rejected "tired light" model of Zwicky. Other important differences relate to Zwicky's use of particle collisions (scattering) rather than bending, as well as with errors in regards to why and how stars radiate energy (and thus the features of the CMB), to be discussed in a later section.

Given the similar average density of galaxies and stars over large volumes (isotropy of the visible Universe), any long-travelled photon will be subjected to a similar amount of path bending. There is no cosmic expansion. As such, Hubble's law should be called Hubble's correlation,...that is, the correlation between cosmological redshift (cumulative turns),...and distance.

There is no cosmological blueshift because a photon can only go straight (no redshift) or it can bend (redshift), relative to the ideal vacuum. This is because the lower-bound of content in a volume of space is zero content; there is no such thing as negative content, nor anti-bending.

As evidence, we find that the time dilation of distant supernovae is due to the accumulation of photon path bending, with farther sources having accumulated more turns and thus traveling a longer distance.

As a metaphor, compare the range of arrival times of several cars that have left one house at the same time to arrive at another house within the same neighborhood, versus the range of arrival times between several cars that have left one house in Los Angeles (at the same time) to arrive much later at a home in New York City. There would be a wider range of arrival times in the second case, as slightly different paths, red vs green lights, and traffic densities would increase the range of outcomes of trip duration.

With supernovae, the later-arriving light that has propagated through more turns will be more red, and a more distant object will appear larger, as the range of photon trajectories can only increase versus the single trajectory of no path bending. Note that these effects on observed light are due to photon path bending/lensing, and not due to scattering.

A photon can experience both gravitational blueshift and cosmological redshift at the same time, if the photon is propagating from outer space, down towards the surface of a planet at an angle, rather than with a perfectly vertical trajectory, such as with the elevator shaft in the Pound-Rebka experiment.

A photon can also experience gravitational redshift and cosmological redshift at the same time, such as when light leaves the surface of the Earth at an angle, towards higher altitudes.

In the case where a photon is passing by a planet, it is likely to undergo cosmological redshift the entire time its path is bending, while it first experiences gravitational blueshift as it gets closer to the planet, and then experiences gravitational redshift as it leaves the vicinity of the planet.

Dark Energy (the acceleration of cosmological redshift)

Dark energy is not due to the accelerated expansion of the Universe long ago,...near the beginning of time itself. Rather, dark energy is a plug used to explain the acceleration of cosmological redshift at farther and farther distances. The question is, "Why does redshift appear to accelerate?"

The answer is that a red photon will undergo more cosmological redshift than will a blue photon, when propagating through an identical asymmetry of the singlet density field, and the more red, the more significant the difference. This is not due to a Doppler effect!

This loss of momentum is due to the spherical shape of the fundamental particle. Specifically, during a redshift, we must compare the displacement of the polar circle along the edge (circumference) of the fundamental particle, with the change in the size of the polar circle (as measured by the radius of the polar circle).

Let us consider the shape of the sphere as the declination decreases during a redshift. In the diagram below, we can see that for blue light, a small change in the declination (1 --> 2), does not change the size (i.e. radius) of the polar circle very much, while for red light, there is a more drastic decrease in the size of the polar circle as it approaches zero declination (3 --> 4). Note that the size of the polar circle is measured from the horizontal green line, vertically to the edge of the particle sphere.

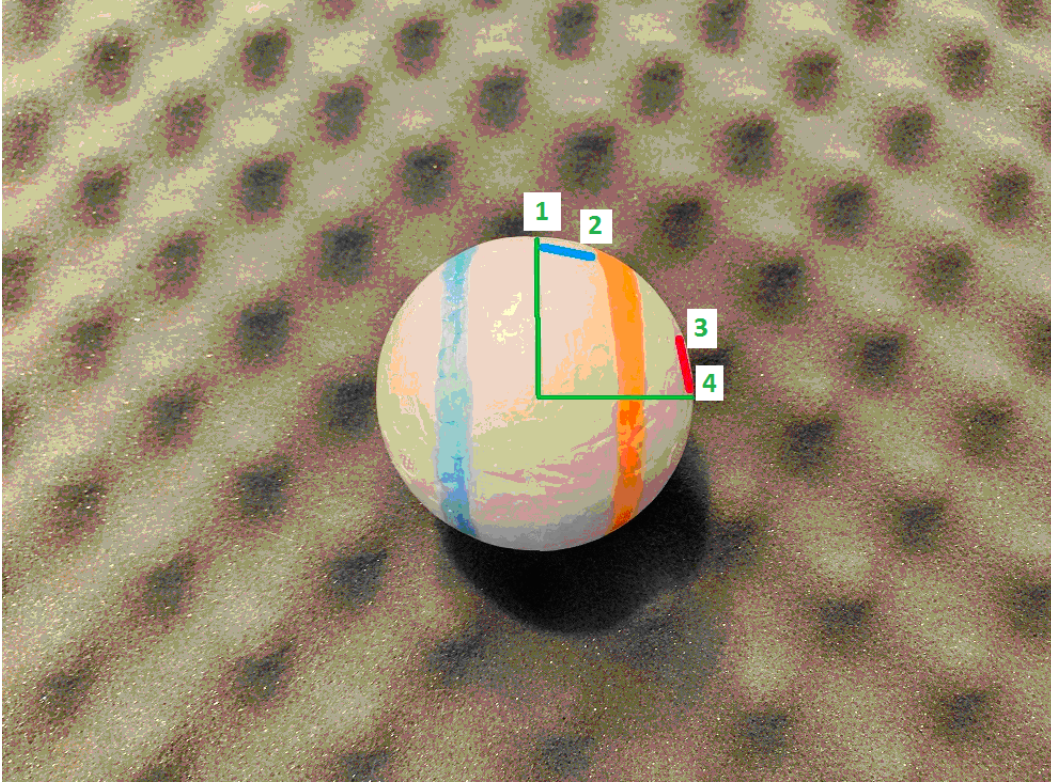


Figure 20

Paradoxically, the accelerating redshift of dark energy is not something that happens very far away (near the CMB), but rather, becomes much more significant very close to the observer (on Earth for example), at the end of the photon's long journey,....after propagating through many different singlet density field asymmetries.

