

Ottawa, May 11, 2017

## Preface

### **Beginnings**

Newton's third law, "Action and reaction are equal and opposite" left me puzzled for a while after I first encountered it in highschool. The first two laws made sense of a sort but surely when I pushed against the wall of my school that puny force did not appear to disturb the limestone a whit. Oh well, I thought, just another of those mysterious text book propositions like Euclidian geometry about parallel lines that I had encountered and then dismissed as enigmas that one must accept in order to pass a test.

The following year, in a chemistry class I learned about the law of LeChatelier. To every (chemical) action, he said, there is a reaction which tends to undo the effect of the initial action-as close a paraphrase as I can recall.

Two years later, in a military course on basic electronic theory, I first learned about resonant circuits and the light began to dawn. The following year, at a military college came the notion that all of nature was a system in resonance- not simple resonance of course, but different levels of harmonic resonance. From the recurring cycles of the hydrogen atom to the extremely complex interactions of a block of limestone, all matter it seems was striving toward harmony in reaction to the forces imposed by the environment. In the case of rock and earth they all tended toward a balance that would eventually end in a level plain, as some seer in a bible wrote, "that which is high will be made low and that which was low will be raised up". ( I am not religiously inclined by the way and cannot vouch for the accuracy of that paraphrase)

As in electrical circuitry, harmony in material things comes at the cost of energy. In the case of electronic oscillators the source energy is a generator or a battery. In nature energy is drawn from a vast energy pool. Also, like electronic oscillators the transformation of energy is only accomplished with varying degrees of efficiency. Oscillations are dampened by resistance and their bandwidth becomes broader. In the matter that makes up most of our planet, galaxies and stars the same considerations apply.

The increasing entropy of solid particles which seems headed for a total lack of organized matter must at some point be halted and reversed. Energy cannot be created or destroyed. Because the universe is composed of energy and mass is

equivalent to energy, the universe appears to be cohesive by nature. **Thus, I surmise, its tendency to disorganize, its entropy, must at some point be defeated by its inherent tendency to pull itself together. In response to Newton and LeChatelier, any tendency toward disorganization will restore energy to the field from which it originated. Entropy will be countered by an equal reaction to organize and since there is no resistance in space it will continue that cycle indefinitely.**

From those inchoate musings, over the years I have evolved my theory of everything, the **Universal Energy Field**.

## **The Cosmos**

Current models of the universe are based on a foundation of verifiable physical laws amplified by a number of conjectures about observed astronomical phenomena. Among these are:

Newton's laws adjusted for more refined values by modern physics.  
Assumptions about the ultimate nature of matter resulting from experimental observation. More specifically, the particulate nature of the universe and the revelations of de-constructive examination of the atom into an organized zoo of sub-particles  
Maxwell's laws of electromagnetism and wave propagation.  
Michelson-Morley experiment.  
Double slit experiment.  
Entropy.  
Compton effect.

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The Big Bang Theory: supported by observation of a largely omnidirectional radio-frequency remnant of that event—singularity as it is called.

The observed red-shift of stars and galaxies indicating a universe that has been, and continues to be, expanding from that point source singularity.

The proportions of certain light metals observed in stars.

In my ninetieth year I am becoming increasingly aware of my mortality. Rather than let the fruits of long years of meditation and speculation on the nature of our universe go unharvested I offer my conclusions in the full realization that they may be, and probably are, erroneous. I have no reputation to maintain nor any scholarly credentials to support my theory, yet scrutiny and contemplation of the contradictions in current understanding of cosmology emboldens me to present my more intuitive take on the subject. I confess that the implications of that theory are so incredible that I can scarcely believe it myself. Yet, as Sherlock wisely stated, "When all other possibilities have been excluded, what remains must be the truth."

Before proceeding further I shall attempt to sketch my understanding of the cosmos.

Starting from first principles a few definitions may be in order.

Energy is the ability to do work. It cannot be created from nothingness and neither can it be destroyed.

Force is that which can accelerate mass.

Force can only come from an imbalance in energy. I.e. in an equi-potential medium no force can exist.

Force may be expressed as an electrical attraction or repulsion. Electrical force can be stored as a field between charged bodies.(i.e. an imbalance in local energy and therefore a force)

Electrical force is not, as popularly imagined, an accumulation of electrons or positive ions, but the imbalance in energy created in the surrounding medium by those charged bodies.

