QUAGECOMS 101 - A Revolution in the application of Nanotechnology to the Silicon Microchip and the Computation Industry

An open invitation to all in the information and data processing industries. (PACIFICA OMNISCIENCE; November 4th, 2001)
QUAGECOMS are Quantum-Geometric Computer Chips of Superconductivity.

Logo: QuaGeComs for my Data are Pater for my Mater!

Part I: Brief and Introduction

Part II: The State of the Microchip-Industry without QuaGeComs
1. The Rayleigh Criterion
2. Optical, Ultraviolet and Nuclear Unification
3. The Rydberg-Alpha Connection
4. Superconductive Magnetocharges as mapped Electrocharges
5. Photolithography and Quantum-Dot-Assembly

III: Conclusions and References

I: Brief and Introduction: (please allow for date of publication).

In 2000, the Clinton Administration of the United States of America provided a big boost in funding for the science- and engineering budgets in the form of the 'National Nanotechnology Initiative' or NNI.
The Bush Administration further proposes increased federal funding for nanotechnologies in 2001 to US$ 519 Million, doubled from 1999 and quadrupled from the budget in 1997.

Nanotechnology, the study and production of structures on the scale of the molecule at the boundary between organic- and inorganic chemistry, is thought to lead directly to the fastest transistors and the strongest and lightest materials ever produced.

Instrumentation for genetic sequencing and related micro medicinal applications for the detection of tumors and viral agents on sub cellular levels hold further promise for the patent holders of the successful scientific particulars.

A search for information to bridge the gap between existing computerization on the microchip scale and the thousand-fold scale reduction into the realms of nanoscience with its links to the DNA/RNA encoding has become a worldwide effort in the endeavours of cultural science.

In the United States, the National Institute of Health (NIH) enjoys hefty increases in federal funding and reflects a steady growth in the budget for the 'Life Sciences' (US$ 5 Billion in 1970 and US$ 17 Billion in 2000 in real terms).
In the same period, the budgets for Engineering and the Physical Sciences has remained relatively flat at about US$ 5 Billion in constant dollar terms.

To keep the US competitive with documented spending by foreign governments, which committed themselves to a 60% increase in the funding of Nanotechnology (from US$ 500 Million in 2000 to US$ 800 Million in 2001), the NNI became official scientific policy.
[Source: US Senate briefing and National Science Foundation; May 24th, 2001].

This global interest in a promising new technological advance then indicates a fundamental relationship; as yet only partially defined and not patented, between the dynamics and structure of sub cellular 'building blocks of biovital organisms' and a 'shrinking scale of computerization' in the form of the Silicon Chip.
As the 'Code of Life' is given in the form of the DNA and the ribosome of the nanoscale (typically 25 nanometers (nm)=25

Thousandths of a micron or 25 Millionth of a millimeter), a true geometrical understanding of the DNA-Code must indicate the natural limits for any potential symbiosis between the lifeforms of Carbon in any natural setting and their manipulated and synthesized expressions in Silicon.

Any National Scientific Advisory Board, say in the US, the United Kingdom or in Australia, New Zealand or Canada, would so be most prudent in its political approach to fund its proposals via Research and Development (R&D) in committing to specific projects intrinsic and encompassing Nanotechnologies.

The international race to deploy a workable and successful model for Nanoscience seeks to discover a synergetic unification between Biology and Physics in the BioPhysics of the fundamental laws of the Natural Sciences.
Such a unique model exists in the form of Microbiology and the Biochemistry of viral capacities to reproduce on the nano scale of the DNA/RNA under utility of micro scaled cellular host organisms.

To establish this model of the 'Physical Principles underpinning all of Biochemistry' however, the elementary hierarchies of universal information transfer must be known, evaluated and made subject to interdisciplinary analysis by all branches and fields of the established scientific data base.

This specifies the overall purpose and scientific basis for this proposal.
It is claimed, that there exists a unique information pathway which interconnects all of the scaling parameters in a merger of classical spacetime principles with the wavefunctions of quantum mechanics.
In particular, the encoding of physical law defines specified parameters on both the microscale of the biological cell and the massproduced Silicon Chip, as well as the nanoscale of the genetic encoding.

Engaging in a specific manufacturing process for the contemporary Silicon Microchip which incorporates the 'Unification Wavelengths' for the Nanoscale, would then open the doors into the universally defined information pathway via quantum-geometric specifications.

Because the 'natural' DNA/RNA encoding utilises this same 'Geometry of the Quantum' in a form of Holography; such 'Quantum-Geometric-Computer-Chips' or QuaGeCom-Chips would carry the potential to form symbiotic partnerships with the two stranded DNA-Double Helix, say in particular genetic sequencing with Introns (Junk-DNA) and other functional extensions of the unused genomatic potential for information storage.

As the nature of the 'Universal Information Pathway' (UIP) is self-iterative by definition, (it is a derivative of binary algorithms of a pre-spacetime genetic singularity, defining the 'Vacuum'), a precise quantum-geometric blueprint reproduces itself whenever the boundary conditions of its own creation are satisfied.

The mathematical justifications (logical proofs) to scientifically validate this model of Quantum geometry have been established and an extensive analysis as to the formulations of the UIP are available to any agency seeking patent and partnership with this proposal and the creation of QuaGeComs as investment opportunity.

I may interlude here to say, that I forwarded this proposal in 2001 to the Australian Government's Science ministry, which eventually acknowledged receipt of the proposal and advised as to its delegation of it to some scientific advisory board.
Needless to say, that was the last I heard of it.
But the references to prospective investors are in relation to government and not any personal correspondences.

II: The State of the Microchip-Industry without QuaGeComs

1. The Rayleigh Criterion

The mass-production of the Silicon Chip assumes the form of PhotoLithography, a process which is defined in the physics of the optical sciences and the applications of Electromagnetic Fieldtheory upon the fields of Resolution and the reproduction of Diffraction patterns.

A laser beam 'writes' a circuit pattern for a microchip onto a Silicon wafer, coated with light-transductive material (photo-resistant polymer), and material which can be selectively removed (manipulated).
The encoded polymer acts as photographic negative (mask) and is layered upon a substrate of glass or chromium.
Exposing this 'mask' to Ultraviolet Radiation of specified wavelength (laserlight) then allows 'Lensing Diminuition' of the encoded negative pattern onto Silicon wafers coated with photoresist to create identical Silicon Chips as the 'positives'.