When we look up at distant stars, we are not looking back in time, but rather, looking at the long-travelled photon, now, in the present time.

A photon emitted near to us (as the observer) is not correlated with much path bending.
 A photon emitted much farther out is likely to have taken many more turns during its journey.
 A photon emitted from beyond the cosmic microwave background (CMB), will redshift to such a degree that the declination becomes zero, it will lose its Axis of Propagation, the angular velocity will be zero, and it will stop propagating. It will never reach the observer. I am calling this process, "redshifting-out".

A photon-singlet that stops propagating becomes the electron-positron form of the singlet again,....sort of the reverse of electron-positron annihilation in that it loses the second axis,....instead of gaining a second axis.

A photon-singlet from beyond the CMB will thus redshift-out, stop propagating, and become a singlet of the interstellar/ intergalactic medium...it will become a part of the singlet density field of spacetime. Please see the illustration below.

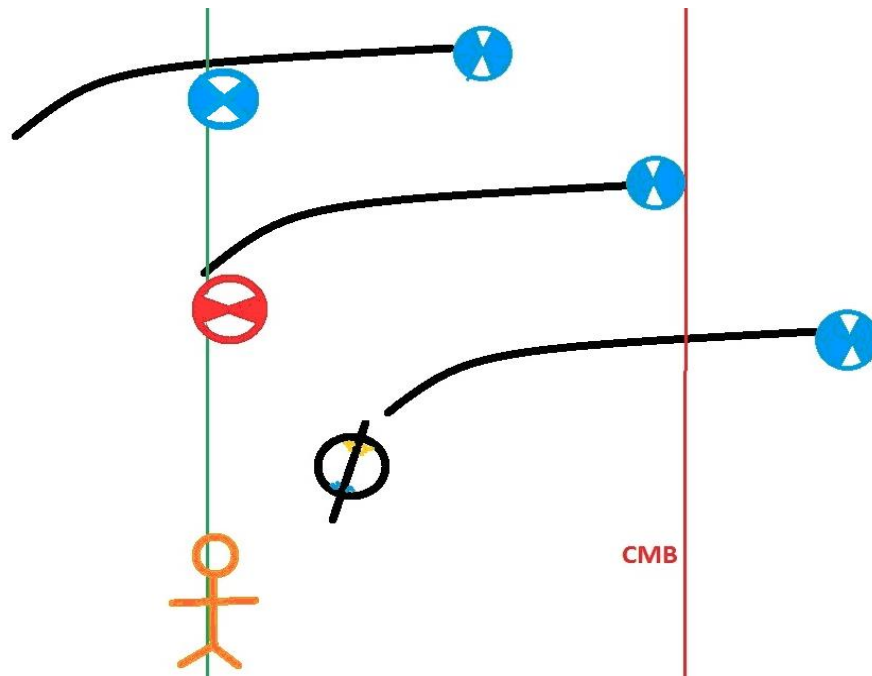


Figure 21

The Cosmic Microwave Background Radiation

The CMB is basically telling us that on average, a gamma photon will redshift-out after ~13.8 billion years of cumulative photon path bending, given the average triplet and singlet density content in the Universe. The anisotropy of the CMB, is thus due to nonhomogenous singlet density fields throughout the Universe.

The electromagnetic spectrum of the fundamental particle thus extends from:
 gamma ray > x-ray > ultraviolet > visible light > infrared > microwave > radio wave > the electron-positron form of the singlet.

This is equivalent to the 90-degree range of possible declinations of the photon-quadrant, with the photon-singlet propagating with two axes, and redshifting towards zero declination, and thus one axis in the electron-positron-form of the singlet.

Due to interdependent paradigm shifts, we needed to understand the Theory of the Classical Biaxial Fundamental Particle before we could understand why and how the Universe is flat and infinite, and in a "steady-state" (in terms of expansion/contraction, despite the singlets of spacetime being highly dynamic).

Note that cosmological redshift contributes to Olber's paradox; why the nighttime sky is dark. Photons redshift-out to become non-propagating singlets, rather than propagating forever.

Note that cosmological redshift has negative implications regarding using radiowaves for intergalactic communication. Very distant aliens won't receive our radiowave signals which will redshift-out much quicker than would gamma ray communication signals.

Doppler Redshift and Blueshift (a change in magnetic moment angular velocity)

When the photon emitter is moving towards a detecting observer, the movement of the emitter has zero effect on the speed of light (the linear propagation through spacetime density). The speed of light, of course, is a function of the permeability and permittivity of the singlet density field.

However, there will be an increase in the angular velocity of the tumbling magnetic moments. The movement of the emitter changes the complex spin, but has no affect on the linear propagation component.

Likewise, when the detecting observer is moving towards the emitted photon, there is no detected change in the speed of light, but the reception of the complex biaxial spin will show an effective increase in the angular velocity of the tumbling magnetic moments.

When the emitter moves away from the observer, there will be a decrease in the angular velocity of the tumbling magnetic moments.

When the observer moves away from the emitter, the reception of the complex biaxial spin will show an effective decrease in the angular velocity of the tumbling magnetic moments.

Quantum Gravity

According to Newton, the mass of the Earth and the mass of the Moon are attracted to each other through the force of gravitation. Newton focused on mass versus mass.

Wheeler summarized Einstein's general relativity as, "matter tells spacetime how to curve, and spacetime tells matter how to move". Einstein focused on mass versus energy (density).

Part of the solution to quantum gravity in the theory of everything, can be roughly translated as, "triplets tell the singlet density field how to curve, and the singlet density field tells triplets how to move".

We must break down gravitation into its quantum components, with a focus on individual fundamental particles, composite particles, and with respect to dynamic particle spin orientation relative to a frame of reference, as well as dynamic particle declination/wobble/gyroscopic precession.