Electrons are tiny self-sustaining eddies in a surrounding energy medium.

Positive ions are atomic nuclei which lack one or more electrons.

Mass is energy from a universal energy field stored in a tangible solid..

Magnetic force is the disturbance in the universal surrounding medium caused by motion of electric charges.

Gravitational force is the force which acts on mass, but although it attracts, or appears to attract other masses it is merely a gradient in a universal field of energy.

Work equals force applied through distance.

Picture a vast cloud of some invisible energy field analogous to a thunderstorm cloud in our atmosphere with the exception that it is not subject to gravity. Now imagine that cloud in isolation from external forces.

Within a thunder cloud water vapour condenses into tiny droplets, ice pellets, snow, hail, etc. In the absence of external gravity these forms of what would otherwise be precipitation are driven to and fro by internal currents within the cloud. Some move to regions of higher temperature, melt and coalesce into raindrops, others become snowflakes that in turn melt and eventually become rain. For a time, depending on the vagaries of the air currents, each of these forms will exist in a state of equilibrium with a particle receiving from and contributing to its surrounding medium of water vapour. Some will become hail stones which are driven about in currents of vapour that have originated in the exchanges between material particles and the surrounding medium and are of a more permanent nature than the other forms. Nevertheless, all, including hail, will be in a continuing, though not constant, state of dynamic equilibrium with the surrounding medium of water vapour.

To be clear, the entirety of the hailstone is not continually being exchanged with the surrounding water vapour, but primarily through sublimation and temperature change. Also, it should be noted that the size of the hail stone will increase until it has reached such an equilibrium. It may then combine with other particles to form an even larger hailstone, under some conditions. The energy budget of the cloud as a whole will remain unchanged as vapour changes in state. Similarly, all solid matter is in a state of dynamic equilibrium with the UEF. In the vast Universal Energy Field all of the particles we perceive as solid matter; dust, planets, stars, galaxies etc. are condensed matter formed from the UEF and are in quasi-permanent state of dynamic equilibrium. Examined in the context of an eternal universe, the interchange of energy between these “solid” states and the UEF is imperceptible. But is it ?

## **Red Shift and the Expanding Universe**

Almost all stars and galaxies exhibit a red shift, assumed to indicate movement away caused by a Doppler shift in the frequency of light emitted by such stars. Because light is the only instrument available to measure stellar distance (beyond short range parallax measurement) there is no way to tell if the Doppler red shift is actually caused by an expanding universe. An alternative, which I consider equally tenable, is that energy from the undetectable UEF is being absorbed by such astronomical objects and re-emitted into the UEF. The consequential stretching of the UEF would result in a lower frequency light emission, i.e. a red shift--Of course, a blue shift would indicate a real and greater velocity.

Again, by analogy, consider a cloud of water vapour unaffected by gravity: Some random movement of a molecule may initiate a current within the vapour. Over time the current will develop into streams of vapour which will develop eddies. Vapour from the surrounding medium is being drawn into the eddy. As the eddy tightens due to the mutual attraction of vapour particles it will eventually form into a droplet etc. Although the droplet persists as a liquid, vapour will continue to be exchanged between it and the surrounding medium. Friction among these particles may cause lightning with a thunderclap. Similarly to red shifted light from astronomical objects, the longitudinal sound waves through the air from that vicinity, must be of longer wavelength than they would have been in the absence of an eddy. Yet the eddy may not be becoming more distant.

**Analogously, within the UEF, energy being absorbed by a star and re-emitted into the UEF may be stretching light waves emanating from it so that it appears to be from a receding source.**

All of the foregoing leads to the astonishing conclusion that our universe and everything in it consists of insubstantial energy, a vast turbulent elastic cloud. Whether it consists of infinitesimal packets or not would be difficult to determine. However, if it does, they are probably at the Planck wavelength. Thus, it seems obvious that the speed limit of light is a result of the inability of a massive object to absorb and re-emit energy from the UEF. That its mass should increase exponentially as the speed of light is approached seems also an obvious consequence of the inability of the mass to re-emit energy faster than it is

absorbed. That is it. No mystery. The mechanics of energy absorption and re-emission may be complex but the conclusion is clear: If mass and energy are equivalent and if mass increases with increased velocity then it follows that the mass of any object depends on its velocity relative to the UEF.