This process is limited in the distance (or wavelength) between two point objects for which the two objects can be resolved in an image.
The most advanced systems in operation can print a minimum pattern of about 180 nanometers from a Krypton-Fluoride Laser

Source with a wavelength of 248 nm.

The physical relationship between Input wavelength of the laser source and the maximum diminuition as the Output is given as the Rayleigh - Criterion:

"Two point sources are resolvable, provided their angular separation in radians is not less than (1.22).L/D, where D is 2n.sinX as the diameter or numerical aperture of the lens and L is the wavelength of the light-source.
This defines the angular radius of the primary diffraction fringe-pattern."

[The factor 1.22 is the smallest root of the 1st order Bessel Function as solution of differential wave equations of cylindrical symmetry.
The UIP defines an encompassing form of Rayleigh's Criterion directly from the initial conditions specifying the vacuum energy].

As D approaches a value of 0.7 (depending on the angle X between 0- and 90 degrees for a D between 0 and 1), the vectorial nature of the electric field interferes with a linearly proportional resolution and scaling deviates from maximization of parameters.

Present technology uses **maximized numerical apertures D*=sinX of about 0.6** with lensing materials of Fused Quartz (refractive index n=1.458).
Argon-Fluoride Lasers at 193 nm, using Quartz (**Silicon Dioxide SiO_2**) so allow a nano pattern of (0.61)(193 nm)/(1.458) (0.6)=134 nm.

Oxygen absorbs 193 nm UV radiation however and the resulting Ozone attacks optical materials in coating fluor-based elements.
Fused Silica absorbs heavily beyond 180 nm.

2. Optical, Ultraviolet and Nuclear Unification

As Silicon Dioxide forms the basic material for the Silicon Chip and serves as well to supply the maximized lensing material in the form of Fused Quartz; the wavelength about 180 nm should provide one of the Unification Wavelengths of the Unified Field of the Vacuum Energy.

This is indeed the case; Fused Quartz transmits electromagnetic radiation between 4000 nm (Infrared) and 180 nm (UV).
There are six major electromagnetic unifications in the Vacuum Field, all interdependent and proportionally quantized relative to one another to provide the UIP.

Some of these unification wavelengths are already specified in the scientific literature.
Others are approximated as in the case of the Krypton-Fluoride Laserlight.
The Optical Unification occurs at the wavelength of Orange monochromatic Laserlight and a dimensionless scale of 600 nanometers* (in an universal mensuration system, calibration depending on precise measurements of constants 'c' and 'h').
This is calibrated as exactly 598.999 nm (SI) and also near the SI Standard of 589.3 nm, used as reference for light refraction in the Sodium-D spectral emission line.

The Optical Unification Standard then transduces into the Infrared Unification at 9 microns*, which in the natural settings translates into an 'Atmospheric Window of IR', where there is no absorption of infrared radiation by water vapour in the atmosphere.
The (mean) SI-value translates to 8.9849869 micrometres for Infrared Unification.

The Ultraviolet Unification derives from a prenuclear epoch in the cosmic genesis. This describes an energy continuum renown as the monopolic epoch, characterised by a bosonic-photonic energy of 27 Million Billion GigaElectronvolt.
One can define an universe at a temperature of 307 Billion Billion Billion degrees Kelvin* of a size 10^{22} times smaller than an atom at a time 10^{-40} seconds* after the quantum singularity defining the Big Bang.

The monopolic epoch gave birth to an elementary particle, known as the Magnetic Monopole and carrying a characteristic mass of about 48.2 Nanograms*, which gave rise to a naturally superconductive magnetic current **I=N(2e)f**, (**N** being an integer of quantisation, **e the electronic chargequantum** also representative of a **magnetocharge e*** and **f** being the frequency of the electromagnetic monopolic radiation also expressed as the ratio between the speed of light '**c**' and the wavelength **L**).
This Unified Natural Current became a Nuclear Monopolic Current in an time interval centred on a period between 114-1150

seconds* after the quantum birth of the universe.

The Nuclear Unification is universally renown as the Electronic (effective) Radius:
$R_e = e^2/(4\pi\varepsilon_o.M_e.c^2) = \mu_o e^2/(4\pi.M_e)$ and provides a typical nuclear size of 2.8 Femtometres (fm) and 1 millionth the nanoscalings.

(The formulations above include the electronic effective mass M_e; lightspeed c, the electronic charge quantum e and the electric permittivity constant ε_o and the magnetic permeability constant μ_o).

The Nuclear Unification transforms into a Gravitational Unification (also known as an approximation of Ng-Van Dam), which quantizes the Planck-Unification of the origins.

3. The Rydberg-Alpha Connection

But the entire path of Unification is based and centered on a single parameter, ubiquitously known as the Electromagnetic Finestructure Constant '**Alpha**'.
Alpha = $e^2/(2\varepsilon_o.hc)$, where **h**, the Planck-Constant, is responsible to crystallize the various quantisations of proportionality in the UIP and in conjunction with the effective electronic massquantum describes the interactions between the electronic charge quantum **e** and the magnetic chargequantum **e***.
This uses a part of the electron's restmass $M_{eo} + M_e{}^* = M_e$ to indicate the intrinsic nature of 'Restmass' to be a form of Current of Magnetocharges (as a direct consequence of the definitions from the monopolic epoch).

There exists thus a 'Monopolic Masscurrent' in the Vacuum-Unification-Field just 15.4 thousandths trillionths trillionths trillionths of a second* following the vacuum fluctuation of the singularity responsible for the birth of the cosmos.
But there is a remnant of this superconductive magnetoelectric electricity in the form of the UV-Unification Wavelength and which is closely approximated in present Photolithography and the Rayleigh Criterion.

A clear distinction between electropolar charge and magnetopolar charge and hence electromagnetic and gravitational parameters did not eventuate in the universe until the Gravitational Unification Wavelength assumed its scaling size.
This point in time is known as the end of a 'modified chaotic Guth Inflation'.
Since the universe assumed its general relativistic dynamical expansion at exactly that point of 'Temporal Timeinstantenuity', the particular (bosonic) parameters of the 'Inflationary Universe' changed phase to define the postinflationary cosmos in terms of quantum mechanistic wavefunctions.

This also clearly differentiated between Electropoles of charge 'e' and Magnetopoles of charge 'e*'.
The mass of the magnetic monopole (superstring class IIB) became constituent of the vacuum in the form of Vacuum-Potential-Energy or Vortex-PE (VPE), ready to form linkages with electropolic charges defined in e.

