

Chasing Cosmic Dawn: The LEDA Experiment

Danny C. Price⁽¹⁾, Jonathon Kocz⁽¹⁾, Benjamin R. Barsdell⁽¹⁾, and
Lincoln J. Greenhill⁽¹⁾

Harvard-Smithsonian Center for Astrophysics, Cambridge MA, 02138

The Large-Aperture Experiment to Detect the Dark Age (LEDA) is a new experiment that seeks to detect absorption of neutral Hydrogen in the intergalactic medium (IGM) at the end of the Dark Age, before widespread reionization. LEDA is deployed at the new Long Wavelength Array station in Owens Valley (LWA-OV), where the 512-input LEDA correlator also constitutes the primary signal processing backend. In this talk, I will introduce LWA-OV and detail how LEDA may be used to detect (or place limits upon) the IGM signal at redshifts of $z \sim 15-30$, about 100 million years after the Big Bang. This will deliver observational constraints on sources of heating during the Dark Age and the timing of Cosmic Dawn, when the earliest generations of stars and black holes formed. I will report on LEDA's current status, and will present all-sky images and preliminary results. Calibration challenges, and our strategies to overcome them, will also be discussed.

—————154 words to this point—————