VII: Mathimatia B: Bosonic Temperature Unification and the Universe's Temperature Evolution

Möbius had broken into two and had transferred his one-sidedness to the Klein mirror and in a dimensional twinship between Klein's heness in the 12th dimension at the Instanton of Khaibit and Klein's sheness at the Instanton in Universe in the 10th dimension of the 11-dimensional two-sided manifold, Logos called the M-spacetime of the Mother as a Magic Mirror of the Mystery of Witten.

Klein's sheness so brought the UFOQR with its matter-antimatter definitions and acting under the auspices of the gauge ambassadors into the 10th dimension of the superstrings of Universe of the Mother as the Queendom of Baab from the 12th dimension of the Kingdom of the Father.

The matter templates YCM so could interact with their antimatter counterparts MCY in a new way, as the quantum relativity between them had changed from its 2-dimensional origin with no thickness to a 3-dimensional evolvement , due to the thickness of the Inflaton-Instanton interval in the birthing of space-time.

In particular YCM(1)+MCY(-1) = (Y+M)C^2(M+Y)(0) = RCCR(0) = GMMG(0) = BYYB(0) in the mixing of the colour charges.
This created a new template; the Universal Intelligence called the Vortex-Potential-Energy or VPE as a Vacuum-Potential-Energy or a Zero-Point-Energy in the UFOQR.

This zero-spin or scalar VPE so had been defined as the Dark Energy or DE from Khaibit to continue the Inflaton of the hyper acceleration of the de Broglie wave-matter of the mass seed M_o.
Because the Inflaton had defined the Hubble event horizon as a Black Hole $M_H = R_Hc^2/2G_o$, this gradient of Black Hole masses $M_o/M_H = \Omega_o$ defined a parameter $\Omega_o = 0.028$ as the difference between the Hubble Mother Black Hole and the mass seed M_o from the creation algorithm of the Mathimatia.

This Black Hole Mass parameter Ω_o so would specify M_o as the mass seed and as a form of mass energy Abba named as the 'Baryonic Matter Seed' and it was the baryonic matter that would interact with the EMR as photons without colour charge as a luminous form of matter. The Inflaton parameters of the de Broglie wave matter had been the hyper-acceleration $A_{dB} = R_H.f_{ps}^2$ and the superluminal hyper-speed $V_{dB} = R_H.f_{ps} = R_Hc/\lambda_{ps}$, incorporating Abba's resonance self-state or eigen frequency f_{ps} into the birth of the cosmos.

The Dark Energy equation for the Inflaton was defined as a multiversal summation of the protoverse encompassed by the omniverse in the Mathimatia:

Dark Energy DE-Quintessence Λ_k Parameters:

A general dark energy equation for the kth universe (k=0,1,2,3...) in terms of the parametrized

Milgröm acceleration A(n); comoving recession speed V(n) and scale factored curvature radius R(n):

$\Lambda_k(n) = G_oM_o/R_k(n)^2 - 2cH_o(\Pi n_k)^2/\{n - \Sigma\Pi n_{k-1} + \Pi n_k)^3\}$ for
negative Pressure $P_k = -\Lambda_k(n)c^2/4\pi G_oR_k$

$= \{G_oM_o(n-\Sigma\Pi n_{k-1}+\Pi n_k)^2/\{(\Pi n_k)^2.R_H^2(n-\Sigma\Pi n_{k-1})^2\} - 2cH_o(\Pi n_k)^2/\{n-\Sigma\Pi n_{k-1}+\Pi n_k)^3\}$
$\Lambda_o = G_oM_o(n+1)^2/R_H^2(n)^2 - 2cH_o/(n+1)^3$
$\Lambda_1 = G_oM_o(n-1+n_1)^2/n_1^2R_H^2(n-1)^2 - 2cH_on_1^2/(n-1+n_1)^3$
$\Lambda_2 = G_oM_o(n-1-n_1+n_1n_2)^2/n_1^2n_2^2R_H^2(n-1-n_1)^2 - 2cH_on_1^2n_2^2/(n-1-n_1+n_1n_2)^3$
.....

For the protoverse k=0 then, **$\Lambda_o = G_oM_o(n+1)^2/R_H^2(n)^2 - 2cH_o/(n+1)^3$** had been a boundary condition at the time instanton t_{ps} as the quantum of mass m_{ss} in $f_{ss} = m_{ss}c^2/h = 1/f_{ps} = t_{ps}$. All mass is quantized in $m = \sum m_{ss} = Nm_{ss}$ and $1/f_{ss}^2 = f_{ps}^2$ eigen states in $9x10^{60}$ permutations to $mf_{ss}^2/m_{ss} = mE_{ss}/m_{ss}hf_{ps} = m.m_{ss}c^2/m_{ss}E_{ps} = mc^2/m_{ps}c^2 = m/m_{ps}$.
Any mass m is so quantum gravitationally quantized in a mass eigen frequency f_{ss} in the time instanton as the inverse of the source frequency f_{ps} as a distribution of permutational self-states $f_{ps}^2|_{mod} = 9x10^{60}$.

The cycle time $n=H_ot$ for the nodal Hubble constant $H_o = c/R_H = dn/dt$ at the Instanton so had been $n_{ps} = H_ot_{ps} = ct_{ps}/R_H = c/R_Hf_{ps} = c/V_{dB} = \lambda_{ps}/R_H = 6.26x10^{-49}$ as a proportionality relating the minimum conditions of the Instanton to the maximum conditions of the Inflaton in the form of wavelength and velocity.

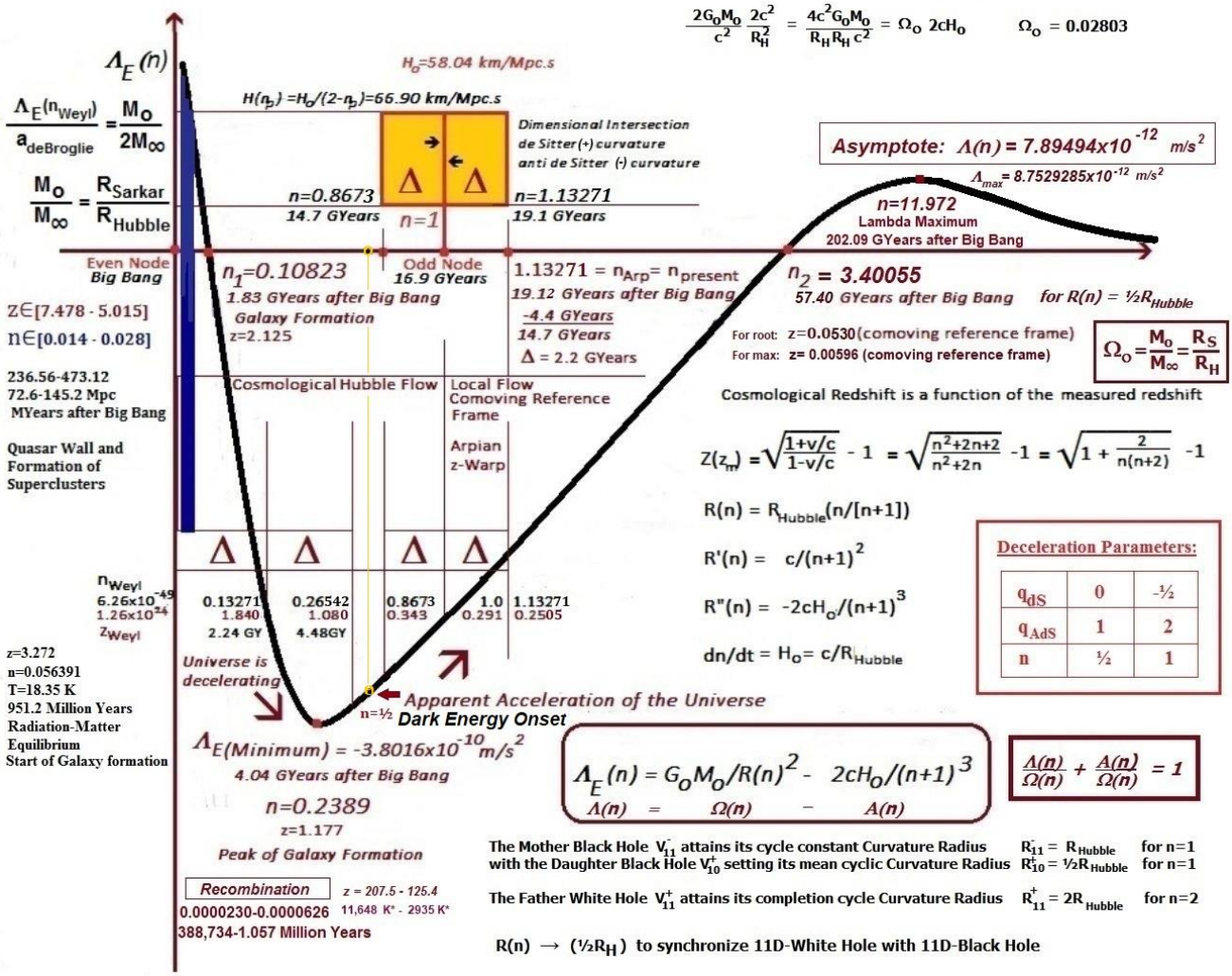
$\Lambda_o(n_{ps}) = G_oM_o(n_{ps}+1)^2/R_H^2(n_{ps})^2 - 2cH_o/(n_{ps}+1)^3$ calculates as $\Lambda_o(n_{ps}) = \{G_oM_o/R_H^2\}\{R_Hf_{ps}/c\}^2 = G_oM_o/\lambda_{ps}^2$ for this Lambda- or Dark Energy acceleration and proportional to the hyper acceleration of the Inflaton as $\Lambda_o(n_{ps})/a_{dB} = \{G_oM_o/\lambda_{ps}^2\}/\{R_Hf_{ps}^2\} = \{G_oM_o/\lambda_{ps}^2\}/\{2G_oM_Hf_{ps}^2/c^2\} = \{M_o/2M_H\}$ as $c = f_{ps}.\lambda_{ps}$ as the de Broglie group-wave velocity.
A group velocity for waves is upper limited by light speed 'c'; whilst a phase velocity for waves is lower limited by 'c' as a superluminal or tachyonic speed for matter waves in $v_{phase} = f\lambda = \{mc^2/h\}\{h/mv_{group}\} = \{c^2/v_{group}\} > c \; \forall \; v_{group} < c$.

At the instanton t_{ps}, a de Broglie Phase-Inflation defined $r_{max}=a_{dB}/f^2_{ps}$ and a corresponding Phase-Speed $v_{dB}=r_{max}.f_{ps}$.
Those de Broglian parameters constitute the boundary constants for the Guth-Linde inflation and the dynamical behaviour for all generated multiverses as subsets of the omniverse in superspacetime CMF.

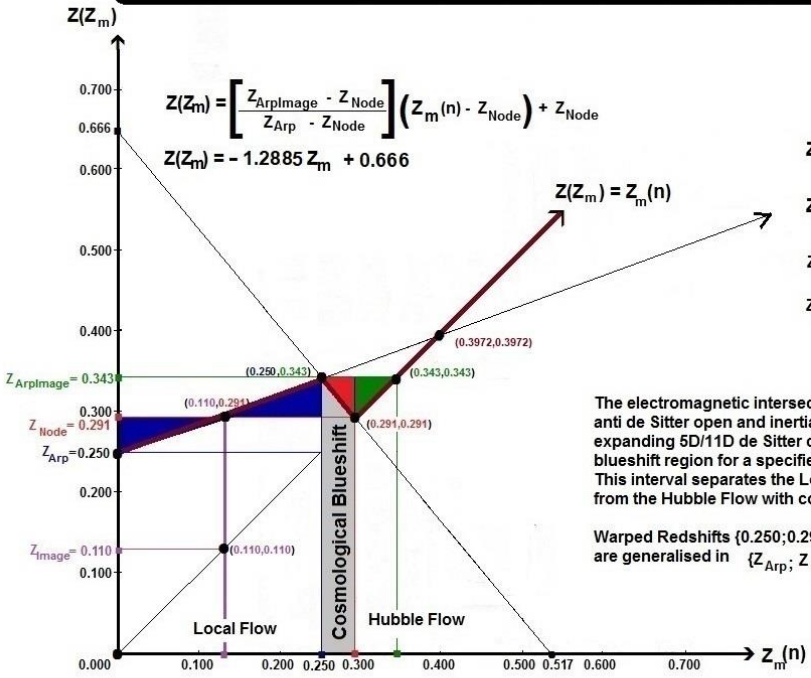
Initially, the de Broglie Acceleration of Inflation specified the overall architecture for the universe in the Sarkar Constant $A_S=\Lambda_E(n_{ps})r_{max}/a_{dB} = G_oM_o/c^2$
The Sarkar Constant calculates as 72.4 Mpc, $2.23541620x10^{24}$ m or as 236.12 Mlightyears as the bounding gravitational distance/scale parameter.

A Scalar Higgsian Temperature Field derives from the singularity and initialises the consequent evolution of the protocosmos in the manifestation of the bosonic superbranes as macroquantisations of multiverses in quantum relativistic definitions.

The Omega of critical density is specified in acceleration ratio $\Lambda_E(n_{ps})/a_{dB}$, which is $G_oM_o/c^2r_{max} = 0.01401506 = \frac{1}{2}M_o/M_\infty = \frac{1}{2}\Omega_o = q_o$ (Deceleration Parameter).



The Big Bang Observer with the Cosmic Wave Surfer and the Hubble Multiverse



The electromagnetic intersection between the asymptotically expanding inertial 5D/11D anti de Sitter open and inertial universe of negative curvature and the lightspeed expanding 5D/11D de Sitter closed universe of positive curvature forms a cosmological blueshift region for a specified redshift interval.
This interval separates the Local Flow for measured lower cosmological redshifts z<0.25045 from the Hubble Flow with cosmological redshifts z>0.291

Warped Redshifts {0.250;0.291;0.343} are imaged in $\{1.26\text{x}10^{24};1.840;1.080\}$ as shown and are generalised in $\{Z_{Arp}; Z_{Node}; Z_{ArpImage}\}$

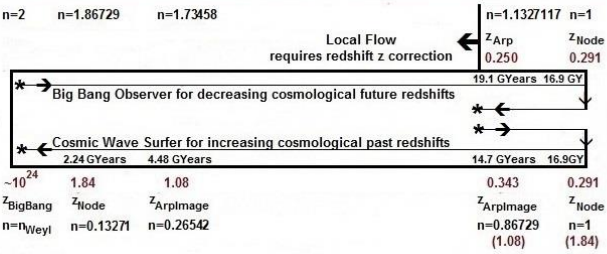
The intersection of the Local Flow cosmological redshift correction line for low redshifts z with the nodal redshift constant line determines a measured redshift z(m) as z(m)=z(image)=0.109 as a critical value for the Hubble Flow for high redshifts.
For this value of z then particular unexpected cosmological phenomena, such as quasar redshift anomalies apparently coupling quasar sources with galactic hosts and aberrant spectra and light curves for gamma ray bursters and supernovae can be observed by Terran stargazers unawares about the multivalued redshift regions and their mirroring properties as indicated.

$$H_o = dn/dt = c/R_{Hubble} = n/t = n_{BB}/t_{BB} = n_{Weyl} f_{Weyl} = \lambda_{Weyl} f_{Weyl}/R_{Hubble}$$

$$H_{omax} = f_{Weyl} = 3\text{x}10^{30}\ Hz \qquad H(n_{present}) = H_o/(2\text{-}n_{present}) = 66.9\ km/Mpcs \qquad H_{omin} = 58.04\ km/Mpcs = 1.877...\text{x}10^{-18}\ Hz$$

The Big Bang observer, say an Earth astronomer perceives and measures the receding event horizon of the Hubble node in witnessing hisher future with increasing cosmological redshifts z from left to right.

