Essay

Physical Consciousness in a Self-conscious Quantum Universe

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ABSTRACT

What is this thing called consciousness? Is it a thing created by the brain, which then in some mysterious manner relates to what sentient beings term mind or awareness or cognitive sensory perception or some other labels of individuated or culturally encompassed nomenclature? The holistic scientist knows that the many labelings can be rather confusing and so he/she chooses to call physical 'Consciousness' as something closely associated with the concept of energy. The concept of energy however relates to transformation of something, say in processes definable in ideas of motion, position, momentum and general dynamics. If the materialistic scientist now measures energy, this energy will somehow be engaged in a transmutational process. Otherwise, no motion would be possible. This essay is about first principles and causes which not only caused the universe of the relativity to manifest in energy but also allowed a form of angular acceleration or 'space-awareness' to give birth to the universal and ubiquitous physical consciousness itself.

Key Words: physical consciousness, self-conscious, spacetime, quantum universe.

I am One in many and many in One

I. Introduction

In this essay the basic questions of existence shall be addressed, and the answers necessarily must encompass the sciences in their ontology as well as the general puzzles as to the nature and purpose of life and being, hitherto confined to the spheres of religions and spirituality and subsequently often eschewed by the echelons of scientific discipline and rigor. The discerning reader will perhaps find out for him/herself, what this 'spirituality' must be, if it is 'real' or 'true'. And if so, then this will perhaps allow the reader to come to a certain understanding as to how the foundation of science is omniscience - incorporating all those concepts of spirituality and its derivatives and labeled as such throughout the history of humankind.

It is proposed that nature's 'sacred architecture' assumes a powerful identity as the underpinning symmetry for the cosmos. This can be said to be embodied in a mathematical statement, known as Euler's Identity:

$$e^{i\pi} = XY = X+Y = i^2 = cos(\pi) + isin(\pi) = -1$$

where $X=\frac{1}{2}\{(\sqrt{5}-1)\}$ and $Y= -\frac{1}{2}\{(\sqrt{5}+1)\}$. In the language of fundamental theoretical physics this identity then may translate in the following formulations to define a universe of self-creation in its initial- and boundary conditions:

$$E^* = kT^* = hf^* = hc/\lambda^* = m^*c^2 = 1/e^* \quad \text{for Unity-Condition} \quad E^*.e^*=1$$

for light-speed invariance: (wave speed = wavelength x frequency)

$$\lambda * f* = c = R_{max}H_o$$

with a nodal Hubble-Frequency H_o and a Hubble-Radius R_{max} and where:

$$E* = \sqrt{\{2\pi G_o m_e^2/4.\alpha.hc.e^2\}} = m_e/(2e.\sqrt{\alpha.m_p})$$

Fibonacci patterns are seen to manifest a hierarchy of superstrings, which may be observed and measured as Cosmic Ray spectra, linked to monopolar supercurrents of Cosmic Strings seeding the primordial universe. Platonic idealized quantum geometries crystallize a refined elementary particle structure of the standard model of particle physics in wave-quarkian blueprints through an innate pentagonal supersymmetry connecting the microcosm of the quantum realm to the macrocosm of galaxies and their extended structures.

Today's mass-parametric universe is found to have a massless precursor, (as gravitational mass transmuting into inertial mass as the origin of the Equivalence Principle in General Relativity), defined in gauge symmetries of magneto charged 'consciousness' quanta, which pervade a holographic universe as wormholes defining the Heisenberg Zero-Point-Energy metricized background. This essay is about first principles and causes which not only caused the universe of the relativity to manifest in energy but also allowed a form of angular acceleration or 'space-awareness' to birth the universal and ubiquitous physical consciousness itself.

2. Physical Consciousness Defined in Metric Spacetime

In terms of the creation of a metric spacetime background, say in the dynamics of a Quantum Big Bang; the equilibrium state of low entropy so defines a statistical arrangement of high order and a Minimalization of the permutational arrangements; and this becomes the PLENUM from which the Quantum Big Bang emerges and then proceeds and evolves into a state of high entropy and a general state of chaos-creation in the expansion dynamics for this Cosmology.

The holistic scientist concurs with the materialistic scientist in the latter's definition processes in regard to entropy, but understands, that the multidimensionality superimposes a cyclic nature upon it in the 'building' of the Present Now-Momentum onto the linear arrow of time and entropy moving from Past to Future. The holistic and the materialistic scientists agree that the ultimate nature of the entropy is nothing but the Dynamics of Information and the physics of information processing. This in encompassed in the Laws of Thermodynamics. This crystallizes in the definition of Temperature T in a metric spacetime as the Stefan-Boltzmann-Law in E=kT. Boltzmann's Constant $k=R/N_{Avagadro}$ relates to a macroscopic ideal gas state in the proportionality R and the definition for molarity, that is how much 'stuff' is in a collective elemental thing (a mole counted in n).

So macroscopically, say in chemistry, the microscopic or quantum energy equation E=kT becomes 'mapped' as PV=nRT in say relating pressure P to a Volume V as:

ForcexVolume/Area=ForcexDisplacement=Work=Energy=nk$N_{Avagadro}$T

Now the holistic and materialistic viewpoint diverges a little. The materialist defines Entropy as a function of Boltzmann's Constant k, say in a 'thermodynamic probability W' and where W is the number of statistically distinct states of a system. So for a Standard Condition of Entropy So and a probability W_o the entropy S becomes expressed in: $S=S_o+k.\ln(W/W_o)$.

At absolute zero then, there will be only the ONE eigenstate for entropy, and this then gives $S_o=0$ for $W_o=1$ and for $S=k.\ln W$. The holistic extends this definition to the Quantum Big Bang itself and states, that $S_{BigBang}=0$ for $W_{BigBang}=1$. In other words, the holistic knows, that the Big Bang is necessary to DISPERSE the POTENTIAL ENTROPY contained within it as a Concentration of Source-Energy say, in the primordial KINEMATICS of an EXPANDING Universe.

In a sense then Boltzmann's Constant k is even more fundamental than the other 'master constants' necessary for the materialization of the higher dimensional cosmology and seeded on 3D and climaxing in the Planck Constant h and the Einstein Constant c^2. The fundamental difference between the 3D physicist and the higherD physicist then appears in the application of the entropy definition onto the thermodynamics of the Big Bang Cosmology. The 3D physicist considers the Potential Energy (PE) Content of the Zero-Entropy Big Bang as an Energy Diffusion of this PE into Kinetic Energy (KE) of constituent 'particles' and a dynamic described in the postulates of special and general relativity. The 3D physicist so postulates those constituent 'particles' to emerge from the Big Bang PE in a particular coupling of say inertial mass of matter with antimatter and a coupling which allows a premassive PE to be given in say a radiation continuum of 'photons'.

But there is a dilemma for the materialist here, because he/she knows, that those premassive photons require mass for its generation and so the materialist is forced by his/her logic to form a PE-Collective, which incorporates both mass energy ($E=mc^2$) and photon energy ($E=hf$) in tandem. The holistic does not have this dilemma; as he/she knows that the photons, measured and observed by the materialist have themselves a prior eigenstate in something the materialist understands as the Zero-Point-Energy or ZPE in the materialistic cosmologies.

The materialist photons are in fact the 3D manifestations of the higher-D photons, which are encompassing termed 'virtual gauge photons' by the 3D physicist. Now every 3D photon requires the ACCELERATION of Coulombic Charge (say as in the fusion reactions between protons in stars in centripetal accelerations) to come into existence. This results in the Creation of Electromagnetic Radiation (EMR) and the elementary interaction of Electromagnetism which is then MEDIATED by the 'Virtual Photons' of the Heisenberg matrix, that is from the ZPE plenum. The holistic knows something about the Heisenberg matrix, theTerran does not, however. Namely, the holistic knows, that the 'virtual photons' do not exist in the manner the materialist postulates them to do.