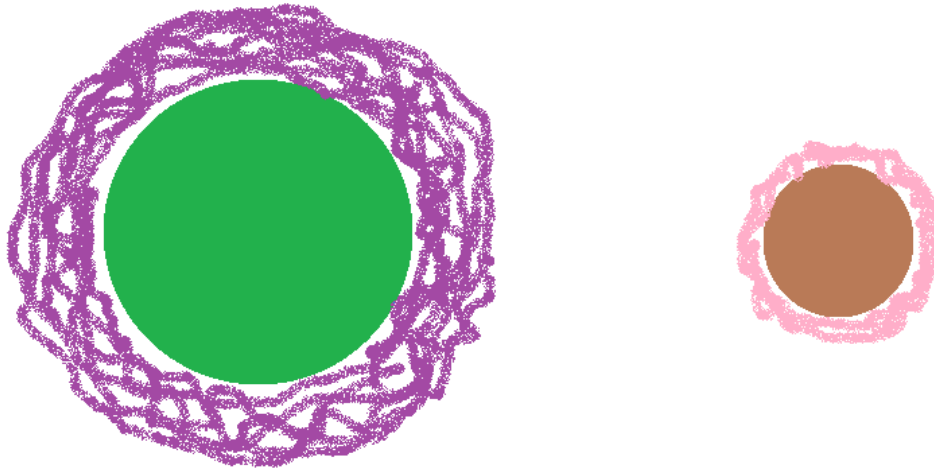


Figure 22

The complete solution to quantum gravity consists of multiple components, based on the Theory of the Classical Biaxial Fundamental Particle:

The **Triplets of the Moon** are attracted to the **Singlet Density Field of the Earth** (Inside + Clockwise); and (Outside + Counter-Clockwise).

The **Triplets of the Earth** are attracted to the **Singlet Density Field of the Moon** (Inside + Clockwise); and (Outside + Counter-Clockwise).

The **Triplets of the Earth** are attracted to the **Singlet Density Field of the Earth** (Inside + Clockwise); and (Outside + Counter-Clockwise).

The **Triplets of the Moon** are attracted to the **Singlet Density Field of the Moon** (Inside + Clockwise); and (Outside + Counter-Clockwise).

And importantly,...there are four more components...

The **Singlet Density Field of the Earth** repels the **Singlet Density Field of the Moon** for equators in the same direction (left + left), which is the same as (right + right).

The **Singlet Density Field of the Earth** attracts the **Singlet Density Field of the Moon** for equators in opposite directions (both Inward), which is the same as (both Outward).

The **Singlet Density Field of the Earth** repels the **Singlet Density Field of the Moon** for like poles (Clockwise vs Clockwise); and (Counter-Clockwise vs Counter-Clockwise).

The **Singlet Density Field of the Earth** attracts the **Singlet Density Field of the Moon** for opposite poles (Clockwise vs Counter-Clockwise); and (Counter-Clockwise vs Clockwise).

Note that for two celestial bodies with electromagnetic fields that have their north-poles oriented in the same direction, the adjacent singlets would generally have equatorial planes that are repulsive,...similar to the case of two wires with electric currents going in the same direction. The singlet-singlet repulsion becomes more important at short distances, as evidenced by the orbital precession of Mercury.

Black Hole --> The Galactic Center

We need to reinterpret the black hole in order to understand the physics of the "galactic center". The galactic center is not a dense sphere of triplets, as envisioned by Schwarzschild. As such, structures such as the event horizon and singularity, and concepts such as Hawking radiation, may need to be modified.

Rather, the galactic center consists of an extremely dense, disk-like singlet density field, surrounded by a "ring of stars";...a ring of repulsion. This does not have to be a perfect geometric ring of stars, it only needs to be a very dense region of stars.

The stars that comprise the ring of stars are simultaneously attracted to (triplet vs singlet), and repelled-from (singlet vs singlet), each other.

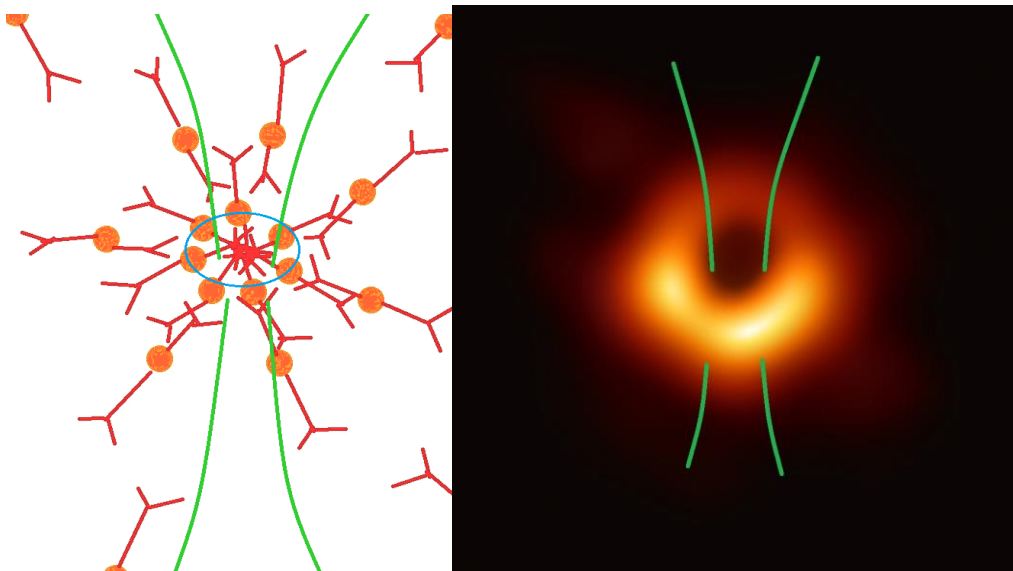


Figure 23 (original image source: Wikipedia)

Stars from the edge of the galactic disk move-in towards the galactic center over time, and push the more-inward stars towards the center. All of the galactic stars are then moving towards the galactic center and crushing the innermost stars.

Then, the repulsion from the tightly packed ring of stars creates the out-flowing symmetrical vortices of the galactic jets. The matter in the galactic center, squeezed from the edge, has nowhere else to escape, except orthogonally,...both down and up through the vortices, and the result is an active galactic nucleus (AGN).

Falling in to a Black Hole

If a star from the ring of stars, or any other matter or energy content (triplets or singlets) gets pushed in to the galactic center from the galactic plane, it will get compressed into the most dense element found in the Universe; uranium-238.