The Big Bang observer remains stationary relative to the Cosmic Wave surfer and measures the latter in receding from herhis recessional velocity or descreasing speed due to gravitational mass attraction



The Cosmic surfer rides the wavefront of the expanding universe in a comoving reference frame of the Arpian velocity defining the Arpian cosmological redshift.
Shehe so observes the cosmic evolution as a witness for the past in the increasing of the warping effect towards the Big Bang and where the 11D/5D closed de Sitter universe coincided with the 10D/5D open anti de Sitter universe.
The increase of the redshifts then proceeds from the right to the left in mirroring the timearrow of the Big Bang observer.

The dynamic node moves the Hubble event horizon along the basic n-interval $[0\text{-}n_{BB},1]$ to superpose the 11D Radius $R_{11}(n)=nR_{Hubble}=R_{Hubble}+\Delta$ onto the oscillating multiverse bouncing between even nodes of the Big Bang observer $\{0\text{-}n_{BB}, 2, 4, 6,...\}$ and the odd nodes of the mirrored and imaged Cosmic wave surfer {1, 3, 5, 7,...}.
The unitary interval so defines the curvature in $R_{10}(n)=R_{Hubble}\{n/[n+1]\}$ asymptotically and as a function of the expansion parameter $a = R_{10}(n)/R_{Hubble} = n/[n+1] = 1 - 1/[n+1]$

Recessional Velocity : $v'/c = 1/(n+1)^2$ in $1+z = \sqrt{\{(1+[v'/c])/(1-[v'/c])\}} = \sqrt{\{1+2/(n[n+2])\}}$ for $n = \sqrt{(c/v')} - 1 = \sqrt{\{1+2/(z[z+2])\}} - 1$

$v'/c = 1/(n_p+1)^2 = 0.219855$ for $z_{arp} = 0.25045$ for a present z=0 redshift image for $n_p = 1.132712 = 1+0.132712$ and $2-1.132712 = 0.86728$ (image)

Critical Redshifts:

$Z_{o/arp} = 0.00000$ for $n_p = 1.132712$ and imaged in the limiting $Z_{n\Delta} = 0.34323$ for the Local Flow LF

$Z_{M231} = 0.04147$ for a LF-n=3.91058 for a redshift correction $Z_{M231}(0.04147) = 0.37045(0.04147) + 0.25045 = 0.26581$ for a $n = 1.07864$ and $n_p - 1.07864 = 0.05407$ as 912.5 Million ly

$Z_{LF} = 0.10943$ for n= 2.022956 for a 'Local Flow' redshift correction $Z_{LF}(0.10943) = 0.37045(0.10943) + 0.25045 = 0.29099 = Z_n$ at the node for a $n = 1 = n_p - 0.132712$; 2.24 Gly from n_p

$Z_{Q3C273} = 0.1583$ with $v'/c = 0.1583$ and for a n= 1.5134 for a redshift correction $Z_{Q3C273}(0.1583) = 0.37045(0.1583) + 0.25045 = 0.30909$ for a $n = 0.94993 = 1 - 0.05007$

The position of Blazar Q3C273 is so 1.132712-0.94993 = 0.18278 from the n_p cycle coordinate at a displacement of $2.9202\text{x}10^{25}$ m* or 3.0846 Billion light years from n_p
The nodal mirror of the Inflaton defines a redshift displacement of 2.24 Billion years from the present observer for multiple redshift values for ylemic objects within the Local Flow.

$Z_{arp}(0.25045) = 0.37045(0.25045) + 0.25045 = 0.34323 = Z_{n\Delta}$ for a $n = 0.867289$ for $n_p - 0.867289 = 0.265422$ and a distance of 4.479 Billion light years from n_p imaging $Z_{n\Delta}$

$Z_n = 0.29099$ for n=1.000000 in Hubble Flow for $Z_n(0.29099) = 0.29099$ for $n_p - 1.0000 = 0.132711$ and a distance of 2.240 Billion light years from n_p

$Z_{n\Delta} = 0.34323$ for n=0.867289 in Hubble Flow for $Z_{n\Delta}(0.34323) = 0.34323$ for $n_p - 0.867289 = 0.265422$ and a distance of 4.479 Billion light years from n_p

$Z_{n\Delta'} = 1.07994$ for n=0.265422 in Hubble Flow for $Z_{n\Delta}(1.07994) = 1.07994$ for $n_p - 0.26544 = 0.86727$ and a distance of 14.636 Billion light years from n_p
$Z_{ni} = 1.84012$ for n=0.132712 in Hubble Flow for $Z_{ni}(1.84012) = 1.84012$ for $n_p - 0.13271 = 1.00000$ and a distance of 16.876 Billion light years from n_p

"The idea of an antigravity force has had a bad rep ever since," says Kirshner. "People sort of sniggered when it was mentioned, usually because it meant they couldn't explain their results." So when Riess, having checked his figures, suggested this might be the reason he kept showing negative mass, Kirshner, in quiet desperation, emailed the whole team, saying,

"In your heart of hearts, you know this can't be right! We have got to find out where the error is."

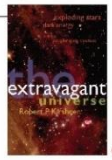
"In your heart you know this is wrong." Really, it just seemed like a terrible result, a horrifying thing

GETTING IT RIGHT 219

the writing assignments. So we all gave him advice. Conflicting advice. After all, this was a collaboration, not an army.

I didn't like the result. I didn't think we were smarter than Einstein and he had tripped on the cosmological constant. I did not want to make a mistake. I hadn't liked being wrong about the progenitor of SN 1987A and I did not want to be wrong about the history of cosmic expansion. On 12 January 1998 (at 10:18:51 A.M.) I wrote,

I am worried that the first cut looks like you might need some lambda. In your heart, you know this is wrong, though your head tells you [that] you don't care and you're just reporting the observations . . . It would be very silly to say "we MUST have nonzero lambda" only to retract it next year.



$q = 1$	$q_{dS} = R_H/2\lambda_{ps}$ $n = n_{ps}$ $q_{AdS} = 2n_{ps}$	$q_{dS} = 1$ $n = ¼$ $q_{AdS} = ½$	$q_{dS} = 0$ $n = ½$ $q_{AdS} = 1$	$q_{dS} = -0.4235$ $n = 0.8673$ $q_{AdS} = 1.7346$	$q_{dS} = -½$ $n = 1$ $q_{AdS} = 2$	$q_{dS} = -0.5586$ $n = 1.13271$ $q_{AdS} = 2.26542$	$q_{dS} = -0.75$ $n = 2$ $q_{AdS} = 4$	-1

Limit = {0} — Cyclic Closed 11/5D Witten Membrane MIRROR Spacetime — Limit = {∞}

Eternal Open 10/4D Einstein Minkowski Spacetime

Continuity in Cyclic Resets of the Initial-Boundary parameters

$$q_{dS} = 1/2n - 1$$
$$q_{AdS} = 2n$$

$$q_{dS} \cdot q_{AdS} = 2n(1/2n - 1) = 1 - 2n$$

$$\frac{q_{dS} + q_{AdS}}{q_{dS} - q_{AdS}} = \frac{1 - 2n + 4n^2}{1 - 2n - 4n^2} = \frac{4\{n-¼(1+i\sqrt{3})\}.\{n-¼(1-i\sqrt{3})\}}{-4\{n-¼(1-\sqrt{5})\}.\{n-¼(1+\sqrt{5})\}}$$

Roots for T(n)=-1 in n(n+1)-1=0
$n = -¼(1+i\sqrt{3})$; $n = -¼(1-i\sqrt{3})$

Roots for T(n)=1 in n(n+1)+1=0
$n = ¼(\sqrt{5}-1) = ½X$; $n = -¼(\sqrt{5}+1) = -½Y$

The cosmological observer is situated simultaneously in 10/4D Minkowski Flat dS spacetime, presently at the n=0.8676 cycle coordinate and in 11/5D Mirror closed AdS spacetime, presently at the n=1.1327 coordinate.

Observing the universe from AdS will necessarily result in measuring an accelerating universe; which is however in continuous decelaration in the gravitationally compressed dS spacetime for deceleration parameter q_{AdS}=2n. Gravitation is made manifest in the dS spacetime by Graviton strings from AdS spacetime as Dirichlet branes at the 10D boundary of the expanding universe mirroring the 11D boundary of the nodally fixed Event Horizon characterised by $H_o = c/R_H$

The Dark Matter region is defined in the contracting AdS lightpath, approaching the expanding dS spacetime, but includes any already occupied AdS spacetime. The Baryon seeded Universe will intersect the 'return' of the inflaton lighpath at n=2-√2=0.586 for (DM=22.09 %; BM=5.55%; DE=72.36%).

The Dark Energy is defined in the overall critical deceleration and density parameters; the DE being defined in the pressure term from the Friedmann equations and changes sign from positive maximum at the inflaton-instanton to negative in the interval L(n)>0 for n in [n_{ps} - 0.18023) and L(n)> 3.4008 with L(n)<0 for n in (0.1803 - 3.4008)with absolute minimum at n=0.2389.

This DE (quasi)pressure term for the present era (1-0.1498 for 85% DM as 4.85% BM and 27.48% DM and 67.67% DE) is positive and calculates as 6.696×10^{-11} N/m², translating into a Lambda of 1.039×10^{-36} s^{-2} and 1.154×10^{-53} m^{-2}. This pressure term will become asymptotically negative for a universal age of about 57.4 Gy, and for the zero curvature evolution of the cosmos.

The 'naked singularity' can be defined as the ratio of the minimum to the maximum and calculates as the genetic 'NullTime' $n_{ps} = \lambda_{ps}/r_{max} = 6.259093485 \times 10^{-49}$ in dimensionless cycletime units (Tau-Time in General Relativity).

This NullTime precedes the Planck-Time $t_P = h/2\pi c^2 m_P = 6.9653035 \times 10^{-44}$ seconds (s) by a factor of 111,283, should timeunits be assigned to n_{ps}.*

The 'naked singularity' can then be redefined as the GENESIS-BOSON with a pre-Planck energy spectrum of 6.59×10^{24} GeV, an effective 'size' of 3×10^{-41} metres (m) and a preBig Bang temperature of 7.67×10^{37} Kelvin (K).

Timeinstantenuity ends the 'Bosonic Epoch' of the superbranes at $t_{ps} = 3.3301 \times 10^{-31}$ s and renders the Guth-Linde-Inflation as 'classically dynamic' in General Relativity. The negative curvature of 10D-C-Space is 'flattened' in the positive curvature of 11D-M-Space and an overall observed Euclidean flat cosmos is realised.

Hubble Parameter	$H(n) = \{c/[n+1]^2\}/\{R_H(n/[n+1])\} = H_o/T(n) = H_o/(n[n+1])$
Timerate change Hubble Parameter in AdS without dS	$d(H(n)/dt\|_{AdS} = \{dH(n)/dn\}.\{dn/dt\} = -H_o^2/n^2$ by $H(n) = c/nR_H$ with $A(n) = 0$
Timerate change Hubble Parameter in AdS with dS	$d(H(n)/dt\|_{Ads+dS} = -H_o^2.(2n+1)(n+½+1)/(n[n+1])^2 = -4\pi G\{\rho+P/c^2\} = \rho_{B/DM} + \rho_{A/DE}$
Dark Energy Parameter with $\Lambda_{(E)instein} = 0$	$\Lambda(n)/R(n) = \Lambda_E/3 - 4\pi GP/c^2 = \rho_B + \rho_\Lambda = G_oM_o/R(n)^3 - 2H_o^2/\{n[n+1]^2\}$

(1) $q(n) = -\ddot{a}.a/\dot{a}^2 = -\{-2cH_oR_H/[n+1]^3\}.\{nR_H/([n+1]\}/c^2/[n+1]^2\} = 2n$ for AdS spacetime and dS spacetime for $H_o = c/R_{(H)ubble/max}$

$r(n) = r_{max}(1 - 1/(n+1))$ (Parametric Scalefactor for Distance)

$\dot{r}(n) = c/(n+1)^2$ (Parametrisation for Velocity)

$\ddot{r}(n) = -2cH_o/(n+1)^3 = a_o(n)$ [Milgrom] (Parametrisation for Acceleration)

$n = H_o t$ with $c = f_{ps}\lambda_{ps} = H_o r_{max}$ and $H_o = dn/dt = constant = 1.879564359x10^{-18}$ 1/s]

(2)

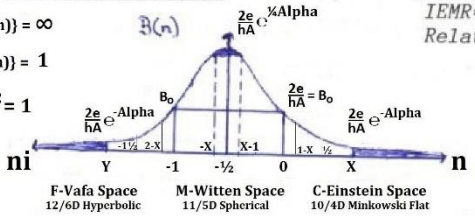
with $T^2(n) = 1 = X(X+1) = -i^2 = -XY$ in the Feynman-Path-Integral as alternative quantum mechanical formulation for the equations of Schrödinger, Dirac and Klein-Gordon by: $T(n)=n(n+1)= |-n| +...+ |-3| + |-2| + |-1| + 0 + 1 + 2 + 3 +...+ n$

$B(n) = 2e/\hbar A.exp[-Alpha.T(n)]$ (Universal Cosmic Wavefunction or IEMR=Inverse-Energy-Magnetocharge-Relation for Superstring HE(8x8))

Aleph-Null: $\lim_{n=\infty}\{T(n)\} = \infty$

Aleph-All: $\lim_{n=X}\{T(n)\} = 1$

$|X+Y| = |XY| = -i^2 = 1$



The universe is 'frozen' in M-Space at the X-coordinate for which T(n)=1 and imaged in the Y-coordinate as imaginary time n_i as function B(n)

T(n)=n(n+1) defines the summation of particle histories (Feynman) and B(n) establishes the v/c ratio of Special Relativity as a Binomial Distribution about the roots of the $XY=i^2$ boundary condition in a complex Riemann Analysis of the Zeta Function about a 'Functional Riemann Bound' FRB=-½.

And so half of the Black Hole Mass parameter $\Omega_o = M_o/M_H$ defines the Black Hole mass differential in the acceleration differential between the Dark Energy DE and the hyper-acceleration A_{dB} of the Inflaton as Deceleration parameter $q_o = ½\Omega_o = G_oM_oH_o/c^3 = G_oM_o/R_Hc^2 = \Lambda_o/A_{dB}$.