[The details are the basis for any unification theories attempting to meld General Relativity to Quantum Theory and define the wavefunctions of the universe as spacetime symmetries of a superparity manifesting parallel universes as mirror images between dimensionally intersecting media specified in 12-dimensional 3-branes or topologically multiple connected surfaces in superstrings and M-F-Theory].

The formulation for the UV-Unification under discussion describes the Magnetic Monopolic Massquantum per Unitwavelength as equivalent to Natural Current **2ef=2ec/L**.

This Unitwavelength becomes the Unification Wavelength for the Atom and approximated in the 'Unified Rydberg Constant **$R_y = Alpha^3/4\pi R_e$**'
for a known evaluation **$R_y/SI = M_e.e^4/(8\varepsilon_o{}^2.h^3c)$**, used in spectral analysis of the elements in emission and absorption.

The wavelength for UV-Unification on all scales then is given in a constant which relates the monopolic masscurrent to currents of superconductivity.

(ec)R_y=2ec/Λ_{uv} in general quantisation (N=1) and UV-Wavelength Λ_{uv} as: **$\Lambda_{uv}=2/R_y=8\pi.R_e/Alpha^3$** m*.

The binary algorithms of the genesis give R_e=2.777..fm* and the dimensionless Alpha is given as **$60\pi e^2/h$** subject to a primary definition for chargequantum e (not e*) as function of Alpha in the primordial universal wavefunction of the origins.

The Unification-Wavelength for UV Elelectromagnetic Radiation computes as the maximization of Rayleigh Resolution at 179.6994 nm*, calibrating to a maximized 'Image-Size' of 179.3996 nanometres in the SI-Measurement system.

The link to the Nanoscale, using mass produced QuaGeComs, is so found in applying technology tailored to tap the VPE as specified in the Alpha^3-factor hidden in the UV-Unification-Wavelength Λ_{uv}.
The key is the accessibility to the Nuclear-Unification-Scale as given by R_e.

No further reduction in the image size of Λ_{uv} is required, if there exists a natural means of tapping the nuclear femto-scale under utility of the magnetocharges embedded in the vacuum as mass-equivalent current elements.
As the Femtoscale is naturally 'nested' in the Gravitational Unification Scale, which is nested in the Planck-Scale; the original encoding pattern is accessed.

The requirement is the tapping of magnetocharges as 'image' of the electrocharges.

4.Superconductive Magnetocharges as mapped Electrocharges

The detailed mechanism of how magnetocharges and electrocharges transmutate into each other involves the exposure of UV-Radiation to parallel synchronised Mass-Radiations in the form of 'materialised light-equivalents', such as streams of elementary particles, (as say in nuclear medicine, i.e. Positron-Emission-Tomography or PET).

For 'particles radiations', such as are naturally observed in Cosmic Rays; limited and constituent of the monopolic spectrum; are antiparallel, then decay rates of matter-antimatter interactions involve the factor **Alpha^2** and decay products engage pairs of photonic quanta.

Parallel particle radiations carry a total spin-quanta-momentum of an odd integral definition and so at least 3 photons result in the matter-antimatter interaction with **Alpha^3** specifying the decay rate (say of Orthopositronium).

It is then evident, that to tap magnetocharges, one induces superconductivity into the QuaGeComs in transforming the antimatter/positron part of the VPE into every other of the electrons, which constitute the standard currents in the integrated circuits of the Silicon Chip.

The switching between electrocharges 'e' and magnetocharges 'e*' then becomes a 'Natural Superconductivity' independent of transition temperatures, but a consequence of synchronized application of Quantum Geometry as defined in the origins of the laws of physics.
QuaGeComs become the SELFRESONATING medium for the UIP.

The Universal Information Pathway so induces a natural superconductivity based on principles of Quantum Geometry.
The coefficient of the primary universal wavefunction can be stated as **2e/hA**, where the constant **A^2** derives from the basic binary code responsible for the generation of some fundamental constants of nature (such as **c^2**, **h** and **k**).

The Universal Wavefunction is normally distributed as a function of dimensionless cycletime n (proper Tautime in General Relativity in the expression for Curvature-Radius **R_c=c.dt/dTau**) and centred in an interval bounded by the universal Josephson-Constant **J_o=2e/hA**.

Detailed analysis leads directly to the Quantum Hall Effect via the universal Action Law (which can be said to operate on all quantum scales as imaged medium from the 'higher'dimensions 5 to 12) in the general form of **Action = Charge^2**.

QuaGeComs so exhibit the Josephson Effect in a natural setting of SuperSQUIDS or SuperSuperconducting Quantum-Interference-Devices.

Every **e-e* Electropole-Magnetopole interaction** sets up a Josephson Junction; Electromagnetic Conductance becomes quantised by **2e^2/h** and the Hall Voltages proceed to induce stepwise regions where the Conductivity and the Resistivity become zero as function of the magnetic flux density.

The key to High-Temperature Superconductivity for specified materials (**$YBa_2Cu_3O_{1-7}$ Yttrium-Barium-Copper-Oxides** etc) so becomes a magnified effect of Quantum Geometry and can be shown to relate to Quasicrystals of fivefolded symmetries (Shechtmanites) and thus the geometries of crystalline lattices, able to holographically resonate with the UIP.
Other criteria, such as piezoelectricity and magnetostriction will finetune the search for appropriate materials.

5. Photolithography and Quantum-Dot-Assembly

Contemporary attempts by the international scientific community to discover the interface between the diminuition of the Computer Chip and the world of the Bacterium has encountered a number of insurmountable technical difficulties.

Increasing the energy of the input radiation can damage samples and equipment.
Extreme UV-light and X-rays probe the nanoscale wavelengths, but diffraction effects cause features to blur and meld together.
Particle radiations of electrons or nuclear particles can be used to fabricate individualised structures on the atomic scale, cause no diffraction, but are unsuited toproduce multiple copies of the singular interference, restricted by quantum incertainty and complementarity (recent developments have however shown great deficiencies in the Bohr Quantum Copenhagen interpretation and the Uncertainty Principle has been shown to be finestructered in wormhole parameters).

Scanning probes, such as the Atomic Force Microscope (AFM) detect small currents of electricity passing between the microscope's tip and the sample, thus sensing the atomic scale electromagnetically.
[The principle of quantised electric currents and potentials is elementary to the development of nanotechnology as holographic image for the biovital archetype.]

The cost of electron-beam instruments (100's of millions of US$) is prohibitive for most of the research budgets of the participants as fiscal restraints.