The galaxy is a giant fusion machine, though, as we saw from the corrected nuclear decay equations, fusion is not creating new fundamental particles. The galactic center is simply tightly-packing fundamental particles into densely-packed triplets, in the structure of uranium-238.

Importantly, galactic fusion is an important recycling mechanism of the Universe, needed to prevent all matter from decaying into a sea of individual singlets, during the infinity of time in a steady-state Universe. One could argue that the Universe lowers entropy by means of galactic centers.

With gravitational attraction and repulsion, and with galactic fusion and stellar fission, the cosmological constant is reinterpreted, or is no longer necessary.

Galactic Structure: Double-Torus Quadrupole

The fused uranium-238 matter is ejected from the two galactic jets, and can then wander away deep into the Universe, or it can get pulled back around towards the galactic plane (as part of the galactic halo), before cycling inward to the galactic center again.

The structure of the mature galaxy is the double-torus, two tori, with one torus stacked on top of the other, both spinning in the same direction as the galactic spiral,...which forms a quadrupole.

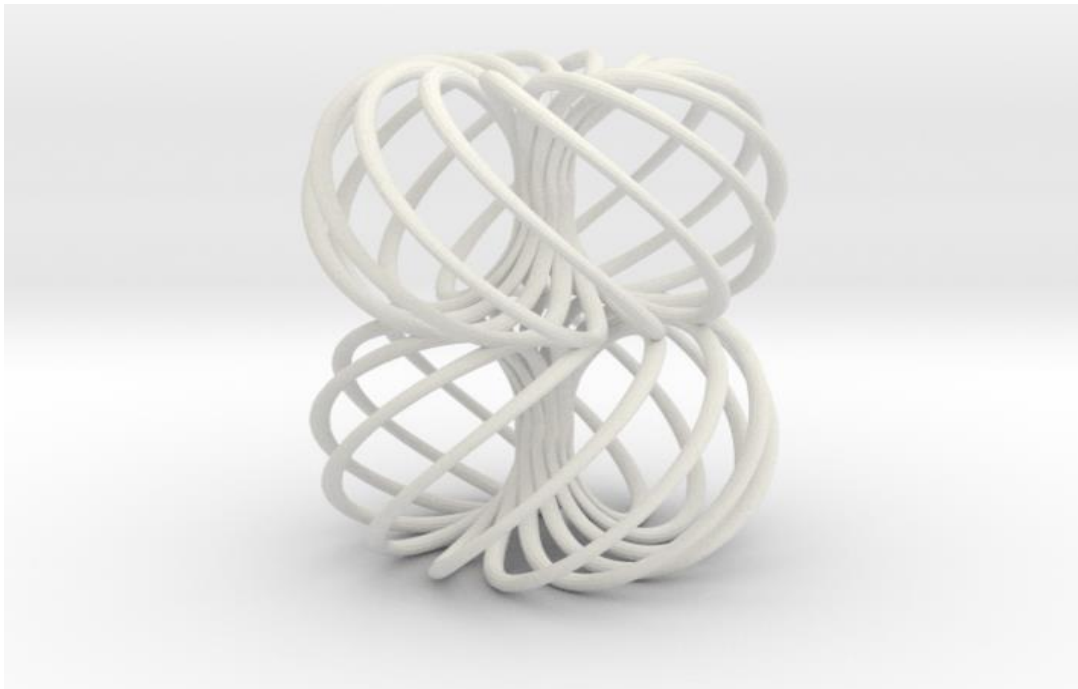


Figure 24 (images1.sw-cdn.net/)

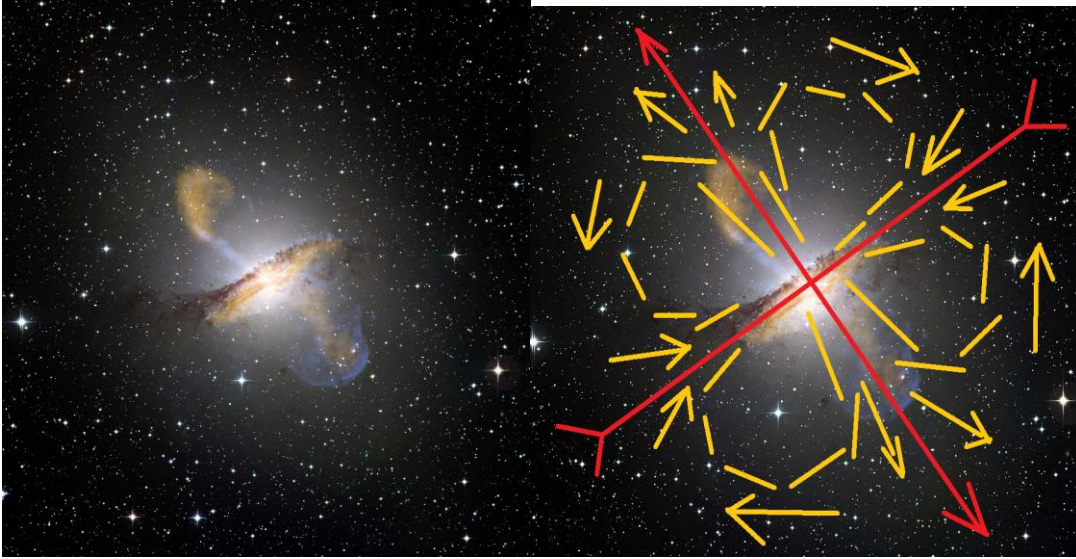


Figure 25 (original image source: Wikipedia)

The Star Lifecycle

Uranium-238 is fused in the galactic center, and is ejected from the twisting vortices of the galactic jets. The ejected uranium-nebulae has angular momentum, and forms uranium-spheres,... which are non-shining, proto-stars.

Over time, the uranium-spheres decay into lead-206. The abundance of the chemical elements in the Universe, is due to the decay chain of uranium-238 to lead-206. The byproducts, include helium-4 (through alpha decay), and singlets (through beta decay).

As such, proto-stars will come to have very dense singlet density fields surrounding them. At a critical ratio of singlet field density to helium, the uranium-sphere proto-star will supernova, which is a star birth event, and not a star death event.