### **Arguments for the UEF**

First and foremost: Maxwell's laws showing that electromagnetic waves can propagate through space in a self-sustaining progression do not demonstrate the absence of a medium through which these waves travel. On the contrary, he believed, as I do, that an all-pervasive energy field with unique elastic properties is the medium for all electromagnetic waves.

Secondly: Gravity which is a weak force is merely the result of a gradient in the universal energy field. The field itself is very strong and the ultimate source of all matter.(This is an assumption on my part.)

The invisible mass-equivalence of the UEF is what physicists call "Dark Matter".

All solid matter is a result of concentrations of the universal energy field and exists in constant dynamic equilibrium with the field in a way analogous to the concentration of water vapour into snow, ice pellets, hail and rain drops as outlined above.

### **Objections**

The objections to a universal medium presented by Michelson-Morley, the Double Slit experiment, etc. can all be answered in the context of the UEF. It is worth noting also that the apparent mystery of "Schrodinger's cat as well as the puzzling nature of quantum entanglement are also readily explained by the

universal energy field theory. Consider the apparently haphazard tracks of lightning bolts. Are they not following the paths of least resistance through a medium? Similarly, examine the sparks emitted by a Van de Graaff generator. These appear to follow the random pathways of least resistance through the surrounding medium. Is this not a model for the apparent randomness of quantum pathways? They emanate from the same point and all paths will end at some point on a body with a lower potential.

The Michelson-Morley finding that no universal field was detected in the split-beam light experiment fails when one considers that the instruments themselves are being affected by the field of which they are composed and in which they exist. Similar to an air mass experiment, the light originates in and travels through a medium which is itself the frame of reference.

The double-slit light diffraction experiment is also explained by the presence of the UEF which will be affected no matter which slit is used to pass photons.

They are not simple energy packets in a vacuum but waves within an all-pervasive field. (Like traveling electrical eddies if you will)

Quantum entanglement becomes an obvious result of a disturbance in a strong elastic field. (If you create an eddy with one orientation-say by using a paddle in water- you create an opposite eddy on the other side of the paddle) No more spooky action at a distance. Now if space in some ways resembles a bowl of gelatin and one moves a spoon in the centre, does it not send similar disturbances in all directions. Space, in my conception, must have similar elastic properties.

Surely, you can't be serious. Do you really expect anyone to believe that, for example, fossils buried underground for millions of years are merely impermanent eddies of some mysterious universal field.

Answer, think again about the hail stone in a cloud. In the absence of a gravitational field it might persist indefinitely with only a very slow exchange of molecules due to sublimation. Rocks, and bones may very well be impermanent structures when viewed through the lens of an eternal universe. One does not, of course mean that the whole dinosaur bone, any more than the relic of St Francis Xavier, is transforming instant by instant. What is occurring is the total energy of the field in which they exist is subject to change, even while individual structures within it remain, like persistent eddies, the same over very long periods.

This theory conflicts with long-established and verified theory of relativity by

Einstein.

No. In fact it merely confirms Einstein's notion of a universal constant. Describing gravity as a deformation of "space-time", another name for total nothingness as most would have it, is illogical. One cannot deform that which does not exist. Rather, the concept of a Universal Energy Field subject to distortion in the presence of matter, as Einstein must have conceived it, is the only thing that makes sense.

### **Conclusions**

The electric force is a measure of the local intensity of the universal energy field (UEF). Ultimately, when all the subatomic particles are examined, there remains only the electric force. Yes, I am aware of the "strong force" and the "weak force" in atomic nuclei, but I suggest that rather than separate identities they are the consequence of electrical interactions within the UEF.

The Universal Energy Field as I envision it, may be considered as a vast cloud of the tiniest possible elemental energy packets. Any random imbalance in that field would lead to a reaction against that imbalance and, as a result of the elemental packets rushing in to restore an equilibrium, would create an elemental particle. (On the subatomic scale, the attractive force would be exponentially stronger than at molecular level; its range would also be limited by the radius of the UEF disturbance- eddy if you like-on that scale.)

Quarks and other sub-atomic particles would be the result of agglomerations of the fundamental energy packets that form the UEF. These, through a process analogous to raindrop formation in a cloud would be a reaction to local field imbalances.

