

Time Dilation Cosmology in the Eternally Evolving Continuum

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Abstract

A proof of the gravitational dynamics developed here-in is LIGO'S Sept. 14, 2015 detection of a "gravity wave", and a proof of the nature of the evolving continuum is IBEX failing to find a shock wave at the edge of the heliopause and the "dead zone" discovered by Pioneer 1. This is a Time Dilation-based cosmology. The evolution of time is the primary, irresistible, force in the universe, as all events in space must evolve forward with time. This is the Fundamental Direction and Rate of Evolution, herein represented by Einstein's Fundamental Metric, which is the basis of the tensors describing a null gravitational field. Fluctuations in the CMB are fluctuations in the rate of time. When a standing wave forms a dilation pit, we also see an irresistible Gravitational Direction and Rate of Evolution. Dilation creates a density at the faster end due to contraction to maintain c and an increase in energy and pressure due to an increase in frequency. Gravitational evolution translates the fundamental energy of time into kinetic energy. When the gravitational evolution impedes at the central focus of a spherical dilation pit, the kinetic energy is translated into thermal energy. The resultant of the FDE & GDE is the curvature in evolution we see as the spacetime/quantum continuum evolves forward. We have 2 event horizons we appear to evolve between where time appears to stop, "Limits of Relativity". We apparently evolve toward the event horizon of the galactic MECO ("black hole") and away from the outer, cosmic, horizon. The passage of proper time within our own inertial frames has an acceleration aspect of $\sim 2.2686 \cdot 10^{-18}$ s/s that manifests the Hubble shift through time dilation in older frames and time appears to stop at ~ 13.9 Gly looking outwards. This acceleration eliminates singularities and infinite expansions when added to the time elements of Einstein's field equations. Each galaxy can be considered a branching of the evolution of the universe. Both of these event horizons retreat when approached and the dilation gradient shifts, so if the 1 s/s limit is considered the edge of the universe, MECO's are gateways to other universes without end. The proof that the $\sim 2.2686 \cdot 10^{-18}$ s/s acceleration in the inertial frame exists is in the fact that life forms grow up, against the GDE (gravity). Galactic rotation velocities

are explained. The origin of spacetime is explained. This model replaces LamdaCDM/BB.

Keywords: gravity; Einstein; general relativity; special relativity; galactic rotation velocities; spiral galaxy; Hubble shift; time dilation; spacetime; space; time; spacetime continuum; MECO, black hole; event horizon; timelike; spacelike; lightlike; geodesics; gravity waves; LIGO; IBEX; Pioneer; Voyager; stellar system; big bang; quantum; quantum physics, quantum continuum

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Introduction

The singularity of the Big Bang and the universe expanding faster than the speed of light are nonsensical, as is Dark Matter. The evidence certainly seems to support these theories, but we are most likely misinterpreting what we are seeing. We also know the Standard Model is most likely wrong as CERN has produced no new results, the Higgs boson even being suspect.

Instead, this theory attempts to explain what we are seeing in the universe solely through relativistic effects in time, which is what the Einstein Tensor in General Relativity is solely reliant on.

Regarding gravity, I began thinking along these lines after studying Quantum Mechanics because Einstein translates the differences in the clock rates into angular deflection and velocity. He calls these his "energy" components. So even though General Relativity is based on the Equivalence Principle, the constancy of c and Lorentz contractions, the apparent effects of the differences in the time elements should also appear to manifest as a virtual direction in the forward evolution of time within the continuum. That virtual direction in a gravitational field is down the dilation gradient. This accounts for the fact that gravity only has one direction and why it overpowers the other forces so much even though it is so weak: it is an irresistible evolutionary force in time.

I had been working on a relativistic solution to the Hubble shift for some time and was surprised how simply it came together when a slight acceleration in the rate of time is considered an integral aspect in the passage of time. When added to the time elements of Einstein's field equations, we then find ourselves in an eternal continuum evolving between 2 event horizons where the rate of time approaches 0, and we see a transition from timelike to spacelike, instead of a finite universe originating in an unknown singularity and then expanding out to infinity at an accelerating rate.

Looking outward we see divergence as older, slower, galaxies slip from view, as we appear to evolve inward towards the event horizon of the MECO⁵ at the center of the Milky Way in the spiraling convergence of

General Relativity, without the creation of a singularity. Each galaxy therefore is a branching of the forward evolution of the universe, and each event horizon the gateway to universes ad infinitum.

This is a totally new approach that only looks at the effects in time Relativity relies on. The Big Bang enthusiast might at first find things “topsy turvy”, but I encourage them to read through.

About Einstein and General Relativity

“Reality is merely an illusion, albeit a very persistent one.”

Albert Einstein

Einstein’s field equations accurately describe the visual and dynamic *effects* of gravity on a particle moving within a gravitational field (time dilation gradient), and they work extremely well in a spherical system centered on a spherical mass. The reason they do not seem to work on the galactic and cosmological scales is because the dynamics being described by General Relativity, GR, are not being fully understood and go beyond the Equivalence Principle, the constancy of c , and Lorentz contractions. There are also perspectives in the time aspect that need to be considered.

I will be quoting Einstein’s 1915 paper on GR, “The Foundation of the Generalized Theory of Relativity”¹, throughout this paper.

