Hubble expansion of the Universe by Dark Energy is negated by Cosmic Dust

Blackbody radiation and not the speculative Dark Energy is shown to cause Universe Expansion, but at an imperceptible rate consistent with a static Universe in dynamic Equilibrium with itself.

Aug. 12, 2009 - *PRLog* -- **Background**
Einstein proposed the cosmological constant be included in his field equations to avoid a collapsing Universe. But in 1929, Hubble showed the light from distant galaxies is redshift that by Doppler's effect meant the galaxies were moving away from us at a high velocity suggesting the Universe was expanding. When Einstein was confronted with Hubble's finding, he remarked that the cosmological constant was his "biggest blunder."

Hubble redshift as proof of an expanding Universe has been shown Paper to be invalid because of the redshift induced in cosmic dust particles (DPs) See www.nanoqed.org , "Dark Energy and Cosmic Dust ", 2009. Had Einstein questioned Hubble's finding on the grounds, say that the redshift measured was caused by DPs, he might have rescinded to his original position that the Universe is static in dynamic equilibrium with itself. But Einstein did not, thereby initiating nearly a century of unfortunate research in astronomy that recently culminated in dark energy being adopted at the Invisible Universe Conference, Ibid, "Invisible Universe Conference", as the new cosmological paradigm only because dark energy is necessary to support an expanding Universe based on the falsity of Hubble's redshift.

Sometimes called the Zero Point Field (ZPF), dark energy is the field equivalent of the well verified Zero Point Energy (ZPE) corresponding to the quantum mechanical ground state of atoms and molecules. But unlike the ZPE, dark energy has never been experimentally verified. Instead, the measurement of Casimir forces between a pair of parallel plates in a vacuum is inferred as proof of the existence of the dark energy thought present in the gap between the plates.

But the forces measured in Casimir experiments have been explained by the room temperature blackbody (BB) radiation emitted from the atoms in the surfaces of Casimir's plates. Ibid, " Casimir Update ". Unlike the speculative dark energy, the existence of BB radiation is unequivocal. Similarity arguments therefore allow the hypothesis:

"The dark energy thought to be the source of Universe expansion is BB radiation at 2.725 K."

Modified Standard Model of Cosmology

The DPs that induced Hubble's redshift may be considered to be the dust of cold dark matter in the Standard Model of modern cosmology. As simulated in the Friedmann equations, the Universe is a homogeneous spherical model of submicron DPs in a bath of Cosmic Microwave Background (CMB) radiation at 2.725 K. Generally accepted as a first approximation for the evolution of the Universe, the Standard Model does not include stars or clusters of galaxies because such objects are much denser than the typical part of the Universe.

Unlike the collapsing Universe that troubled Einstein, the Standard Model was modified to include BB radiation induced repulsion between all DPs. Pair-wise forces between DPs therefore comprise gravitational attraction and temperature dependent radiational repulsion. At 2.725 K, the repulsion dominates attraction, but as the temperature approaches absolute zero, gravitation dominates.

Numerical Simulations

Numerical DP simulations allow an estimate of the Universe expansion using Newtonian mechanics for a cubical box in a molecular dynamics (MD) analysis. See Ibid, "Universe Expansion by Blackbody Radiation ". The MD computation box was located at the center of the cloud of DPs and comprised a total of 500 DPs arranged to obtain the Universe mass density 5x10^-27 Kg/m3. A generally accepted upper bound radius of the DPs in the interstellar medium is 0.25 microns, and therefore taking the DPs to be

spherical amorphous silicate having density 2200 Kg/m3, each DP has a mass 1.44x10^-16 Kg. The MD simulation box therefore had sides of 24000 m with the spacing between DPs corresponding to ~ 3024 m. This is far larger than the MD box used in atomic and molecular analysis, but allows an understanding of how DP pair-wise interactions cause expansion and collapse in the Friedmann dust model. Only bounding simulations were run, the first at T = 0 that corresponds to a collapse from the regularly spaced DP lattice to a small region and the second the expansion of the collapsed region that tends to approach the initial DP configuration.

The MD simulation showed the time of Universe to collapse 18000 m is about 0.34 billion years giving a rate

Conclusions

1. The Universe expansion velocities in excess of 80 Km/s based on recent redshift measurements of Supernova light are erroneous because the redshift is actually produced upon absorption of Supernova light in submicron cosmic dust. This is consistent with the MD analysis showing imperceptibly small velocities, so as to suggest a static Universe as first proposed by Einstein.

2. The BB cosmological constant is of order of 10^-40 /s^ 2 and is reasonably close to estimates based on dark energy. But this is irrelevant because the MD simulation based on Newton's equations or the Friedmann equations in a static Universe do not depend on the cosmological constant.

3, Gravitational attraction balances radiational repulsion as BB temperatures are lowered from 2.725 K to about 0.01 K at which time the Universe begins to collapse.

4. The negation of an expanding Universe based on the redshift of Supernova light in DPs is consistent with the imperceptible velocities in a static Universe.

5. The Big Bang most likely did not begin from nothing, but if it occurred at all was caused by the collapse of the Universe on itself. Unlike the Big Bang that is assumed to occur instantaneously, static Universe

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About QED induced Radiation: Classically, thermal EM radiation conserves heat by an increase in temperature. But at the nanoscale, temperature increases are forbidden by quantum mechanics. QED radiation explains how heat is conserved by the emission of nonthermal EM radiation.

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