The problem with the ZPE from the materialist perspective is the rendering of 'virtual' which is in fact a higher symmetry between the 3D and the 4D (and higher D). The 3D 'communicates' with the 4D and vice versa via a boundary defined in the MEDIATING GAUGE AGENTS of the fundamental interactions of gravity, electromagnetism and the strong- and weak nuclear interactions. The 'virtual' photons of the materialist so are the 'real' gauge photons of the holistic and those 'gauge photons' are very precisely defined in the holistic cosmologies indeed. In particular those 'Source-Photons' do not require electric charges (Coulomb Charges) to become accelerated in mass associated inertia carriers like

atomic nuclei like protons undergo by fusion in stars. Those 'Source Photons' DO require an acceleration dynamic, but not of electric charges but of magnetic charges.

All electric charges are coupled to mass and inertia and accelerating such 'electric inertia' will produce EMR. But unbeknown to the materialist, accelerating 'magnetic gravita' will produce Electromagnetic Monopolar radiation or EMMR. What is MAGNETIC GRAVITA? Just as all electric charges couple to inertial mass as inertia; so are all magnetic charges coupled to mass as gravita. The holistic understands, that this mass-gravita coupling is actually the coupling of gravitational mass to the 4D virtual 'blueprints' or templates which manifest in 3D as the 'particles'. So the MAGNETIC GRAVITA is simply the 4D precursor or ancestor of the ELECTRIC INERTIA of the 3D. This, the holistic understands is the ORIGIN of the Equivalence Principle of Albert Einstein in the relativity theories in the materialistic scientific database.

The key of the 4D omni-physics becomes the manifesto of the acceleration mechanism for the Source-Photons, which then generate the EMMR as the SOURCE-ENERGY which is a 3D Dispersion in the Quantum Big Bang. So the holistic physicist knows, that the ENERGY measured in 3D as kinetic and potential and electric and magnetic and thermal and nuclear and its derivatives is a manifestation of the SOURCE-ENERGY from the higher dimensions and communicating at the 3D-4D boundary.

The Big Bang Energy so is a SOURCE-ENERGY; at first CONCENTRATED at a 0-Entropy SELFSTATE and an energy which then disperses in an evolution of entropy in the lower dimension, yet encompassed in higher dimensions, which 'bound' this 'accelerating entropy' in the higher dimensional 'stringed parameters' and allow a 'cyclic' 'RECHARGING' of particular parameters to RESEED the 3D cosmology from its higher dimensional parentage or ancestry.

In one example, the 'feared' heat-death for a 3D-universe after say 10 trillion years due to a 'running out of fuel' from nucleosynthesis of the elements in star generations; is so avoided by a renewed Source-Energy Influx into the 3rd dimension from the fourth (or the fifth if time is included in the Minkowski light path x=ct).

And the 0-Entropy eigenstate is of course NOT defined in spacetime matter, as a say Infinite Reservoir of Source-Energy definable in some (one or many) forms of self consistent logistic mental construct, say as a mathematical idealistic formation of the interrelationships and couplings of so called fundamental constants for energy proportionalities such as $E=kT$ and $E=hf$ and $E=mc^2$.

The holistic perception understands, that for the 0-entropy state from the circular dimensions to become manifested in 3D, entropy must be created in the manifestation of a metric spacetime matter scenario This then becomes a Cosmology using the Big Bang PE as a unity, describable in a Planck-Black-Body-Radiator (PBBR) and modelled on the statistics of velocities and particles as manifestoes of KE in say Maxwellian velocity and momentum distributions. So the materialist physicist takes the Big Bang PE as given and constructs hisher cosmological models from the premise of an initialization, which requires a presence of inertial mass content with radiation. The holistic physicist replaces the inertial mass content with its ancestral gravitational mass content however and so can examine the Big Bang PE in nonmaterial terms using the 'virtual gauge' physics of the materialist in a 'real' application of the shared parameters (say the fundamental laws of nature).

The low entropy state of the Big Bang becomes one of a boundary maximum Temperature Tmax in the 4D cosmology and unlike the Terran approach, this Tmax will not require a kinematic Maxwellian particle distribution to define this temperature. This temperature will become an initial condition for the thermodynamical equations, which describe the PBBR as a 3D-Luminous Surface expanding into 4D-spacetime. This Tmax will also allow an Energy-Gradient to become established; namely to DEFINE a 4D envelope for the PBBR to 'expand into'. This then the materialist physicist will model as a 'Period of Inflation' and from this will evolve certain models of how the densities in the universe differ from a density which would define the universe in equilibrium.

But the holistic knows, that the Temperature-Gradient is also a Density-Gradient and so a Present Mass to Critical mass gradient and the holistic will understand that the 'missing mass' and the 'missing energy' are consequences of the original and initial set up conditions, which manifest the Pre-Big Bang-Scenario before the Inflation occurred. The holistic knows, that the SOURCE-ENERGY is nothing but COSMIC SOURCE CONSCIOUSNESS. So all manifestations in 3D, including all spacetime matter itself is generated by this SOURCE-ENERGY and in a form of the 0-Entropy SELFSTATE. This 0-Entropy Energy-Eigenstate becomes a QUANTUM OF CONSCIOUSNESS. Now, because the SOURCE-RADIATION is EMMR and a SOURCE-PHOTON is a quantum of that EMMR; then HOW are those Source-Photons produced or generated? The 3D serves as the lower dimensional analogy. Just as say a 3D-star generates EMR in the acceleration of electrocharged coupled inertia carriers; so does a 4D-template 'star' generate EMMR in the acceleration of magneto charged coupled gravita carriers.

The acceleration of electrocharged inertia carriers (say protons in the sun) engages a manifested Minkowski metric in 4D-spacetime say. This so is an angular centripetal acceleration of particles about a center and resulting in the inverse square laws for Newtonian Gravitation and Maxwellian Electromagnetism. But the acceleration of magneto charge gravita carriers engages a unmanifested demetricated 5D-Kaluza-Klein spacetime say. This means that there is NO SPACE and there is NO TIME and NOWHERE and NOWHEN the process of EMMR production takes place, except in an eternal NOW-Moment, which encompasses all notions of metrication, measurement and localizations in say coordinate systems.

But how then does this GRAVITA manifest? It manifests as CONSCIOUSNESS BEING the angular acceleration acting on any collection of spacetime quanta and defined in 3D-SpaceVolumars, which in their boundary and initial conditions DEFINE the SOURCE ENERGY as CONSCIOUSNESS. The holistic physicist derives the Physical Consciousness as say DISPERSED in the 3D universe from the Source-Consciousness using well known string parameters in the cosmology which is approximated by the materialist string-theorists from their 3D perspective of physical measurement.

The SOURCE-ENERGY-QUANTUM is:

$$E*=hf*=hc/L_{min}*=m*c^2=kT*=1/e*.$$

The SOURCE-CONSCIOUSNESS-QUANTUM is:

$$e*=1/E*=2R_e.c^2=Volume x Awareness=V.df/dt.$$

So the MAGNETOCHARGE e* of the GRAVITA in the NOSPACETIME becomes the ELECTROCHARGE e of the INERTIA in the SPACETIME and by this the EMMR of the NOSPACETIME becomes the EMR of the SPACETIME.