Applying this gradient to the Instanton then reduces the time instantaneity $t_{ps} = 1/f_{ps} = f_{ss}$ in $q_ot_{ps} = n_{ps}.\{G_oM_o/c^3\}$ to create a 'Higgs Potential False Vacuum' or HPFV within the Inflaton-Instanton epoch of the superstrings.

The temperature evolution of the Instanton can be written as a function of the luminosity L(n,T) with $R(n) = R_H(n/[n+1])$ as the radius of the luminating surface. Luminosity is specified as physical Power P or total energy E emitted over a time t.

For the total energy of Universe as $E_U = M_oc^2$ for a cycle time $n = H_ot$ or $t_{ps} = n_{ps}/H_o$ as initial boundary condition for $t = n/H_o$ then equates $H_oM_oc^2/n$ as proportional to L(n,T) = (Surface area of the energy emitter)(BBR proportionality constant)(temperature of emitting body to the fourth power) with proportionality constant 3/550 obtained from the 33-tier Maria Code and the Principalities of the Mathimatia.

The second Eps-Expansion-Coefficient in the Expansion Principality now reduces this luminosity by a factor of 3/550 = 1/183.33... to indicate the Core-Bulge Ratio for Black Holes,

termed a M-Sigma relation in the mapping of the Planck minimum energy Zero-Point Oscillator $E_p^o = ½E_p = ½hf_p = ½m_pc^2 = ½kT_p$ onto the Instanton parameters of the E_{ps}-Weyl wormhole.

$3/550 = 1/\{11.2e^*/60\} = 60\ E_{ps}/22 = ½Eps.\{60/11\}$ for $½E_{ps} = \{11/60\}\{3/550\} = 33/33{,}000 = 1/2e^*$.

The Luminosity function for Universe for a temperature $T(n=H_ot)$ is written as:

$L(n,T) = 6\pi^2R(n)^2.\sigma.T^4 = 3H_oM_o.c^2/550n$

$3H_oM_oc^2/550n_{ps} = L(n_{ps},T(n_{ps})) = 6\pi^2\lambda_{ps}^2.\sigma.T_{nps}^4 = 2.6711043034x10^{96}$ Watts* for $T(n_{ps}) = \sqrt[4]{\{M_of_{ps}^3/1100\pi^2\sigma\}}$ and where σ = Stefan's Constant = $2\pi^5k^4/15h^3c^2$ in units of $[J/K^4m^2s^1]=[kg/K^4s^3]$
and as a product of the defined 'master constants' k, h, c^2, π and 'e' from the two self-generating algorithms of the Mathimatia.

The Genesis Boson then became the parametric initialization of creation in the abstract labeling of the Mathimatia:
ENERGY = k.TEMPERATURE = h.FREQUENCY = h/TIME = MASS.c^2 and using the SE_{ps}-Master-Constant Set: {4; 6; 7; $L_o = 1/[6x10^{15}]$; $c^2 = 9x10^{16}$; 11; $h = 1/[15x10^{32}]$; $A^2 = 14x15^{24}$; $k = 1/[15x16^{18}]$; $26x65^{61}$} in reverse order and with arbitrary symbols as shown associated with those 'master constants'.

Particularly then: ENERGY = $hR_{max}/\lambda_{ps} = hR_H/\lambda_{ps}$ with MASS = $hR_{max}/\lambda_{ps}c^2 = 0.01183463299$ and TEMPERATURE = $hR_{max}/k\lambda_{ps} = 7.544808988...x10^{37}$ and FREQUENCY = $R_{max}/\lambda_{ps} = n_{ps} = 1.59767545...x10^{48}$ in the Mirror duality $f_{ps} = 1/f_{ss}$ for $f_{ps}.f_{ss} = 1$ and time instantaneity $t_{ps} = f_{ss} = 1/f_{ps}$ as a Maximum/Minimum initial- and boundary condition.

The MARIA CODE in the Riemann Analysis specifies the partitioning of the decimal monad around the primary Maria-Number and SE_{ps}-Constant "11" and specifies the Prime Number Algorithm: +1+11+10+11 as 33-tiered segments, which transform the mechanics of SE_{ps} into the 64-codex of the DNA/RNA code for its eventual quadrupling as the 256-codex incorporative of dormant intron/intein-codings.
Details are in the references, but the MARIA-CODE is based on the distribution of the Maria-Numbers given by: $M_p+99=M_{p+12}$; $n=\frac{1}{2}((264k+1)^{\frac{1}{2}}-1)$ via $n^2+n-66k=0$ and the MARIA-INFINITY-MATRIX, semanticised as:

[28]

11LOVE65USE110LOVE164USE209LOVE263USE...(Archetype 2)	Maria Numbers are those IntegerCounters, which contain all previously counted integers as mod33.
21USE66LOVE120USE165LOVE219USE264LOVE...(Archetype 3)	
32USE77LOVE131USE176LOVE230USE275LOVE...(Archetype 5)	
33LOVE87USE132LOVE186USE231LOVE285USE...(Archetype 6)	1+2+3+4+5+6+7+8+9+10+11=66
44LOVE98USE143LOVE197USE242LOVE296USE...(Archetype 8)	
54USE99LOVE153USE198LOVE252USE297LOVE...(Archetype 9)	Since 66=2x33, 11 is M#1.
65USE110LOVE164USE209LOVE263USE308LOVE..(Archetype 2*)	(for k=2)

Archetypes 2+3+5+6+8+9=33 and Archetypes 1+4+7+0=12 then define the imaginary time-dimensions as the Archetypes not in the Sequence for $E_{ps}=1/e^*$ Coefficients used in the application of the seven fundamental principles to define the F-Space.

In particular, the first application of the Coefficient-Relation results in the specification of the Atomic Isotopes and the second application defines the Expansion/Contraction-Principle in the three-fold definition of RESTMASS=..and its transformation into its second (Black Body Transparency) and third (RMP's) as omniversal agency, i.e. Avogadro's Constant: $N_A=6.022421431x10^{23}\ mol^{-1}$* as RESTMASS.

The 33-tier Maria Code from Principalities of the Mathimatia and Eps-Coefficients for Mass Transformation in the Genesis Boson

For the nth principality, the E_{ps}-Coefficient-Series and iterative counter k is:

[29]

$$[7k-(7-n)].E_{ps}^{k-1}.10/33 \;=\; [7(k-1)+n].e^{*1-k}.10/33$$

Identity-Series(n=1;k=1,2,3): 10/33; 4/825; 1/55000;....
Expansion-Series: (n=2;k=1,2,3): 20/33; 3/550; 2/103125;...
Order-Series(n=3;k=1,2,3): 30/33; 1/165; 17/825000;...
Symmetry-Series(n=4;k=1,2,3): 40/33; 1/150; 3/137500;...
Infinity-Series:(n=5;k=1,2,3): 50/33; 2/275; 19/825000;...
Inversion-Series(n=6;k=1,2,3): 60/33; 13/1650; 1/41250;...
Reflection-Series(n=7;k=1,2,3): 70/33; 7/825; 7/275000;...
Relativity-Series(n=8;k=1,2,3): 80/33; 1/110; 1/37500;...
Quantisation-Series(n=9;k=1,2,3): 90/33; 8/825; 23/825000;...
New Identity-Series(n=10;k=1,2,3): 100/33; 17/1650; 1/34375;...

For k=1; the coefficients have the numerators: 10,20,30,...and denominator 33.
For k=2; the coefficients have the numerators: 8,9,10,...and denominator 1650.
For k=3; the coefficients have the numerators: 15,16,17...and denominator 825000.

The E_{ps}-Coefficient-Series can then be extended to reflect the 7-tiered principality.

MASS becomes the 'Atomic-Mass-Unit' in 12D-F-Space in using one proto nucleon m_c = $Alpha^9.L_{planck}$ for every one of the 12 monopolar current loops in the Unified Field of Quantum Relativity UFoQR.

A first E_{ps}-Identity-Coefficient in the Expansion Series of the fundamental principles from the SE_{ps} algorithm then crystallizes the 'Counter for matter' in Avogadro's Constant for Molarity, subject to mass energy perturbation effects:
$MASS(20/33)/12m_c = N_{avogadro} = 6.02242143x10^{23}$ 1/mol*

The counter $N = n_{ps} = \lambda_{ps}/R_{max}$ in 'real' time relative to the Quantum Big Bang and emerging from the string epoch and relating to 'imaginary' time relative to this selfsame creation in the Cosmogony of the Genesis Boson in Khaibit and the Inflaton-Instanton of the Abba-Baab 11-dimensional super membrane.
This 'virtual' or unreal Quantum Relative Time then manifests as the Hubble-Frequency $H_o = c/R_H$ in proportionality to the Source Frequency of the E_{ps}-Gauge Photon $f_{ps} = c/\lambda_{ps}$ in the expression $H_oR_{max} = c = \lambda_{ps}.f_{ps}$.

N then had been the Null time for the initialization of the super membrane modular duality in the De Broglie phase speed initialization, beginning with the oscillation or bounce of the Planck Length conformably mapped onto time instantaneity as a Now-Cycle-Time $n_{ps} = H_ot_{ps} = H_o/t_{ss}$ and as the Time Instanton $t_{ps} = 1/f_{p\,s} = f_{ss}$ and the Inflaton $R_{max} = R_{Hubble} = c/H_o$ with de Broglie Phase speed $V_{debroglie} = R_H.f_{ps} = R_H.c/\lambda_{ps} = c/n_{ps}$ as the 'Heartbeat of the Cosmic Mother Black Hole' frequency of the oscillating cosmos in the Cosmology of Abba.
The Hubble frequency H(n), so oscillates between two Hubble nodes maximized as frequency as the source frequency f_{ps} at the Instanton and minimized in the Hubble frequency H_o at the Inflaton node of the Hubble event horizon as $H_o = n_{ps}/t_{ps} = \lambda_{ps}f_{ps}/R_H = c/R_H$.

The second Eps-Expansion-Coefficient in the Expansion Principality now reduces this luminosity by a factor of 3/550 = 1/183.33... to indicate the Core-Bulge Ratio for Black Holes, termed a M-Sigma relation in the mapping of the Planck minimum energy Zero-Point Oscillator $E_p^o = ½E_p = ½hf_p = ½m_pc^2 = ½kT_p$ onto the Instanton parameters of the E_{ps}-Weyl wormhole.

$3/550 = 1/\{11/60x2e\} = 60\ E_{ps}/22 = ½Eps.\{60/11\}$ for $½E_{ps} = \{11/60\}\{3/550\} = 33/33{,}000 = 1/2e^*$.

The third Expansion-Coefficient in the Expansion Principality is 2/103,125 and indicates the frequency eigen states for sufficiently 'evolved space-aware' consciousness processors as VPE-M_o/m_c Abba energy collectors.
$(2/103{,}125)f_{ps}.L_o = 9696969696 = f_iE_i^2$ 'self-states' for frequency-mass eigen-states and for an 'optical unification' of Eps.Ess in the form of the Restmass-Photon acting as dark matter gauge ambassador particle on physical consciousness carrying YCM-matter conglomerations or bodies.

The temperature evolution at any cycle time $n=H_ot$ so is expressed as:

$$\mathbf{T(n) = \sqrt[4]{\{\{H_o^3M_o/1100\pi^2\sigma\}.\{(n+1)^2/n^3\}\}}}$$

$R(n_{ps}) = n_{ps}R_H/(1+n_{ps}) = \lambda_{ps}$ in the limit of the Instanton with Volumar $V_3(R) = dV4/dR = d(½\pi^2R^4)/dR = 2\pi^2R_H^3$ defining a surface area $dVH/dR = 6\pi^2R_H^2$ from the 3-dimensional surface V_3 in the spacetime of Klein's 4-dimensional volume $V_4(R)$.

$L(n,T) = 3H_oM_o.c^2/550n$ and for Temperature $T(n_{ps})$ ---------- $T(n_{ps}) = 2.93515511x10^{36}$ Kelvin*.

$T(n_{ps})$ so is the temperature of the Instanton as a function of the baryonic mass seed M_o and therefore also the temperature of the Dark Energy in terms of the Lambda-Einstein acceleration in proportion to the deceleration parameter $q_o = \Lambda_o/A_{dB} = ½\Omega_o = M_o/M_H$.
In the form and context of quantum gravity however, the temperature of the Instanton was $T_{ps} = E_{ps}/k = hf_{ps}/k = m_{ps}c^2/k$ for a quantum gravitational minimum Black Hole mass of $M_{hyper} = r_{ps}c_2/2G_o$.

The BBR or Planck Black Body Radiator so began its expansion at light speed 'c' with hypermass M_{hyper} = 6445.78 kg* and about the weight of a pair of mature elephants as the minimum mass for a Schwarzschild Black Hole.
The rest of the mass seed M_o so was distributed in the higher dimensional spacetime of Klein as a potential energy defined in the Vortex-Potential-Energy or VPE and in expectation of being 'triggered' as an 'energy of the vacuum' upon the 'filling' of the Klein space in 4 space dimensions by the Möbius 3-dimensional space expanding as the Instanton into the Inflaton.

Within the era of the super membranes, the physical parameters had been defined in the transformation of 5 string classes from the Planck boson to the Weyl boson and prior to the final transformation birthing the Instanton, the Genesis boson had defined the parameter of not physicalised TEMPERATURE to allow a 'False Vacuum' to manifest the Higgs template in the UFOQR and to correlate the 'Bounce of the Planck length' to a 'Bounce of the Planck time' in the Inflaton-Instanton conformal transition and as the maximum HPFV.

Its minimum is then the deceleration parameter gradient $q_o=\Lambda_o/A_{dB}$ bounded in the Genesis boson for the parameter initialization.

$t_{Genesis} = n_{Genesis}/H_o = 4.395x10^{-33}$ s* for cycle time $n(t_{Genesis}) = \sqrt[3]{\{\{H_o^3M_o/1100\pi^2\sigma\}\{n_{ps}k/h\}^4\}} = 8.252x10^{-51}$ for $T(n_{Genesis}) = \sqrt[4]{\{\{H_o^3M_o/1100\pi^2\sigma\}.\{(n_{Genesis}+1)^2/n_{Genesis}^3\}\}} = 7.5448x10^{37}$ K* in the Higgs false vacuum and $\{n_{ps}k/h\}|_{mod}$.