In § 16 of his paper, he says, “It must be admitted, that this introduction of the energy-tensor of matter *cannot be justified* (author’s italics) by means of the Relativity-Postulate alone....”. It is only used to provide a sense of the conservation of energy and momentum. Therefore, it will not be used in this paper. Only the relativistic effects in Einstein’s Tensor will be considered, as this is what GR describes. In § 15 of his 1915 paper, he calls the time dilation elements his “energy components” (his quotation marks), while considering the Hamiltonian function, and this paper focuses on those time elements. Einstein's tensor only contains spacetime elements, i.e., x,y,z and t , and is the actual description of the evolution of events that "describe" the "effects" of gravity. Einstein's tensor describing gravity does not require the stress-energy tensor and the stress-energy tensor is meaningless without the corresponding Einstein tensor.

He also remarks in § 21, in his comparison to Newton’s theory as a first approximation, that, “The remarkable thing in the result is that in the first-approximation of motion of the material point only the component g_{44} of the fundamental tensor appears.”. This is the time-time element.

It is also the time-time element that determines relativistic mass in that for an object in freefall within a time dilation gradient, the velocity and rate of acceleration are determined by the difference in the rates of time between frames, just as the evolving geodesics describing the particle's apparent motion are.

Though not considered herein, it should be noted that the stress-energy tensor is also scaled using the time elements to make it agree with the results of Einstein's Tensor. It is the time elements that Relativity relies on.

In § 4 he states, "According to the general relativity theory, gravitation thus plays an exceptional role as distinguished from the others, especially the electromagnetic forces, in as much as the 10 functions $g_{\sigma\tau}$ representing gravitation, define immediately the metrical properties of the four-dimensional region."

This statement makes it clear that his equations only "represent" gravitation. When we accept the postulates of Special Relativity, SR, relative motion will manifest as per GR, and this fits the metrics of the changes in relationships in space we experience. It is simply what we must see based upon the evolution of events over time in a time dilated continuum. It is not a causation. The causation is the passage of time that evolves the spacetime (herein, also "quantum") continuum forward. The evolution of time is the primary, irresistible, force of the universe. All of space must evolve forward with the passage of time.

It is the author's belief, for reasons delineated later, that the spacetime continuum is eternal. It is also a "singularity" whether it has the volume of a grain of sand, or has an infinite volume; i.e., even if it is expanded to infinity, the continuum is still a singular thing that only appears to have separate parts. Because it is a continuum, regardless of its volume, we can have quantum entanglement, superposition and dual wave/particle properties. Since it is only an evolving continuum, an energy field, it has no actual depth. Spatial distances only appear in gravitational fields, as below. Consider a thin oil slick floating on water being gently heated from below. The spatial continuum is the oil slick and the evolution of time is the heat.

Einstein's Fundamental Metric

	X	Y	Z	T
X	-1	0	0	0
Y	0	-1	0	0
Z	0	0	-1	0
T	0	0	0	+1

We begin with considering Einstein's *in vacuo* state in his Fundamental Metric as representing the "Fundamental Direction of Evolution", or FDE, of a flat, non-time-dilated, spacetime, and by considering the constant rate of time in the metric to be the fundamental, universal rate of time as experienced in any observer's inertial frame, as per the Equivalence Principle, and for the universe overall as a unit. This metric can be considered the basis of the tensors describing a null gravitational field where motion is undetectable and space appears dimensionless to the massless observer as there are no objects to compare distance or relative motion to.

As this non-dilated spacetime continuum is at least *perceptually* infinite and eternal, Heisenberg's Uncertainty Principle, HUP, allows it to be full of an infinite potential energy. The evolution of time is the fundamental force of the universe as it forces all space to evolve forward with it. Einstein's General Relativity solution for the extra precession of Mercury's orbit is a proof that space evolves forward. As developed below, the fundamental rate of time includes a small acceleration aspect and that further energizes that evolution, and also manifests the Hubble shift.

Spacetime can be perceived to have substance as space expands and contracts in response to changes in the rate of time (tick rate), and the two aspects are cohesive and interdependent in that they must maintain a proportionality to maintain c . There is a 1 s/s limit in the difference in the rates of time, dRt , between the inertial frame of the observer and any coordinate frame for them to remain timelike and visible to each other because time seems to stop at the coordinate end and no events can remain visible. The 1 s/s dRt is herein called the "limit of relativity" and beyond that

frames are spacelike and irrelevant to us. The limit of relativity is reached, at ~ 13.9 Gly, due to the acceleration that manifests the Hubble shift, and at the event horizon of a MECO⁵ where the tick rate $\rightarrow 0$ and the $dRt \rightarrow 1$ s/s.

A MECO is the latest advancement in our understanding of what we used to consider to be “black holes”. It is beyond the scope of this paper to get into their physical aspects, which are well-documented by Astronomer Rudolph Schild of the Harvard–Smithsonian Center for Astrophysics, who led a team that was the first to find an intrinsic magnetic field in quasar Q0957=561⁶. MECO’s are discussed in more detail below.

With the acceleration derived from the Hubble shift below, the universe appears to be eternal. Older frames diverge and slip from view at the outer edges where time appears to stop, while the forward evolution converges, spirals in, towards the apparent slower time of the MECO at the center of the Milky Way. Each galaxy can be seen as a different direction of evolution of the universe, a branching, and if we consider the limit of relativity of 1 s/s to be the "edge" of the universe, then they constitute gateways to other universes ad infinitum. This is because as you approach an event horizon, it shifts away from you as the dilation gradient shifts, so your individual universe always seems infinite and an event horizon can never be reached. Moving outward towards the horizon, older frames just come into view and space seems to contract as their rate of time accelerates with proximity. Moving inward, the slower rate of time of the MECO causes lengths to expand as we approach and space appears to stretch out into the ever-deepening spiral gradient of the MECO. A singularity never forms in this direction due to the acceleration factor, as explained below.