An alternative method to Photolithography is termed 'Soft Lithography' (as proposed by groups such as Whitesides-Love at Harvard University).
Soft Lithography moulds patterns in elastic polymers for printing as elastic stamps, microcontact printing or capilliary actions of solidification.
Dip-Pen-Lithography (Mirkin Group at Northwestern University) uses the AFM to produce self-assembling monolayers bonded on a metal surface under utility of a medium (water vapour).
Thiol molecules are insoluble in water but bond to Gold as the metal surface.
Such lithographic methods can manipulate small groups or individual atoms in the fabrication of specialised devices, but are unsuitable to manufacture the multilayered structures of electronic elements for integrated circuitry.

Another internationally pursued approach is that of setting up controlled chemical reactions to assemble atoms and molecules into nanostructures.

In Quantum-Dot-Assembly (QDA) (Alivisatos Group at University of California at Berkeley and Bawendi Groupat M.I.T), Cadmium-Selenide Crystals are grown in a chemical reaction between the metals Cadmium and Selenium ions and are isolated in the addition of 'Surfactant Organic Molecules'.
The organic molecules prevent clumping between crystals and regulate crystal-growth-rates in coating the resultant crystalline conglomerations.

QDA is a technology which indicates the geometric link between the inorganic chemistry of crystals and the biochemistry of cellular activity.
The geometries of the organic molecules define the optimum crystalline scale in stable packings to indicate the elementary link between surface topology in three dimensions as derivative of a higher dimensional geometry, coded in spacetime scalings of a 'higher dimensionality' basic to functionally encoded DNA/RNA.
Recent development include the NanoDiamond structures and their optical 'gap-reduction' in changing electrical and optical properties as effect of the surface properties, allowing photoluminescence in buckyball envelopes, so allowing semiconducting properties to become apparent.

In general, diminuition of microscopic technologies into the realms of nanobiology stumbles at the scale of the natural assemblies, the biological cell with its selfreplicating dynamics and as encoded in the nucleotidal baseletters A-T/U and G-C (Adenine skews with Thymine/Uracil for DNA/RNA sugar differentiation and Guanine twists with the Cytosine to implement the magnetocharge based extension of the double-helix as pentagonised magnetopolar field embraced by the helicity).

20 Amino Acids are biochemically encoded to provide the protein-tools for cellular development and the four nucleotidal base-pairings assume the role of coupling the magnetocharges to electrocharges in a quadrupled 64-codonic codex across the dimensions to link with the magnetopolic spectrum of the superconductivity.
The Crick-Watson-Franklin-Wilkins basepairings are modified in the Curtis basepairings structurally.
The pentagonal supersymmetry relates Penrosian tiling patterns of both longrange rotational (decagonal) and longrange translational symmetry to crystalline structures found everywhere in nature (say Platonic Solids of Tetrahedron, Cube, Octagon, Dodecahedron and Icosahedron and more particularly Buckminsterfullerene 60-Carbon shapes and Shechtmanite

quasicrystals).

In the Curtis-DNA-structure, double pentagons back to back specify the DNA-doublehelix in stepwise markers for the base pairings and allow magneto induction in those steps into the space enclosed by that helical structure in quantum steps via the Action-Law.

In particular the 64-RNA-Codex is extended fourfold in polarising the 4x4 codon matrix in association with magnetocharges.


G E N E S I S
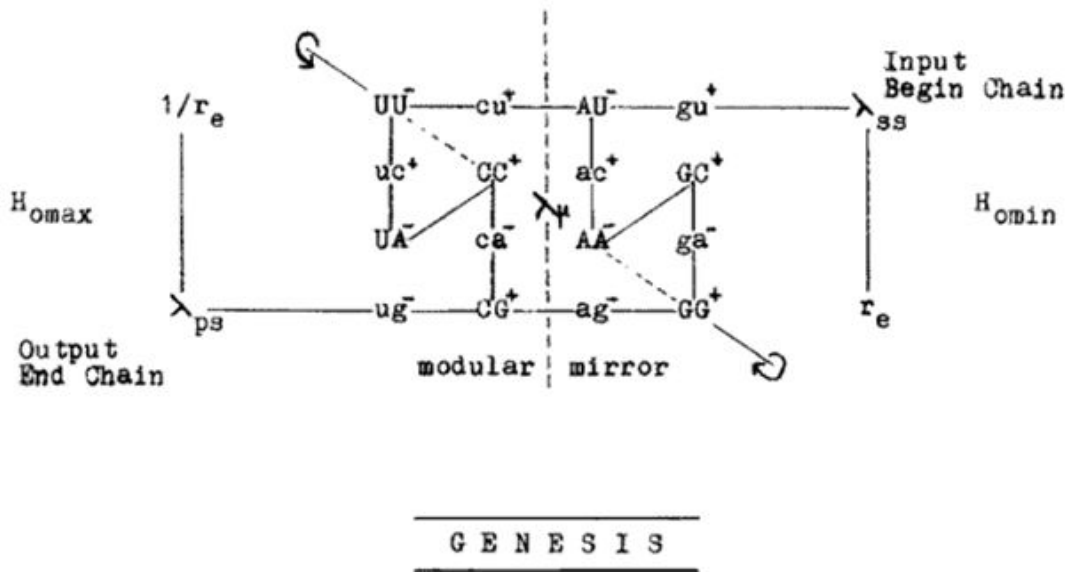
12D-DNA/RNA Template of the 8x8=64 Nucleotidal Base Extension

Input gu ...AU-...ac ...AA-...GC ...ga-...GG ...ag- becomes mirrored in
Output ug-...CG ...ca-...CC ...UA-...uc ...UU-...cu
as its complement.
The modular mirror of the 9 micron InfraRed Unification divides the cytosine-adenine row and the diagonal mirror UU-..CC ..AA-..GG indicating the twist.

[MagnetoElectric Coupling LC as YX-chromosomes say, introduce electropolic capacitances C and magnetopolic inductances L, both in self- and mutual couplings].