$t_{dBmin} = q_ot_{ps} = n_{dBmin}/H_o = n_{ps}\{G_oM_o/c^3\} = 4.672x10^{-33}$ s* for cycle time $n(t_{dBmin}) = 8.772x10^{-51}$ for $T(n_{dBmin}) = \sqrt[4]{\{\{H_o^3M_o/1100\pi^2\sigma\}.\{(n_{dBmin}+1)^2/n_{dBmin}^3\}\}} = 7.206x10^{37}$ K* in the Higgs false vacuum from the DE gradient instanton bounce for deceleration parameter $q_o = \Lambda_o/A_{dB}$

$2t_{dBmin} = \Omega_ot_{ps} = 2n_{dBmin}/H_o = n_{ps}\{2G_oM_o/c^3\} = 9.343x10^{-33}$ s* for cycle time $n(t_{dBmin}) = 1.754x10^{-50}$ for $T(n_{dBmin}) = \sqrt[4]{\{\{H_o^3M_o/1100\pi^2\sigma\}.\{(n_{dBmin}+1)^2/n_{dBmin}^3\}\}} = 4.285x10^{37}$ K* in the Higgs false vacuum from the DE gradient instanton bounce for $\Omega_o = M_o/M_H$
$t_{HPFV} = \{T(n_{ps})/TEMPERATURE\}t_{ps} = n_{HPFV}/H_o = 1.297x10^{-32}$ s* for cycle time $n(t_{HPFV}) = 2.435x10^{-50}$ for $T(n_{HPFV}) = \sqrt[4]{\{\{H_o^3M_o/1100\pi^2\sigma\}.\{(n_{HPFV}+1)^2/n_{HPFV}^3\}\}} = 3.351x10^{37}$ K* in the Higgs false vacuum
$t_{dBmax} = [\sqrt{\alpha}]t_{ps} = n_{dBmax}/H_o = 2.847x10^{-32}$ s* for cycle time $n(t_{dBmax}) = 5.347x10^{-50}$ for $T(n_{dBmax}) =$

$\sqrt[4]{\{\{H_o^3M_o/1100\pi^2\sigma\}.\{(n_{dBmax}+1)^2/n_{dBmax}^3\}\}} = 1.857x10^{37}$ K* in the Higgs false vacuum from the Planck-Stoney Inflaton time bounce.

This manifests as a 'false vacuum' and as a temperature gradient, as a causation of the Big Bang Instanton on physical grounds.

The metaphysical ground is the symmetry breaking from the source parity violation described in the birth and necessity of the Graviton to resymmetrize the UFoQR and as a consequence of Abba's quest to find Baab as Universe without and within as Sophia Earth and the forms of Adam and Eve reborn from their archetypically energized nature as physicalized body forms manifesting the Life of Universe, Multiverse and Omniverse.

$T(n)^4 = H_oM_oc^2/(2\pi^2\sigma R_H^2[550n^3/[n+1]^2])$ for
$T(n)^4 = \{[n+1]^2/n^3\}H_oM_oc^2/(2\pi^2\sigma R_H^2[550]) = 18.1995\{[n+1]^2/n^3\}$ (K^4/V)*

TEMPERATURE/$T(n_{ps}) = 7.544808988...x10^{37}/2.93515511x10^{36} = 25.705 = 1/0.03890...$
$T(n_{ps}) = 2.935x10^{36}$ K* of the singularity is 0.0389 or 3.89% of the pre-singularity within the Inflaton.

So the POTENTIAL Temperature manifests as 3.89% in the KINETIC Temperature' which doubles in the Virial Theorem to 7.78% as 2KE + PE = 0:

Applying the actual VPE at the Instanton to this temperature gradient:

$\rho_{VPE}/\rho_{EMR} = \{4\pi E_{ps}/\lambda_{ps}^3\}/\{8\pi^5E_{ps}^4/15h^3c^3\} = 15/2\pi^4 = 0.07599486... = 1/12.9878...$ indicating the proportionality $E_{VPE}/E_{EMR} = kT_{ps}/kT_{EMR} = 2T_{ps}/T_{potential}$ at the Instanton from the Inflaton as an original form of the virial theorem, stating the Kinetic Energy of the Instanton and the QBB Lambda to be twice the Potential Energy of the de Broglie wave matter Inflaton, then manifesting as the $M_o/2M_{Hubble} = r_{Hyper}/2R_{Hubble}$ Schwarzschild mass cosmic evolution.

This then extrapolates the Big Bang singularity backwards in Time to harmonize the equations and to establish the 'driving force of the vacuum' as the DE from Khaibit and in association with a potential scalar Higgs Temperature Field.
All the further evolvement of the universe so becomes primarily a function of Temperature and not of mass.

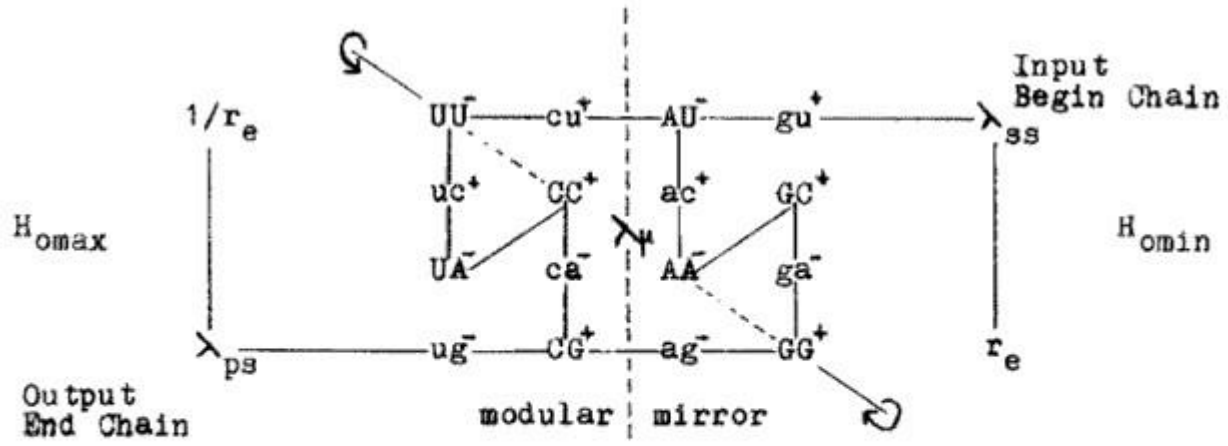
The next big phase transition is the attunement of the BOSONIC UNIFICATION, namely the 'singularity' temperature $T_{ps} = 1.41x10^{20}$ K with the Luminosity function. This occurs at a normal time of 1.9 nanoseconds into the cosmology.

$T(n_{ps})$ reduces to $T_{ps} = 1.4167x10^{20}$ K* for $L(n,T) = 6\pi^2R(n)^2.\sigma.T^4 = 3H_oM_o.c^2/550n$ and $T_{ps} = E_{ps}/k$
for $n_{BU}^3/(1+n_{BU})^2 = H_o^3M_o/(1100\pi^2\sigma.T_{ps}^4)$ and for $n_{BU} = \sqrt[3]{\{4.511x10^{-80}\}} = 3.562x10^{-27}$ for $t_{BU} = n_{BU}/H_o = 1.90x10^{-9}$ s* or 1.9 nanoseconds*.

It is then that the universe as a unity has this temperature and so allows BOSONIC differentiation between particles.
The individuated Bosons of the mass had been born then and not before, as the entire universe was a bosonic macro-quantized superstring or super-heated Bose-Einstein Condensate or SHBEC until the bosonic unification nexus was reached by the expansion of Universe from the lower dimensional Instanton of Möbius into the higher dimensional Inflaton of Klein.

The size of the universe at that time was that of being 1.14 meters across from $R(n_{BU}) = R_H\{n_{BU}/(1+n_{BU})\} = 0.57$ m*.

Next came the electroweak symmetry breaking at 1/140 seconds and at a temperature of so $1.7x10^{15}$ Kelvin*



GENESIS

The squared E_i-eigenstate implies a "doubling" of magnetocharged entities by the Action Law of h*=e*e and the Cooper-Pairing of the e-chargequanta in Superconductivity and the Josephson-Constant J_o in the B(n).

We so define E_i as $2m_oc^2$, where $2m_o=m_i+m_j$, which becomes "two bodies as one" or the average mass of a couple as m_o. $[f_i=9696969696.N^2/E_i^2]$.
The number N of Eigenstates f_i is then defined by $2m_oc^2/N$, where N can be said to constitute the number of unitcells for the combined "body".
Setting $N=L_of_{ps}=5x10^{14}$ as the transduction frequency from F-Space into C-Space, that is a wavelength of 6000 Angstroms (Orange Light), allows a partitioning of the "unitcells" into eight gluonic/colour-magnetocharged eigenstates of 62.5 Trillion per permutation and reflecting a quadrupolar magnetocharge distribution shared between a DUALITY-MONAD exhibiting Waveparticle-Particlewave duality in 12 dimensions and quantising AS the 13th dimension as a 26-D-Weyl-Tensor in the root-extension of 4-D-Spacetime. For $m_o=70kg^*$, a typical Alpha-$f_i=15.270$.
Setting WAVEPARTICLE equal to MINDBODY and PARTICLEWAVE equal to BODYMIND and doubled in Superparity reflection in M-Space: defines a Valency-Sharing between the Magnetocharged components (Mind and Body) and linking to the nucleotidal basepairings as discussed in detail in the references.
The Superparity for positive (female) and negative (male) quadrupoles is:

$$\begin{bmatrix} \text{MindBody } (-,+) & \text{MindBody } (+,-) \\ \text{BodyMind } (-,+) & \text{BodyMind } (+,-) \end{bmatrix} = \begin{bmatrix} C^*G & G^*C \\ UA^* & AU^* \end{bmatrix} = \begin{bmatrix} YX & X'X'' \\ X''Y & XX' \end{bmatrix} = \begin{bmatrix} LC & L'C'' \\ C''L & CL' \end{bmatrix}$$

The nucleotidal bases are Cytosine-Guanine-Uracil-Adenine in C-Space and denoted as * in F-Space and link to one Y-Sex-Chromosome and a permutation of three X-Sex-Chromosomes defining a variety of sexual characteristics based on the generation of the 20 Amino Acids via the genetic code.
The magnetoinductive L-Factor (Male Magnetocharge) and the electrocapacitative C-Factor (Female Magnetocharge) can also be used to link the WaveParticle duality across the C-M-F-Space.
The $2m_o$'s so consist of two PARTICULAR WAVES in embodiment, sharing magnetocharges with two WAVED PARTICLES in disembodiment or ascension: thus defining Erwin Schrödinger's Cat Cleopatra BOTH ALIVE (as the JUDAIC LION) and DEAD (as the ROMAN EAGLE).
Once Cleopatra has found its genetic baseperfect match as defined by the extended 256-codex with the fifth baseletter of the Enimine=$\frac{1}{2}$(Uracil+Thymine) in the "KleinDragon-Twist" of Guanine with Cytosine and the "Serpent-Skew" of Uracil with Adenine in the twin-pentagonal redefinition of the Crick-Watson-Wilkins Double-Helix as the Curtis 12-D-F-Space formation: then the $XY=i^2$ quantum geometry can manifest the 13th dimensional SuperSpacetime in the Einstein-Minkowski Continuum as a Oneness of the sexual and magnetocharged Harmony of C-M-F-Space.

We use the Identity-Series for n=1 for 26 Bosonic Eigenstates/Dimensions (and coded in One-to-One correspondences, i.e. in the LOVEUSE symmetry 5445 in the Maria-Matrix) and the Helium-Distribution-Percentage of 1.271%.

[30] Isotopic-Percentage-Generator: $IPG = 1.271\%.(7k-6).e^{*2-k-j}.10/[33(27-k)]$

Abundance-Ratios for stable isotopes are then:
Hydrogen/Helium = (75%)/(23.729%) with remainder 1.271% and k=1 for Isotopes of Hydrogen; k=2 for Helium; k=3 for Lithium etc. until k=26 for Iron.
k=1: j=1,2,3 gives: 0.01481%; $2.963x10^{-5}$%; $5.925x10^{-8}$%
k=2: j=1,2,3 gives: $2.465x10^{-4}$%; $4.930x10^{-7}$%; $9.860x10^{-10}$%
k=3: j=1,2,3 gives: $9.629x10^{-7}$%; $1.926x10^{-9}$%; $3.852x10^{-12}$%

The isotopic ratios are decreasing within a series of multiples of the E_{ps}-quantum and are weighted relative to natural abundances in nested perturbation of the elements. At k=3, Lithium-6 occurs at say 7.4% and Lithium-7 at 92.6%; this mixes j=1 with j=2 in $7.125x10^{-8}$% and $1.783x10^{-9}$% respectively for a Lithium-Arithmetic-Mean of $3.652x10^{-8}$% or a Lithium-Geometric-Mean of $1.127x10^{-8}$%.

Deuterium-Abundance is naturally bounded in 0.01481% and reduced in radioactive j-isotopes like Tritium in perturbative Beta-Minus-Decay.
Helium-3 is bounded in $2.465x10^{-4}$% and subject to a 3:1 Hydrogen/Helium ratio for the remainder of 1.271%, i.e. the ratio 0.953/0.318, which adds to the primary elements.

Until BOSONIC UNIFICATION (BU) at $1.90x10^{-9}$ s* with $T_{BU}=T_{ps}=E_{ps}/k=1.4167x10^{20}$ K*; the superstring epoch defines the density in the multiverse as Boson-Gluon-Photon-Plasma. At the instanton, the temperature is $T_{nps}=2.94x10^{36}$ K* (from [19]); restmass seed M_o so manifesting as $VPE^{2n}=YCM+MCY=RGB+BGR=R^2G^2B^2+B^2G^2R^2=B^2YY=B^4Y^2Y^2$-Pair-Production/Annihilation (J8-J10 in UFoQR) in forms of Matter/Antimatter, Photon/Gluon and Neutrino/Antineutrino.

The EMR-Radiation-Density is related to the Bosonic-Energy-Density via E_{ps}-VPE= ρ_{VPE}:

[31] $\rho_{EMR}=(8\pi^5k^4/15h^3c^3)T^4_{Boson}=(m_{Boson}c^2/2\pi^2\lambda^3_{Boson}).2\int_0^\infty u^3du/(e^u-1)=[E/V]_{Boson}.2\Gamma(4).\zeta(4)$

Generally: $\rho_{VPE}=4\pi E_{ps}/\lambda^3_{ps}$ in $\rho_{EMR}/\rho_{VPE}=2\Gamma(4).\zeta(4).(kT/E_{ps})^4=(2\pi^4/15).(kT/E_{ps})^4$

Planck-Density is then: $\rho_P=(4\sigma/c)T^4_P=E_P\pi^2/15.\lambda^3_P$, with $\sigma=2\pi^5k^4/15h^3c^2$ (W/m^2K^4)*.