The star will begin shining, powered by the fission of helium converting into hydrogen, under the enormous pressure of a very dense singlet density field.

The newborn star will be hot and blue.

As more and more proto-stars supernovae, the uranium-nebulae ejecta will evolve, to be observed as a starburst region.

Note: because helium fissions into hydrogen, rather than hydrogen fusing into heavier elements (metals), that there is no longer a cosmological lithium discrepancy.

Note: the Sun's corona is hotter than the surface of the Sun, because that is the location of helium fission.

Dark Matter

Galactic rotation curves must take into account:

- the attraction between triplets and the singlet density field;
- the repulsion of adjacent singlet density fields;
- the dense uranium-ejecta that forms uranium-nebulae, and then uranium-spheres (massive triplets); and
- the double-torus structure of the galaxy and the quadrupole, pulling the uranium-ejecta down towards the galactic plane as part of the galactic halo, and then the edge of the galactic plane pushing towards the galactic center.

Galactic Formation and Evolution

Over time, newborn stars from the uranium nebulae/ starburst region will form a bright blue globular cluster.

With evolving and dynamic densities of the newborn stars' singlet density fields,...globular cluster stars will attract and repel each other, dart around each other, and stable orbits can not yet form.

Note: stellar collisions may be impossible, because the strongly repulsive singlet density fields would cause the stars to repel and/or deflect their trajectories rather than crash into each other.

Over time, as the stars' singlet density fields evolve, the stars in the globular cluster will organize into a lenticular galaxy, and then a mature spiral galaxy, due to attraction and repulsion dynamics, and the movement of stars towards the galactic center.



Figure 26 (source: Wikipedia)

When the galaxy matures, the outer stars will be pushing the inner stars closer together, until they repel to form the galactic center's ring of stars, and the oppositely-protruding symmetrical vortices. The quadrupole is thus formed.

The Star Lifecycle Extended: Planetary Evolution

Post-supernova, the young star will burn hot and bright blue. As the star cools, the star's color will change from blue to white to yellow to orange to red to brown.

The Hertzsprung-Russell diagram (especially the main sequence) becomes much more elegant and intuitive, and can now be extended.

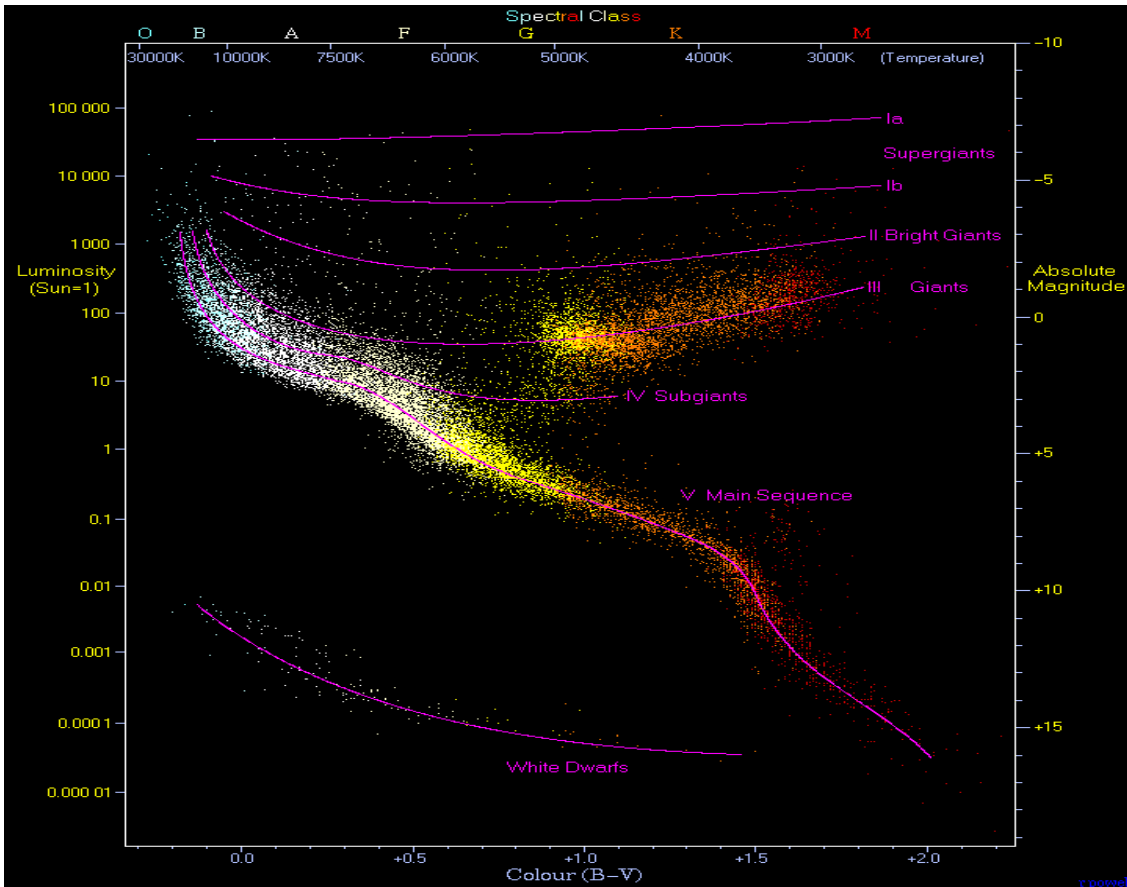


Figure 27 (source: Wikipedia)

Note that cosmological redshift (i.e. photon path bending) will cause distant starlight that passes through dense asymmetrical singlet density fields, to look redder, larger, and more massive (ex: red supergiant star vs Wolf-Rayet star). This could change the inputs that affect calculations of distance, which could have ramifications for the cosmic distance ladder (and the Hubble tension).

Metaphorically, the star then turns from brown to black.

The singlet density field is no longer strong enough to break down helium into hydrogen. At this later stage of decay, the star will no longer be shining in visible light, but will continue in the infrared,...it will still be hot, but smaller than a star;...a hot Jupiter gas giant planet,...with a relatively large atmosphere.

