Invisible Universe International Conference: Toward a new cosmological paradigm

Theme 1: Observational and Experimental aspects of Dark Energy and Dark Matter

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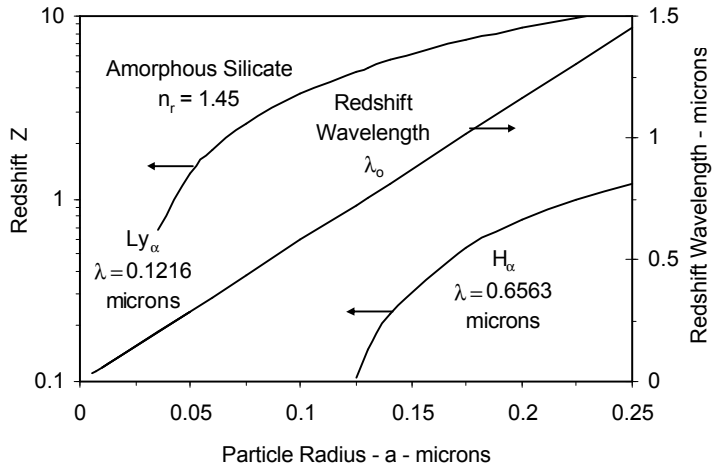
Cosmic Dust and Dark Energy

In 1929, Hubble formulated the law that the redshift of spectral lines in galaxy light by Doppler's effect suggested the expansion of the Universe. Today, astronomers [1] contend Universe expansion is caused by dark energy. However, dark energy is moot if Hubble's redshift is not caused by Universe expansion, but rather by [2] cosmic dust particles (DPs). Indeed, supernova photons having wavelength λ are shown [3] upon absorption in DPs to redshift Z to wavelength λ_o,

$$Z = \frac{\lambda_o - \lambda}{\lambda} \quad \text{and} \quad \lambda_o = 4\,a\,n_r$$

where, n_r is the refractive index, and a is the DP radius. For amorphous silicate dust having range [4] from a = 0.005 to 0.25 microns, the H_α and Ly_α lines are shown below to redshift to Z of about 1 and 10, respectively.



Given that supernova light is unequivocally absorbed by cosmic dust on its way to the Earth, the measured Hubble redshift Z is caused by DPs and has nothing to do with an expanding Universe. Hence, any implied relation [1] of dark energy to an expanding Universe is not justified. Cosmic dust also holds in question the Hubble redshift as the first and only proof that the Universe began with the Big Bang suggesting the new cosmological paradigm adopted at the Invisible Universe Conference should be a return to Einstein's notion of a static Universe in dynamic equilibrium.

References

[1] Riess, A.G., et al., "Type Ia Supernova Discoveries at Z >1 from the Hubble Space Telescope Evidence for Past Deceleration and constraints on Dark Energy Evolution," ApJ, 607, 665, 2004.
[2] Corasaniti, P.S., "The Impact of Cosmic Dust on Supernova Cosmology," MNRS, February 2008.
[3] Prevenslik, T.V., "Einstein's Universe and Cosmic Dust," at www.nanoqed.org , 2008.
[4] Weingartner, J.C. and Draine, B.T., "Dust Grain Size Distributions and Extinction in the Milky Way, large Magellanic Cloud, and Small Magellanic Cloud," AsJ, 548, 296. 2001.