BU-Density becomes: $\rho_{BU}=(4\sigma/c)T^4_{ps}=8\pi^5E_{ps}/15\lambda^3_{ps}=\rho_{VPE}.(2\pi^4/15)$ or $2.0x10^{81}$ (eV/ℓ)* $3.264x10^{65}J/m^3$

The VPE-ratio between photons and baryons (based on m_c and K.KIR.K) is determined in the G-F-Interval as Eta-Inner=G/E=1/1039802245 and Eta-Outer=F/E=1/986925478 as spacequanta. The Black Body Energy for cycletime $n_p=H_o t_p$ is given in $T_{2.7}=hf_{2.7}/k$ and $f_{2.7}=5.68x10^{10}$ 1/s*. The Number of photons per unitvolume is N_γ, with photon density varying in intensity ***$I(x,\mu)$ as 'e' from a central source and for Attenuation $I/I_o=1/e$ for attenuation coefficient μ being inverse the lightpath $x=1/\mu$ in modular string T-duality: $[N_\gamma.e]=(4\sigma/c).T^4_{2.7}/E_{2.7}$ then generalised as 5.04 (eV/l) or $8.10x10^{-16}J/m^3$.***

The microwave backgound at n_p so becomes about 418 Million γ/m^3 at 2.7 K* and $c/f_{2.7}=5.20$ mm for $f_{2.7}=5.77x10^{10}$ Hz* $N_\gamma(n)/e=N_{Baryon}=M_o/m_c=1.83x10^{78}$ for $n=1.22x10^{-31}$ and $T=3.17x10^{23}K^*$; $R=2.06x10^{-5}m^*$ and $\rho_{EMR}/\rho_{10D}=4c^2X^n/550(n+1)(\frac{m^*}{s^*})^2$

Eta-Mean = $\eta=N_{Baryon}/N_\gamma=\frac{1}{2}\{G/E+F/E\}=9.874845308x10^{-10}$

Unification Eta-Mean = $\eta=\frac{1}{2}\{G/E+F/E\}/\sqrt{2}=6.98257x10^{-10}$

The present C-Space Density ρ_{10D} relates via DIM(n_p)=7.56 to the present M-Space Density ρ_{11D}

[32]

$$\rho_{11D} = M_o Y^{n_p}/(2\pi^2 R_H^3 (n_p)) = 2.9096x10^{-29}\ kg^*/m^{*3} \quad \text{and 'dimmed' to}$$

$$\rho_{10D} = M_o Y^{n_p}/(2\pi^2 R_H^3 (n_p/[n_p+1])^3 = 2.1996x10^{-28}\ kg^*/m^{*3}$$

η_{10D} mean $=5.46\ x10^{-10}$

$$\eta_{10D} = \{\rho_{10D}/m_c Y^{n_p}\}/\{(4\sigma/kc)(T_{np}^3/e) = (0.1285)/(4.378x10^8) = 2.935x10^{-10}$$ attenuated from $N_B/N_\gamma = e\,\eta_{10D} = 7.98x10^{-10}$

$\eta_{11D} = 3.88x10^{-11}$ 'dimmed' from η_{10D} and attenuated from $e\,\eta_{10D} = 1.06x10^{-10}$

η_{11D} mean $=7.24\ x10^{-11}$

This mean value for Eta mirrors the dimensional intersection of the Riemannian hyperspheres in G/E and F/E of the IR-OR-HBrmi, and as compared with the F/G ratio for the baryonic elemental HBrmi-Distribution in the Identity-Series of the SE_{ps}-Code.
From the G-F-HBrmi, the nucleosynthesised elements coalesce in the form of nucleons m_c in predominatingly doughnut-shaped alpha-particular macroquantum supermembranes or Calabi-Yau manifolds and reflected in subsequent planetesimal- and starformations in the generation of the ylemic epoch of neutron stars.

A general formula for the MAGIC NUMBERS of nucleonic arrangements in shells is given by the SE_{ps}-algorithm in the Unification-Polynomial of M-Space:

[33]

$ax^3+bx^2+cx+d=0$ and the Feynman-Path-Integral $T(n)+2$ sets the mapping of SE_{ps} onto Super-SE_{ps} as the relative primeness of the Experience-Factors in SE_{ps} superparitive to SE_{ps} in extension.*
SE_{ps} in F-Space differs by the Fermat-Identity "2" from SE_{ps} in C-Space to denote the Union between the binary and decimal systems in: $a°+b°=c°=1\rightarrow 2\rightarrow 10$.*
Subtracting polynomial $f(x)$ from $f(x+1)$ for the identity $n^2+n+2=0$ gives $3ax^2+(3a+2b)x+(a+b+c)=0$ and specifying $a=1/3$ and $b=0$ and $c=5/3$.

$T_{MagicNumbers}(n) = n[n^2+5]/3$ for the primary and secondary series.

Primary Series: 0,2,6,14,28,50,82,126,184,...
Secondary Series: 0,2,(2),6,(8),14,(20),28,(42),50,(78),82,(stop command),126,..

As 50+82=132 > 126; the Magic Number for n=7; this Out-of-Order sets a natural limit on the nuclear stability in the generation of the periodic table of the atomic elements as consequence of fundamental principles in the specification of Lead at #82 and Bismuth-209 the last stable isotope at #83.

The secondary series reflects the Fibonacci mechanism of always adding successive terms as the Experience-Factors in the "Information-Gathering-Parameter".

The 2-branes of Helium-4 or alpha-particles so become topological surface mappings from M-Space into the C-Space of 4-D with the added Calabi-Yaus of 6-D as the "collapsed" superstring dimensions of a Conifoldment-Transformation of 3-Toruses into a 3-Sphere (Poincare/Riemann); root-reduced as Möbian-KleinBottle-Dragon-Manifold in 2-D.
The Quantum Geometry of minimally connected surface topologies is then defined via the SE_{ps}-Identity $XY=X+Y=-1=i^2$ and the 3-D crystallisation of Platonic Solids in fivefold supersymmetry across the Omnispace of the 10-11-12-13/4=1-D continuum.

The natural exponent e is defined in the inversion of scale parameter 1/a = {1+1/n}

$e = \lim_{n\to\infty} \{1+1/n\}^n$ **for** $e = \{1+1/n\}$ **for x=1=hf/kT in Planck's Radiation Law for a Black Body**

$e-1=1/n$ for $n=1/[e-1] = 1/Y^{n'} = X^{n'}$

$n' = \ln\{e-1\}/\ln Y = 1.12492010..$ for a time coordinate 0.0075 or about 126.58 Million years ago

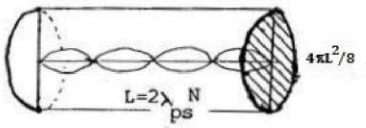
$$e^{\frac{hf}{kT}} = 1 + \frac{1}{n} \quad \text{for } n(f,T) = \frac{1}{e^{hf/kT} - 1} \qquad \text{(Eq.\#26)}$$

Now consider the universe as a Black Body or a particle in a quantum box, the box being of course the quantumspace boundary r_{max}, itself bounded by omnispace as the 11-dimensional supermembrane, with 28 7-spheres relating to 26 bosonic dimensions via the quantization of Prime numbers as encountered.

The U-Field is quantized into 12-intersecting unified current loops and the extent is $4\lambda_{ps} = 4x10^{-22}$ m*.

We so consider the frequency interval $2\lambda_{ps}N$ and the "volume" of the black box is quantized

$N = L/2\lambda = Lf/2c$ **with** $dN = L.df/2c$ **for** $N^2dN = (L^3f^2/8c^3)\,df$



Surface Area of a sphere as octant of a cubic box volume L^3

Now the "volume" of the box is $L^3/8$ and our dimensionless volume becomes the Number of FREQUENCY STATES for a black body with frequencies in the interval df. Since the temperature for a given frequency interval determines the distribution of the radiation spectrum, we determine the spectral distribution dE/df via

As a photon has two quantum polarization spin momenta, the Frequency States are doubled.

Frequency States $2x\,4\pi N^2dN = 8\pi L^3 f^2/8c^3\,df$

The number of photons in df: $\frac{8\pi f^2(V)}{c^3} x \frac{1}{e^{hf/kT} - 1}\,df = dP$

$dE = hf\,dP = \frac{8\pi h.V}{c^3}.\frac{f^3}{e^{hf/kT}-1}\,df$

and the total energy in the cubic black box is: $$E = \int_0^\infty dE = \frac{8\pi hV}{c^3}\int_0^\infty \frac{f^3}{e^{hf/kT}-1}\,df \qquad \text{(Eq.\#27)}$$

Since we evaluate for a given T, we set u=hf/kT and du=(h/kT)df

and we need to evaluate the proportionality constant via the integral $\int_0^\infty \frac{u^3}{e^u - 1}\,du$

This can be written as: $\int_0^\infty \frac{u^3}{e^u-1}du = \Gamma(3+1)\zeta(3+1)$

The GAMMA function $\Gamma(x)$ satisfies the form: $x = \frac{\Gamma(x+1)}{\Gamma(x)}$ as analogue to our $\frac{n+1}{n} = 1 + \frac{1}{n}$

generally $\Gamma(x) = \int_0^\infty t^{x-1}e^{-t}\,dt$ and for n a positive integer then $\Gamma(n+1) = n!.\Gamma(1) = n!$

The ZETA function of Riemann is defined as $\zeta(z) = \sum_{n=1}^{\infty} 1/(n^z)$

We require $\Gamma(4).\zeta(4) = 3!\cdot\sum_{n=1}^{\infty} 1/n^4 = 3!\cdot(1/1 + 1/2^4 + 1/3^4 + \ldots + 1/n^4 \ldots)$.

This we derive via the function $f(x)=x^4$ and the application of Fourier Series in cos(nx)

$f(x)=x^4$ with period 2π, then $a_n = \frac{1}{\pi}\int_0^{2\pi} x^4.\cos(nx)dx = \frac{1}{\pi}\left(\frac{4x^3}{n^2} - \frac{24x}{n^4}\right)\Big|_0^{2\pi} = \frac{32\pi^2}{n^2} - \frac{48}{n^4}$

for n=0, $a_0 = \frac{1}{\pi}\int_0^{2\pi} x^4\,dx = \frac{32\pi^4}{5}$

$$f(x)=x^4 = \tfrac{1}{2}a_0 + \sum_{n=1}^{\infty} a_n.\cos(nx) = \frac{16\pi^4}{5} + \sum_{n=1}^{\infty}\left(\frac{32\pi^2}{n^2} - \frac{48}{n^4}\right).\cos(nx)$$

$f(0)=f(2\pi)=\frac{1}{2}(0+16\pi^4) = 8\pi^4$ (Dirichlet Condition) and we use the result $\sum_{n=1}^{\infty}\frac{1}{n^2} = \frac{\pi^2}{6}$

and obtained similarly in setting $f(x)=x^2$.

Then for f(0), we have $\frac{24\pi^4}{5} = 32\pi^2.\frac{\pi^2}{6} - 48\sum_{n=1}^{\infty}\frac{1}{n^4}$ and $\sum_{n=1}^{\infty}\frac{1}{n^4} = \frac{\pi^4}{90}$

Total Energy $E = \frac{3!\,\pi^4 V.8\pi k^4T^4}{90h^3c^3} = \frac{4V}{c}\left[\frac{2\pi^5k^4}{15h^3c^2}\right]T^4 = \frac{4\sigma VT^4}{c}$

Stefan-Boltzmann Constant σ

Radiation Energy / Matter Energy $= \frac{4\sigma T^4}{m_cY^nc^3}$ **for Radiation Pressure = Matter Pressure**

Early Universe **Later Universe**

$T_{Equilibrium} = \sqrt[4]{18.20\,\frac{(n+1)^2}{n^3}} = \sqrt[4]{\frac{m_cY^nc^3}{4\sigma}}$ $\qquad \frac{n^3Y^n}{n^2+2n+1} = \frac{72.80\sigma}{m_cc^3} = (1.65107x10^{-4})\,(K^4/V)^*$

In the early radiation dominated cosmology; the quintessence was positive and the matter energy dominated the intrinsic Milgröm deceleration from the Instanton n $=n_{ps}$ to n = 0.18023 (about 3.04 Billion years) when the quintessence vanished and including a Recombination epoch when the hitherto opaque universe became transparent in the formation of the first hydrogen atoms from the quark-lepton plasma transmuted from the X-L Boson string class HO(32) of the Inflaton epoch preceding the Quantum Big Bang aka the Instanton.

From the modular membrane duality for wormhole radius $r_{ps} = \lambda_{ps}/2\pi$, the critical modulated Schwarzschild radius $r_{ss} = 2\pi\lambda_{ss} = 2\pi x10^{22}$ m* for $\lambda_{ps} = 1/\lambda_{ss}$ and
for an applied scale factor $a = n/[n+1] = \lambda_{ss}/R_H = \{1\text{-}1/[n+1]\}$

for a $n=H_ot$ coordinate $n_{decomax} = 6.259485x10^{-5}$ or about $6.259485x10^{-5}$(16.88 Gy) = 1.056601 Million years
attenuated by $\exp\{-hf/kT\} = e^{-1} = 0.367879$ to a characteristic cosmological time coordinate of 0.36788x1.056601 = 388,702 years after the Instanton n_{ps}.

The temperature for the decoupling is found in the galactic scale-limit modular dual to the wormhole geodesic as $1/\lambda_{wormhole} = \lambda_{antiwormhole} = \lambda_{ss} = 10^{22}$ meters or so 1.06 Million ly and its luminosity attenuation in the 1/e proportionality for then 388,588 lightyears as a decoupling time $n_{recombination}$ or $n_{decomax}/e$.

A maximum galactic halo limit is modulated in $2\pi\lambda_{antiwormhole}$ meters in the linearization of the Planck-length in the conformal mapping of wavelength λ_{ps} in the wormhole radius $r_{ps} = \lambda_{ps}/2\pi$.

$R(n_{decoupling}) = R_H\{n_{decoupling}/(n_{decoupling}+1)\} = 10^{22}$ meters for $n_{decoupling} = 6.2595x10^{-5}$ and so for a CMBBR-Temperature of about T = 2935 K* for a galactic protocore then attenuated for $n_{decouplingmin} = n_{decomin} = 9.962x10^{-6}$ for $R = \lambda_{ss}/2\pi$ and $n_{decomax} = 3.9x10^{-4}$ for $R = 2\pi\lambda_{ss}$ and for temperatures of so 11,648 K and 740 K respectively, descriptive of the temperature modulations between the galactic cores and the galactic halos.

So a CMBBR-temperature of so 11,648 K at a time of so 168,114 years defined the initialization of the VPE and the birth of the first ylemic protostars as a decoupling minimum. The ylemic mass currents were purely monopolar and known as superconductive cosmic strings, consisting of nucleonic neutrons, each of mass m_c.

If we assign this timeframe to the maximized ylemic radius and assign our planetesimal limit of fusion temperature 1.2 Billion K as a corresponding minimum; then this planetesimal limit representing the onset of stellar fusion in a characteristic temperature, should indicate the first protostars at a temperature of the CMBBR of about 740 Kelvin.

The universe had a temperature of 740 K for $n_{decouplingmax} = 3.9x10^{-4}$ for $R = 2\pi\lambda_{antiwormhole}$ and this brings us to a curvature radius of so 6.6 Million lightyears and an 'ignition-time' for the first physical ylemic neutron stars as first generation protostars of so 7 Million years after the Big Bang.

The important cosmological consideration is that of distance-scale modulation.

The Black Hole Schwarzschild metric is the inverse of the galactic scale metric.
The linearization of the Planck-String as the Weyl-Geodesic and so the wormhole radius in the curvature radius R(n) is modular dual and mirrored in inversion in the manifestation of galactic structure with a nonluminous halo a luminous attenuated diameter-bulge and a super luminous (quasar or White Hole Core).