#### **What would limit the radius of the "Strong Force Elemental Particle"?**

Remember, the strong force would exist between the smallest elements of the UEF hence, like the molecular forces that cause hailstones to form, its range would be limited by the local intensity of the UEF. Its radius cannot exceed that of the atomic nucleus because it is limited by the local intensity of the UEF.

I do not, of course mean that the UEF is a simple electrical field, but rather that it at its most basic level if it is stretched it may give rise to one. \*

Further ruminations.

Current models of the universe imagine that all of matter and interstellar dust etc.

are the result of a humongous explosion from energy concentrated into a point source; a singularity.

Assuming that such a point source origin did not result from creation of energy by some supernatural entity, all of the universe then must have come from that single point source and the objects and their interactions must then be simply the consequence of momentum from that original explosion of energy.

When Einstein confirmed his theory that light must be composed of discrete energy bundles (photons) physicists then concluded that conventional physics about wave propagation through space was wrong.

Although he did demonstrate using electron emission above cutoff frequency does confirm the existence of photons, all physics then and since does not appear to consider space/time to have any existence other than that which is created by material bodies. Clearly, that is not the case. All evidence points to a vast cloud of extremely small parcels of energy and, like waves in water, all of the electromagnetic phenomena are waves within that UEF.(More on this later)

The latest models of the atom would appear to confirm my understanding of the composition of matter: In reaction to a local energy imbalance the tiniest elements of energy organize into enduring resonant systems which form the fundamental building blocks for more complex resonant systems. Taking the hydrogen atom for example, the permitted energy levels for its electron look suspiciously like harmonic multiples of an original resonant state.(further

clarification required)

Space-time continuum then becomes merely another name for the UEF. Time is not something mysterious, but rather the rate of physical reactions within the local UEF. Even the red-shift phenomenon evidence for an expanding universe is questionable with the concept of a UEF in which all matter exists in dynamic equilibrium. Consider: a star gives off energy in the form of electromagnetic waves and solid particles due to nuclear reactions. Those stars are themselves the concentration of the UEF into particulate matter, i.e. hydrogen and compounds thereof. That energy is continually being radiated into the UEF as the star burns out. Whence comes the energy it is radiating? Some of it must be from the UEF which is the source of the gravitational gradient that is compressing the solar ball. That energy would create an inflow of the UEF that would have the effect of stretching electromagnetic waves in the region near the star, thereby producing the observed red shift.

As for the universal cosmic background noise that confirms the “Big Bang”, that

makes perfect sense in a universe composed of particles in a vacuum of empty space, but in a UEF might it not rather be an interference pattern such as occurs between waves on a lake. A sort of heterodyne effect? In a bowl of jelly waves and oscillations soon die out because of internal friction, but in a vast frictionless Universal Energy Field they may continue indefinitely. Another way of looking at the cosmic background noise is to think of the universe as an enormous football stadium. Although spectators arrived at about the same time, their cheers amalgamate into one vast chorus with a bandwidth limited by the vocal cords of the participants. Conceivably, also there may be an enduring background difference wave resulting from interference between all other electromagnetic waves in the UEF. Cosmic collisions, novas, and supernovas are universal events. As the energy from such events is distributed throughout the cosmos would it not tend to even out into a vast harmony.

Even the supposed accuracy of atomic clocks, the pulse rate of the cesium atom, can only be considered accurate within the region of the UEF where they are measured. They are, I have no doubt, extremely accurate but that accuracy is merely a rate at which physical reactions occur. If the rate at which physical reactions occur is determined by the local intensity of the UEF, then time measurement by cesium atoms is invalid.

It now it appears that neither distance, nor time, nor the speed of light can be considered absolute, but rather relative to the intensity of the UEF.

\* Recently, physicists have begun to realize that the “vacuum” of space is not actually a vacuum and postulate that it may be filled with a myriad of tiny bits of energy, Qbits or perhaps strings of such. If so, then within the context of the “big bang” these bitty bits must also have been expanding throughout the universe as it heads toward entropic doom. Do these bits of energy expand also? Or, is there anything between these discrete particle/waves of energy? Also, would not the “speed” of light also be dependent on the local intensity of the field throwing estimates of the age of the universe out the window?

Whether any of the foregoing is accurate or not, one thing seems certain:  
**Electricity is the only tool we have to influence the UEF.**

Although matter waves exist we could only produce them usefully by creating very large concentrations of mass and that does not appear to be feasible in the foreseeable future.