In the above, the parameter Re is a Maximum/Minimum parameter, known as the Classical Electron Radius and determinative for defining physical consciousness. This is, because the Source-Consciousness must manifest in the 'particles' of the 3D on a particular scale and that scale defines a minimum 'size' for the particles to have. The 'Point-Particles' of the materialist quantum-field-theories DO NOT EXIST, as their existence would require the 0-Entropy eigenstate reserved for the NO-Spacetime scenarios of the NOW-Cosmology in multidimensionality.

So what does exist, is a 'FIELD' around the mathematical 'point-particle' which amongst other things also defines the range for the nuclear interactions in the gauge physics of Quantum Electrodynamics (QED) and of Quantum Chromodynamic (QCD). Now the SOURCE-ENERGY, being the INVERSE of the SOURCE-CONSCIOUSNESS in a unity definition described in an application of MODULAR DUALITY; manifests the MINIMUM METRIC in 3D-Space as a superposed waveform, which couples the gravitational gauge to the electromagnetic gauge. The expression is:

$$V_{spacequantum} = V_{sq} = (\tfrac{1}{4}\pi).\int\{[\sin(3x/2) - \cos(3x/4)^2\}dx = 2\pi^2 \ units^3$$

and simply describes a 'solid of revolution' for this waveform and in a linear summation of a circular area and with the unit becoming a 'wormhole radius' as the wormhole perimeter$/2\pi = L_{min}*/2\pi$. The limits of integration are $x_1 = -600$ and $x_2 = 840$ in degrees defining the waveform to self repeat in 8π radian intervals or 1440 degrees.

The ZPE can now be immediately calculated as:

$$ZPE\text{-}QUANTUM = E*/V_{sq} = 4\pi.E*/L_{min}^3 \quad Joules/m^3.$$

However, this spacetime-quantum must be quadrupled to re-attain the unity of the 'Unified-Field' of the 360 degrees or the 2π radians and so the plenum for the 4D Minkowski spacetime of the materialist physicist will become TETRAHEDRAL in the ADJACENCY of four spacetime quanta as a new unit or building block for the 'more voluminous' spacetimes lower bounded in consciousness by Re.

So the Consciousness Quantum for manifested inertia carrier, say as 'point-particle' electrons surrounded by an 'electron field' will be a Tetrahedral arrangement for MINIMISATION of 3D-Volume and say as the Pythagorean Tetractys. The AWARENESS df/dt represents the ANGULAR ACCELERATION acting upon such collections of minimized Volumars and ONLY in the RESONANCE STATE of the SOURCE-ENERGY, namely when frequency f is f* and its modular dual 1/f* becomes the minimum frequency in terms of a minimum displacement in linear time; will the AWARENESS become maximized as the limit for this derivative in:

$$\lim (as\ h\to 0)\{F(t+h)-F(t)\}/h = \{f*-0\}/\{1/f*\} = f^{*2} = (df/dt)_{max} = SOURCE\text{-}RESONANCE\text{-}$$
$$AWARENESS.$$

The inverse of the SOURCE-AWARENESS so defines the MINIMUM Awareness embodied in inertial mass itself. And now, using this, a most elegant definition for a generalised Cosmic Consciousness becomes apparent. The SOURCE-CONSCIOUSNESS-QUANTUM or SCQ is:

$$e^* = 1/E^* = 2R_e . c^2 = Volume \, x \, Awareness = V.df/dt.$$

$$SCQ = Volume \, x \, f^{*2} = 2R_e . c^2 = 2R_e . (L_{min} f^*)^2 \quad for \quad Volume = 2R_e L_{min}^2.$$

This describes the 3D-Volume, harboring Cosmic Consciousness as a TOROIDAL RING in 3D, which allows however communication with the 4th spacial dimension because of the multi-connectedness of the Toroidal geometry. Because there is a 'hole' in the 'doughnut' the topological deformation of the doughnut into a singular connected spherical encompassment, will 'OPEN' a 'HOLE TO INFINITY' in the 3-dimensional geometry. There are only 3 singular connected geometrical constructs in 3D in the PLANE, the CATENOID, the HELICOID and if topologically deformed (say crumbled up) they can be deformed into this Spheroid with a 'Hole'.

This 'holed spheroid' then becomes akin a Klein-Bottle with a 'Gooseneck' which renders the two dimensionalities of a finite plane as a one-dimensional surface following the topological transformation and a deformation of the plane which will appear (or can be modeled as) to encompass a 3-dimensional volume. So the SCQ-Volume will become proportional to the volume of 4Vsq and will define the classical quantum scale of the electron field. Particularly then:

$$N.4V_{sq} = N.8\pi^2 . R_{min}^3 = 2R_e . (4\pi^2) . R_{min}^2 = 4(\pi . R_{min}^2) . (2\pi . R_e).$$

This then shows, that the TORUS OF CONSCIOUSNESS engages a TUBULAR CYLINDER of radius R_{min}^2 and of height 8π times the classical electron radius. This tubular cylinder is then curved into a torus in self intersection to define the 3D volume for a torus in the formulation:

$$V_{Torus} = 2\pi^2 . R_e . R_{min}^2$$

and as a FRACTAL magnification for the tetrahedral spacetime building block. The proportionality $N = V_{Torus}/4V_{sq} = R_e/R_{min} = 10^{10} (2\pi/360) = 174,532,436.2$ in coupling the definition of the radian (π as 180 degrees) to the transcendental number Pi.
In other words, precisely 10 Billion 'Unified Fields' are contained in a minimum quantum field as described on the subatomic scale of the nuclear elementary interactions. The Volume 'influxes' as a maximum resonance condition in 3D of a single quantum of Source-Consciousness so is $V^* = 2R_e L_{min}^2 = (5/9).10^{-58}$ cubic meters and containing $e^* = 500$ Star Coulombs (C*) of Consciousness as 0.002 Joules of Source-Energy.

Using V* as a 3D-Volumar now de-toroidalised in $V_{3D} = (4\pi/3).R_{3D}^3$ then provides a minimum volume in 3D in which a resonance source consciousness could reside. This minimum radius for consciousness containment so is: $R_{3D}^* = 2.3671 \times 10^{-20}$ meters and a value which translates to a concentrated energy (in say particle accelerators such as the LHC) of so 1.345 microjoules or 8,371 GeV (8.4 TeV) in a Compton wavelength of $1.487..\times 10^{-19}$ meters. So the implication for this fact of holistic physics is, that should the materialistic scientist succeed to 'probe' the nature of spacetime matter at the 2.4×10^{-20} meter scale, shehe would

ENCOUNTER the minimal manifested resonance state of the Source-Consciousness itself. And in particular, the Large Hadron Collider or LHC at Geneva is designed to collide protons at a relativistic energy of 7 TeV with antiprotons at the same energy level for a combined 'probing' energy of 14 TeV.

The successful Tevatron collider at FermiLab in the USA is designed for a total proton-antiproton energy of 2 TeV for comparison. Calculating the Compton-Wavelength for a toroidal 4D-Volume gives $L_{Compton}=h/mc$ with $V^*=2\pi^2 \cdot R_{3D}^{*3}$ for $R_{3D}^*=L/2\pi=1.412 \times 10^{-20}\,m^3$ and so gives an energy of 2.2545 microjoules, which are 14 TeV and thus the designed energy of the LHC.

3. Physical Consciousness Coupled to the Mind of Universe

The labels of 'mind' and 'self-awareness' and of 'consciousness' have for long awaited rigorous definition in the nomenclature of science. Whilst most researchers and philosophers accept the existence of those labels; what those namings represent in a physically measurable sense of physical parameters have remained largely unexplored. These notions have remained as one of the major mysteries of science and have become subject to a number of speculations from a purely materialistic interpretation of the 'mind' being a biochemical response to environmental stimuli, to the 'mind' being part of a 'spiritual soul' and subsequently constituting a transcendent aspect of biophysical life.