Besides the inherent acceleration in the rate of time, HUP allows for random fluctuations in the rate of time. When the rate of time fluctuates, a dilation gradient is created which is orthogonal to the FDE of the continuum. It can only be orthogonal because, as above, spacetime is an evolving continuum and there is no space “ahead of” or “behind” the evolving continuum for the dilation gradient to appear “in”. The gradient can only appear “across” the FDE as viewed by an outside observer. When the dilation gradient is introduced, we also see an apparent evolution down the dilation gradient, a Gravitational Direction of Evolution, GDE.

Dilation creates a density at the faster end due to length contraction necessary to maintain c , and there is an increase in energy and pressure due to an increase in frequency. As the motion and densities appear when a dilation gradient is introduced, we see the creation of kinetic energy. Gravity then magnifies that energy by evolving the density down gradient into slower areas of time, giving the photons a greater relative frequency, energy and, therefore, mass. They also appear to increase in velocity, as below.

Densities appear to evolve downgradient in a gravitational (time dilation) field because, to an outside observer, time is evolving forward faster, and therefore “first”, in the fastest rate-of-time frames. The next instant is “beginning” there and then perceptually flowing into slower time rate areas, seeking the shortest routes to the bottom of the time dilation gradients, evolving all densities down gradient with it. As space is cohesive and resistant to change, densities manifest an increased drag on the rate of evolution, slowing the tick rate within the density, and densities resist displacement from their FDE within the continuum.

Whereas the GDE always meets increasing resistance from ahead as it evolves through the drag of the slower tick rates of successive frames, accelerating them, the FDE always encounters increasing resistance from space itself as density increases within the continuum, from “behind”, and so is accelerating them. Both of these accelerations cause relative velocities to appear to increase as the gradient deepens. The velocities reflect the difference between the universal rate of evolution of the FDE and the apparent tick rate of the local frame, but, as per GR, velocities and tick rates change with perspective (See Appendix A). The GDE can therefore be perceived as being the result of the FDE trying to evolve space forward at a constant rate of acceleration throughout the continuum.

Gravity only has one direction because the GDE only flows downgradient. It overpowers the other forces so easily, even though it seems so weak in comparison, because it is an irresistible evolutionary force in time, and the curvature of motion we see manifested in GR is the resultant of the two evolutionary directions, fundamental and gravitational. GR can explain how we see this resultant evolution materialize given the postulates of SR, the constancy of c and Lorentz contractions because they all correlate to the effects in time, the Lorentz contractions being in both time and space

In a spherical dilation pit, as density accumulates at the focus of the pit, the rate of evolution continues to decrease: the denser the space the slower the rate of evolution. This deepens the slope of the gradient at an accelerating rate as the density grows, making the event self-sustaining and self-accelerating. As densities impede at the central focus of the pit, the kinetic energy is translated into thermal energy and pressure increases.

Both the FDE and GDE are impeded at the focal point of the pit. As developed below, the impedance is not complete because the FDE always precedes the GDE and the curvature of motion we see in GR develops into spin, a spacetime vortex. On the stellar scale the resulting dynamics result in the formation of a star. This dynamic could conceptually occur on any scale, and the author proposes that as the $dRt \rightarrow 1$ s/s, relativistic effects could occur manifesting virtual and elementary particles and clouds of such particles. Standing waves in the CMB could form the primary matter nodes.

To accommodate c , the next instant must appear to flow down the gradient at c , otherwise light could not be evolved through the continuum at c . It is departing each frame at c relative to that frame's rate of time. As it moves into a slower adjacent frame, it accelerates the tick rate of that frame and the slower frame decelerates the tick rate of the flow by an equal amount. This equalization maintains the relative slope of the dilation gradient, which only changes as density increases at the center of the pit or intersection of non-spherical gradients, as in flattened galaxies.

A proof of the dynamic developed herein is LIGO'S Sept. 14, 2015 detection⁴ of a "gravity wave"; a distortion in spacetime consisting of fluctuations in the rate of time accompanied by distortions in space, shifting through the space time continuum at c . Space was proven to stretch with the dilation and compress with the acceleration, distorting the physical form of the antenna. This brief deceleration/acceleration is on top of the acceleration due to the FDE and GDE, as described above.

As above, events are not moving "through" or "in" a pre-existing space. Space is not "left behind" nor "moved into", it is evolved forward. The perception of moving "through" a pre-existing space is an illusion caused by the apparent evolution down the time dilation gradient. Without the gradient, there is no apparent evolutionary motion and no perception of depth, as above in the fundamental metric. This is the biggest flaw in

perception in today's astrophysics. They do not see the quantum, spacetime, continuum.

When we see light lensing around a massive body, it is not moving "through" a distorted space, it is being evolved down the body's dilation gradient by the GDE as it passes through the gradient.

When driving down the road, the road is not there waiting for us. The road is also evolving forward, in the forward direction of time, in the continuum, always changing, but in the same place relative to adjacent frames so it is there for us as we evolve forward *and* move through the continuum relative to other events through the application of an external force. It evolves forward at the same rate we do, maintaining its relative position in time and space, because we occupy the same relative position in the dilation gradient and are therefore evolved forward at the same tick rate.