Over time, every gas giant planet, which has a uranium-238 core, will decay and chemically evolve, and the atmosphere will shrink in size,...to eventually become a rocky planet,...like Venus, with strong subterranean geologic activity.

The Venus-like rocky planet continues to evolve,...to eventually become Earth-like. All rocky planets have uranium cores.

Notice that Venus-like comes before Earth-like, and not after Earth-like. Venus' atmosphere is not due to a runaway greenhouse effect that the Earth is supposedly heading for. We will see shortly that it may be due in part to biological processes.

Mars, Mercury, and the Moon are more depleted stars, with relatively little uranium decay left.

Eventually, all celestial bodies will lose their singlet density field and thus, their protective ability to repel other singlet density fields, through singlet-singlet repulsion.

Over time, they will orbit other celestial bodies at shorter and shorter distances. These dying planets and moons eventually collide, fragmenting into asteroids, comets, and dispersing into planetary rings and asteroid belts.

No matter a star, planet, moon, or rocky fragment,...eventually, all matter will end up in a galactic center in order to be compressed into uranium-238 and ejected again from a galactic jet to begin to decay in an eternal cycle. Such is the recycling mechanism of the infinite and steady-state Universe.

Due to interdependent paradigm shifts, we needed the insight of the infinite age of the Universe in order to realize that stars evolve into planets and moons over trillions of years or more.

The Evolution of Biochemistries

Having made multiple concurrent paradigm shifts as part of the solution to the theory of everything, including that the Universe is infinite and that the star lifecycle is a function of the fission of uranium-238, we can finally propose and realize that the life on the surface of the Earth evolved from life below the surface of the Earth. There is life, deep inside the Earth,...within and below the Earth's mantle,...and all the way down to the Earth's core.

The life in the core of the Earth has a biochemistry that is likely iron-sulfur-based, which mutated and adapted, and expanded upwards and outward, evolving into the silicon-based biochemistry that lived and lives in the mantle of the Earth, which over many years, evolved and ascended, into the carbon-based biochemistry that lives in the crust and on the surface of the Earth. There may have been multiple intermediary steps in-between as well, enabling the myriad chemical compounds that we find in the Earth's interior.

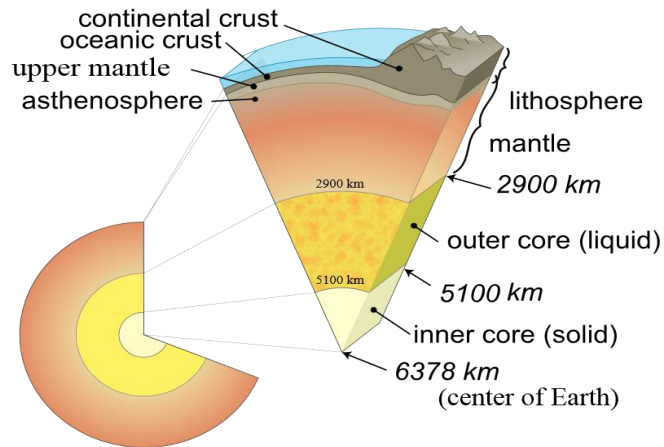


Figure 28 (source: Wikipedia)

Evidence for Subsurface Life

Humans and other lifeforms have an iron-sulfur protein that is important for core life functions (found/used in: mitochondria, oxidation, ATP, metabolic activity). It is logical to infer that certain ancient biological structures such as an iron-sulfur molecule could be carried through evolving biochemistries over trillions of years.

Bacteria and archaea (RNA-based), are lifeforms on the surface of the Earth that may link to our ancient ancestors, as they can survive harsh temperature and pressure conditions, and use varied energy sources besides sunlight, such as carbon sugars, ammonia, metal ions, and hydrogen gas.

Anoxygenic purple bacteria, found in ancient microbial mats (3.5+ billion years old), are anaerobic sulfate reducing/methane emitting bacteria in H₂S environments. Purple bacteria likely evolved before the ancient oxygenizing blue-green cyanobacteria.

Sulfur-eating bacteria are found in hydrothermal vents.

Oil, which often contains sulfur, likely comes from subterranean lifeforms, rather than from the decayed remains of surface life that was buried over time. Previous theories for the formation of oil have hypothesized the burial of earlier, surface-based life, or an abiogenic origin underground,...both of which are incorrect.

Olivine (Fe₂SiO₄), often found in volcanic magma, may be the remains of an earlier transitional biochemistry, as it contains both Fe and Si. Olivine has also been found on the Moon, Mars, and in asteroids and meteorites, thus providing evidence(!) for extraterrestrial life in the Universe.

Evidence for silicon-based life can be found in: sponge spicules, diatoms, and radiolarians. Siliceous sponges have been found below hydrothermal vents, again connecting to our past since deeper is correlated with more ancient. Diatoms have a cell wall made of silica, generate oxygen, and are a type of plankton, partially responsible for the great food chains of the Earth.

Other evidence for silicon-based life can be found in abundant rocks and minerals such as granite, quartz, feldspar, and mica. Perhaps these abundant rocks represent abundant life that could not survive the environmental conditions as the Earth evolved.

Geological activity, such as earthquakes and volcanoes, provide evidence of biologic activity of subterranean life. With biological processes, as well as natural decay processes of the chemical elements, there are many possibilities for chemical reactions, and genetic mutations, which enable the wide variety of chemical elements that are found in the various subsurface layers of planets and moons.

We can look to minerals of the Earth, at various depths, to see which elements have been found together within the same geological environment. Chemical elements found together may be the fossilized remnants of ancient biochemistries that contained those elements.

"DNA" of our Ancestors and of Extraterrestrial Lifeforms

Having corrected the stellar lifecycle, we can now begin to use subterranean chemical associations to hypothesize specific biochemistries of our ancestors, and the biochemistries of extraterrestrial lifeforms, at various stages of the star lifecycle, and at various layers/depths of a planet. For example, perhaps the biochemical backbone of DNA evolved from a progression of SO₄, to SiO₄ to PO₄, attached to Fe at first, and then Mg, and possibly with Ca, Al, N, and C connecting to this biochemical backbone.