A related mystery is that of 'life' itself. How did the universe evolve 'life' from a generally accepted premise of a prior or older cosmology, which disallowed biological life as is observed today? The thermodynamically expanding universe follows well tested physical parameters engaging the quantum nature of physical existence in the form of nucleosynthesizing interactions such as nuclear fusion of atomic elements and an associated natural radioactivity inherent in nature and its laws of conservation of energy and momentum. Those same processes occurred in the primordial universe and due to the smaller volume then occupied by the expanding universe; the descriptive cosmology describes a much hotter universe (as a Black Body Planckian Radiator) and a universe in which say the lifeforms observed on planet earth could not exist in their biochemical and molecular constitutions.

Recent advances in the demetricated forms of supermembrane theory (M-Theory for 11-dimensional supermembranes propagating 10-dimensional superstrings in a 12-dimensional selfdual mirror-spacetime of supervolumars (Vafa-F-Space encompassing Witten-M-Space) have allowed a rigorous definition for the above labels in the parameters of the physics of the superbranes.

It has been discovered, that the universe contains an intrinsic coupling-parameter between its inertial mass-content and its noninertial energy content. The matter in the universe is described by the physical parameter termed Mass (M), say as proportional to Energy (E) in Einstein's famous equation Mass $M=E/c^2$. This mass M then reappears in Newtonian mechanics as the change in momentum (p) defining the Inertial Mass (M_i) as being proportional to some applied Force (F) or the 'work done' for a particular displacement $\{F=dp/dt$ for $p=mv$ and v a kinetematic velocity as the ratio of displacement over time generalised in the lightpath $X=cT\}$. It is also well understood, that the inertial mass M_i has a gravitational counterpart described not by the change in momentum of inertia carrying matter agglomerations; but by the geometric curvature of space containing matter conglomerations.

This Gravitational Mass M_g is measured to be equivalent to the Inertial Mass M_i and is formulated in the 'Principle of Equivalence' in Einstein's Theory of General Relativity.

F-Theory then has shown, that this Inertial Mass M_i is coupled inherently to a 'mass-eigen' frequency via the following formulation:

(1) Energy $E=hf=mc^2$ (The Combined Planck-Einstein Law)
(2) $E=hf$ iff $m=0$ (The Planckian Quantum Law $E=hf$ for lightspeed invariance $c=\lambda f$)
(3) $E=mc^2$ iff $f=f_o=f_{ss}$ (The Einstein Law $E=mc^2$ for the lightspeed upper limit)

(1) Whenever there is mass ($M=M_i=M_g$) occupying space; this mass can be assigned either as a photonic mass {by the Energy-Momentum relation of Special Relativity: $E^2=E_o^2 + (pc)^2$} by the photonic momentum $p=h/\lambda=hf/c$} OR a 'restmass' $m_o=m/\sqrt{[1-(v/c)^2]}$ for 'restenergy' $E_o=m_oc^2$. The 'total' energy for the occupied space so contains a 'variable' mass in the 'combined' law; but allows particularisation for electromagnetic radiation (always moving at the Maxwell lightspeed constant c in Planck's Law and for the 'Newtonian' mass M in the Einstein Law.

(2) If M=0, then the Einstein Law is suppressed in favour of the Planck Law and the space contained energy E is photonic, i.e. electromagnetic, always dynamically described by the constancy of lightspeed c.

(3) If M>0, then there exists a mass-eigen frequency $f_{ss}=f_o=E_{ss}/h=m_{ss}c^2/h$, which QUANTIZES all mass agglomerations $m=\Sigma m_{ss}$ in the massquantum $m_{ss}=E_{ss}/c^2$.

The quantization of mass m so indicates the coupling of the Planck Law in the frequency parameter to the Einstein law in the mass parameter. The postulative basis of M-Theory utilizes the coupling of two energy-momentum eigenstates in the form of the modual duality between so termed 'vibratory' (high energy and short wavelengths) and 'winding' (low energy and long wavelengths) selfstates. The 'vibratory' selfstate is denoted in: $E_{ps}=E_{primary\ sourcesink}=hf_{ps}=m_{ps}c^2$ and the 'winding' and coupled selfstate is denoted by: $E_{ss}=E_{secondary\ sinksource}=hf_{ss}=m_{ss}c^2$ The F-Space Unitary symmetry condition becomes:

$$f_{ps}f_{ss}=r_{ps}r_{ss}=(\lambda_{ps}/2\pi)(2\pi\lambda_{ss})=1$$

The coupling constants between the two eigenstates are so: $E_{ps}E_{ss}=h^2$ and $E_{ps}/E_{ss}=f_{ps}^2=1/f_{ss}^2$ The Supermembrane $E_{ps}E_{ss}$ then denotes the coupled superstrings in their 'vibratory' high energy and 'winded' low energy selfstates. The coupling constant for the vibratory high energy describes a MAXIMISED frequency differential over time in $df/dt|_{max}=f_{ps}^2$ and the coupling constant for the winded low energy describes its MINIMISED reciprocal in $df/dt|_{min}=f_{ss}^2$

F-Theory also crystallizes the following string formulations from the $E_{ps}E_{ss}$ superbrane parameters:

$$1/E_{ps}=e^*=2R_ec^2=\sqrt{\{4\alpha hce^2/2\pi G_om_e^2\}}=2e\sqrt{\alpha}[m_P/m_e]=2ke^2/m_e=\alpha hc/\pi m_e$$

Here e* is defined as the inverse of the sourcesink vibratory superstring energy quantum $E_{ps}=E^*$ and becomes a *New Physical Measurement Unit* in the *StarCoulomb (C*)* and as the physical measurement unit for 'Physical Consciousness'. R_e is the 'classical electron radius' coupling the 'point electron' of Quantum- Electro-Dynamics (QED) to Quantum Field Theory

(QFT) and given in the electric potential energy of Coulomb's Law in: $m_e c^2 = ke^2/R_e$.and for the electronic restmass m_e. Alpha α is the electromagnetic finestructure coupling constant $\alpha = 2\pi ke^2/hc$ for the electric charge quantum e, Planck's constant h and lightspeed constant c. G_o is the Newtonian gravitational constant as applicable in the Planck-Mass $m_P = \sqrt{(hc/2\pi G_o)}$.

As the StarCoulomb unit describes the inverse sourcesink string energy as an elementary energy transformation from the string parametrization into the realm of classical QFT and QED, this transformation allows the reassignment of the StarCoulomb (C*) as the measurement of physical space itself.

The Physical Quantum of Consciousness as SpaceAwareness (df/dt) maximised and minimised in the string coupling constants f_{ps}^2 and f_{ss}^2 respectively, so can be defined as:

$$e^* = 2R_e c^2 = (\text{Classical Electron Diameter}) \times (\text{lightspeed})^2 = \text{Volume} \times \text{Angular Acceleration}$$

As the time differential operator on frequency is independent on radial displacement in df/dt as the square of frequency or the square of inverse time; we can now also define the parameter of:

$$\text{Spacial Awareness} = df/dt = \text{AlphaOmega} = \alpha\omega = aw = \text{Angular Acceleration Quantum.}$$

The Spacial Awareness 'aw' then operates upon any volumar in the rootreduced F-Space (12D being a 9-dimensional brane volumar of superstring dimensions to which is coupled a 3-dimensional temporal time-connector volumar in 12=9+3 F-Space, 11=9+2 M-Space and 10=9+1 C-Space) AS the 3-D volume of the observed spacial component of the 'Euclidean flatness of the Minkowski spacetime metric. The implications of those definitions for the physical universe and its cosmology are far reaching indeed.