1   *The MagnetoCharged 256-RNA-Codex serving for the Transform of the MTVF-Matrix*

GENESIS - The Origins of the Genetic Coding   [Excerpt]
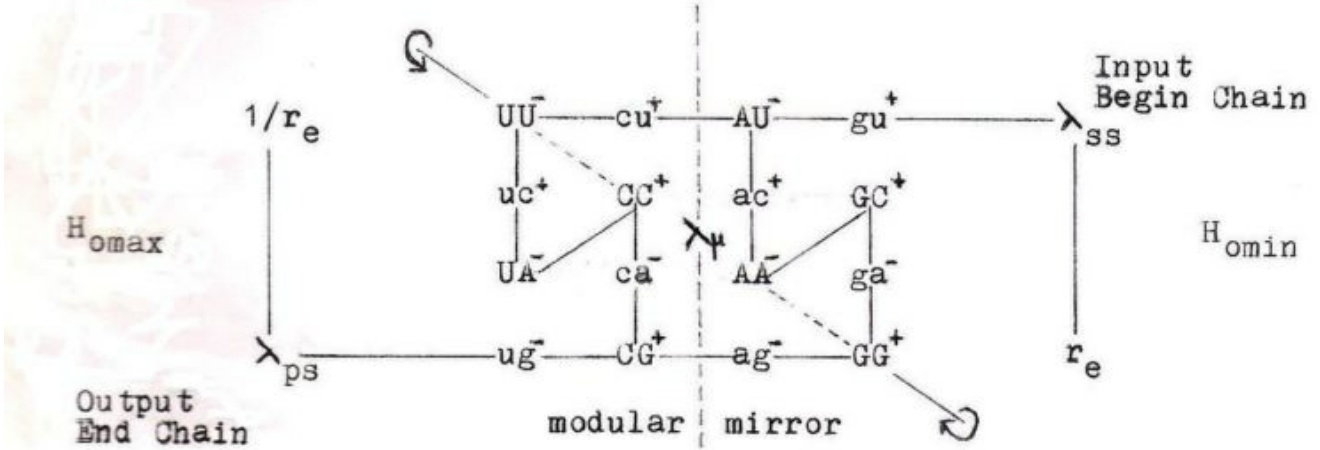
The male and female templates are perfectly reflective and join by changing all the magnetocharges on one, say GG. Then UA- repels ug- as EndofChain, as do gu+ and GC+ as the starting points. CC+ is attractive to AA-, but repulsive to both cu+ and gu+ for the male-female intercourse of the two halves of the encoding.

The Reflections are: GG+rUU- & ug-rgu+ & ga-ruc+ & ag-rcu+ & GC+rUA- & CG+rAU- & ca-rac+ & CC+rAA-

Female MagnetoCharges are Upper Cases and Male MagnetoCharges are Lower Cases.

UU-	cu+	AU-	gu+	*INPUT*		CC-		GC-
uc+		ac+		*reflecting in*		ca+		ga+
UA-		AA-		*OUTPUT*	ug+	CG-	ag+	GG-
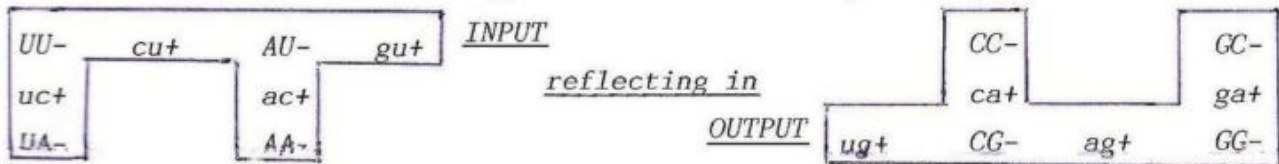
This paper shall describe the reactivation of intron-dormant genetic expression by a fourfold extension of the spacetime continuum.

A 4x4 square matrix of dipolar magnetocharges is used in the mechanics of the permutational transforms to regenerate the 64 elemental RNA-code of amino acids from the lattice of the magnetoelectric charge distribution.

The quadruplistic form of the double-DNA-helix becomes so generated to manifest in quantised 4-dimensional linespace. A protogenetic geometric form of the DNA coiling is thus defined as a reconfiguration of four interwoven spacetimes.

A subset of a potentially infinite lattice of magnetocharges defines a 13-dimensional monad of sourcemonopolic origin, which as one strand of the RNA-helix follows the DNA-based chain of command to merge with its complementary strand.

A 26-dimensional dyad of a tripartite DNA-helix is created in the complementary matching of a magnetoinductive L-factor with an electrocapacitative C-factor and associated with the sexual characteristics (Y- and X chromosomes respectively).

# THE MODULAR SYMMETRY OF THE 12-DIMENSIONAL DNA-TRIPLE HELIX

To apply our scaled hierarchy of the genetic universal code to the intermittent scale of the biological expression of the biochemistry, built upon electronic configurations in the outer atomic definitions of the leptonic ring; we shall now visit the linespace geometric form of the double helix and extend it into the higher dimensions of the magnetocharges.

The Francis Crick/Maurice Wilkins/James Watson model of 1953 shows the geometry between the nitrogenous base pairings as one of NH_2-O and NH-N matching between Guanine and Cytosine in a triple bonding; with Adenine and Thymine displaying a NH_2-O and NH-N double bond; the NH_2-O bond being reflected in the DNA-RNA common base pair GC. Cytosine and Thymine (Uracil in RNA) consist of a heterocyclic hexagonal ring of empirical formula $C_4H_4N_2$ as organic pyrimidine base. Guanine and Adenine are purine derivatives as $C_5H_4N_4$ organic bases and display a hexagonal geometry interwoven with a fivefold symmetry of a pentagonal ring.

For RNA the sugar deoxyribose is replaced by ribose, a hydroxide (OH) replaces hydrogen and in Uracil, the methyl radical CH_3 changes to H. Synthesis of OH with H produces water as internalisation for the DNA/RNA molecule, meaning that water is absorbed from the chemistry in the organismic body. This waterloss defines the hydrogen bonding between the sugar-phosphate DNA/RNA backbone to the nitrogenous bases.
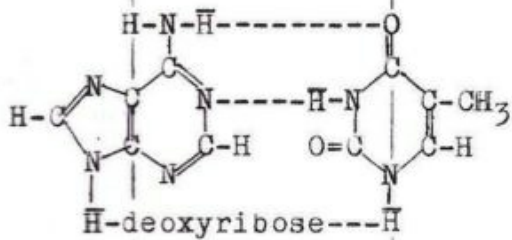
(Phosphate, i.e. H_3PO_4 phosphoric acid)

