Title: [CII] At 1<z<2: Observing Star Formation In The Early Universe With Zeus (1&2).


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Abstract

We report the detection of the [CII] 158 micron fine structure line from six submillimeter galaxies with redshifts between 1.12 and 1.73. This more than doubles the total number of [CII] 158 micron detections reported from high redshift sources. These observations were made with the Redshift(z) and Early Universe Spectrometer(ZEUS) at the Caltech Submillimeter Observatory on Mauna Kea, Hawaii between December 2006 and March 2009. ZEUS is a background limited submm echelle grating spectrometer (Hailey-Dunsheath 2009). Currently we are constructing ZEUS-2. This new instrument will utilize the same grating but will feature a two dimensional transition-edge sensed bolometer array with SQUID multiplexing readout system enabling simultaneous background limited observations in the 200, 340, 450 and 650 micron telluric windows. ZEUS-2 will allow for long slit imaging spectroscopy in nearby galaxies and a [CII] survey from z 0.25 to 2.5.