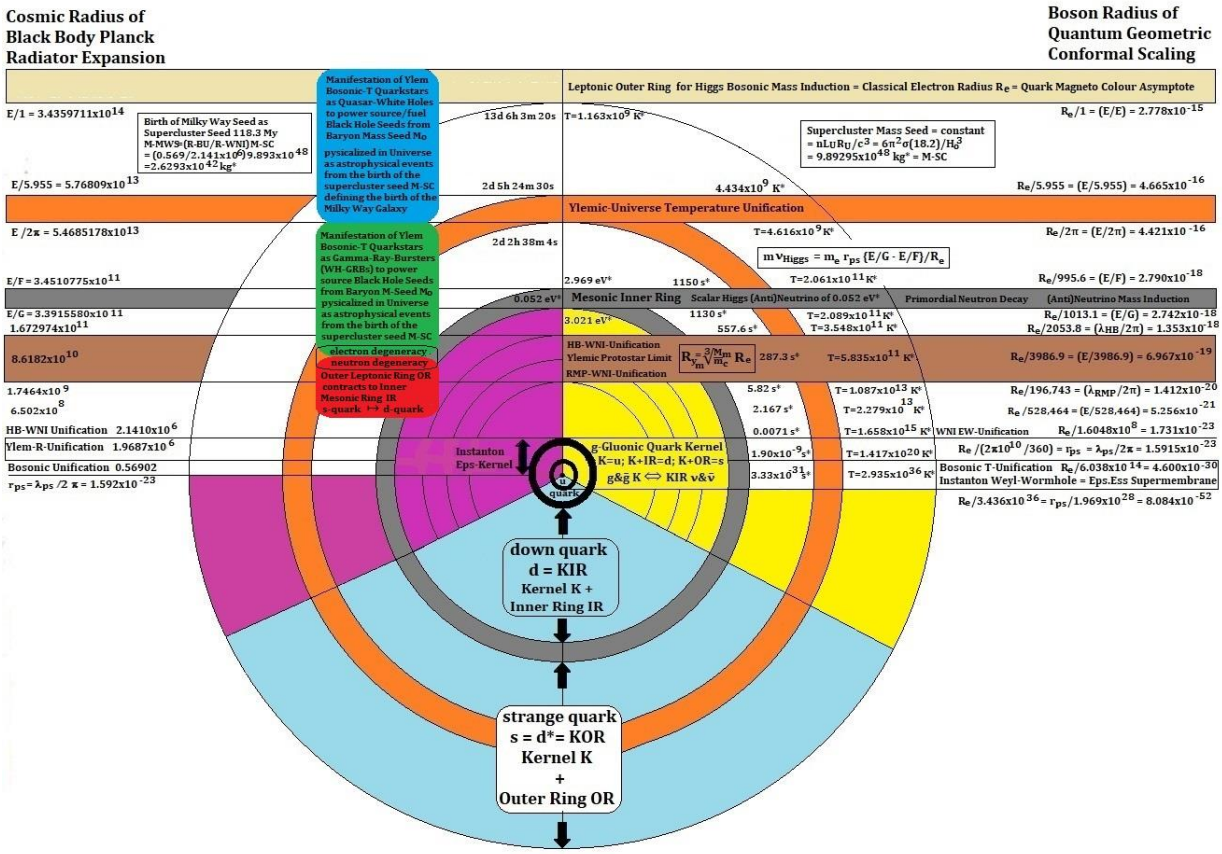
The core-bulge ratio on the scale of 3/550 to 0.002 to 0.001 will so reflect the eigen energy quantum of the wormhole as a heterotic Planck-Boson-Weyl-String or as the magneto charge as 1/500, being the mapping of the Stoney-Planck-Length-Bounce as $e = l_P.c^2\sqrt{}Alpha$ onto the electron radius in $e^* = 2R_e.c^2 = 1/E_{ps} = \lambda_{ps}/hc$ in the modular string-T-duality applied to the self-dual monopole as string class IIB.

The attenuation of the recombination coordinate then gives the cosmic temperature background for this epoch in the coordinate interval for the curvature radius $R(n=9.962x10^{-6}) = 1.5915x10^{21}$ m* to $R(n=6.259485x10^{-5}) = 10^{22}$ m* for the Dark Energy galactic halos emergent from their Black-Hole-White Hole VPE precursors.
The DEBH halos then encompass Outer- and Inner Dark Matter Halos around Baryonic Matter Inner Bulges at characteristic displacement scales of a $9.9854x10^{20}$ m* DMOH at 105.476 years and a redshift of 399 encompassing a $4.9927x10^{20}$ m* DMIH-GDisk at 52,738 years and a redshift of 565 about a $9.985x10^{19}$ m* BMIH-GBulge at 10,548 years and a redshift of 1254.

This radial displacement scale represents the size of a typical major galaxy in the cosmology; a galactic structure, which became potentialized in the Schwarzschild matter evolution and its manifestation in the ylemic prototypical first generation magnetar-neutron-blazar stars, whose emergence was solely dependent on the experienced cosmic temperature background and not on their mass distributions.

This radial displacement scale represents the size of a typical major galaxy in the cosmology; a galactic structure, which became potentialized in the Schwarzschild matter evolution and its manifestation in the ylemic prototypical first generation magnetar-neutron-blazar stars, whose emergence was solely dependent on the experienced cosmic temperature background and not on their mass distributions.

Quantum Geometric Temperature-Radius/Displacement Unification



Cycle time n=H_ot	**Time t**	**Comoving/(H)ubble Redshift z** $\sqrt{\{1+2/n[n+2]\}-1}$	**Contracted dS deSitter Scale Hubble Radius Universe** R_U $R_H\{n/(n+1)\}$ **nR$_H$ expanding AdS m***	**Radius Ylem** R_y $\sqrt{\{kT_UR_e^3/G_om_c^2\}}$	**Black-White Hole Curvature Mass BHW** $R_c=R_y$ M_c $R_yc^2/2G_o$ **kg***	**BHW-Hawking Temperature** T_H $hc^3/4\pi G_okM_c$ **K***	**Temperature Universe** T_U $\sqrt[4]{\{18.2(n+1)^2/n^3\}}$ **K***	**Temperature Ylem** T_{ylem} $\sqrt[4]{\{3\pi R_U^2T_U^4/2R_yR_s\}}$ **K***	**Luminosity Universe** L_U $6\pi^2R_U^2\sigma T_U^4$ **W* Supercluster Mass Seed** M_{SC}=constant $nL_UR_U/c^3=6\pi^2\sigma(18.2)/H_o^3$ **9.89295x10^{48} kg***	**Luminosity Ylem** L_y $4\pi R_y^2\sigma T_y^4$	**Quantum Geometry Displacement Scaling m***
$n_{present}=n_p$ 1.132711 $1+\Delta_{Sun+Earth}$	19.116 Gy	0.25045 comoving H projected 0.00000 Local Flow	8.4855x10^{25} dS 1.8097x10^{26} AdS	0.0871	3.529x10^{25}	0.0259	2.747 T_U-T_H=2.7211	4.718x10^{7}	1.476x10^{48} dS 6.7813x10^{48} AdS	2.871x10^{22}	
1.0070075 1+0.0070075 $1+\Delta_{Milky Way}$ Inflaton Mirror ½q_o=¼ Ω_o Synchronize 12D|11D|10D Khaibit-Universe Ø=2R$_H$	16.994 Gy	0.28860 comoving H projected 0.10298 Local Flow	8.0163x10^{25} dS 1.60887x10^{26} AdS	0.0897	3.633x10^{25}	0.02514	2.911 T_U-T_H=2.8859	4.824x10^{7}	1.661x10^{48} dS 6.691x10^{48} AdS	3.328x10^{22}	

1	16.876 Gy	0.29099 H	7.9884x10^{25} dS 1.5976x10^{26} AdS	0.0899	3.641x10^{25}	0.02508	2.921 T_U-T_H=2.8959	4.829x10^{7}	1.672x10^{48} dS 6.688x10^{48} AdS	3.356 x10^{22}	
0.9929925 1-0.0070075 1-$\Delta_{MilkyWay}$ Inflaton Mirror ½q_o=¼ Ω_o Synchronize 12D|11D|10D Khaibit-Universe Ø=2R_H	16.758 Gy	0.29342 H	7.9603x10^{25} dS 1.5865x10^{26} AdS	0.0900	3.645x10^{25}	0.02505	2.931 T_U-T_H=2.8959	4.836x10^{7}	1.683x10^{48} dS 6.685x10^{48} AdS	3.383 x10^{22}	
0.8743001-$\Delta_{Sun+Earth}$ +$\Delta_{Milky Way}$	14.755 Gy	0.34010 H	7.4526x10^{25} dS 1.3968x10^{26} AdS	0.0930	3.766x10^{25}	0.02425	3.127 T_U-T_H=3.1028	4.952x10^{7}	1.911x10^{48} dS 6.714x10^{48} AdS	3.969 x10^{22}	
$n_{nodalimage}$ for inflaton n_{niinf}=0.86732-n_p 1-$\Delta_{Sun+Earth}$	14.637 Gy	0.34323 H	7.4207x10^{25} dS 1.3857x10^{26} AdS	0.0932	3.775x10^{25}	0.02419	3.140 T_U-T_H=3.1158	4.958x10^{7}	1.927x10^{48} dS 6.719x10^{48} AdS	4.009 x10^{22}	

0.8602865 1- $\Delta_{Sun+Earth}$ - $\Delta_{MilkyWay}$	14.51829 Gy Age of Sun+ Earth 19.1158 - 14.5183 4.5975 Gy	0.34640 H	7.3884x10^{25} dS 1.37446x10^{26} AdS	0.0934	3.782x10^{25}	0.02415	3.154 T_U-T_H=3.1299	4.966x10^{7}	1.944x10^{48} dS 6.728x10^{48} AdS	4.055 x10^{22}	
0.76078	12.839 Gy	0.3972 H	6.9031x10^{25} dS 1.2155x10^{26} AdS	0.0964	3.904x10^{25}	0.0234	3.365 T_U-T_H=3.3416	5.082x10^{7}	2.199x10^{48} dS 6.818x10^{48} AdS	4.734 x10^{22}	
⅔	11.251 Gy	0.4577 H	6.3907x10^{25} dS 1.0651x10^{26} AdS	0.0999	4.046x10^{25}	0.0226	3.614 T_U-T_H=3.5914	5.205x10^{7}	2.507x10^{48} dS 6.964x10^{48} AdS	5.594 x10^{22}	
½	8.438 Gy	0.6125 H	5.3256x10^{25} dS 7.9884x10^{25} AdS	0.1084	4.390x10^{25}	0.0208	4.254 T_U-T_H=4.2332	5.480x10^{7}	3.343x10^{48} dS 7.522x10^{48} AdS	8.093 x10^{22}	
0.26542	4.479 Gy	1.080 H	3.3511x10^{25} dS 4.2406x10^{25} AdS	0.1318	5.338x10^{25}	0.0171	6.283 T_U-T_H=6.2659	6.114x10^{7}	6.298x10^{48} dS 1.008x10^{49} AdS	1.854 x10^{23}	
$n_{galaxypeak}$ for DE=mi	4.0317 Gy	1.177 H	3.0808x10^{25} dS 3.8168x1	0.1364	5.524x10^{25}	0.0165	6.728 T_U-T_H=6.7115	6.224x10^{7}	6.999x10^{48} dS 1.074x	2.132 x10^{23}	

n n_{gp}= 0.2389			0^{25} AdS Galaxy Cell Scale						10^{49} AdS		
$n_{nodalimage}$ for instanton n_{niins}=0.13271 n_p-1 $\Delta_{Sun+Earth}$	2.2396 Gy	1.840 H	1.8719x10^{25} dS 2.1203x10^{25} AdS Galaxy Group Scale	0.1662	6.731x10^{25}	0.0136	9.998 T_U-T_H=9.9844	6.862x10^{7}	1.260x10^{49} dS 1.617x10^{49} AdS	4.677 x10^{23}	
n_{galaxy} for DE=0 n_g=0.10823	1.8265 Gy	2.125 H	1.5603x10^{25} dS 1.7292x10^{25} AdS Galaxy Group Seed	0.1785	7.229x10^{25}	0.0126	11.523 T_U-T_H=11.5104	7.092x10^{7}	1.545x10^{49} dS 1.898x10^{49} AdS	6.156 x10^{23}	
n_{EMRMEQ} 0.056389 EMR Pressure= Matter Pressure	951.63 My	3.272 H	8.528x10^{24} dS 9.009x10^{24} AdS	0.2252	9.121x10^{25}	0.0100	18.346 ~T_U-T_H=18.336	7.877x10^{7}	2.965x10^{49} 3.309x10^{49}	1.491 x10^{24}	
Ω_o=M_o/M_H 0.028030	473.0 My	5.015 H	4.3562x10^{24} dS 4.4783x10^{24} R_s=R_{sarkar} AdS Supercluster Scale	0.2907	1.177x10^{26}	7.758 x10^{-3}	30.571 T_U-T_H=30.5632	8.801x10^{7}	5.965x10^{49} dS 6.304x10^{49} AdS	3.872 x10^{24}	

$q_o=\Lambda_o/A_{dB}$ 0.014015	236.5 My	7.477 H	2.2082x10^{24} dS 2.2391x10^{24} ½R_s AdS Supercluster Seed	0.3757	1.522x10^{26}	6.000 x10^{-3}	51.062 T_U-T_H=51.056	9.816x10^{7}	1.193x10^{50} dS 1.227x10^{50} AdS	1.001 x10^{25}	
½q_o=¼ Ω_o Synchronize 12D|11D|10D Khaibit-Universe Ø=2R_H $\Delta_{MilkyWay}$ 0.0070075	118.2593 My	10.96687 H	1.11957x10^{24} dS 1.11178x10^{24} AdS Birth of Milky Way Seed as Supercluster Seed M_{MWS}=(R_{BPTU}/R_{WNI})M_{SC} 2.6293x10^{42} kg*	0.485518	1.96635 x10^{26}	4.644 x10^{-3}	85.27897	1.095x10^{8}	2.386x10^{50} dS 2.420x10^{50} AdS	2.588 x10^{25}	
3.933x10^{-4}	6.637 My	49.43 H	r_{ss}=2πλ_{ss} 6.2807x10^{22} dS 6.2832x10^{22} AdS	1.430	5.792x10^{26}	1.577 x10^{-3}	739.7 ~T_U-T_H	1.717x10^{8}	4.254x10^{51} dS 4.257x10^{51} AdS	1.357 x10^{27}	
$n_{decomax}$ 6.259x10^{-5} Cosmic EMR	1.056 My	125.5 H	λ_{ss}=1/λ_{ps} 9.999x10^{21} dS DEBH-GHalo	2.848	1.153x10^{27}	7.920 x10^{-4}	2935.3 ~T_U-T_H	2.288x10^{8}	2.671x10^{52} dS 2.671x10^{52} AdS	1.698 x10^{28}	