(H_2O waterloss via $\overline{H}.\underline{OH}$)
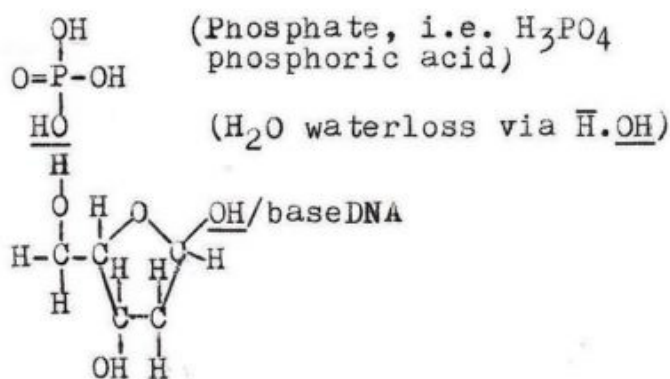
deoxyribose sugar $C_5H_{10}O_4$
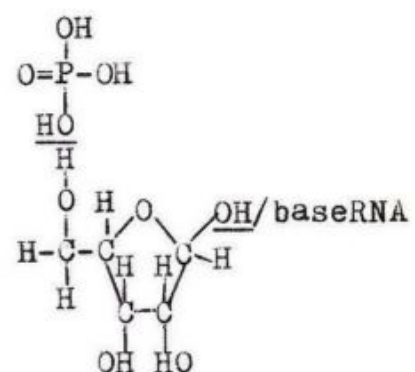
ribose sugar $C_5H_{10}O_5$

CC-axis for 12D mode
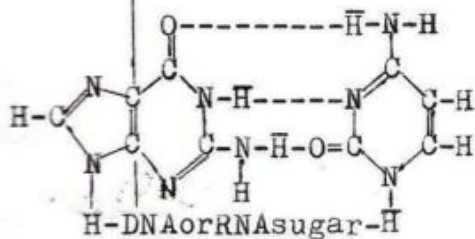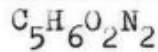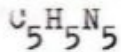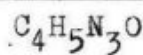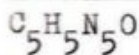
OCNH̄-axis for DNA-RNA mirror

H-N-H̄---------O

H-C

N-----H-N

O=C

C-H

N-----H-N

C-CH₃

C-H

H̄-deoxyribose---H

Adenine---link--Thymine

$C_5H_5N_5$ $C_5H_6O_2N_2$

H-N-H̄---------O

H-C

N-----H-N

N-H

C-H

H-C

C=O

H̄-ribose sugar--H̄
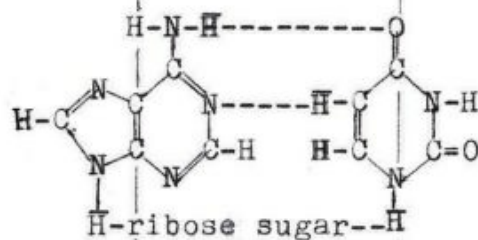
Adenine---link--Uracil

$C_5H_5N_5$ $C_4H_4O_2N_2$
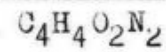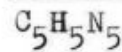
Reflecting Thymine in Uracil
across OCNH releases the CH_2
alkene unitradical.

O---------H̄-N-H

H-C

C

N-H----N

C-H

C-N-H̄-O=C

C-H

H-DNAorRNAsugar-H̄

Guanine---link--Cytosine

$C_5H_5N_5O$ $C_4H_5N_3O$

In all three cases of the 1951/53 Crick/Wilkins/Watson model, the
purine pentagonal symmetry is suppressed in the hydrogenic bonding.
Reflecting Adenine and Guanine in the CC mirror realigns the bases.

O - - - - -H̄*-N-H

H-N

C-H

C-H

N-C

N-H----O=C

C-H

H₂

to sugar__H
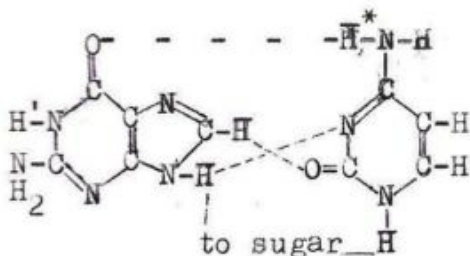
Guanine twists Cytosine

NH_2

H-C

C-H̄

H-N

C-CH₃

N-H

O=C

C-H

to sugar__H̄
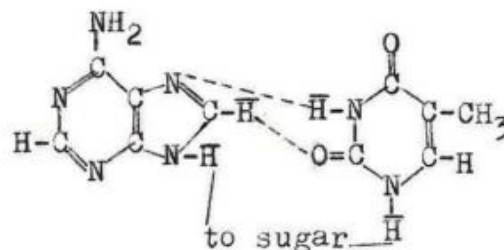
Adenine links Thymine and mirror-Uracil

The "twisting" of Cytosine and the reflection of Uracil occur in higher
dimensional space (i.e. definition of Kleinian bottle as topological
surface) and H' in Guanine becomes the new connection to the sugar/
phosphate backbone, whilst H̄*-N-H = NH_2 (amine) "switches" with the
Cytosine's backbone connection.

Subsequently, the double helix becomes a stacked spiralling sequence
of pentagons around a decagon with longrange translational order and
of longrange rotational order with counting frequency XY=1, i.e. as in
the Penrose tiling of the ratio between rhombuses of 36° and 72° .

10 pentagons form a 10-D perimeter
around a 3-D space, linearising 13D.
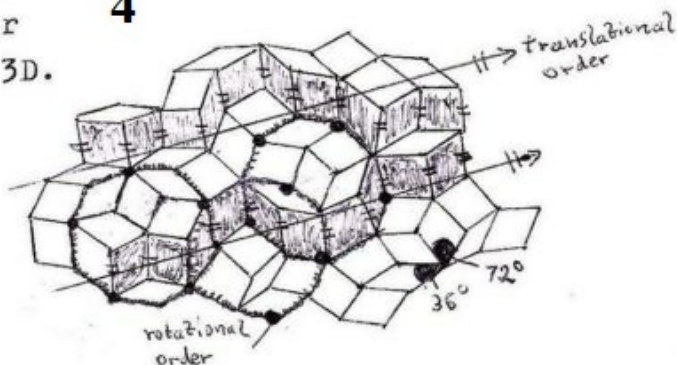
This defines twinned pentagons to form the geometry for the universal
genetic coding and specifies a 26-D dyad to formulate the baseperfect
partnership on all levels of the scaled hierarchies.

The 12-D boundary condition for the SE_{ps} algorithms for masterconstant
generation is $XY=-1=X+Y=i^2$ in the complex plane, but sets $XY=1$ as ab-
solute value in the 10-D L-H-Q-O-spacetimes at timeinstantenuity t_{ps}.