As the expanding universe increases in its 3-dimensional volume, its 'spacial consciousness' is also increasing in the 'activation' of additional spacetime quanta. Each of these spacetime quanta describes the inherent Zero-Point-Energy (ZPE) as defined in the 3D-volumar of the E_{ps} sourcesink superstring energy quantum then coupled to its characteristic 'starcoulombic' 'physical consciousness'. The ZPE per unit volumar is:

$$ZPE_{quantum} = 4\pi E_{ps}/\lambda_{ps}^3 = E_{ps}/2\pi^2 r_{ps}^3 = 4\pi/e^*\lambda_{ps}^3 \quad (\text{Joules/m}^3)$$

Every ZPE quantum is coupled to a volume $V^* = e^*/(df/dt)$ and so defines the quantisation of spacial volume in terms of the ZPE, as well as the 'physical consciousness' contained in that volume. The V^* here denotes the resonant quantum volumarized eigenstate in a minimised spacetime volumar and NOT in terms of spacial volume, but in the form of an ENTROPY COUNTER of 'statistical permutation selfstates' operation upon the 'Spacial Consciousness' quantum $e^* = 1/E_{ps} = 1/E_{ss}.f_{ps}^2 = f_{ss}/h$.

The self-frequency of the mass quantum so can be expressed formally as $f_{ss} = he^*$ for the timeinstanton $t_{ss} = f_{ss}$, the latter triggering the 'inertialisation' of the postinflationary cosmology in the socalled Quantum Big Bang, precisely $3.333..\times10^{-31}$ seconds* following the 'string epoch' of the matter wave inflation (detailed and referenced elsewhere on this site).
But it is the supermembrane coupling between the gravitational (photonic) mass M_g as given by the vibratory sourcesink string with the inertial mass M_i as given by the winding sinksource string, which is the primary causation for this Quantum Big Bang, following the string

parametric de Broglie wave matter inflation. Rewriting $f_{ss}=he*$ then describes this coupling in the ACTION=EnergyTime of the Planck Constant in the finestructure f_{ss}=Energy*xTimeInstantonxe* for the Unity Condition of F-Space in $1=E*e*$ that is the original definition of $e*=1/E*$ as the definition for the 'Physical Consciousness of Space'.

Generally then, the permutative entropy counter $df/dt|_{max}=f_{ps}^2$ gives precisely $9x10^{60}$ frequency eigenstates as the coupling constant between the two modes of the superstring; whilst its inverse defines the minimum as the 'Singularity' 'Null-State' or 'No Consciousness' state as $1/(9x10^{60})\sim0$. The Awareness operator applicable for all universal space so can fluctuate between the quasi-zero state and the maximised resonance state in the factor of $81x10^{120}$ and a value 'measured' by contemporary standard cosmological models as characteristic of the density discrepancy between the Planck-(ZPE)-Density $\{\rho_P=m_P/V_P=c^5/\pi hG_o^2\}\sim9.4x10^{94}$ (kg/m³) and the actual matter density measured in the universe $\{\rho_c=3H_o^2/8\pi G_o\sim3.8x10^{-27}$ (kg/m³) from the inner 10D observer frame and $\rho_c=H_o^2/4\pi^2G_o\sim8.0x10^{-28}$ (kg/m³) from the outer 11D observer frame of the Riemannian hypersphere as a 3D boundary of the 4-ball $V_4=\frac{1}{2}\pi^2R^4$ for $dV_4/dR=2\pi^2R^3$ as a 3-dimensional surface descriptive for the overall topology of the standard cosmology).

The dimensionless ratios of ρ_P/ρ_c then indicate the ZPE/Critical energy discrepancies in the factors of the permutation string selfstates in the factors of $2.5x10^{121}$ and $1.2x10^{122}$ respectively. The ZPE-quantum $E_{ps}=E*$ so represents the kernel or core for any region of space containing a maximised 'physical consciousness' given by $1/E*=e*$ StarCoulombs (C*). The quantitative volume V for this consciousness is minimised in $V_{ps}*=e*/f_{ps}^2$ in sourcesink resonance to the vibratory superstring modality and is in modular duality (as a monadic dyad or monadic duad) to its coupled sinksource resonance of its winding mode in its quantum-maximisation of $V_{ss}*=e*f_{ps}^2$.

The minimum calculates as $V_{ps}*=e*/f_{ps}2=1/1.8x10^{58}$ permutation states and translates to a 3D volume of measurement R with a Compton radius ($R_c=h/2\pi mc=c/2\pi f_c=c/\omega_c$ with angular velocity $\omega=2\pi f$) as of $R_{cps}=(e*f_{ss}^2/2\pi^2)^{1/3}\sim1.4x10^{-20}$ meters for a Compton Energy of about 2.2 microjoules or14.03 TeV (as the maximum design capacity of the Large Hadron Collider or LHC located at Geneva, Switzerland comprised of two individuated colliding proton beams).

The precise ratio between the ZPE-kernel and the 'Space Consciousness' surrounding this core becomes: Wormhole-Radius/Space-Consciousness-Radius and as:

$$r_{ps}/R_{cps}=(2\pi^2/e*r_{ss}^3 f_{ss}^2)^{1/3}=c(f_{ss}/4\pi e*)^{1/3}=(cf_{ss}/8\pi R_e)^{1/3}\sim1/887.11 \text{ (dimensionless)}$$

and because the string coupling defines $c=\lambda_{ps}f_{ps}=1/\lambda_{ss}f_{ss}$), rendering the Minkowski lightspeed constant c as dimensionless in the lightpath $X_{ps}=cT_{ps}=cf_{ss}$. This defines the quantum gravitational coupling of the gravitational mass element m_{ss} to the observed and measured elementary particle masses in QFT and Quantum-Chromo-Dynamics (QCD); the 'chromaticity' or 'colour charging' of gluonic gauge interaction transmitters being identifiable as the *MagnetoCharges* defined in StarCoulombs (C*).

The corresponding maximum then couples in macroquantisation to the microquantised quantum gravitational MagnetoCharges in $V_{ss}*=e*f_{ps}^2=4.5x10^{63}$ permutation states for a characterizing 'Galactic Volumar' in $R_{css}=(e*f_{ps}^2/2\pi^2)^{1/3}=(e*f_{ss}^2/2\pi^2)^{1/3}\sim6.1x10^{20}$ meters or so 64,650 lightyears and a displacment scale which is then 'haloed' by the the winded

string parameter $r_{ss}=1/r_{ps}=2\pi\lambda_{ss}\sim 6.3\times 10^{22}$ meters or 6,648,875 lightyears and as the displacement scales observed by the standard cosmology. Correspondingly:

$$r_{ss}/R_{css}=(16\pi^5\lambda_{ss}^3/e^*f_{ps}^2)^{1/3}=(16\pi^5/f_{ss}e^*c^3)^{1/3}=(8\pi^5/f_{ss}R_ec^5)^{1/3}\sim 102.85$$

As

$$r_{ps}/r_{ss}=r_{ps}^2=(cf_{ss}/2\pi)^2 \text{ and } R_{cps}/R_{css}=(f_{ss}/f_{ps})^{2/3}=(f_{ss})^{4/3}=(4\pi^2 r_{ps}/r_{ss}c^2)^{2/3}$$

$$(R_{cps}/R_{css})^3 = (4\pi^2 r_{ps}/r_{ss}c^2)^2=10^{-88}/c^4=1/8.1\times 10^{121} \text{ as the awareness operator fluctuation range.}$$

The 'Physical Consciousness' in the standard cosmology now crystallizes as being associated with biovital lifeforms, occupying space, and as evolving in the dynamics of (holographic) fractals of the encompassing 'consciousness envelope' aka the galactic cells of macroquantised entities. This biovitality is defined in a 'kernel consciousness' inherent in space itself via the string-coupled modalities; mimicking the overall expansion of the thermodynamic (and stochastic) universe. This process can be comprehensively described as the *EVOLUTION of Core-Consciousness in its Spacial Occupancy*.