Masses are densities within the fabric of the continuum. When we "drive down the road", we are shifting our density *within* the continuum. This requires the application of force and there is resistance. The forward evolution in the direction of time of the continuum itself is due to the simple passage of time and no other force need be applied.

The stars and planets occupy relative tick rate levels, as determined by their relative densities and velocities, and evolve forward within the continuum at those rates, taking the shortest route in time. As above, all these factors change with a shift in perspective, as per GR (See Appendix A). They don't meet external resistance in the FDE because they have a slower tick rate than the surrounding space and they are instead putting a drag on the evolution of time, as above.

The author postulates that it is because the solar system is not "moving through" space, but is evolving along with space, that IBEX² did not find a bow shock at the edge of the heliosphere, as was expected, and why Voyager 1 has entered a "dead zone"³ where solar particles just seem to stop and Voyager 1 is not affected by the expected stellar winds.

When we accelerate into older, slower frames, those frames must appear to accelerate in their rate of evolution so we are in the present when we are within them. We are forcing them to accelerate in time and they resist this. The faster we accelerate, the faster we are requiring the frames we are

entering to update and the more resistance we meet. The drag we feel while accelerating, which becomes infinite at c , is the drag of those frames as we try to shift our density within the continuum. We cannot force space to evolve at c , either in the FDE or GDE.

We also find that, where V_{RA} = apparent recessional velocity, V_{TA} = apparent transverse velocity, M_R = relativistic mass, and α = angle of deflection, as per Einstein's Fundamental Metric, if the $dRt = 0$ then α , V_{RA} , and $V_{TA} = 0$. At the event horizon of a MECO, where time appears to stop, as $dRt \rightarrow 1$, $\alpha \rightarrow 90^\circ$, recessional $V_{RA} \rightarrow c$, $V_{TA} \rightarrow 0$, $M_R \rightarrow \infty$ and space appears flat.

In the vicinity of a MECO, where $dRt \rightarrow 1$, events require a relative evolutionary velocity of near c to keep up with the FDE and remain connected by light (timelike) within our visual section of the continuum.

As a MECO appears to have an effective time rate of zero, events appear to stop and we see no forward evolution. But time cannot stop. As per SR, it has an invariant rate of 1 s/s in *any* inertial reference frame. which is the fundamental rate of the universe overall. The slowing is just a visual effect due to us looking deep into the time dilation pit. The rate of time at what we perceive to be the event horizon is 1 s/s to an observer *at* the event horizon. Both time and space appear normal to him. We are always talking about *relative* rates of time.

To outside observers, the center of a MECO is perceived as empty space⁵ with a zero temperature because no emissions can be detected. In this respect, it can be said that from the outside observer's perspective, the energy of events entering a MECO is transferred back into the potential of the spacetime continuum. In actuality, however, the events are still there. They just appear to disappear to the outside observer due to the effects of time dilation. We just cannot see events taking place in areas with a $dRt \geq 1$.

The empty space has been confirmed by Schild's team, who found a 4,000 AU wide apparently empty space at the center of the MECO^{5,6}, though they propose different reasons for the void than this theory proposes. It therefore appears that a MECO *is* just an area of space where the $dRt \rightarrow 1$. Einstein believed you could just drive through a black hole without harm and Rudolph Schild and his team found the empty space.

This is the reason MECO's can absorb each other; they are just space. If they were invariant mass they would obliterate each other like two planets colliding. This also solves the conservation of information problem for events "entering" MECO's.

The Hubble Shift

Events always appear to be undergoing acceleration as they evolve forward in the time dilated continuum. This suggests that the passage of time itself involves an integral acceleration aspect; perhaps without the acceleration, we would not notice time passing, just as we do not feel gravitational effects at a steady velocity, but do when under acceleration. We do not detect this in our inertial frames as it is so small and is manifesting as part of the FDE's rate of time.

If this is true, when we look out into space beyond the local gravitational influences of the galaxy, and back in time, we are also looking down a time dilation gradient into slower time. The observer's (apparently invariant) relative rate of time is always faster than that in frames in the perceived past, and we find that as $D \rightarrow \sim 13.9 \text{ Gly}$, $dRt \rightarrow 1 \text{ s/s}$, recessional velocity $V_{RA} \rightarrow c$, and lateral velocity $V_{LA} \rightarrow 0$, just as it does near the event horizon of a MECO. Slower time results in lower frequency and the Hubble shift.

The Big Bang theorists say it is the accelerating expansion of the universe that Doppler shifts the light, but this is incorrect. They say recessional velocities can exceed c because the objects are not moving "through" space, but are embedded within an expanding space. This is also an incorrect view.

As above, Einstein's tensor only contains spacetime elements, i.e., x, y, z and t , and is the actual description of the evolution of events that "describe" the "effects" of gravity. The Lorentz contractions are visual and depend on relative motion, regardless of its cause. Therefore, as V_{RA} appears to accelerate, relativistic effects are manifested, regardless of the cause of the V_{RA} . The object gets smaller and time dilation increases. As $V_{RA} \rightarrow c$ the $dRt \rightarrow 1 \text{ s/s}$ and time appears to stop and events are no longer visible. It is not possible to see them accelerate past c . To us, they cease to exist at c .