The link to the omnispace mathematics is established via the deri-
vation of the binary mastercode via awareness triplets: $(1,0,1)$,
$(1,1,1=10)$, $(2,1,3)$, $(3,2,5)$ etc., establishing the SE_{ps} sequence
(also known as Fibonacci series) and its complex counterpart SSE_{ps}
or Super-SE_{ps}.

The fivefold symmetry of the O-space geometry becomes fundamental
for the genesis of the genetic mastercode, being its intrinsic pa-
rameter on all levels and manifesting on the biological scales via
X and Y, Y being called the Golden Mean and defining the pentagon.
The Higgsian symmetry breaking derives from its geometry, defining
the fundamental forcefield interactions (discussed in part three);
as do all the cosmogenic parameters due to the Magnetocharge function
$B(n)=2e/hA.exp(-alpha.T(n))$, $T(n)=n(n+1)$ and the summing of all integers
positive and negative in the Feynman path integral of all particle
histories, becoming unity in the extension of Aleph-Null to Aleph-All
in the redefinition of uncountable infinity.

The 3-tiered 12-dimensional DNA/RNA so becomes the topologically
twisted 3-D DNA/RNA only in its unified state. Observation of partial
DNA, i.e. via crystallography will always display interference patterns
indicative of the Crick/Watson/Wilkins hexagonally connected model.

III. Conclusions and References

Any successful materialisation of nanotechnology must in principle reflect a hugely accomplished nanoscience already in place, namely that of the cellular organism, constructed by the 'Code of Life'.

The cellular size is naturally limited in the scale of virulent agents, such as the HIV/AIDS Virus of typically 100 nm width and geometrically specified in the shape of the Icosahedron, one of the Platonic Solids of symmetry maximisation.
Ther smallest such Icosahedra have a scale of so 20 nm; reflected in the quantisation of the Infrared Unification in division by 360.

There are precisely $10^{10}/360$ Wormhole perimeters in an Classical Electronic Radius (R_e) with the normal parameter for atomic physics in the Compton Wavelength increasing this in the factor of the Electromagnetic Finestructure Constant ($Alpha = e^2/2\varepsilon_o.hc$), as the interaction probability between light (a photon) and matter, say an electron.
Thus, the natural viral limit is 9 microns/360 or 25 nm.

Circularising this in the factor of 2π, reduces this viral scale towards the mean nanostructure scale, as observed in say buckyballed nanodiamonds for 25nm/2π ~3.98 nm.

A standard issue electric motor bears a striking resemblance to the biochemical rotary motor of bacteria,such as Escherichia Coli, (so 10 microns in length), and which turns the flagella (whiptail) under utility of the Earth's magnetic field to propagate through water.

In the standard electromagnetic motor, a moving magnetic field creates electric current (or vice versa - Lenz's Law), which transforms into mechanical forces via rotation; whilst the protein shaft in E. coli revolves as molecular ratchet defined in its shifting of shape (phase change) and regulated by the decomposition of Adenine Triphosphate (ATP) as geosolar magnetic catalyst.

A fundamental relationship between electric and magnetic forces is thus evident on the nanoscale and an elementicity in the natural laws which transcend the standard notions of electricity and of magnetism.
A macroscaled electromagnetic motor becomes the manifestation of a nanobiological 'machine' (and not vice versa),which uses the same principles of physics in a modality of 'wireless' communication in a quantisation of electromagnetic parameters such as current, voltage and resistance.
In particular, the conductance on the nanoscale is quantized as evidenced via the Quantum Hall Effect, linking superconductivity to the Josephson Effect and the application of SQUIDS for superfast electronic switches.
The resulting 'Law of NanoSpace' (or QuantumSpace generally), then derives as the 'Law of Unified Action: $Action = Charge^2$, as in $Conductance = 2e^2/h.$

The higher dimensional expression of temperature-based superconductivity is the notion of:
'$Natural\ Current\ N(2ef) = N(2e.M_o c^2/h)$', which uses the quantisation of spacetime in a form of quantumgeometry to propagate the natural current as a function of frequency, independent of massive charge carriers such as electrons.
The electronic charge quantum transforms into a constant of proportionality and utilises its 'Cooper-partner e' as magnetocharge quantum e* as restmass equivalent.
The flow of magnetocharges partnered by 'fixed' electrocharges results in the phenomenon of 'Natural Superconductivity of the Vacuum' and used in the QuaGeComs.

The prevalence of the vacuum is matched in the ubiquitous nature of magnetopoles, in readiness to form couplings with electropoles in the form of magnetocharges.
One can so define a 'scaled computerisation' pervading the (discrete) continuae of space and time in toroidal spacetime quanta; a supercomputer of the 20th century imaging in a holograph of the quantum computer of the 21st.

A macroscale is evident and has become exploited by contemporary science in the form of electric- and magnetic forces and their technological applications.
This macroscale represents however the magnification of a microscale, which acts under the auspices of the same physical laws, defined however with altered or phaseshifted parameters.
This has become known as the interface between classical physics and quantum theory and is unified in the geometry of Einsteinian General Relativity transmuting into a Quantum Geometry of Superbranes in 12 dimensions.

Intermediate between the smallest scale of the superbranes (Planck Scale) and the largest scale of the cosmos (size of the universe as Riemannian hypersphere in 4D) are a number of other scales, such as the microscale of cells and bacteria; the

nanoscale of molecules; the atomic scales of chemistry, the nuclear scales of the subatomic realms and the aNg-Van Dam scales of the Planck-Quantisation, the latter under intense present investigation, i.e. gravitational waves (LIGO, LISA) and hyperspace topologies (Anti-deSitter manifolds and Black Holes as String-Data encoders using loop quantum gravity blended to superbranes - Ashtekar, Smolin, Bojowald).

There exists a precise pathway for interconnecting all the various scalings; this we have termed the UIP, the Universal Information Pathway.
Using experimental methodologies of science; this UIP has become ever more closely approximated and the arbitrary formulations to create memory storage devices in the form of integrated circuits has reached its final barrier in the application of Rayleigh's Criterion and the minimisation of the silicon microchip.

But it is no coincidence, that the formulation of this criterion has discovered a maximum numerical aperture in a factor of about 0.6, cancelling the coefficient for the input wavelength in the equation $0.61.\lambda/n.(0.6)=\lambda/n$ (n the refractive index).
The magnetopolar spectrum at the genesis connects spacequanta to each other and via agency of lightspeed c, the refractive index must be unity to specify the unified Rydberg formulation in $2/R_y=\Lambda_{uv}$ as QuaGeCom equivalent for the Rayleigh Criterion.

