REDICTED COLD STERILE NEUTRINO COSMIC BACKGROUND SATISFIES CHANDRASEKHAR WHITE DWARF MASS LIMIT

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Several predicted features of the Cosmic realm have been produced from a new cryptographic analysis that is based on the concept of an optimized and maximally ordered Universe that perforce obeys a condition of minimum entropy. The quantitative findings of this cosmic picture include the computation of the Fine Structure Constant α, a Sterile Neutrino νs mass of 27.45 meV, the Cosmological Constants Ω_Λ and Ω_m, the Luminous Matter Fraction Ω_l, the Cosmic Neutrino Background (CNB) density ρ_ν, and the value $T\nu = 0$ for the temperature of the CNB. Likewise predicted was the existence of a very massive DARK MATTER counterpart Ω_l' of the Luminous Fraction Ω_l that obeyed the remarkable relationship $\Omega_l/\Omega_l' \approx \Omega_\Lambda/\Omega_m = 2.74$, valid to one part in $\sim 10^{60}$, hence, observationally exact. The total mass of the unknown Dark Matter object associated with Ω_l' was computed to be $M_d = 2.6213 \cdot 10^{54}$ g, with the level of accuracy limited by the uncertainty in the Gravitational Constant G. The arithmetic structure of the calculated mass identified it as a single coherent monolithic body. We demonstrate that this mass, with a presumed composition of cold degenerate Fermi matter consisting solely of light Sterile Neutrinos ν_s, matches well the value M_{Ch} expected if it had arisen from the formation of the neutrino equivalent of a White Dwarf star at the Chandrasekhar Limit, hence, $M_d \approx M_{Ch}$**.** The radius R***** of this entity is also shown to be $\sim 1.6 \cdot 10^{28}$ cm, a magnitude that very adequately corresponds to the estimates of the radius of the observable Universe. Hence, a measurement of the Luminous Matter Fraction Ω_l yields an indirect quantitative determination of the mass of a Dark Matter object, the Sterile Neutrino ν_s, that fits a coherent analysis of the Cosmic Domain. Furthermore, since previously established results precisely interrelate all of the physical quantities of the $\{\alpha, \Omega_\Lambda, \Omega_m, \Omega_l\}$ tetrad, this striking predictive property holds equivalently for the entire membership of the quartet. This finding motivates the conjecture that the properties of many forms of Dark Matter may be readily discovered and indirectly measured through knowledge of comparable reciprocal relationships associating the characteristics of Luminous and Dark Matter.