So the dilation gradient being used here is real and present. This means we have two choices. Is the shift a Doppler effect in an illogical universe that began with an undefined singularity and is accelerating into infinite expansion, or is it a simple, logical, time dilation effect? If a Doppler effect, how then is the dilation effect accounted for? Would that not double the effect? Then if the dilation is present, which we know it is, the Doppler effect cannot be.

Assuming a Hubble constant, H_0 , of 70 km/s/Mpc, we find the apparent recessional velocity reaches c at 4282.7494 Mpc = 13.968062372 Gly. In the expansion model, what are the odds of the $V_{RA} \rightarrow c$ just beyond the current age horizon of the universe of 13.8 Gy? It is a certainty in the dilation model. Occam's razor applies: the shift is simply due to time dilation due to the acceleration aspect of the passage of time.

For a 1s/s dRt at this distance the rate of change is:
 $1/13968062372 = 7.1592 \cdot 10^{-11} \text{ s/s/ly} = 2.3349516024 \cdot 10^{-4} \text{ s/s/Mpc.}$, so the
dRt for 1 Mpc = $2.3349516024 \cdot 10^{-4} \text{ s/s}$ and:
 $c \cdot (1 + dRt) = (299792.458) \text{ km/s} \cdot ((1 + (2.3349516024 \cdot 10^{-4}))) \text{ s} =$
299862.458 km and:
 $299862.458 - 299792.458 = 70 \text{ km/s/Mpc} = H_0$

Because we are always being accelerated forward in the rate of time, and therefore apparently space, events in the older frames must appear to accelerate away from us in the opposite direction.

This also creates the impression we are each at the center of our own universe and leading it in its evolution, which is relativity, each of us in our own reality: the other observer's meter is always shorter and clock slower and he only exists in the past. We can never see the other observer in the present.

Continuing from above, we find that:
 $2.3349 \cdot 10^{-4} \text{ s/s/Mpc} = 7.1592 \cdot 10^{-11} \text{ s/s/ly} = 2.2686 \cdot 10^{-18} \text{ s/s}$ acceleration
within our inertial frames. This equates to a $6.801091702188 \cdot 10^{-10} \text{ m}$
contraction in space to maintain c . The proof that the $\sim 2.2686 \cdot 10^{-18} \text{ s/s}$
acceleration in the inertial frame exists is in the fact that life forms grow up,
against the GDE and gravity; against the gravitational forward direction of
time. It is evident in every plant.

Since acceleration increases frequency, it can be seen to increase energy and density and, also, therefore, apparent pressure as it puts a constant pressure on space to compress.

Most importantly, when the acceleration is proportionately added to the proper and coordinate time elements of Einstein's field equations, based upon their individual relative rates of time, singularities and infinities are avoided because the geodesics are slightly distorted:

Where t_1 = coordinate time and t_0 = proper time, the time elements $\Delta t_1 / \Delta t_0$ become: $((((\Delta t_1 * ((1 + ((\Delta t_1 / \Delta t_0) * (2.2686 * 10^{-18})))))) / ((\Delta t_0 * (1 + (\Delta t_0 * 2.2686 * 10^{-18}))))$.

For each second of Δt_0 this becomes: $((\Delta t_1 * (1 + 2.2686 * 10^{-18} \Delta t_1)) / ((1 + (2.2686 * 10^{-18})))$

This manifests as a net acceleration of the proper time relative to the coordinate time as the dilation gradient deepens and $\Delta t_1 \rightarrow 0$. It also causes the FDE to always precede the GDE, which relative rate of evolution to the FDE is determined by the slope of the dilation gradient. This prevents the FDE and GDE from coinciding and the subsequent formation of a singularity in a Big Crunch scenario both within a MECO, where we instead see the ever-tightening spiraling evolution, or the universe as a whole, which we see spiraling off in all directions in the galaxies.

Obversely, as $\Delta t_1 \rightarrow \infty$, infinite divergence is impossible as Δt_1 is always divided by a sum > 1 ; i.e., $\infty / (1 + 2.2686 * 10^{-18}) < \infty$.

As dilation creates the impression of movement and dimensions in space, establishes the apparent direction of evolution and the limits of relativity, this inherent, steady, universal acceleration can be considered a foundational element of the universe as we perceive it.

Galactic Rotation Velocities

This section lacks some maths due its complexity, the large range of galactic stages and the lack of accurate data bases not contaminated with dark matter components.

The masses of flattened spiral galaxy systems and spherical stellar systems have different shapes and, therefore, different shaped time dilation gradients and different effects in the time aspect.

Within a stellar system, where GR works so well, as the dilation gradient deepens more quickly as the center of the dilation "pit" is approached, all events appear to accelerate increasingly in spacetime, appearing to evolve forward faster through its apparently faster velocity "through/in" space. The dilation gradient only equalizes in an infinitesimal focal point at the center of the star, impeding the forward evolution of events in all directions, concentrating energy.

Imagine a cloud galaxy with nearly uniformly sized and spaced stars. We observe it to evolve forward over time with very little change occurring.

The stars, however, are all actually evolving forward in the Fundamental Direction of Evolution at c , which is why c is the universal speed limit, it is how fast the spacetime field evolves forward. The rate it appears to also evolve forward down dilation gradients varies with the slope of the gradient, but it is still evolving forward in the Fundamental Direction at c .

