Possible New Horizons fundamental contribution to Cosmology

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Abstract (2,250 Maximum Characters): The New Horizons (NH) spacecraft (S. Alan Stern, PI) is now past Pluto, and in our poster we explore the possibility of making observations, using the NH P-Alice ultraviolet spectrometer, of the cosmic diffuse ultraviolet background radiation, particularly at high northern and southern Galactic latitudes. In the paper, "The Mystery of the Cosmic Diffuse Ultraviolet Background Radiation," by Richard Conn Henry, Jayant Murthy, James Overduin, Joshua Tyler, ApJ, 798:14 (25pp), 2015 January 1, we demonstrated the existence of a second component of the diffuse far ultraviolet background radiation beyond that provided by dust-scattered starlight. The critical question is, does that second component (of unknown origin) extend shortward of the Lyman limit of 912 Å? If it does, then it seems likely that we have discovered the source of the reionization of the Universe that occurred some time after recombination. As things stand at the moment, there is no known source that has been demonstrated to be capable of performing the reionization: reionization that clearly did occur. Our current understanding of P-Alice suggests that it may well be capable of demonstrating the presence (or absence) of such ionizing cosmic diffuse radiation. At low Galactic latitudes, all such radiation would be totally erased by the presence, in large quantities, of interstellar neutral hydrogen; this will allow us to test the reality of any such flux that we may discover at higher Galactic latitudes.

Three great circles: integrated spectra!
Is the flux below 912 Å responsible for the re-ionization of the Universe?
We hope to find out soon, with Alice, on New Horizons ... way, way, out there!