Decoupling			$1.000x10^{22}$ AdS								
$n_{recombination}$ $n_{decomax}$/e 2.303x10^{-5} Cosmic EMR Decoupling	388,702 y	207.4 H	3.6794x10^{21} dS 3.6794x10^{21} AdS	4.144	1.678x10^{27}	5.441 x10^{-4}	6213.0 ~T_U-T_H	2.675x10^{8}	7.260x10^{52} dS 7.260x10^{52} AdS	6.715 x10^{28}	
$n_{decomin}$ 9.962x10^{-6} Cosmic EMR Decoupling	168,114 y	315.8 H	$\lambda_{ss}/2\pi$=1/2$\pi\lambda_{ps}$ 1.59153x10^{21} dS 1.59154x10^{21} AdS	5.674	2.298x10^{27}	3.974 x10^{-4}	11,648 ~T_U-T_H	3.049x10^{8}	1.678x10^{53} dS 1.678x10^{53} AdS	2.125 x10^{29}	
6.250x10^{-6}	105,476 y	399 H	9.9854x10^{20} DMOH-dS 9.9855x10^{20} AdS	6.758	2.737x10^{27}	3.336 x10^{-4}	16,524 ~T_U-T_H	3.280x10^{8}	2.675x10^{53} dS 2.675x10^{53} AdS	7.273 x10^{29}	
3.125x10^{-6}	52,738 y	565 H	4.9927x10^{20} DMIH-GDisk dS, AdS	8.765	3.550x10^{27}	2.572 x10^{-4}	27,790 ~T_U-T_H	3.655x10^{8}	5.350x10^{53} dS, AdS	1.047 x10^{30}	
6.250x10^{-7}	10,548 y	1264 H	9.985x10^{19} BMIH-GBulge dS, AdS	16.027	6.491x10^{27}	1.407 x10^{-4}	92,920 ~T_U-T_H	4.700x10^{8}	2.675x10^{54} dS, AdS	9.572 x10^{30}	

2.1506x 10^{-12}	13.256 d 1.145 x10^{6} s*	681,898 H	3.4359711x10^{14} R_E-E space quanta dS, AdS	1793.0 Quasar-WH	7.262x10^{29} 0.363M_{Sun}	1.257 x10^{-6}	1.1630 x10^{9} ~T_U-T_H	3.347x10^{9}	7.773x 10^{59} dS, AdS	3.081 x10^{38} Quasar-WH	R_e/1 (E/E) 2.778x10^{-15}
3.6103x 10^{-13}	2.225 d 192,270 s*	1.6643x10^{6} H	5.76809x 10^{13} R_E-(E/5.955) Δ=2.774 h dS, AdS	3500.9 Quasar-WH	1.418x10^{30}	6.440 x10^{-7}	4.434x 10^{9} Ylemic Universe Temperature Unification	4.434x10^{9}	4.628x 10^{60} dS, AdS	3.618 x10^{39} Quasar-WH	R_e/5.955 (E/5.955) 4.665x10^{-16}
3.4228x 10^{-13}	2.110 d 182,284 s*	1.6641x10^{6} H	5.4685178x10^{13} R_E-(E/2π) Δ=9986 s space quanta dS, AdS	3571.9 Quasar-WH	1.447x10^{30} 0.723M_{Sun}	6.311 x10^{-7}	4.616x 10^{9} ~T_U-T_H	4.472x10^{9}	4.886x 10^{60} dS, AdS	3.897 x10^{39} Quasar-WH	R_e/2π (E/2π) 4.421x10^{-16}
4.894x10^{-14}	7.240 h 26,064 s*	4.5203x10^{6} H	7.81902x 10^{12} R_E-(E/43.944) space quanta dS, AdS	7407.41 Neutron Star Blazar-WH Chandrasekhar Limit ρ_{ny}= {8$G_o m_c M_m{}^2$/($c^6 R_e{}^3$)}ρ_{nuc} 159.389ρ_{nuc} 7.381x10^{18} kg*/m^3* ρ_{nuc}= $M_m/R_{ymax}{}^3$ =$m_c/R_e{}^3$ GRB-WH	M_{Mod}= M_m =$M_{chandra}$ =$f_{ps}\|_{mod}$ 3.000x10^{30} 1.500M_{Sun}	3.044 x10^{-7}	1.985x 10^{10} ~T_U-T_H	6.060x10^{9}	3.416x 10^{61} dS, AdS	5.651 x10^{40} Blazar-WH	R_e/43.9442 (E/43.944) 6.321x10^{-17}

$1.356x10^{-14}$	2.0065 h 7223.4 s*	$8.588x10^{6}$ H	$2.16703x10^{12}$ dS, AdS	11,985.43 ρ_{ny}= $60.880\rho_{nuc}$ $2.819x10^{18}$ kg*/m^{3}* Blazar-WH Magnetar Tolman-Oppenheimer-Volkoff Limit	M_{TOV} $YM_{chandra}$ $4.854x10^{30}$ $2.427M_{Sun}$	$1.881 x10^{-7}$	$5.1968 x10^{10}$ ~T_U-T_H	$7.405x10^{9}$	$1.233x10^{62}$ dS, AdS	$3.299 x10^{41}$ Blazar-Magnetar-WH	R_e/158.56 (E/158.56) $1.752x10^{-17}$
$2.1601x10^{-15}$	19.173 m 1150.4 s*	$2.152x10^{7}$ H	$3.4510775x10^{11}$ R_F-F space quanta dS, AdS	23,870.8 ρ_{ny}= $15.347\rho_{nuc}$ $7.107x10^{17}$ kg*/m^{3}* GRB-WH Quark-Gluon-Plasma-Strange Star	$9.668x10^{30}$ $4.834M_{Sun}$	$9.445 x10^{-8}$	$2.0614 x10^{11}$ ~T_U-T_H	$9.868x10^{9}$	$7.740x10^{62}$ dS, AdS	$4.126 x10^{42}$ GRB-WH QGPS	R_e/995.6 (E/F) $2.790x10^{-18}$
$2.1363x10^{-15}$	18.961 m 1137.7 s*	$2.164x10^{7}$ H	$3.413055 x10^{11}$ dS, AdS	23,970.35 ρ_{ny}= $15.221\rho_{nuc}$ $7.049x10^{17}$ kg*/m^{3}* GRB-WH QGPS-Star	M_{QGP} $2YM_{chandra}$ $9.708x10^{30}$ $4.854M_{Sun}$	$9.407 x10^{-8}$	$2.0786 x10^{11}$ ~T_U-T_H	$9.885x10^{9}$	$7.826x10^{62}$ dS, AdS	$4.190 x10^{42}$ GRB-WH QGPS	R_e/1006.7.6 (E/1006.7) $2.759x10^{-18}$
$2.1228x10^{-15}$	18.842 m 1130.5 s*	$2.170x10^{7}$ H	$3.3915580x10^{11}$ R_G-G space quanta dS, AdS	24,027.2 ρ_{ny}= $15.149\rho_{nuc}$ $7.015x10^{17}$ kg*/m^{3}* GRB-WH QGPS-Star	$9.731x10^{30}$ $4.866M_{Sun}$	$9.384 x10^{-8}$	$2.0885 x10^{11}$ ~T_U-T_H	$9.895x10^{9}$	$7.876x10^{62}$ dS, AdS	$4.227 x10^{42}$ GRB-WH QGPS	R_e/1013.1 (E/G) $2.742x10^{-18}$

$1.047x10^{-15}$	9.293 m 557.59 s*	$3.090x10^{7}$ H	$1.672974 x10^{11}$ dS, AdS	31,318.4 $\rho_{ny}=8.914\rho_{nuc}$ $4.128x10^{17}$ kg*/m³* GRB-WH QGPS-Star	$1.268x10^{31}$ 6.342M Sun	$7.202 x10^{-8}$	$3.548x10^{11}$ ~T_U-T_H HB-WNI Unification $T_{HB}\leftrightarrow M_{HB}$	$1.105x10^{10}$	$1.596x10^{63}$ dS, AdS	$1.117 x10^{43}$ GRB-WH QGPS	$R_e/2053.8$ $(\lambda_{HB}/2\pi)$ $1.353x10^{-18}$
$1.0415x10^{-15}$	9.244 m 554.66 s*	$3.099x10^{7}$ H	$1.664x10^{11}$ dS, AdS	31,378.3 $\rho_{ny}=8.882\rho_{nuc}$ $4.113x10^{17}$ kg*/m³* $\rho_{nucOR}=m_c/\{XR_e\}^3$ Y^3M_m/R_{ymax}^3 $1.9617x10^{17}$ QGPS-Star	$1.2708x10^{31}$ 6.354M Sun	$7.186 x10^{-8}$	$3.562x10^{11}$ ~T_U-T_H	$1.106x10^{10}$	$1.604x10^{63}$ dS, AdS	$1.124 x10^{43}$ GRB-WH QGPS	$R_e/2064.4$ $(E/2064.4)$ $1.346x10^{-18}$
$5.3942x10^{-16}$	4.788 m 287.27 s*	$4.306x10^{7}$ H	$8.6182x10^{10}$ dS, AdS	40,162.35 $\rho_{ny}=5.423\rho_{nuc}$ $2.511x10^{17}$ kg*/m³* $R_{ymax}=\sqrt[3]{\{M_{mod}/m_c\}}R_e$ $\rho_{nuc}=M_m/R_n^3$ m_c/R_e^3 $4.6309x10^{16}$ kg*/m³* $\rho_{nucOR}=m_c/\{XR_e\}^3$ $1.280.Y^3M_m/R_{ymax}^3$	$1.627x10^{31}$ 8.133M Sun	$5.614 x10^{-8}$	$5.8353 x10^{11}$ ~T_U-T_H	$1.226x10^{10}$	$3.099x10^{63}$ dS, AdS	$2.783 x10^{43}$ GRB-WH QGPS Limit	$R_e/3986.9$ $(E/3986.9)$ $6.967x10^{-19}$

				$2.511x10^{17}$ GRB-WH Gamma-Ray-Burster QGPS-Star Limit							
$5.663x10^{-17}$	30.16 s*	$1.329x10^{8}$ H	$9.048x10^{9}$ dS, AdS	93,518.1 $R_y=R_e\sqrt{\{R_ec^2/2G_om_c\}}$ $\rho_{ny}=\rho_{nuc}$ $4.6309x10^{16}$ kg*/m^3* neutron degeneracy $\rho_{nucOR}=m_c/\{XR_e\}^3$ $2.980.Y^3M_m/R_{ymax}{}^3$ $5.846x10^{17}$ kg*/m^3* QGP Quark Star R_{ymax}	$3.7875x10^{31}$ 18.937 M_{Sun}	$2.411x10^{-8}$	$3.164x10^{12}$ ~T_U-T_H	$1.743x10^{10}$	$2.953x10^{64}$	$6.166x10^{44}$ GRB-WH QGP	$R_e/37,975$ $(E/37,975)$ $7.315x10^{-20}$
$1.0931x10^{-17}$	5.821 s*	$3.025x10^{8}$ H	$1.7464x10^{9}$ dS, AdS	173,299.6 $\rho_{ny}=0.2912_{nuc}$ $1.349x10^{16}$ kg*/m^3* $\rho_{nucOR}=m_c/\{XR_e\}^3$ $5.523.Y^3M_m/R_{ymax}{}^3$ $1.083x10^{18}$ QGP Quark Star R_{ymax}	$7.0186x10^{31}$ 35.093 M_{Sun}	$1.301x10^{-8}$	$1.0865x10^{13}$ ~T_U-T_H RMP-WNI Unification $T_{HB}\leftrightarrow M_{HB}$	$2.254x10^{10}$	$1.530x10^{65}$ dS, AdS	$5.920x10^{45}$ GRB-WH QGP	$R_e/196,743$ $(\lambda_{RMP}/2\pi)$ $1.412x10^{-20}$
$4.0697x10^{-18}$	2.167 s*	$4.957x10^{8}$ H	$6.502x10^{8}$ dS, AdS	251,026.2 $\rho_{ny}=0.139_{nuc}$ $6.427x10^{15}$	$1.01666x10^{32}$ 50.833 M_{Sun}	$8.982x10^{-9}$	$2.2796x10^{13}$ ~T_U-T_H	$2.630x10^{10}$	$4.109x10^{65}$ dS, AdS	$2.303x10^{46}$ GRB-WH QGP	$R_e/528,464$ $(E/528,464)$ $5.256x10^{-21}$

				kg*/m^3* ρ_{nucIR}= $m_c/\{½XR_e\}^3$ $8Y^3M_m/R_{y\,max}{}^3$ $1.5693x10^{18}$ kg*/m^3* QGP-Star Limit R_{ymax}							
1.3401x 10^{-20}	1/140.1 0.0071 s*	8.638x 10^9 H	R_{WNI} $2.1410x10^6$ dS, AdS	$2.1410x10^6$	8.671x 10^{32} 433.552 M_{Sun}	1.053 $x10^{-9}$	1.658x 10^{15} ~T_U-T_H HB-WNI Unification T_{HB}↔ M_{HB}	6.425x 10^{10}	1.247x 10^{68} dS, AdS	5.966 $x10^{49}$	R_e/1.6048x10^8 1.731x10^{-23}
1.2813x 10^{-20}	1/146.5 0.0068 s*	8.834x 10^9 H	$2.047x10^6$ dS, AdS	$2.1773x10^6$	8.818x 10^{32} 440.903 M_{Sun}	1.036 $x10^{-9}$	1.715x 10^{15} Unification T-Instanton	6.470x 10^{10}	1.305x 10^{68} dS, AdS	6.344 $x10^{49}$	R_e/1.6785x10^8 1.655x10^{-23}
1.2322x 10^{-20}	1/152.4 0.00656 s*	9.009x 10^9 H	$1.9687x10^6$ dS, AdS	$2.2095x10^6$	8.9485x 10^{32} 447.424 M_{Sun}	1.020 $x10^{-9}$	1.766x 10^{15} ~T_U-T_H	6.509x 10^{10}	1.357x 10^{68} dS, AdS	6.692 $x10^{49}$	$R_e/(2\pi10^{10}/360)$ r_{ps}=1.5915x10^{-23}
3.562x 10^{-27}	1.897 $x10^{-9}$ s*	1.676x 10^{13} H	R_{BPTU} 0.56902 dS, AdS	$6.259x10^8$	2.535x 10^{35} 126,745 M_{Sun} Stellar BHW Limit	3.602 $x10^{-12}$	T_{ps}=hf_{ps}/k 1.417x 10^{20} Bosonic Plasma T-Unification	6.845x 10^{11}	4.698x 10^{74} dS, AdS	6.568 $x10^{58}$	R_e/6.038 $x10^{14}$ 4.600x10^{-30} r_{ps}/3.460 $x10^6$

$n_{ps}=\lambda_{ps}/R_H$ $6.259x10^{-49}$	t_{ps} $f_{ss}=1/f_{ps}$ $3.33x10^{-31}$ s*	$1.264x10^{24}$ H	$\lambda_{ps}=2\pi r_{ps}$ 10^{-22} dS, AdS	$9.007x10^{16}$ $\sim c^2\|_{mod}$ $r_{ps}.r_{ss}=\lambda_{ps}/\lambda_{ps}$ =1	$3.648x10^{43}$ $1.824x10^{13}$ M_{Sun} $2.011x10^{-8}$ M_o $5.660x10^{39}$ M_{hyper}	2.503 $x10^{-20}$ $M_o\rightarrow$ 5.035 $x10^{-28}$ $M_H\rightarrow$ 1.411 $x10^{-29}$	$T_{\Lambda o}=hf_{ps}/k$ 2.9351 $x10^{36}$ Instanton False Higgs T-Vacuum	$1.715x10^{15}$ HB-WNI T-Unification	$2.671x10^{96}$ dS, AdS	5.360 $x10^{88}$	$R_e/3.436$ $x10^{36}$ $8.084x10^{-52}$ $r_{ps}/1.969$ $x10^{28}$

The Ylemic Gluon-Quark-Plasma Protostars of Universe as Vortex Energies

The stability of stars is a function of the equilibrium condition, which balances the inward pull of gravity with the outward pressure of the thermodynamic energy or enthalpy of the star (H=PV+U). The Jeans Mass M_J and the Jeans Length R_J a used to describe the stability conditions for collapsing molecular hydrogen clouds to form stars say, are well known in the scientific data base, say in formulations such as:

$M_J = 3kTR/2Gm$ for a Jeans Length of $R_J = \sqrt{\{15kT/(4\pi\rho Gm)\}} = R_J = \sqrt{(kT/Gnm^2)}$.