If we then introduce a significantly larger body, we see the nearby stars begin to circulate around the more massive body. The smaller stars now also appear to have a velocity "through space" relative to the central body, and the greater the difference in mass, the steeper the dilation gradient and the higher the relative velocity. This is because the central body has a slower rate of time than the smaller bodies, so the smaller bodies are evolving forward over time faster than the central body. As time has no depth, they cannot evolve "forward" in space, and since they also appear to evolve down the central body's dilation gradient, we see the apparent circular motion. This is not bodies moving "through space". This is the apparent motions created within the evolving continuum, which has no actual depth.

In a binary system, the barycenter, or center of mass, between two stars of equal mass is halfway between them. This is also the point where their time dilation gradients have the same rate of time. As one star grows more massive, that point shifts farther from it, higher up in the dilation gradient towards what is now the faster rate of the smaller star.

The steepest possible gradient is a 1 s/s difference in the rates because at that point time appears to stop. There is a “limit of relativity”.

It is not possible for the smaller bodies to accelerate at or past c as the central body increases in mass and the difference in the rates of time approaches 1 s/s. If they exceeded c , they would also be evolving forward faster than the very fabric of the continuum, which is not possible.

In Einstein’s 1915 paper, substituting X, Y, Z, T for his X_1, X_2, X_3, X_4 , his Fundamental Metric, which can be considered the basis of the tensors describing a null gravitational field, is:

	X	Y	Z	T
X	-1	0	0	0
Y	0	-1	0	0
Z	0	0	-1	0
T	0	0	0	+1

In flattened spiral galaxies, designating the Y axis as being orthogonal to the flat galactic disk, the dilation gradients along the +Y and -Y axes above and below the flat mass of the disk equalize within the disk and as the $dRt \rightarrow 0$ along the Y axes, $\Delta Y \rightarrow 0$.

As $\Delta Y = 0$ at $Y = 0$ in the middle of the plane of the galactic disk, the Galactic Fundamental Metric within the disk of a flattened spiral galaxy is:

	X	Y	Z	T
X	-1	0	0	0
Y	0	0	0	0
Z	0	0	-1	0
T	0	0	0	+1

As all the Y elements go to 0, this metric can be reduced to:

$$\begin{array}{cccc}
 & X & Z & T \\
 X & -1 & 0 & 0 \\
 Z & 0 & -1 & 0 \\
 T & 0 & 0 & +1
 \end{array}$$

As with Einstein's Fundamental Metric, this Galactic Fundamental Metric cannot be realized in finite space as it also represents a null gravitational field without time dilation. ΔY also never actually remains at 0 since particles oscillate above and below the plane of the galactic disk.

However, in this fundamental metric without Y elements, forward evolution can only proceed through the X and Z axes, which share a common plane, and we get circular motion around the center of the galactic mass, orthogonal to the dilation gradients. Note that the orbits in a stellar system are also orthogonal to the dilation field. As above, the GDE can only manifest orthogonal to the FDE.

There is a secondary GDE in along the edges where the Y components lose their dominance and we see an evolution inward and the formation of bars.

As the +1 in Einstein's g_{44} element of the Fundamental Metric represents an invariable rate of time for all frames along all axes, the +1 of the g_{33} element in the Galactic Fundamental Metric represents an invariant rate of time along the X and Z axes. Within the galaxy's dynamic metric, these time elements then change relative to the mass density along the spiral arms, and the apparent velocity relative to adjacent frames is determined by the relative rates of time along the +Y and -Y axes at $Y = 0$. In the absence of an accelerating gradient as in a stellar system, the relative rate of evolution within the inertial frames of the disk is primarily determined by the rate of time in the inertial frames. Thus, we see an initial rapid increase in velocities near the center of the galaxy, where the rate of time rapidly increases with distance from the massive central MECO.

Velocities appear slower between the arms, despite the faster rate of time, due to the shallower gradient. Within the arms, where densities are concentrated, the gradient is deeper along the Y axes and velocities appear

accelerated more as they do in a deeper gradient in a stellar system. The dilation gradients along the Y axis decrease in slope as mass densities decrease along the arms, time goes faster at $Y = 0$, and we see a slightly faster evolution (apparent velocity) of the stellar systems within the continuum with distance from the galactic center.

The g_{33} element also varies slightly relative to the slope and depth of the gradients within the individual stellar systems. This slope effect also manifests the same as we see in a stellar system where relative acceleration increases as the gradient of the slope deepens. A test of this would be that larger masses and groups of masses should therefore appear to be evolving forward faster, and appear to have higher velocities, relative to nearby smaller masses due to their deeper, steeper, individual gradients.

Although the primary dilation gradient is along the Y axes, as the disk flattens there is also a secondary gradient looking in from the edges. The evolution in this directions forms the bars of Sb galaxies.

The Origin of Spacetime

Einstein's Fundamental Metric

	X	Y	Z	T
X	-1	0	0	0
Y	0	-1	0	0
Z	0	0	-1	0
T	0	0	0	+1

A particle moves in a straight line in this Fundamental Metric, where there is no time dilation; where the time-time element $g_{44} = +1$, which is an invariant 1 s/s rate in all frames, the same rate we each experience in our inertial frame as we evolve along our worldline. It represents a null gravitational field. Though a useful tool in GR, Einstein admits this metric most likely cannot exist in finite space. If it did, there would just be a single, infinitesimal, particle, and it would have a zero velocity, regardless of the X,

Y, Z components of the metric, as there would be nothing to relate its motion to. Space would appear flat and have no dimensions as there would be nothing else to relate distance to. He considers this situation to be *in vacuo*. In saying this state probably cannot exist in a finite region, he is confirming the author's conjecture that the spacetime continuum is energetic. It cannot be otherwise.

