

A Near Infrared Study of $z = 3-3.5$ Galaxies in Four Quasar Fields
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Recently, there have been numerous detections of very distant galaxies at a redshift of approximately three using the Lyman break technique (Steidel et al 1993). We propose to conduct the first comprehensive study of the physical properties of these Lyman break galaxies by using near infrared spectroscopy to obtain their star formation rate, velocity dispersions, rotational velocities, and chemical abundances. We will use velocity dispersions to calculate directly the virial masses of the galaxies. Ultimately, we will compare our observations with existing observations and galaxy formation models to determine the nature of Lyman break galaxies. The study of these high redshift galaxies is crucial in our efforts to better understand galaxy formation and evolution.