

Addressing Redshift Controversies through Non-Doppler Redshifts Induced by Light-Matter Interactions

Tabirian, Levon (School: Trinity Preparatory School)

This paper discusses some implications of attributing spectral redshifts of astronomical objects to the dynamics of matter in the path of light propagation. Unlike Hubble's law where the relationship between observed redshifts and distance is a result of observations, the redshift caused by the effect of light speed deceleration with increasing density of matter is naturally proportional to distance. The deviation from linear dependence appreciable for high redshift objects has been characterized using supernovae redshift data for independent distance measurements. The model results in an order of magnitude smaller discrepancy for the distances between quasars and their host galaxies compared to data provided by the Hubble model. The light deceleration model could also contribute to the understanding of dark matter, dark energy, and other attributes of the evolution of the universe.

Awards Won:

NASA: Second Award of \$750