Because no motion would be apparent in the Fundamental Metric, it can be reduced to just the time-time element, g_{44} , which is simply $TT = 1$. An observer existing in this state would only be aware of time passing. The observer's space would be evolving forward with time, but that would be undetectable. The author calls this the IATIA state: "I Am That I Am". This will raise some objections, but it must be noted that our reality is an illusion being manifested out of superposition waveforms that only take on forms that are dependent on an observer being present. Again, as per Einstein, "Reality is merely an illusion, albeit a very persistent one."

So, although what follows is anathema to many physicists, if it is true it is necessary to properly understand what we are trying to describe with our science. If it is true and never accepted, then our science will never fully explain our experience.

What eternally promulgates spacetime?

The author has had proof positive in his life experience that what he is about to say is true: faith gives us divine power. Doctors depend on it and casino owners hate it. This has also been proven by others, repeatedly, throughout the world, throughout history, in the laboratory of life, which he believes should satisfy scientific criteria. Miracles do happen.

This is because spacetime is created by the awareness of being "here", space, and "now", time. There is a primary awareness that exists only because it is aware of time passing. No light, no senses, just self-awareness. This is the "I Am That I Am".

This is a horrible state of being. The worst thing we do to people is to put them in solitary confinement.

Fortunately, it can imagine light and alter its perception of rates of time to stretch the light to give its space depth and otherwise manipulate the light to create worlds that it can incarnate itself into, “losing” itself to escape its eternal loneliness and pass its eternity. All life forms are just different points of view, different perspectives for that single awareness. Hence, we are all one in it and we are all its children and, hence, in faith we have divine power.

Because we are all one in it, it harmonizes our universes. This explains non-locality. Alice and Bob have harmonized experiences, regardless of the apparent distance between them, because they are one-and-the-same in the Creator that is harmonizing their points of view.

The universe evolves forward beneficially for us when we *believe* it will. We are all brought forth as infants who must be carefully succored and this initiates us into faith. We are born into a totally loving, caring, supportive world. A guilty conscience initiates doubt, which is the opposite of faith, and it can manifest devastating effects.

The science is part of the illusion, but it enables us to manipulate things in such a way as to make our lives much fuller and better in innumerable ways. Ultimately, though, it works because we believe it does.

The reason we all hate boredom and fear loneliness is because we are of and from that eternally alone being. If you would know the Creator, know yourself.

The Kingdom of Heaven is *within* you. It is *your* faith that makes you whole. If you want proof, *ask* for something reasonable. Don't forget to say, “Thank you”, when you get it.

Appendix A

Relative Velocities of the Planets From Different Perspectives

Since relative velocity changes with a change in perspective, the relative rate of time must, too.

Considering relative velocity and rates of evolution within the continuum, in the following computations:

Planetary orbital lengths and periods are as per NASA.

Orbital periods are related to 1 Earth year.

Orbital lengths are as perceived “around the Sun”.

Helical orbital lengths are computed using the following formula:

$$(\text{Distance travelled by the Sun})^2 + (\text{Orbital length})^2 = (\text{Helical length})^2$$

The distance travelled by the Sun is relative to the CMB.

$$\text{Sun velocity} = 368 \text{ km/s} = 11.60672 * 10^9 \text{ km/yr.}$$

Considering the perspective of the orbits of Mercury and Venus relative to the plane of the ecliptic, we assign Mercury a velocity of 47.89 km/s and Venus one of 35.03 km/s, a large difference.

But if we consider the velocity of the Sun and its forward evolution in time relative to the CMB, and the helical distances travelled by the planets we get a much different perspective:

Mercury:

Orbital length: $57.909227 * 10^6$ km

Orbital period = .24 yr

Orbits/yr = 4.1666

Total orbital length = $241.249839 * 10^6$ km

Helical length = $11.609226961 * 10^9$ km

Velocity = 368.07948 km/s vs 47.89 km/s

Venus:

Orbital length: $10.8209475 * 10^7$ km

Orbital period = .62 yr

Orbits/yr = 1.6129

Total orbital length = $17.4531062 * 10^7$ km

Helical length = 11.608032143×10^9 km
 Velocity = 368.04160 km/s vs 35.03 km/s

Earth:

Orbital length: 14.9598262×10^7 km
 Orbital period = 1 yr
 Orbits/yr = 1
 Total orbital length = 14.9598262×10^7 km
 Helical length = 11.607684041×10^9 km
 Velocity = 368.03056 km/s vs 29.79 km/s

Mars:

Orbital length: 22.7943824×10^7 km
 Orbital period = 1.88 yr
 Orbits/yr = .5319
 Total orbital length = 121.2467148×10^6 km
 Helical length = 11.607353269×10^9 km
 Velocity = 368.02007 km/s vs 24.13

Jupiter:

Orbital length: 778.340821×10^6 km
 Orbital period = 11.86 yr
 Orbits/yr = 0.0843
 Total orbital length = 65.6273879×10^6 km
 Helical length = 11.606905535×10^9 km
 Velocity = 368.00588 km/s vs 13.06

Saturn:

Orbital length: 142.6666422×10^7 km
 Orbital period = 29.46 yr
 Orbits/yr = 0.0339
 Total orbital length = 484.27237×10^5 km
 Helical length = 11.606821027×10^9 km 12576482920
 Velocity = 368.00320 km/s vs 9.64