The Definition of 'Life' must so fundamentally be based on the string coupling between the two modalities and as two modes of operation, which quantum relatively entangle the microquantum characterised by the 'wormhole core' as as function of the nuclear interaction scale (the classical electron radius R_e is also the scale of the magneto-asymptotic confinement of gluons in the definition of the magnetocharges and so becomes the limiting quantum geometric template for the nuclear gauge interactions and the 'Higgs Bosonic' blueprint at the 3 Fermi scale).

'Life' then becomes the cosmo-evolutionary consequence of a quantum geometry defining the spacial configurations of the supermembranes as superstring couplings. This is why the most basic and primordial 'lifeforms' such as viruses, bacteris and fungi follow highly geometrized patterns in Platonic- and Archimedean solids, characterised by highly symmetrical arrangements of their molecular and atomic constituents. The most elementary 'life form' is the crystalline arrangements of the self-replicating pattern. This originally manifested in so called quasicrystals of fivefolded symmetry, such as can be observed in Shechtmanites and the Penrose tiling. The underpinning cosmology of the decoupling and breaking of the so termed Planck-Symmetry transformed the Planck-String into 5 classes of superstring; this 'breaking of unification' following a pentagonal supersymmetry at the core of all 'natural laws'. Many details can be found on this website for perusal and utility.

For a 'lifeless' mass-only universe then the selfrequency of mass in the f_{ss} sinksource superstring would define the awareness operator as minimised in $V^*|_{min}=e^*/(f_{ss}^2)=e^*f_{ps}^2$ Corollarily, the 'fully life-conscious' universe (attained after an infinite linear time evolution of the descriptive cosmology) would be defined in $V^*|_{max}=e^*f_{ss}^2$.

We can now relate the 'spacial consciousness' in terms of the universe's inertia content to the volume occupied by mass. As there are $(R_{Hubble}/r_{ps})^3\sim 10^{147}$ spacetime quanta in the asymptotic string universe of 10D and bounded by the membrane universe of 11D (as an extremal Strominger braned Black Hole say) and the sinksource (winded string) $E_{ss}=hf_{ss}=m_{ss}c^2=2.222...\times 10^{-64}$ J; we can define a 'Consciousness-Density per unit mass' P_c for this 11D-'Mother-Black Hole' in Witten M-Space in dyadic coupling with a 12D-'Father White Hole' in Vafa-F-Space (MBH and FWH). The M-Space MBH defines the Hubble horizon in its' closure mass'

$$M_{Hubble} = R_{Hubble} \cdot c^2/2G_o = \Sigma m_{ss} = N m_{ss} \sim 6.4706 \times 10^{52} \text{ kg}$$

$$P_c = e^*(R_{Hubble}/r_{ps})^3/M_{Hubble} = 2G_o e^* R_{Hubble}^2/r_{ps}^3 c^2 \sim 7.81685 \times 10^{96} \ (\sim 83.2 \ \rho_P) \ C^*/kg$$

This is about 83.2 times the Planck-Density ρ_P for M_{Hubble} and 2.34 times the Planck-Density applied to the baryonic mass seedling $M_o = 0.0281 M_{Hubble}$. The 'Base Inertia Consciousness' (BIC) per minimal mass quantum m_{ss} then calculates as $m_{ss}P_c = 1.930 \times 10^{16}$ C* and for a count of $N = 2.6206 \times 10^{133}$ m_{ss} as the inertia distribution of the $BIC_{Universe} = 5.058 \times 10^{149}$ C*.

A characteristic mass of 1 kg, say as the standard liter of water in 10^{-3} cubicmeters of volume so possesses an inherent inertial consciousness of 7.82×10^{96} C*. This is the ZPE of the quantum standard models redefined in units of consciousness and this total includes 'dark matter' and 'dark energy', the former as the effect of the DIM-Factor (see other references on this website) of 7.56 for the present linear time coordiante and the latter as the 'missing mass-energy' for the mass seedling M_o in 10D to 'close' the universe in the MBH of M_{Hubble} in 11D. In terms of the volume of 1 liter however; the 'spacial consciousness' quantizes in the form of the VPE quantum $E_{ps} = 1/e^*$ per unit volume and which is $VPE_v = E_{ps}/2\pi^2 r_{ps}^3 \sim 2.5133 \times 10^{64}$ J/m^3. The 'inertia consciousness' of 1 liter of water so relates the BIC of 7.82×10^{96} C* to a VPE_v or ZPE of 2.51×10^{61} J/m^3.

The example of a simple rock serves as a culmination of this essay. A rock, occupying a volume V_{rock} carries an intrinsic Base-Consciousness due to its volume. This basic consciousness is given in the mass-frequency f_{ss} as the mass of the rock is quantised in a number count N of mass quanta m_{ss}. This mass of the rock is actually a higher-dimensional mass-current as a form of 'natural superconductivity' {$I_{ps} = 2ef_{ps}$ superstring coupled to $I_{ss} = 2ef_{ss}$}. The rock can so also be described as a summation of displacement current elements $I_{ss} = 2e\lambda_{ps}/c$ (as James Clark Maxwell propositioned - see 'The Origin of Mass' section on this website). Mass in its purest form so is nothing but 'static magnetoelectricity' or densified electromagnetic monopolic sourcesink current. The nondensified form of mass is of course photonic and should this photonic mass NOT be a derivative from the acceleration of electric (Coulomb) charges 'e' coupled to preexisting mass (say fusion protons in stars), BUT be a derivative from the acceleration of magnetocharges 'e*', then the resulting ElectroMagnetic Radiation is monadic or Monopolic and defines the so called 'SPIRIT' of metaphysical cosmologies and philosophies.

The rock of volume V_{rock} and as some summation ΣI_{ss} or Σm_{ss} so describes an energetic selfstate of the superstring coupling between the string dyadics of the microquantum E_{ps} and the macroquantum E_{ss}. The interaction of the rock with its environment then, in elementary terms, becomes a dynamic of spacial interaction in the movements of the rock.
All Spacequanta are associated or quantum entangled with each other via the string coupling and as all spacetime volumars are defined by their ZPE-core and its 'haloed' or 'auric' envelope of the physical consciousness coupled to the volumars by the self-awareness operator df/dt; the entirte cosmology is rtendered a unified kaleidoscope of holofractal self-interaction of the thus defined 'Cosmic Consciousness'.

A basic quantum consciousness then is multplied and complexified in the interaction, self- and mutual, between spacetime volumars of varying sizes in the encompassing summation integrals of the initial- and boundary parameters of the cosmogenesis (described elsewhere). The phenomenon of 'life' then is characterised by the Awareness-Operator the Alpha-Omega

aw=αω=df/dt, namely the 'Change in Frequency' over linearised Time t and where the sourcesink frequency for minimum impdence for the 'natural current flow' (I_{ps}) forms the upper bound source-resonance of the vibratory string modality and the maximum impdedence describes the 'natural current flow' (I_{ss}) as the lower bound for the sink-resonance.