It is my belief that a device can be constructed to exert an asymmetrical force that pushes the UEF aside.

An appropriately configured asymmetric electric wedge could be used as a vehicle to separate the UEF, permitting the vehicle to proceed at speeds far exceeding that of light, *because the mass which results from the interchange of the UEF with matter would be effectively by-passed, forming a kind of pocket in space or a space warp as imagined in popular sci-fi.*

(If my theory is correct, and the UEF is far more powerful than the expanding, weakening discrete field of little quantum bits then a machine capable of reacting with it should be possible. In the far more likely case that conventional physics is correct, the task becomes much more difficult. That would require some very efficient energy storage device and probably an initial rocket boost. Achieving superluminal speeds would also take much longer.)

If I am spared a few more months or even years I hope to elaborate on the foregoing conclusions. If correct, they hold the key to intra-stellar flight.

The framework for a space penetrating vehicle would include a self-contained power supply, a central cathode, a very effective dielectric and a tightly-wound asymmetrical shell. Gauss's law would result in any internal charge migrating to the outer shell; however, with good dielectric insulation there would be a time lapse before that would be complete. It is that interval that my device would use to produce an undulating field that would exclude the UEF. Then, like siphonophore jellyfish undulating its way with little effort through the extremely dense medium of water, the vehicle would squirt through space, unaffected by inertial drag. Adopting the strategy of the jellyfish to make its way through water one might employ opposing magnetic or electrostatic fields that thrust aside a highly insulated elastic shell in ripples. An experiment to illustrate by analogy

the principle behind this might be developed by using a submarine with cyclically controlled water jets. Imagine a central intake tube into which water is pumped by a power source, say a nuclear reactor, and then ejected through vents in the hull via a number of pipes. By controlling the intensity of the expelled jets in a sinusoidal ripple one should be able to create a propulsive force. To my surprise I encountered an article in *Popular Mechanics*, describing just such a development in submarine propulsion since writing this.

\*In some respects the idea would be much like creating anti-matter\_matter pairs in a controlled way such that they are sufficiently insulated from each other that they cannot annihilate each other. I suspect that would be difficult if not impossible to achieve.

As I am not an accomplished artist it may be some time before I can produce a convincing sketch of the vehicle I propose. When configured it would essentially be an extension of my conceptual dynacaptor- a device to hold a very large electric charge by using the centrifugal force of heavy positive ions to concentrate a positive charge on the skin of a rotating cylinder.

Better yet; as an experimental vehicle one may use two or more high energy Tesla Coils enclosed in a magnetic bottle. I envisage a device that may act in space like a catamaran, with energy imbalances between the machines creating a thrust vector like that of a sail that may propel the ship at hyper-luminal speeds.

Standby for further developments and, no doubt, a storm of derision from those punching holes in my theory. In fact, I would be greatly relieved to find my theory shattered by the far greater minds that exist in this world. I would not then feel obligated to pursue this relentless quest ad astra.\*

It seems probable that the UEF I have postulated is composed of tiny discrete energy bits on the Planck scale. It seems also probable that the density of these enbits varies on a large scale but is, like molecules of water vapour, more or less uniform throughout the universe, with local variations determined by or determining the presence or absence of material objects.

Does this vast field expand indefinitely according to the law of entropy? Possibly, however I feel instinctively that the field is essentially cohesive and will eventually draw back in upon itself. If, indeed, the missing 'Dark Matter' is nothing more than the sum of the UEF then a re-consolidation into a smaller universe seems likely. \*I note in a recent issue of *Scientific American* that some

physicists are postulating a particle they call Axion as the fundamental constituent of the universe.

Uncle Dan Farrell

Updated May 26, 2017 (2:27pm)

Updated 14-08-2017

Updated 13-09-2017

Updated 26-09-2017

What is energy? One definition “The ability to do work” seems a bit too narrow. The seas for example are full of energetic particles called molecules but no work is done until an imbalance in sea level occurs. Even then, that imbalance, most commonly in the form of a tide, is the result of another energy difference, the attraction of sun or moon caused by an imbalance in the gravitational field. Does this imply that the “field” itself is composed of discrete particles? This brings up the question of mass and the entropy of the cosmos.