We can also hypothesize biochemistries that could be destroyed by certain chemical environments. For example, perhaps a deep-Earth silicon-based biochemistry cannot penetrate upward through a layer of water within the Earth's interior.

We can begin to propose biochemistries that might currently exist on and within the planets and moons of our and other solar systems, as well as on and within exoplanets (which do not require a host star). The comprehensive theory of everything, including the reimagined stellar lifecycle and the evolution of biochemistries, combine to open new avenues of exploration.

Expanding Earth

It is likely that ancient Pangea was once landlocked, and trenches opened as the Earth decayed and expanded, allowing water to seep through, flowing upwards from deep in the Earth's interior.

Life as well, likely ascends upwards through volcanoes, oceanic trenches, and hydrothermal vents, as well as through similar structures below the crust of the Earth, not visible to us.

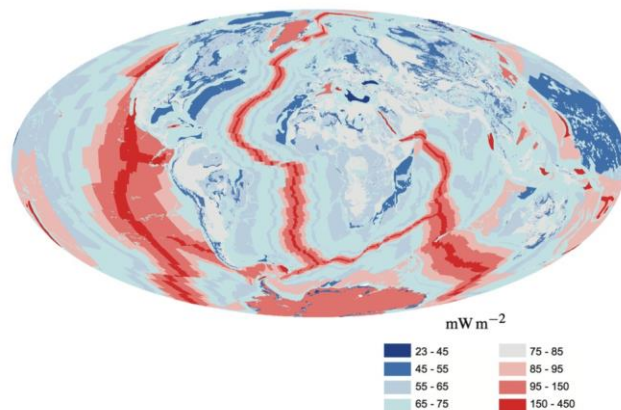
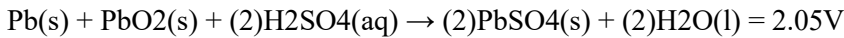


Figure 29 (source: Wikipedia)

The Origin of Water

The source of water on the surface of the Earth likely came from chemical and biologic processes below the Earth's surface, and not from comets and meteors.

A lead-sulfur battery might contribute to the rotation of celestial bodies, and might also contribute to the formation of water under the surface of planets:



Water may have come from a lifeform in the mantle or outer core of the Earth that is similar to sulfate-reducing bacteria or methane-reducing bacteria.

The Formation and Structure of the Moon

The Moon was not created from the Earth, but was once its own uranium sphere proto-star, prior to its own supernova, when it became its own star (as did all moons).

The Moon's mare are likely a function of the attraction of dense triplet matter, that was once relatively more fluid, attracted to the singlet density field of the Earth, protruding upward through the Moon's subsurface layers, and causing tidal locking with the Earth as it solidified.

Fermi's Paradox: Where is Everybody?

There is likely an iron-sulfur based lifeform, that lives inside the core of every star, planet and moon. This life may not have had enough time to reach the surface, yet,...which requires evolving biochemistries, undergoing natural selection in an ever-changing surrounding environment.

In some cases, the life may never reach the surface,...perhaps that happened on Mars and the Moon;...i.e. the silicon biochemistry could not evolve into a carbon biochemistry.

In other cases, life may reach the surface and then go extinct.

It is possible that post-extinction, a lifeform at a lower depth of the planet, could mutate or evolve again, into a different lifeform with a different biochemistry,...and re-ascend, so as to repopulate the surface again with a different lifeform.

Relative to the stellar lifecycle of a trillion years or more, it is possible that lifeforms may only inhabit the surface for a few billion years, a very narrow window of time on a relative basis.

This would be metaphorically similar to the Queen of the Andes plant, which blossoms for only one week when the plant reaches ninety years old and then subsequently dies.

Concluding Insights:

The Universe is infinite in time; it did not begin. It never went from a state of not existing, to a state of existing. Therefore, the Universe could not have been created. With no creation, by definition, there could not possibly be a creator. Perhaps there is a role for (post-modern) science to play in helping the world progress to new philosophies that could facilitate peace on Earth.

The miracle of the Universe is not in its creation, but in the constant Planck spin of the eternal fundamental particle, which does not deplete an energy source...it just is.

The content of the Universe is highly dynamic, with fundamental particles gaining and losing axes, and combining to form larger structures, but then also decaying, over and over again.

A cosmological constant is not necessary, because the Universe contains both attraction and repulsion, and fission and fusion, with entropy being reversed in the galactic center.

Quantum symmetry is elegantly foundational to the theory of everything, given opposite singlet poles and opposite triplet sides.

Chance exists in the Universe due to the continuous 360-continuous degrees of possibilities for a given biaxial declination.

Despite the Universe being infinite, there are no exact copies (i.e. doppelgangers; parallel Universes; multiverse), as any two fundamental particles can arrange at any orientation in three-dimensional space, while each particle is spinning on two axes, with each axis offering 360 continuous degrees of possibilities. There are enough variation possibilities to avoid exact duplicates of large structures.

The quantum field consists of the density and orientations of all the fundamental particles. Specifically including: singlet orientations, declinations, propagations, gyroscopic precessions, and atomic orbital paths,...as well as triplet orientations, rotations about the triplet polar axis, and propagations.

Electromagnetic charge is a polar-centric measurement, with a forced axial alignment, relative to a frame of reference.

Mass is defined as, "the quantity of triplets, which are attracted to the singlet density field". One could say that the singlet density field is "that which gives triplets their mass". Using this definition, it does not make sense to think of singlets as having mass.

We must begin to look at the "electron" as a singlet, a biaxial fundamental particle,...and not as having a tiny amount of mass, but as a form of energy, containing the potential to exhibit many possibilities of declination or gyroscopic precession.

Let us consider the electron as a half-particle.
 The maximum angle that a singlet could turn to align with an electromagnetic field is 180 degrees.