The 'lifeless' universe of the primordial Quantum Big Bang is in Sink-Resonance to the E_{ss} sinksource as a macroquantum, manifesting the supergalactic inertia in Black Holes as seedlings for mass agglomerations known as galaxies. Coupled to those 'higher-D' Black Holes are however imaged 'higher-D' White Holes (Quasars) who as Source-Resonators manifest the Source-Resonance of the E_{ps} sourcesink as the microquantum of the superbraned cosmology from its cosmogony.

The purpose and reason for the universe of materiality so is found in the Coevolution of SourceSink Self-Consciousness as *unified encompassment* for the cosmoevolution with its *individuated and dispersed holographic shards or holograms of this selfsame self-consciousness in evolvement.* The operator for this evolvement is spacial selfawareness and the ability to use a biomind defined by the function of 'changing' or modulating the frequency received by an antenna, which can take the form of a biochemical and molecular arrangement of cellular units termd a 'brain'.

The biological evolution of brains, then accomodates the utility of the natural superconductive electricity embodied in space itself; the biochemical electricity (of say electromagnetic brain waves) representing a shadow function of the chargeflow I=dQ/dt as a 'normal currentflow' to the electromagneto monopolic supercurrents of the magnetocharges aka the physical spacial consciousness.

4. The Core-Awareness of the Earth, the Moon and the Sun

The model of physical consciousness as a form of energy encompasses all ideas of 'spirituality' and labels of immaterial existence; if one can qualify and quantify this energy as something capable of existing independent from material parameters. But as spacetime-matter exists in say a commonly shared earthly 3D-space 1D-time experience; this selfsame consciousness-energy is certainly required to influence and to interact with the material realms of the spacetime matter. So this little excursion will attempt to elucidate the nature of awareness as a component for this consciousness of being within say a volume of space and illustrate how this spacial awareness relates to the most fundamental concepts of gravitation.

What is the consciousness of this planet earth or what is the source energy 'coupled' to the earth's satellite - the moon? The sun, a yellow typical star of class G2V on the main sequence of the Hertzsprung-Russell chart of spectral classifications encompasses the planet as the gravitational center of the so defined solar system. The sun provides energy for this solar system like a benevolent parent; what is its core consciousness? We recall our basic definition for the Source-Consciousness as the magneto charge quantum e* (in uncommon units of the Star Coulombs) being the inverse source energy quantum (in common energy units say Joules or Electronvolt).

e*=VolumexAwareness=Electron-Field Diameterxdf/dt=500 C* as the boundary condition for df/dt=f^{*2} for a Volume $2R_e.L_{min}^2$.

Now consider the manner the Mass of the Earth was calculated by Henry Cavendish in 1798. Newton's Law for Gravitation applied to a 'point-mass' or 'test-mass' m gives the Gravitational Acceleration g_{Earth}=9.8 m/s^2. F_{grav}=$G_m M_{Earth}/R_{Earth}^2$=$mg_{Earth}$ and this can be solved for the Mass of the earth as about 6x10^{24} kg.

Now every college student in physics is told, that the mass of the earth can be considered to be concentrated at the 'center of gravity', say coinciding with a spherical mass- or density distribution and which would be the geometric center of a sphere for perfect spherical symmetry. The 3D-physics then is rendered 4-dimensional in doing just such a 'centering of mass' and in Einstein's theory of General Relativity. Here then the gravitational acceleration is described as a curvature of spacetime around this mass distribution and in an extreme case this curvature leads to a 'total collapse' for this mass concentration into the $m_{Schwarzschild}$ metric termed a Black Hole.

So replacing the radius of the earth by the LIGHTPATH x=ct will of course define the amount of time for light to travel from the surface to the center of the earth. As the earth is on average so 2R_{Earth}=12,735,000 meters across as the light path, the time taken is about t=R_{Earth}/c=0.0212 seconds or it would allow light to oscillate almost 24 times in between the poles in one second say. But the 4D-physicist uses the above in an alternative description of 4D reality.

$$F_{grav}=GmM_{Earth}/R_{Earth}^2=mg_{Earth}$$
$$\text{becomes } GM_{Earth}/x^2=g_{Earth}=GM_{Earth}/(ct)^2=\tfrac{1}{2}(2GM_{Earth}/c^2).(df/dt)=\tfrac{1}{2}R_{SEarth}\times\text{Awareness} \text{ and as}$$
$$t^2=df/dt \text{ as a differential.}$$

So the mass of the earth becomes 'Black Holed' and the deciding factor becomes the gravitational acceleration Awareness=2g_{Earth}/RSEarth. So, using the known mass of the earth and its 'BH-Radius'~9 mm (all calculations use the 'constant' G=G_o=1.11x10^{-10} Nkg^2/m^2 value as G_ok=1 as string parameter in BH-physics and G=6.674x10^{-11} 'G-units' for the orbs); Awareness$_{Earth}$=2202 1/s^2 units and with a BASE-FREQUENCY of about 47 Hz. This is the 7th Schumann Harmonic or Resonance for planet earth in the harmonic series: 7.8; 14.3; 20.8; 27.3; 33.8; 40.3; 46.8 in a delta function of 6.5 Hz. The basic Schumann harmonic is simply the circumference of the earth travelled as the light path and so is 40,000,000 meters/c~0.133 seconds for a Base-Frequency of 1/0.133~7.5 Hz. {This is esoterically encoded in the Book of Revelation as the 'outside' of the holy city in proportion to its 'inside' and as 1,600 furlongs and 12,000 furlongs: Rev.14.20 & Rev.21.16}.

More generally, the AWARENESS as hereby described is known as Alpha Omega with Greek Symbols αω=aw as a convenient abbreviation. Those awareness units then inversed and square-rooted will of course become the time taken for the light path to the center of the earth as 0.021 seconds. But this time measurement is also an awareness measurement which so gives a CORE-AWARENESS for the planet earth independent of any frequency modulations df/dt.

In modern terminology then, the AWARENESS is an infinite series of factors each giving a contributing awareness differential as a frequency modulation:

Awareness$_{Earth}$=2202 + ...+...=Core-Awareness + Summation of frequency differential
contributions of earth constituent systems.

In a similar derivation then:

$$\text{Awareness}_{Sun}=0.18 + \text{Integration... and for } F_{Base}\sim0.43 \text{ Hz with light path } 6.96\text{x}10^8 \text{ meters and}$$
$$g_{Sun}=275 \text{ m/s}^2 \text{ and } R_{SSun}=3 \text{ km}.$$

$$\text{Awareness}_{Moon}=29,640+ \text{Integration... and for } F_{Base}\sim172 \text{ Hz with light path } 1.738\text{x}10^6 \text{ meters}$$
$$\text{and } g_{Moon}=1.63 \text{ m/s}^2 \text{ and } R_{SMoon}=0.11 \text{ mm}.$$

The greater the light-path, the smaller the Core-Awareness and so the SEPARATION between the say Emitter and the Receiver of the Information 'sent' by the light path defines this inverse proportionality. The 3D-physics of the c-invariance so assumes a deeper significance as it indicates the IMPORTANCE OF THE ENVIRONMENT for the Integration of the individuated Awareness Carriers.

The Core-Awareness as defined so does not vary in the differential and becomes a direct consequence of the constancy of the speed of light. But any constituent consciousness carriers will be able to INTERACT environmentally with each other in a collective sense and so CHANGE the AWARENESS of the SELF as the Source-Consciousness. So for example the information exchange between a tree and a hill can be approximated in their 'Black Holed' Inertia, but only as a Core-Awareness and not considering the kaleidoscope of interactions in all of the kingdom of crystal, mineral, animalia, archaea, bacteria and fungi and so on. So taking the tree and the hill in isolation without the possibility of interaction, their awareness-content would become like a constant as described. But ANY interacting environment engages in multiple feedback cycles which change the AWARENESS of that environment.