Mass and energy are equivalent. Masses attract one another. How? Through their effect on the UEF; i.e. inflows of energy from the UEF sum with outflows to reduce the total energy level to the minimum. Now energy does not necessarily attract other bundles of energy, but it does seek to achieve a median energy level. Current standard physical doctrine would have us believe that increasing entropy will have all of the universe dispersing into a void like buckshot from a shotgun. And that well may be. However, the universe, even according to standard scientific dogma, is assumed to have had a compact origin. What, held it together? When a shotgun shell bursts out of a gun muzzle not only lead shot is expelled but also a volume of burnt gas and energy in the form of heat. The shot will never return to the gun muzzle, so why should one expect the matter of our universe to recombine into an everlasting universe?

My instinctive feeling is that, like air masses that cling together and mix but slowly with another, the basic energy of the UEF will cohere such that the universe will endure. But that is merely an instinctive notion.

What is certain is that actions are always accompanied by reactions which attempt to undo the initiating action. Also, pent energy, as with tides, may equilibrate slowly, and/or may be accompanied by violent reactions. The violence of these reactions depends on the time lapse during which equilibration occurs. Faster, more furious. A shotgun burst is accompanied by a large sound wave with violent acoustic reverberations. Melting snow is nearly imperceptible. All of the energy, in one form or another, is returned to the earthly environment. What about the putative “Big Bang”? Does the energy released also return to its source?

## **On Mass**

What is it that causes resistance to motion? Friction, wind resistance, gravitational forces ...?

It all boils down to a transfer of energy in the end. To move a body involves an equal and opposite reaction to a force. The resistance, or, to put it another way, the force required to change the position of a mass is proportional to the mass and the rate at which the position of that mass is changed. Now consider the force required to change the position of an eddy in a cloud. (It will have been the result of pressure differences between volumes of vapour, of course, in the case of a cloud of water vapour) The eddy will have extracted energy from the surrounding cloud. The rate and amount of energy transfer will depend on the acceleration of the eddy.

Now, consider all matter adrift in the Universal Energy Field. Unless acted upon by some external force (for force read energy imbalance) such material bodies, from atoms of hydrogen to giant stars and galaxies drift along like eddies in a stream of water. This is the unifying underlying nature of the universe. All change of motion comes about as an exchange of energy between the matter being accelerated and the surrounding field.

Obviously, the acceleration of matter will ingest ever greater amounts of energy from the field as it is accelerated, with a limit imposed by the exponential increase in the energy difference needed to produce further acceleration. I. E. Einstein's limiting speed of light.

Accordingly, the only conceivable way of exceeding that speed limit would be to limit or even stop the influx of field energy as a body is accelerated. To do that, energy would have to be generated within the body being moved in such a way as to offset the influx from the field.

**To clarify:** I repeat: Every individual atom or subatomic particle is not renewed instantaneously via an interchange with the UEF. What is in an ongoing exchange with the UEF is the system in which such particles find themselves. E.G. an electron as DeBroglie described it is a wave, and consequentially must act as a resonant system because its energy is conserved. The various orbits-energy levels of electrons- are harmonics as atoms progress up the periodic table. A hydrogen atom for example is a system in resonance-dynamic equilibrium-with the ambient UEF together with its subatomic quarks. Molecules are merely complex combinations of the fundamental protons, electrons and at the most fundamental level subatomic parts such as quarks.

For further development: At the risk of blunting the linchpin of my arguments I shall hammer again the link between energy differences and the nature of our universe.

Consider a massive weather system-such as the "Bomb-cyclone" event occurring today-in which a volume of dense cold higher pressure air is confronted by a cyclone of air at a greatly lower pressure. As air flows into the cyclone its energy is compressed toward the center. In reaction, like a twirling skater, the speed of the air increases to maintain a centrifugal force offsetting the pressure from without. Now reflect on a three-dimensional vortex. At some point, if the pressure difference were sufficiently great, it is conceivable that its core might be forced into a compact solid.

Imagine if one could pick up a dense, clockwise circulating air mass and drop it into the center of an anti-clockwise circulating low pressure air mass. Annihilation, much as the mutual

annihilation that occurs when a positron and an electron impact. . . .  
January 07, 2018

I realize that this theoretical discourse is not well organized as with conventional scientific papers. I plead diminishing powers of composition due to age. Also, because I am very old, I feel obliged to publish this to my website without delay, before I am overtaken by the winged chariot of time.