DYNAMICS OF THE ULTIMATON

Stuart R. Kerr, III
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Nearly all the matter contained in the known universe may be fundamentally different from the atoms that allow stars to shine. Invisible "dark matter", as it is commonly called, may be generating ten times the gravitational force than the visible stars alone can account for. It has been calculated that the exterior arms of a spiraling galaxy, such as our own Milky Way, should be moving more slowly than those moving within the body of the galaxy. There are fewer stars in the in the outer galaxial arms, and consequentially less gravitational mass. However, the observed rotation of the outer stars of over 150 observed galaxies is surprisingly fast.

Estimates are that galaxies must have from 5 to 10 times the mass of their shining stars to account for these observed speeds of rotation. The estimated gravity generated by the even more massive galaxy clusters, those compact aggregations of individual galaxies, indicates the presence of dark matter 10 to 20 times the mass of the visible matter. Both reckoned accounts point to a substantial discrepancy regarding "observed" and "predicted" matter content in the cosmos.

There have been put forth by the scientific community many proposals that attempt to account for this missing mass. In order for so-called "brown dwarves" - cool, dim stars one-tenth to one-hundredth the mass of our sun - to account for the extra mass necessary to generate observed gravitational forces, 1000 of these imperceptible stars would be necessary for each visible star (about 100 trillion per galaxy). Along the same line of reasoning, billions of "black holes" - intense vortices of gravity arising from the collapse of massive hydrogen stars - are estimated per galaxy as necessary to account for the missing mass. These black holes, which are likely the "dark gravity bodies" referred to in The Urantia Book, gravitationally ensnare surrounding space-matter which, in turn, is expected to produce abundant emissions of X-rays. But, so far, extensive X-ray searches of the heavens have not conclusively identified any black holes.

The elusive family of neutrinos, an assemblage of sub-atomic particles whose presence in the cosmos is considered pervasive and whose masses are only conjectured, have been taken to account for the excessive gravity in galaxies. These mysterious neutrinos are expected in most theoretical models of particle physics, such as the Grand Unification Theory (GUT), that comprehensively attempt to interrelate all universe forces and manifestations of matter into one unified whole, operating within one fundamental principle of cosmic reality. Neutrinos have been virtually undetectable except for the infinitesimal gravitational force they exert on atoms; they are conjectured to possess an extremely tiny mass. Because the energy of a neutrino is so small and the margin of error in measurement so great, various approaches to measuring this mass have proven inconclusive.

Neutrino masses play an important role in the theories of astrophysics and cosmology. The best laboratory determination for the upper bounds on the neutrinos are uncertain, but experimentation decidedly indicates a restrictively minute mass. The best astrophysical and cosmological bounds are even more restrictive. In 1985, John J. Simpson of the University of Guelf in Ontario was the first to report the possible presence of a heavy neutrino with a calculated mass of 17 kilo-electron-volts (keV). The mass of an electron is 511 keV, and the electron itself is surmised to be founded on smaller sub-electronic particle components; the hypothetical electron neutrino is one such constituent. Simpson's particle, a "heavy" neutrino, is determined to be electrically neutral and to be weakly interactive with ordinary matter. This same particle description is used by The Urantia Book to describe inter-associations of the ultimaton as they position themselves intra-electronically within the electron.

The Urantia Book tells us that what we would designate as "empty space", actually contains approximately the equivalent mass of about 100 ultimatons, the mass of one electron, in every cubic inch. On a cosmological scale, this ultimatonic mass adds up to be of considerable magnitude; the gravitational effect on the physical universe would be expansively immense.

The question becomes, then: Are ultimatons and neutrinos one and the same reality? If not, are they in any fashion related to one another? Now, we are told that ultimatons are not subject to linear gravity as are atoms and electrons; at least this is true for unassociated ultimatons. This lack of linear gravity response is also characteristic of unattached and uncharged organizations of sub-electronic energy particles. However, when pre-electronic matter becomes activated by X-rays and other powerful energy sources, it becomes slightly gravity responsive. Otherwise, unassociated ultimatons respond only to the circular gravity pull of Paradise; they are held in the universal space drift, forever swinging through pervaded space in the exact gigantic outlines of Paradise,

In the creation of matter as we know it, ultimatons are slowed down through many phases of physical activity before they attain the revolutionary-energy (spin) prerequisites to electronic organization. Linear gravity begins to become operative with this progressive development towards the electronic organization of matter; mass response to linear gravity becomes operative.

Functioning by inherent mutual attraction, ultimatons cluster according to their axial revolutionary velocities and these revolutions determine the negative and positive natures of several types of electronic units. Aggregating clusters of ultimatons, the primal physical units of material existence, collect in groups of one hundred to make up the constitution of an electron. There are never more nor less than one hundred ultimatons in the typical electron. Any variation of this number less than one hundred results in the loss of typical electron identity, bringing into existence one of "ten modified forms" of the electron assembly.

Temperature extremes, both hot and cold, exert a great influence on the ultimaton in the realm of energy and matter evolution. Low temperatures, along with other cosmic influences, promote certain forms of electronic construction and atomic assembly; high temperature and pressure, such as exists with certain internal solar states, initiate the onset of atomic breakup and material disintegration.

"Under such pressure and at such temperature all atoms are degraded and broken up into their electronic and other ancestral components; even the electrons and their associations of ultimatons may be broken up, but the suns are not able to degrade the ultimatons" [[UB 463:5] There are no cosmic conditions of heat or pressure which are capable of converting ultimatons back into their primal ancestry of emergent energy.

It may be the combination of these peculiarities connected with the unusual properties of the ultimaton that have made its direct discovery so elusive. The lone unassociated ultimaton as well as its various sub-electronic combinations that comprise the existence of the ten revealed modified forms of the electron, are truly existent at the very doorstep of emergent physical reality. They become manifest within that shadowy transition zone that separates the pure energy of nascent cosmic force from the phenomena of physical matter in all of its universe power. These various ultimatonic associations, as disclosed within The Urantia Book, might provide a correlated basis for three currently investigated members of the neutrino family, a proposed fourth neutrino, and possibly another six undiscovered neutrino manifestations. Their someday discovery might well bring the scientific community to the very brink of knowable physical (emerged) reality.

Mankind would then reach the true and final particle foundation on which all other particle manifestations, including the neutrinos, are built. This search would conceivably lead to the discovery of the ultimate "monad" whose primal reality can only have Paradise, the source of all energies and the source of that from which all materialization is derived, as its most primal nucleus.