Introduction to *the 241-Mumbers Tautology*
Via Numeric/Metric Derivations of Co-Defined Coupling Constants

The 241-Mumbers data system is a guaranteed source of essential and uniquely precise information '*meta-mapping*' the gamet of fundamental physics and cosmology through the *dimensionless scaling* of 'pure' *Mumbers*, or '*Membrane Numbers*.' A profound, yet simple, grasp of the inherent *power of 241-Mumbers* can be had by following an oddly revealing, but standard, procedure - each step leading to the next. First take

$$0:a = (.241)^{-1} = 4.149377593360.995850622406639.004149377593360.995850622406639........,$$

which is then added with the inverse of **241/3** $(= 80.33333333)\}^{(-1)} = 0:b = .012448133$; to get

$$0:c = a + b = X = 4.161825726141078838.$$

Next, we simply subtract X from our 'Prime Prime' itself, obtaining a new numerical invariant

$$0:d = \mathbf{241} - X = Y = 236.838174275.$$

But now things get weirder still as we divide Y by 14 to give

$$0:e = Y/14 = Z = 16.91701244813278,$$

which is multiplied by **12** to give $0:f = Z \times 12 =$

The Monolith Number

$$N_U = 203 + 1/241 = 203.004149377593360.995850622406639.004149.....$$

What else but a single, manifestly multi-dual, yet dimensionless invariant could offer a complete and categorically consistent system of *Meta-Physics* - a *sentential Hilbert calculus* based upon one *Primary Numeric Premice* or 'defined term' - a *literal "MonoLith."* Ultimately, this *Meta-Mumber* N_U will be revealed as the <u>*Fundamental Membrane Number*</u> uniting the deepest tenets of, or isomorphisms with a full *11*-dimensional geometry with a pure numerical (finite Fermat) mapping of a *physical 'Planck scaling;'* supplying all major mumbers and their multifold (metric) meanings and invariances, for this 'Universal Brane' some folk call Home.

Experimental certitude is of course less ideally attainable. However, extrapolations from empirical data require a relatively limited degree of accuracy compared to the dimensionless standards of Pure Mumbers, a priori to the broader issue of translating this Hilbert/Fermat arithmetic into physically measurable terms. Case in point: follow the Magic Mumbers as the Monolith implores us - translating what amounts to a *2-based exponent* N_U into a *natural logarithmic system* N_{Ue}, as follows

$$1a: \quad N_{Ue} = N_U \cdot Ln(2) = 140.71175373.......$$

Subtracting out the natural log of 4 times pi-squared, one miraculously obtains what amounts to a *dimensionlessly derived and <u>discretely quantized,</u> so truly <u>invariant</u>, <u>pure number</u> a representing the inverse of the <u>electromagnetic coupling constant</u> (alpha)*

$$1b: \quad a = N_{Ue} - Ln(2\pi)^2 = \mathbf{137.03599965023012363009305578558.....} = 1/\alpha!!$$

20

For future purposes, it will be instructive to re-write *a* as if it were still a **2**-based logarithmic system:

$$\text{1c:} \quad \mathrm{N}a_{(2)} = a/Ln2 = 197.70115711864872339976...... = a_2,$$

while it should be obvious that *a* in natural numbers itself translates as 4.92024... in the exponent of a natural logarithmic basis, which is equivalent to the number 7.0984113182... as a 2-based exponent.

Beyond and behind these multiple expressions of the fine-structure as 'pure' numbers, the 'unification' of electric charge and gravitation was originally, and remains, inherently a *Kaluza-Klein model,* whether it be 5 (space-time), or 11 (with full superstring/particle/cosmic membrane parameters), dimensional. As a consequence, more attention has been paid to Oskar Klein's 1926 note in *Nature* concerning the 'dimensional compactification' of electro-gravitational charge at a radius $\sqrt{a}$ over that of a Planck mass. Yet his paper in *Z. Phys. (37*, p. 895, 1926) clearly infers that one needn't get more esoteric than the common *proton and electron* of hydrogen in order to comprehend the 'proper characteristic' that makes this theory uniquely (not 'super' gravity, symmetry, strings, or even sheets) *physically* interpretable. It follows that just one other auxiliary premise is required to complete, interpret and measure, or 'gauge,' the physics of the Monolithic Tautology. By use of the same familiar fraction, we again simply consistently *define the <u>dimensionless KK or proton+electron Gauge</u> parameter*:

$$\mathbf{N_{p+e}} = \mathbf{63.5} \text{ - } \mathbf{1/241} = \mathbf{63.495850622406639.004149377593360996.....}$$

which naturally allows all mass-scales (for elementary particles and such) to be determined by pure ratios to the <u>KK Metric Gauge</u> of the <u>combined (measured) mass of the proton and electron</u> - <u>938.782996828 MeV</u>, as extrapolated from most recent [2000] data, expressed as an energy-scale in terms of Millions of electron Volts.

Mumbers like N_{p+e} can then basically be interpreted as exponents of 2-based logrithems representing large natural-numbers (per se) forming ratios R^{pl} to 'one (effective) Planck unit,' where $2^0 = 1$; which in the present case just means that it takes 2^{Np+e} protons and electrons to make one Planck mass. So, *conversely* multiplying the combined experimental values of the electron and proton masses (as expressed in kilograms) by 2^{Np+e} provides an effectively *derived* Planck mass

$$2a: \; m_{pl} \; = \; 2^{Np+e} \cdot (m_p + m_e) \; = \; 2.176655965 \times 10^{-8} \, kg$$

More importantly, inverting the square of this derived Planck mass and multiplying by the Planck/Dirac constant $\hbar$ times light speed c gives us a tautologically consistent value of the *derived gravitational coupling constant*

$$2b: \quad G \; = \; m_{pl}^{-2} \cdot (\hbar \cdot c) \; = \; \mathbf{6.6729398 \; \times \; 10^{-11}} m^3 kg^{-1} s^{-2}$$

which further discussion will reveal to be a fully *discrete Quantum Gravitational 'state' of the Newtonian potential.*

The unique principles of our Monolithic Meta-Mathematical Physics should be already be startling enough to dispel notions that *'free-parameters'* of *any* sort are further needed, nor necessary to begin with, for **true** *Unification of Physics and Cosmology* - the two most 'Fundamental Coupling *Constants'* of all being true *Co-Defined Invariants* derivable from pure dimensionless analysis (utilizing that common fraction 1/241), as referenced to a self-consistent physics based upon standard measurements of the two most studied, basic and stable units of both mass and charge. Let's then cut to the chase and develop the essentials of, and our basic table for, *particle physics and its associated cosmology* - with a special eye on how the (Minimal) Super-Symmetric Higgs (MSSH), and associated 'SuperSymmetry-Breaking,' Mechanisms serve one purpose - to get a smattering of *baryon* (& electron) *matter* for atoms with enough 'unseen mass' to create galaxies that can together evolve ('pre,' and then, eventually) 'self-conscious' matter - like us!