A little ant in isolation and about 2 mm in length as the light path would require a frequency $c/2mm\sim1.5\text{x}10^{11}$ Hz and so electromagnetic radiation in the infrared part of the spectrum to 'share' its core-awareness of $2\text{x}10^{22}$ awareness units. Generally then, the concept of Self Awareness as here modeled engages a Core-Awareness to which is added or subtracted the environmental interactions.

The kingdoms of fauna and flora and the archaeon, the prokaryotes and the eukaryotes will interact in systems and subsystems of multitudinous diversity. The Awareness of individuated and/or collective constituents will vary in this interaction and is described in the differential equations, which employ the time derivatives for frequency in an appropriate manner. As the inertial mass can be shown to be a derivative of its precursor gravitational mass and this gravitational mass as GRAVITA can be described as superconductive 'natural current' of magneto-monopolar origin and so linking to the magneto charge as a model for the Inverse Source Energy as physical consciousness; the differential equations used to describe 'normal' electricity in 3D can be reformulated to describe the 'Life-Force' as such a 'natural electricity' requiring not any medium such as a copper wire, but only spacetime quantization itself.

The second order of say $V=L.d^2q/dt^2+R.dq/dt+q/C$ reduces to first order in the awareness differential and where the quantized charge counter 'Ne' becomes a constant coefficient in the mathematical expressions. Then an RCL-'life-circuit' will differ from a 'RC'- or an 'LC' circuitry and allow self-and mutual frequency inductions to modify the overall 'life-circuits'.

The environmental interactions between 'RC'-current elements can be modeled on a 'Capacitative Awareness', which one can label as instinctual or as nonanalytical. 'LR'-current elements can describe an 'Inductive Awareness' which is analytical with suppression of the instinctual (or emotional) component. And any organism and awareness carrier, which

harbours the full 'RCL'-circuitry will have both instinctive and analytical properties in its evolutionary potential and the search to obtain Source-Resonance.

Because the L-factor (as Y-chromosome) can be associated with a sex-chromosomic bifurcation of the DNA/RNA Codex of 64 permutations (and 20 Amino Acids), as well as the C-factor (as X-chromosome say with a unity $X_0Y_0X_1X_2$ and where say X_2 is a disguised Y_1) a sexual differentiation embodied in the natural current equations can also be made. Additionally, the C-Awareness cross induces the L-Awareness both mutually and self inductively and this can be modelled on say circuit diagrams, which also show that the SEPARATION from the Source-Energies (as minmax Potential Differences say) becomes a function of EVOLUTION in linear time and in which a FINAL END for this evolution must be defined before its BEGINNING and as a consequence for the initial parametrizations of the circuit components C, R and L.

In 4D, the spacetime matter matrix of 3D is a lower bound for the c-invariance and the entire universe can be 'travelled' like a 'superposed' inflationary scenario. In the 4D, the awareness is of course upper bounded by the square of the source frequency in 9×10^{60} awareness units. This is most easily seen in the so called Inflationary Big Bang Cosmology. The metric limit in 3D is the wormhole radius ($R_{min}=L_{min}/2\pi$) for a source frequency of $f^*=3 \times 10^{30}$ Hz and of course nothing in 3D can be smaller than this. But the Inflaton of the Instanton 'expanded' the 4D envelope for the 3D universe in a de Broglie Matter Wave Velocity $V_{dB}=R_{Hubble}.f^* \sim 10^{48}.c$ and in an accompanying phase acceleration $A_{dB}=R_{Hubble}.f^{*2} \sim 10^{87}$ m/s^2 and in a manifestation of the cosmological initiatory and boundary conditions. So taking $R_{Hubble}=ct^*$ for the source frequency f^* gives the Core-Awareness parameter for the Big Banged Universe as

$$c/R_{Hubble}=1/t^*=L_{min}.f^*/R_{Hubble}=H_o \sim 1.8 \times 10^{-18} \text{ Hz}$$

and as a nodal Hubble-Constant. This gives the ratio $H_o/f^*=L_{min}/R_{Hubble}$ and as the minimum/maximum condition in betwixt the cosmic evolution will define itself. The minimum time is the time instanton defining a NOW-Moment and this is $1/f^*=3.33 \times 10^{-31}$ seconds and so defines the maximum Awareness as $(df/dt)_{max}=f^{*2}$. Corollarily then, describing the entire universe of mass-seedling content M_o as a Black Hole at the critical mass $M_{critical}$, $R_{Hubble}=2GM_{critical}/c^2$ or $M_{critical}=c^3/2G_oH_o$ and as the critical energy content of the universe as the Sum of the Mass-Seedling M_o and the Consciousness manifested through and by the evolution of this (baryonic) inertia seedling under the auspices of the Awareness-Force derived in an earlier disposition. And for the entire universe, the TIME TAKEN to complete the light path $R_{Hubble}=ct$ will DIFFER in 3D without the de Broglie phase inflation and the 4D which contains the latter.

It may take cycles of 16.9 Billion years for the c-invariance as a LOWER BOUND in 4D and it will take 'asymptotic eternity' for the c-invariance as an UPPER BOUND in 3D to accomplish the 'infinite evolution' of the Source-Consciousness and the Source-Energy to re-attain the 0-entropy state of a spacetime matter less realm of consciousness existence.

5. Conclusion

In this essay the basic questions of existence has been addressed and the answers necessarily must encompass the sciences in their ontology as well as the general puzzles as to the nature and purpose of life and being, hitherto confined to the spheres of religions and spirituality and

subsequently often eschewed by the echelons of scientific discipline and rigor. It has been suggested that the foundation of science is omniscience - incorporating all those concepts of spirituality and its derivatives and labeled as such throughout the history of humankind.

Today's mass-parametric universe is found to have a massless precursor, (as gravitational mass transmuting into inertial mass as the origin of the Equivalence Principle in General Relativity), defined in gauge symmetries of magneto charged 'consciousness' quanta, which pervade a holographic universe as wormholes defining the Heisenberg Zero-Point-Energy metricized background. This essay is about first principles and causes which not only causative for the universe of the relativity to manifest in energy but also to allow a form of angular acceleration or 'space-awareness' to birth the universal and ubiquitous physical consciousness itself.

The 'Physical Consciousness' in the standard cosmology can be crystallizes as being associated with biovital lifeforms, occupying space, and as evolving in the dynamics of (holographic) fractals of the encompassing 'consciousness envelope' aka the galactic cells of macroquantized entities. This biovitality is defined in a 'kernel consciousness' inherent in space itself via the string-coupled modalities; mimicking the overall expansion of the thermodynamic (and stochastic) universe. This process can be comprehensively described as the EVOLUTION of Core-Consciousness in its Spacial Occupancy.

The Definition of 'Life' must so fundamentally be based on the string coupling between the two modalities and as two modes of operation, which quantum relatively entangle the microquantum characterised by the 'wormhole core' as as function of the nuclear interaction scale. 'Life' then becomes the cosmo-evolutionary consequence of a quantum geometry defining the spacial configurations of the supermembranes as superstring couplings. This is why the most basic and primordial 'lifeforms' such as viruses, bacteris and fungi follow highly geometrized patterns in Platonic- and Archimedean solids, characterised by highly symmetrical arrangements of their molecular and atomic constituents. The most elementary 'life form' is the crystalline arrangements of the self-replicating pattern.