THE MYSTERY OF PLANCK-EXTENDED VERSION

(The Power of Panck)

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Abstract: Mysterious numerical coincidences to be explained.

1) According to the Stefan-Boltzmann's Law**:** $\frac{P_{[W]}}{4\pi R^2}=\sigma T^4$ [W/m^2] , where $\sigma = 5{,}67\cdot 10^{-8} W/m^2K^4$ is the Stefan-Boltzmann's Constant. From that, we have: $T=(\frac{P_{[W]}}{4\pi R^2\sigma})^{1/4}$. If now we say R is the classic radius of the electron $r_e=\frac{1}{4\pi\varepsilon_0}\frac{e^2}{m_e\cdot c^2}\cong 2{,}8179\cdot 10^{-15}m$, and if the power P (Power of Planck) is half the Planck Constant, $P=\frac{1}{2}h$ [W], then the temperature T is exactly the T CMBR of the Universe:

$$T_{CMBR}=(\frac{\frac{1}{2}h}{4\pi r_e^2\sigma})^{1/4}\cong 2{,}7K\ !$$

2) I want to irradiate in the Universe all the energy of an electron by the Power of Planck we have just introduced; this is obviously happening in a time $T_U=\frac{m_ec^2}{h/2}=2{,}47118\cdot 10^{20}s$. Now, I want to make a comparison between the potential energy of an electron and the energy of a photon; the ratio between them is: $\frac{Gm_e^2}{r_e}\Big/ h\nu$. I know from the High School that the frequency is the inverse of the period: $\nu=\frac{1}{T}$; if now I use the T_U just introduced to get the frequency ν_U, then I get: $\frac{\frac{Gm_e^2}{r_e}}{h\nu_U}=\frac{1}{137}=\alpha$, that is exactly the Fine Structure Constant!

3) Still from the High School, I know that the period T_U just obtained through the Power of Planck is given by the ratio between the circumference and the revolution speed. Therefore, in our Universe: $T_U=\frac{2\pi R_U}{c}$, so: $R_U=\frac{cT_U}{2\pi}=1{,}17908\cdot 10^{28}m$. Moreover, the centrifugal acceleration is given by the ratio between the square speed and the radius; so, still in our Universe: $a_U=\frac{c^2}{R_U}=7{,}62\cdot 10^{-12}\ m/s^2$. Now, I wonder if there exist a "celestial body" whose gravitational acceleration is exactly a_U. Well, it exists and it is the electron! In fact, if, in a classic sense, we see it as a small planet, we will have, for a small test mass m_x over its "surface": $m_x\cdot g_e=G\frac{m_x\cdot m_e}{r_e^2}$, from which: $g_e=G\frac{m_e}{r_e^2}=a_U=7{,}62\cdot 10^{-12}\ m/s^2$!

4) In our Universe, according to Newton, we can get the mass from the acceleration a_U:
$a_U=G\cdot M_U/R_U^2$, so: $M_U=a_U\cdot R_U^2/G=1{,}59486\cdot 10^{55}kg$. If we ask ourselves how many electrons and positrons are needed to get the Universe, we would have N of them: $N=M_U/m_e=1{,}74\cdot 10^{85}$, but now we also realize that $R_U=\sqrt{N}r_e$!!!!!!!!! (very sharp!)

5) In our galaxy (the Milky Way) the Sun is at a distance of 8,5kpc from the centre and should have a rotation speed of 160 km/s, if it were due only to baryonic matter, that is that of the stars and of all visible matter. But we know that, on the contrary, the Sun speed is 220 km/s. So we have a discrepancy Δv of 60 km/s: (Δv=220-160=60 km/s).(1kpc=1000pc ; 1pc=1 Parsec=$3,26\_l.y.=3,08\cdot10^{16}m$; 1 light year l.y.=$9,46\cdot10^{15}m$) ($R_{Gal}=8,5kpc=27,71\cdot10^{3}\_l.y.=2,62\cdot10^{20}m$ is the distance of the Sun from the centre of the Milky Way)
If the Sun were at a distance RGAL of 30 kpc, it would have had the same speed of 220 km/s, but the discrepancy Δv would have been higher. In general, we know from the rotation curves that:
$\Delta v=k\sqrt{R_{Gal}}$, where k =constant. We realize that: $k=\sqrt{2a_U}$!!!!!!!! Try with the above values for the Sun and see.
6) We see here that the « Unification between Gravitation and Electromagnetism » stands:

$$\frac{1}{4\pi\varepsilon_0}\frac{e^2}{r_e}=G\frac{m_eM_U}{R_U}\quad !!!!!!!!$$

7) Let's start from the RADIATION CONSTANT : $a=\frac{4\sigma}{c}=\frac{8\pi^5k^4}{15c^3h^3}=7,566\cdot10^{-16}\frac{J}{m^3K^4}$. We know from physics that it respects the following law: $u=aT^4$; $[u]=[\frac{J}{m^3}]$ and σ is the Stefan-Boltzmann's Constant. With a spherical Universe (for reasons of symmetry) and as the Universe cannot have a translational motion (because it would need a bigger Universe in which to translate), its motion is just rotational, with an energy: $E=\frac{1}{2}I_U\omega_U^2$, where I_U is the moment of inertia and, for a sphere, we know that:
$I_U=\frac{2}{5}M_UR_U^2$ and ω_U, from physics, is: $\omega_U=\frac{2\pi}{T_U}$, where $T_U=\frac{2\pi R_U}{c}$. Now, we have:

$$\omega_U=\frac{2\pi}{\frac{2\pi R_U}{c}}=\frac{c}{R_U}$$

, from which: $E=\frac{1}{2}\frac{2}{5}M_UR_U^2(\frac{c}{R_U})^2=\frac{1}{5}M_Uc^2$, and, for $u[J/m^3]$:

$$u[J/m^3]=\frac{E}{V}=\frac{\frac{1}{5}M_Uc^2}{\frac{4}{3}\pi R_U^3}=\frac{3}{20}\frac{M_Uc^2}{\pi R_U^3}=aT_{CMBR}^4$$

, from which:

$$T_{CMBR}=(\frac{3}{20}\frac{M_Uc^2}{a\pi R_U^3})^{1/4}=(\frac{9c^5h^3}{32\pi^6k^4}\frac{M_U}{R_U^3})^{1/4}=(\frac{72Gc^{11}h^3\varepsilon_0^4m_e^6}{\pi^2e^8k^4})^{1/4}=2,72846(02218319896)K\cong2,72846K$$

which is very sharp, as the official measured value is $T_{CMBR}=2,72548K$, so we are in the 0,1%!!! (3rd decimal!)
8) Let's consider the Heisenberg's Indetermination Principle (taken with the equal sign, out of simplicity): $\Delta p\cdot\Delta x=\hbar/2$ ($\hbar/2=h/4\pi=0,527\cdot10^{-34}J\cdot s$). We realize and can be also proved that (just numerically): $\Delta p\cdot\Delta x=m_ec\cdot\frac{a_U}{(2\pi)^2}=0,527\cdot10^{-34}$ which is exactly $\hbar/2=h/4\pi$ and very very sharp!!!!!!!

Bibliography: http://vixra.org/abs/1303.0074 http://vixra.org/pdf/1303.0074v1.pdf

Thank you.
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