Abstract Submitted
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Plausible Answers to Questions Regarding Abiogenesis on Prebiotic Earth[1] GRANT COOPER, Texas Tech University — Evidence indicates Earth's surface acquired necessary life-giving volatile elements - carbon, nitrogen, sulfur - from a collision with a Mercury-like planetary embryo ˜4.4 billion y ago. Icy comets containing hydrocarbons collided with a cooling prebiotic Earth to create impact reactive environments that - via classical anthropic causality - introduced primordial "ribozyme-like" RNA complexes which could duplicate a few molecular units per 24 hrs. Random classical processes introduced energetically accessible duplex RNA segments containing keto - amino (-NH_2) hydrogen bonds, where hydrogen bonded amino protons were subjected to quantum uncertainty limits, $\Delta x\ \Delta p_x \geq \hbar/2$. This introduced a probability of EPR arrangement, *keto-amino (entanglement)*$\rightarrow$ *enol*$-$*imine*, where reduced energy product protons are each shared between two indistinguishable sets of *intramolecular* electron lone-pairs belonging to enol oxygen and imine nitrogen on opposite genome strands. Product protons participate in entangled quantum oscillations at ˜410^{13} s^{-1} (˜4800 m s^{-1}) between near symmetric energy wells in decoherence-free subspaces until measured, in a genome groove, $\delta t << 10^{-13}$ s, by an evolutionary selected Grover's quantum bio-processor. This quantum entanglement resource for reactive evolution provides a sequence of ˜12 incremental entanglement-enabled improvements to genome fitness, of the form: RNA-ribozyme $\rightarrow$ RNA-protein $\rightarrow$ DNA-protein.

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