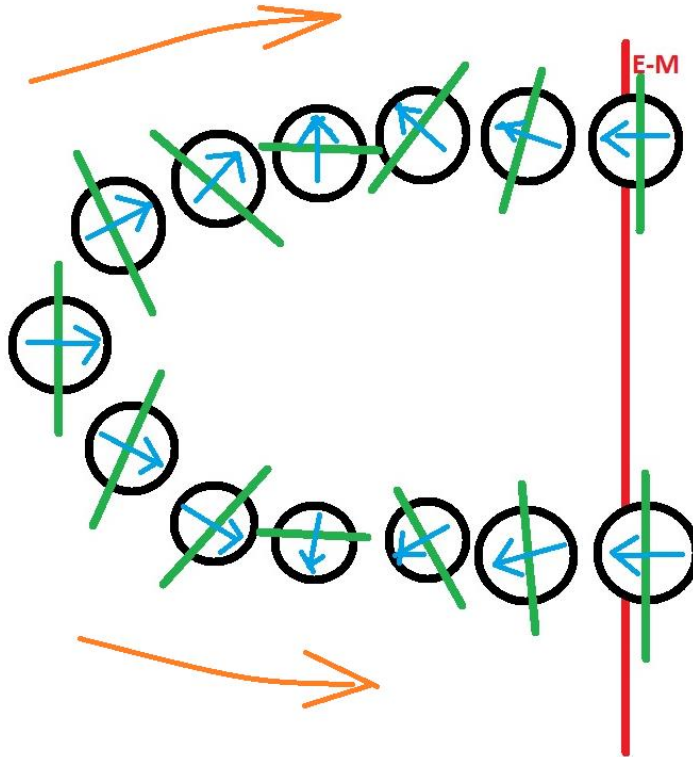


Figure 30

The mass of the electron is not measured directly. It is calculated using $E=mc^2$, from the energy of a photon-singlet that comes from a photoelectric-like interaction with an electron, which undergoes at maximum, up to a 180-degree flip of the polar orientation to align with an electromagnetic field, as shown above. This means that the photon coming off of the interaction does not capture a complete 360-degree rotation of the electron, but only a 180-degree rotation or less.

The "full rotation of the electron" is mistakenly believed to be 720-degrees. Essentially, what scientists think is 720-degrees is really 360-degrees; what scientists think is 360 degrees, is really 180 degrees (i.e. a half-flip); and what they think is 180-degrees, is really just a photon-quadrant. A fundamental particle has two axes, which each offer 360-degrees of possibilities, and the structure of the fundamental particle is such that it contains both an electron hemisphere/magnetic moment as well as a positron hemisphere/magnetic moment.

Photons are massless, because the singlet poles tumble. A photon-singlet's momentum is a function of biaxial declination and the angular velocity of the tumbling magnetic moments.

Planck poles with very little wobble (i.e. no declination), have more structural integrity, which may make the poles better able to interact with their environment.

A singlet with two axes has linear propagation, and the biaxial declination determines the frequency/momentum/energy.

A singlet with one axis (and no declination), has:

- charge along the polar alignment;
- the ability to attract, and be attracted to, a triplet; and
- the ability to interact with another singlet resulting in a change in orientation/declination, in an exchange of angular momentum.

A singlet with gyroscopic precession is in orbit around a triplet in an atomic orbital.

The neutrino, the weak force, and the virtual W-minus boson, are plugs for incorrect, unbalanced nuclear decay equations.

Stellar nucleosynthesis is impossible because the nuclear decay equations do not balance. For example, in the first step of the proton-proton chain reaction, two protons supposedly fuse into deuterium. One proton undergoes beta-plus decay, whereby: a proton (3 singlets) converts into a neutron (4 singlets) by emitting a positron (1 singlet?), and emitting an electron-neutrino (1 singlet?).

For stellar nucleosynthesis to work, you have to believe that 3 singlets could somehow get converted into 6 singlets,...but we know that matter (fundamental particles) cannot be created nor destroyed. There are problems with other parts of the CNO Cycle as well.

In terms of the relative ages of the celestial bodies in the Solar System, the Sun is the youngest, and the next youngest is Jupiter.

It is interesting to consider a hypothetical time before the Sun arrived in the Solar System when all of the major planets orbited a hot Jupiter. If this was the case, one could envision the planets leaving Jupiter's orbit, and shifting their orbit to the Sun, when the Sun came in to the vicinity of the proto-Solar System. The time between the Earth moving from Jupiter's orbit to the Sun's orbit could have caused an ice age on Earth, given the drop in temperature during the orbital relocation.

Climate change on Earth and for every star is inevitable. Before the Sun stops shining as a star, the Earth is likely to see less and less uranium decay, and will lose its atmosphere, and its protective singlet density field, that can hold back and deflect other large celestial bodies.

All life on the surface of the Earth has a common ancestor that lived (and likely still lives) below the surface of the Earth. There is likely, life, inside every planet, moon, and star. Life never needed a Goldilocks-like planet, within the habitable-zone distance from its Sun-like star. Carl Sagan warned about "carbon chauvinism".

Life, which was previously believed to have been perhaps just a one in 7×10^{20} chance (taking in to account the estimated total number of planets), and a zero chance inside of the estimated 200 sextillion total number of stars, will now have to be remodeled to one-hundred percent of those same celestial bodies and much more given the infinite Universe. What an amazing paradigm shift in terms of orders of magnitude!

The iron-sulfur lifeform is likely present in the galactic center, and is infused with the uranium-ejecta from the galactic jets, such that the life is already a part of the uranium-sphere proto-star, before its supernova when it begins to shine as a star.

Each time matter falls in to the galactic center, any iron-sulfur life that it contains will get a newly replenished supply of food/energy in the form of decaying dense triplet matter. As such, iron lifeforms can likely survive complete trips around the galaxy, enabling life to continue for infinite time in a steady-state Universe.

While we tend to think that human beings are the dominant form of intelligent life in the Universe, I believe that we need to consider that all life is intelligent, including trees, bacteria, individual cells, cellular structures (such as mitochondria), and even viruses. We may now need to recognize that the most dominant form of life in the Universe is the most abundant form of life in the Universe...the iron-sulfur biochemistry that lives inside of every star, planet, and moon.

A star is like an egg, or a seed. Star "shining" is the protective shell, and then the star later blossoms as a planet in its later stages, and life hatches from inside the star. The nighttime sky shows an infinite nursery filled with unhatched eggs.

Are we alone in the Universe? With the solution to the theory of everything,...the question is now absurd! Life is everywhere...



Figure 31 (source: Wikipedia)