

“A MOSAIC Search for Lyman Alpha Emitting Galaxies at $z \sim 2.1$ ”

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Lyman Alpha Emitting Galaxies (LAEs) are extremely important in the study of galaxy evolution as their clustering indicates that they are the likely progenitors of Milky-Way size galaxies in the local Universe. Although observations of LAEs at $3.1 < z < 6$ indicate very little evolution of the luminosity function (LF), separate observations at $z \sim 0.3$ indicate that low-redshift LAEs are both rarer and fainter. We use narrow-band imaging to select LAEs at an intermediate redshift of $z \sim 2.1$ to search for evolution in the range of $0.3 < z < 3.1$. The data sets consisted of images gathered from three separate observing runs spanning three years at the Kitt Peak National Observatory (KPNO) and Cerro Tololo Inter-American Observatory (CTIO). In addition to standard reduction techniques, we used specifically designed reduction tasks for the MOSAIC camera at KPNO and CTIO in order to combine our final reduced images into a single stacked image. This deep, stacked image will aid us in detecting LAEs at our chosen redshift of $z \sim 2.1$. Using this sample at $z \sim 2.1$, we hope to investigate certain evolutionary properties of LAEs including age, stellar mass, dust and dark matter halo mass. We will present a status update on this project, including our initial sample of $z \sim 2.1$ LAEs.