Uranus:

Orbital length: 287.0658186×10^7 km
 Orbital period = 84.01 yr

Orbits/yr = .0199
 Total orbital length = 341.70434×10^5 km
 Helical length = 11.606770299×10^9 km
 Velocity = 368.00159 km/s vs 6.81

Neptune

Orbital length: 449.8396441×10^7 km
 Orbital period = 164.8 yr
 Orbits/yr = 0.0060
 Total orbital length = 272.96094×10^5 km
 Helical length = 11.606752096×10^9 km
 Velocity = 368.00101 km/s vs 5.43

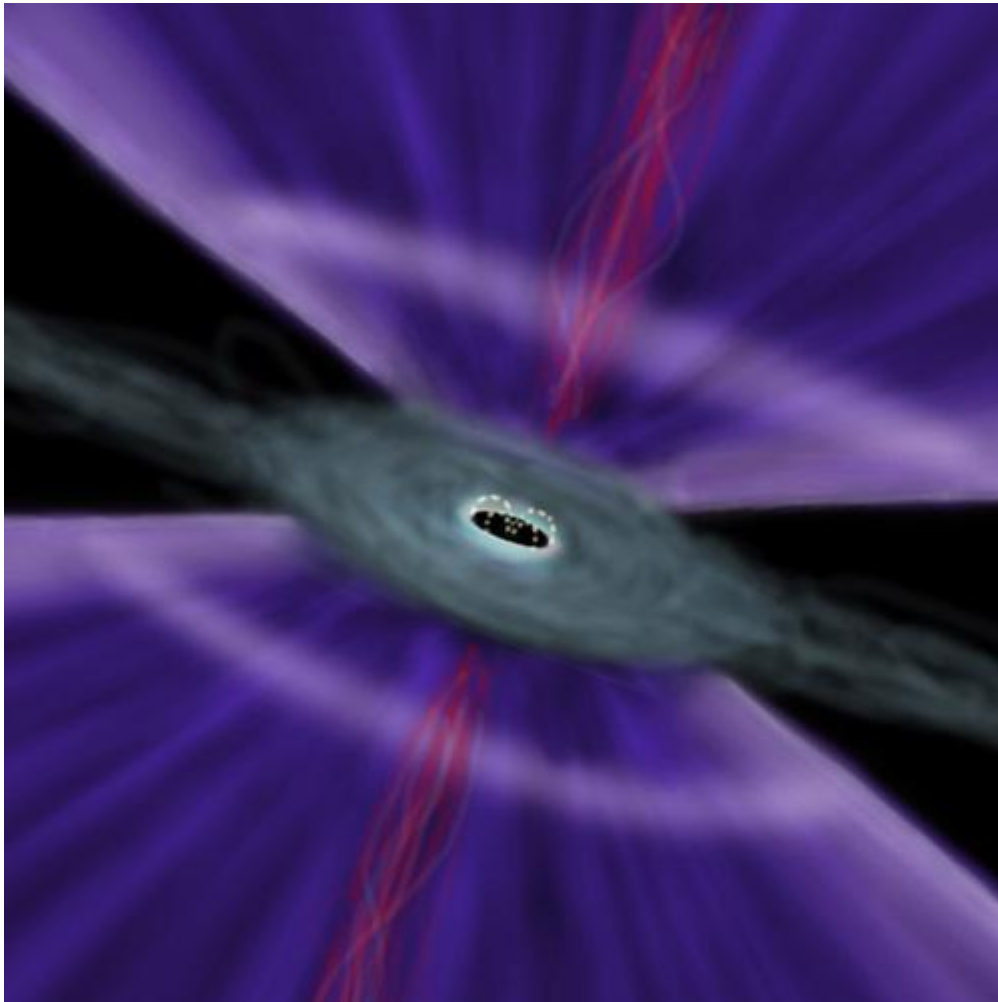
From this perspective, the velocities, or rate of evolution, of Mercury and Venus are only .038 km/s different. Note also that as we increase distance from the Sun, the velocities decrease until Neptune has a velocity only .001 km/s different from the base velocity of the Sun. Relative velocities equalize with a larger perspective. If we shift out to the local group and its apparent motion relative to the CMB of 627 km/s, the difference between the Sun and Neptune's velocity is only .00059 km/s.

In both perspectives, the velocity and acceleration are directly related to the $dRt/distance$ so are higher in steeper gradients, and this higher apparent acceleration of events in slower time frames maintains their relative positions within the overall continuum as it evolves forward as viewed from both perspectives.

This means GR is describing the forward evolution of the continuum and the events occurring within it, rather than the evolution of events through pre-existing "curved spacetime". It is not the masses that determine relative velocities and trajectories, but the dynamics and perspectives in time.

Appendix B

Magnetic Eternally Collapsing Object (MECO)



“Schematic figure demonstrating the principal luminous quasar structures as determined by our (Schild’s team) reverberation-microlensing analysis. The dark compact central object is surrounded by dipole field lines (dotted yellow) and the sharp luminous ring at the inner edge of the accretion disc is white. A dark accretion disc intersects the outflow wind structures (Elvis surfaces) whose fluorescence above and below the plane (blue) contributes to the UV-optical continuum observed. The compact radio core (red) is shown in size and distance scaled to the overall structure.”⁵

(Image: Christine Pulliam/CfA)

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