High-redshift Lyman-α galaxies

Sangeeta Malhotra\textsuperscript{1} and James E. Rhoads\textsuperscript{2}

\textsuperscript{1}Department of Physics and Astronomy, Arizona State University, Tempe, AZ 85287-1504, USA
email: san@stsci.edu

\textsuperscript{2}School of Earth and Space Exploration, Arizona State University, Tempe, AZ 85287-1504, USA
email: james.rhoads@asu.edu

A strong Lyman-α line enables relatively easy detection of high redshift galaxies. Lyman-α galaxies are now known from $z = 3$ to 6.6. No evolution is discerned in the Lyman-α line luminosity function in this redshift range. This implies that the intergalactic medium at $z = 6$ is at least 50% ionized over more than 50% of the volume. Recent continuum detections of these galaxies from \textit{HST}, MMT and \textit{Spitzer} are now allowing us to address questions about the nature of these Lyman-α emitters, their stellar populations and ages. We find that by and large the Lyman-α galaxies are young galaxies dominated by stellar populations that are less than 25 Myr old.

doi:10.1017/S1743921307012392

Cosmic microwave background: probing the universe from $z = 6$ to 1100

David N. Spergel
Princeton University, Peyton Hall, Ivy Lane, Princeton, NJ 08544-1001, USA
email: dns@astro.princeton.edu

Observations of cosmic microwave background temperature and polarization fluctuations are sensitive to both physical conditions at recombination ($z = 1100$) and physical process along the line of sight. I will discuss recent results from the Wilkinson Microwave Anisotropy Probe and planned ground and space-based observations. The talk will emphasize the role of CMB observations in determining the initial conditions for the growth of structure and as a probe of the physics of re-ionization.