The unification of all the force-interactions can be shown to depend on a parameter X and where $XY=X$ $Y=-1=i^2=\exp(i\pi)$ in the analysis of complex Riemann space, with $\sin\Theta=X$ defining the numerical aperture as angular size for GUT-Unification (uniting the nuclear and the electromagnetic interactions).

The Rayleigh/Abbe Criterion is so naturally encompassed by the UIP.
The ultimate unification condition can be described as a 'generalised 11D-M-space Hamiltonian' of expression:
$2e.R_e= e*(Planck-Length).\sqrt{(Alpha)}$, linking electronic- and magnetic charges in their mappings of the Planck-Scale onto the Nuclear Scale.

Anthony Paul Bermanseder for Pacifica OmniScience)

References:

1.SCIENCE SPECTRA: Issue 20, 2000; p.32-40, by Robert E. Gleason
"How far will circuits shrink?"
PO Box 26430; Collegeville, PA 19426, USA

2.SCIENTIFIC AMERICAN: Special Issue, September 2001
"NanoTech"
415 Madison Ave, New York, NY 10017-1111,USA

3.SCIENCE & TECHNOLOGY: November 2, 2003, by Katie Walter
"When Semiconductors go Nano"
Lawrence Livermore National Laboratory, University of California

QUAGECOMS 101 and the Universal Information Pathway aka UIP

- A Revolution in the application of Nanotechnology to the Silicon Microchip and the Computation Industry linked to Radiationmass and the Mind-Body Duality of the 4D-LightBody

In Lakech - I Am Another Yourself!

This Message is directed towards the Extraterrestrial Intelligences located so 2 million kilometers from the Center of the Earth and who so are not subject to the Gaian Quarantine Zone established for the intergalactic communique between the relatively stationary planetary platform receiver of Earth and the incoming galactic signal from the creator emission of the waveform 9,360,000 day-cycles preceding December 21st, 2012 Gregorian.

The isolation of the Gaian receiver serves the purpose to focus the extragalactic matrix of the holographic universe within the *Hubble Bubble* of the Isolated space or Cocoon (for the Metamorphosis of the StarHuman Lightbody from its Human precursor) and defining a creator potential coupled to the string-membrane parametric definition of spacial consciousness.

The ET count is accumulating in 200 million merkabah vessels/space craft and represents the 'Cloud of Witnesses' for this aforesaid transformation of an old cosmology into a new cosmology.
The incoming wavefront represents the source-part or Love-Photon for the emergence of spacetime itself as the boundary and initial condition for the manifestation of cosmic consciousness from its prior selfstate independent upon any measurement

system.

The stationary receiver station at the center of the Earth represents the sink-part or AntiLove-Photon for these selfsame necessary conditions to birth the universe in spacetimedness from its prior 'spiritual' or metaphysical selfstate, where Void=Eternity and no counting mechanism exists.

From this emerges the Bifurcation (or Fall) from the Unified State without Duality into the oppositional- and complementary State-AntiState; which is however reunified or reconciled in the quantum form of the modular duality between the source string coupling to the sink string as a SourceSink monad as the State so allowing the AntiState to assume the form of a SinkSource monad in mirror supersymmetry of the quantum gauge omniphysics. This scenario then allows the COUNT to be born in the Cipher 1 and so generates a cosmology subject to mensuration techniques of measurements and observations.

This also sets the Oneness of the Holographic matrix as encompassment for all phase-relative multiverses or megaverse fractals (of individualised and family-genus connected megaversal fractals) in an OmniVersal Envelope or 'superbubble' of the Logos Creator.
The metaphysics of the Precreation from the Without to the Within so is rendered physical in the Recreation from the Within to the Without.

In gauge brane terms of the unified quantum physics; the Emergence of Mass in the Universe was the consequence of suppressing the original AntiLove selfstate of the supersymmetry inherent in the undefined Unity of the cosmogony.

Suppressing the existence of the 'antispirit' as a form of spacetime independent waveform so allowed Matter templates to Emerge as substitute with the caveat, that the AntiState for this Matter or Antimatter was also necessitated to become suppressed.
The 'AntiLove Photon' as the Gauge for the 'AntiCreation' so become the Gravitational Potential for Mass to CONTRACT, that is it assumed the brane function of the sink string in 10 dimensions.

As a consequence of the technical details for this quantum mechanics (found in the Genesis of Genesis message on this forum and elsewhere); all massive or inertia carrying 'bodies' or creatures or creations must harbour the Original 'AntiLove' gauge template, say as gravitational blueprint (or cosmo genetic template encoding) within their body forms to mirror the original double suppression of the antispirit and the antimatter.
This 'suppression template gauge' is commonly known as the Higgs Boson or the 'Mass Matrix' for the Cosmos, a background allowing mass and inertia to exist in spacetime.

When gravity was so born in quantum form; its wavefunction so necessitated a 'mimicking' of the antispirit as a 'Brane Gauge Interaction' and this 'Force of Nature' was 'attractive' in the 'Contractive Sense' to manifest the sinksource modality inherent in the brane cosmology.
Henceforth the Gravity of the Sink can also become a Gravity of the Source or Antigravity in the modular duality coupling between a newly formulated White Holed SourceSink and the Black Holed SinkSource.

This 'turning inside-out' then will become effected when the approaching wavefront from the galactic center meets the stationary 'crystalline and frozen' waveform at the center of the Earth.
The LovePhoton from Hunab Ku, emitted so 25,624 years ago so represents the Source-Photon from the Creation and the AntiLovePhoton at the Gaian gravitational center represents the Sink-AntiPhoton of the cosmogony.
Both were manifest simultaneously in the 'Now-Time-Moment' of the 'Quantum Gravitational Big Bang' and so represent the 'Irresistible Force' meeting the 'Immovable Object'.
To remain true to their quantum geometric and quantum energetic definitions; BOTH must Merge or Blend to satisfy their defined criteria.

This process then will crystallize the Lightbody template as a tertiary colour charge sequence in the *Monadic Unification Duality* between wave and particle or betweeen the so called spirit (a form of electromagneto monopolar gravitational brane radiation) and matter.
In quantum gauge brane terms, this will couple and interchange the colour- or magneto charges between the Higgs Boson and the Love Photon to DEFINE the quantum structure for the tertiary energy source in a new reconfigured universe allowing consciousness to materialise in the RestmassPhoton or RMP as the 'Gauge brane quantum' for Consciousness, so termed 'dark matter' and the 'dark energy'.