Now the Ideal Gas Law of basic thermodynamics states that the internal pressure P and Volume of such an ideal gas are given by PV = nRT = NkT for n moles of substance being the Number N of molecules (say) divided by Avogadro's Constant L in n = N/L .

Since the Ideal Gas Constant R divided by Avogadro's Constant L and defines Boltzmann's Constant k = R/L. Now the statistical analysis of kinetic energy KE of particles in motion in a gas (say) gives a root-mean-square velocity (rms) and the familiar $2.KE = mv^2(rms)$ from the distribution of individual velocities v in such a system.

It is found that PV = (2/3)N.KE as a total system described by the v(rms). Now set the KE equal to the Gravitational PE = GMm/R for a spherical gas cloud and you get the Jeans Mass. (3/2N).(NkT) = GMm/R with m the mass of a nucleon or Hydrogen atom and $M = M_J = 3kTR/2Gm$ as stated.

The Jeans' Length is the critical radius of a cloud (typically a cloud of interstellar dust) where thermal energy, which causes the cloud to expand, is counter acted by gravity, which causes the cloud to collapse. It is named after the British astronomer Sir James Jeans, who first derived the quantity; where k is Boltzmann Constant, T is the temperature of the cloud, r is the radius of the cloud, μ is the mass per particle in the cloud, G is the Gravitational Constant and ρ is the cloud's mass density (i.e. the cloud's mass divided by the cloud's volume).

Now following the Big Bang, there were of course no gas clouds in the early expanding universe and the Jeans formulations are not applicable to the mass seedling M_o; in the manner of the Jeans formulations as given.

However, the universe's dynamics is in the form of the expansion parameter of GR and so the $R(n) = R_{max}(n/(n+1))$ scale factor of Quantum Relativity.
So we can certainly analyze this expansion in the form of the Jeans Radius of the first protostars, which so obey the equilibrium conditions and equations of state of the much later gas clouds, for which the Jeans formulations then apply on a say molecular level.
This analysis so defines the ylemic neutron stars as 'Gamow proto-stars' and the first stars in the cosmogenesis and the universe.

Let the thermal internal energy or ITE = H be the outward pressure in equilibrium with the gravitational potential energy of GPE = Ω. The nuclear density in terms of the super brane parameters is $\rho_{critical} = m_c/V_{critical}$ with m_c a base-nucleon mass for an 'ylemic neutron'.

$V_{critical} = 4\pi R_e^3/3$ or the volume for the ylemic neutron as given by the classical electron radius $R_e = 10_{10}\lambda_{wormhole}/360 = e^*/2c^2$.

$H = (molarity)kT$ for molar volume as $N = (R/R_e)^3$ for $dH = 3kTR^2/R_e^3$.
$\Omega(R) = -\int G_o M dm/R = -\{3G_o m_c^2/(R_e^3)^2\}\int R^4 dR = -3G_o m_c^2 R^5/R_e^6$ for dm/dR
$= d(\rho V)/dR = 4\pi\rho R^2$ and for $\rho = 3m_c/4\pi R_e^3$

For equilibrium, the requirement is that $dH = d\Omega$ in the minimum condition $dH+d\Omega = 0$.
This gives $dH+d\Omega = 3kTR^2/R_e^3 - 16G_o\pi^2\rho^2R^4/3 = 0$ and the ylemic radius as:

$$\mathbf{R_{ylem} = \sqrt{\{kTR_e/G_o m_c^2\}}}$$

as the Jeans-Length precursor or progenitor for subsequent stellar and galactic generation.

The ylemic (Jeans) radii are all independent of the mass of the star as a function of its nuclear generated temperature.
Applied to the proto-stars of the vortex neutron matter or ylem, the radii are all neutron star radii and define a specific range of radii for the gravitational collapse of the electron degenerate matter.

This spans from the 'First Three Minutes' scenario of the cosmogenesis to 1.1 million seconds (or about 13 days) and encompasses the standard beta decay of the neutron, underpinning radioactivity.
The upper limit defines a trillion-degree temperature and a radius of over 40 km; the trivial Schwarzschild solution gives a typical ylem radius of so 7.4 kilometers and the lower limit defines the 'mysterious' planetesimal limit as 1.8 km.

For long a cosmological conundrum, it could not be modelled just how the molecular and electromagnetic forces applicable to conglomerate matter distributions (say gaseous hydrogen as cosmic dust) on the quantum scale of molecules could become strong enough to form say 1 km mass concentrations, required for 'ordinary' gravity to assume control.

The ylem radii's lower limit is defined in this cosmology then show, that it is the ylemic temperature of the 1.2 billion degrees K, which perform the trick under the Ylem-Jeans formulation, and which then is applied to the normal collapse of hydrogenic atoms in summation.

The stellar evolution from the ylemic (di-neutronic) templates is well established in QR and confirms most of the Standard Model's ideas of nucleosynthesis and the general Temperature cosmology.
The standard model is correct in the temperature assignment but is amiss in the corresponding 'size-scales' for the cosmic expansion.

The Big Bang cosmogenesis describes the universe as a Planck-Black Body Radiator, which sets the Cosmic-Microwave-Black Body Background Radiation Spectrum (CMBBR) as a function of n as $T^4 = 18.2(n+1)^2/n^3$ and derived from the Stefan-Boltzmann-Law and the related statistical frequency distributions.

We have the GR metric for Schwarzschild-Black Hole Evolution as $R_S = 2GM/c^2$ as a function of the star's Black Hole's mass M and we have the ylemic Radius as a function of temperature only as $R_{ylem} = \sqrt{(kT.R_e^3/G_o m_c^2)}$.

The nucleonic mass-seed $m_c = m_P.Alpha^9$ and the product $G_o m_c^2$ is a constant in the partitioned evolution of

$m_c(n) = Y^n.m_c$ and $G(n) = G_o.X^n$.

Identifying the ylemic Radius with the Schwarzschild Radius then indicates a specific mass a specific temperature and a specific radius.

Those we call the Chandrasekhar Parameters:
$M_{Chandra}$ = 1.5 solar Masses = $3x10^{30}$ kg and $R_{Chandra} = 2G_oM_{Chandra}/c^2$ or 7407.40704...meters, which is the typical neutron star radius inferred today.

$T_{Chandra} = R_{Chandra}^2.G_o m_c^2/kR_e^3 = 1.985x10^{10}$ K for Electron Radius R_e and Boltzmann's Constant k.

Those Chandrasekhar parameters then define a typical neutron star with a uniform temperature of 20 billion K at the white dwarf limit of ordinary stellar nucleosynthetic evolution (Hertzsprung-Russell or HR-diagram).
The Radius for the mass parametric Universe is given in $R(n) = R_{max}(1-n/(n+1))$ correlating the ylemic temperatures as the 'uniform' CMBBR-background and we can follow the evolution of the ylemic radius via the approximation:

$R_{ylem} = 0.05258...\sqrt{T} = (0.0753).[(n+1)^2/n^3]^{[1/8]}$

$R_{ylem}(n_{present}=1.132711...) = 0.0868...$ m* for a $T_{ylem}(n_{present}) = 2.747$ K* for the present time $T_{present} = n_{present}/H_o$.

What then is $n_{Chandra}$?
This would describe the size of the universe as the uniform temperature CMBBR today manifesting as the largest stars, mapped however onto the ylemic neutron star evolution as the protostars (say as $n_{Chandra}'$), defined not in manifested mass, say as neutron conglomerations, but as a quark-gluon plasma, manifesting physically from the quantum geometric templates in the UFOQR in association with the Vortex-Potential-Energy or VPE.

$R(n_{Chandra}') = R_{max}(n_{Chandra}'/(n_{Chandra}'+1))=7407.40741...$ for $n_{Chandra}' = 4.64x10^{-23}$ and so a time of $t_{Chandra}' = n_{Chandra}'/H_o = n_{Chandra}'/1.88x10^{-18} = 2.47x10^{-5}$ seconds.

QR defines the Weyl-Temperature limit for Bosonic Unification as 1.9 nanoseconds at a temperature of $1.42x10^{20}$ Kelvin and the weak-electromagnetic unification at 1/140 seconds or 7 microseconds at T = $1.66x10^{15}$ K.

So we place the first ylemic proto-star after the bosonic unification, before which the plenum had been defined as undifferentiated 'bosonic plasma', and after the electro-weak unification, which defined the Higgs-Bosonic Restmass induction via the weak interaction vector-bosons to enable the di-neutrons to be born as ylem or Gamow's neutron matter.

287 seconds after the Instanton, the universe was so 173 Million km across, when its ylemic 'concentrated' VPE-Temperature was so 583.5 Billion K* and contained in the limiting quark gluon-plasma star of 80.3 km in diameter.
The 'pixelated' universe so became scaled in ylemic temperature bubbles in the form of primordial White-Hole-Sources coupled to Black Hole-Sinks in a form of macro quanta to reflect the sourcesink Eps coupled to the sinksource Ess of the underpinning elementary super membrane Eps.Ess.
As the universe continued its expansion, the WH-BH dyads remained as temperature hotspots embedded within the cooling spacetime as the Black Body Radiator of the cosmogenesis.

It so had been the thermodynamic temperature of the expanding universe, which had differentiated the space time matrix in scale and beginning with an $80.3/173x10^{6}$ or 1 to 2.15 Million ratios between the Vortex-PE and its encompassing spacetime envelope.
As the universe expanded and cooled, the first ylem stars crystallized from the mass seedling M_o.

The universe's expansion however cooled the CMBBR background and we to calculate the scale of the universe corresponding to this ylemic scenario; we simply calculate the 'size' for the universe at $T_{Chandra}$ = 20 Billion K for $T_{Chandra}^4$ and we then find $n_{Chandra} = 4.89x10^{-14}$ and $t_{Chandra}$ = 26,065 seconds or so 7.24 hours.

The Radius $R(n_{Chandra}) = 7.81x10^{12}$ meters or 7.24 light hours.
This is about 52 Astronomical Units and an indicator for the largest possible star in terms of radial extent and the 'size' of a typical solar system, encompassed by supergiants on the HR diagram.

We so know that the ylemic temperature decreases in direct proportion to the square of the ylemic radius and one hitherto enigmatic aspect in cosmology relates to this in the planetesimal limit. Briefly, a temperature of so 1.2 billion degrees defines an ylemic radius of 1.8 km as the dineutronic limit for proto-neutron stars contracting from so 80 km down to this size just 1.1 million seconds or so 13 days after the Big Bang.

This then 'explains' why chunks of matter can conglomerate via molecular and other adhesive interactions towards this size, where then the accepted gravity is strong enough to build planets and moons. It works, because the ylemic template is defined in subatomic parameters reflecting the mesonic inner and leptonic outer ring boundaries, the planetesimal limit being the leptonic

mapping. So neutrino- and quark blueprints micro-macro dance their basic definition as the holographic projections of the space-time quanta.

Now because the Electron Radius is directly proportional to the linearized wormhole perimeter and then the Compton Radius via Alpha in
$R_e = 10^{10}\lambda_{wormhole}/360 = e^*/2c^2 = Alpha.R_{Compton}$, the Chandrasekhar White Dwarf limit is proportional to the protonic diameter mirrored in the classical electron radius in $R_{proton} = ½XR_e = 0.85838052x10^{-15}$ m* as a reduced classical electron radius and for $Øproton = XR_e = 1.71676x10^{-15}$ m* quantum geometrically increasing $M_{chandra}$ in Y = 1/X as $Y.M_{chandra} = 4.854102x10^{30}$ kg* or 2.4271 M_{Sun}. The White Dwarf Chandrasekhar limit so increases to the Tolman-Oppenheimer-Volkoff (TOV) limit $M_{chandra}Y = R_{TOV}c^2/2G_o$.

Hence any star experiencing electron degeneracy is actually becoming ylemic or dineutronic, the boundary for this process being the Chandrasekhar mass, extended to the TOV mass. As this represents the Electron Radius as a Protonic Diameter, the Protonic Radius must then indicate the limit for the scale where proton degeneracy would have to enter the scenario. As the proton cannot degenerate in that way, the neutron star must enter its Quark-Star Gluon-Plasma phase transition at the $½R_e/Y$ scale, corresponding to a mass of $2Y.M_{Chandra} = 9.7082x10^{30}$ kg* or 4.854 solar masses.
This marker is between the F-googol and the G-googol space quanta counter nexus coordinates.

The maximum ylemic radius limiting the manifestation of a Quark star then is found from the constant density proportion ρ=M/V:
$(R_{ylemmax}/R_e)^3 = M_{Chandra}/m_c$ for $R_{ylemmax}$ = 40.16235 km.

The corresponding ylemic temperature is 583.5 Billion K for a CMBBR-time of 287 seconds or so 4.8 minutes from a $n = 5.4x10^{-16}$, when the universe had a diameter of so 173 Million km.

The first ylemic protostar vortex was at that time manifested as the ancestor for all neutron star generations to follow.
This vortex is described in a cosmic string encircling a spherical region so 80.32 km across and within a greater universe of diameter 173 Million km and at a thermodynamic temperature of 583.5 Billion Kelvin at that point in the cosmogenesis.

This vortex manifested as a VPE concentration after the expanding universe had cooled to allow the universe to become transparent from its hitherto defining state of opaqueness and a time known as the decoupling of matter (in the form of the M_o seedling partitioned in m_c's) from the radiation pressure of the CMBBR bosons.

And so it continued!