

Selecting Candidate AGN at or above Redshift 7 from Deep Surveys

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Abstract

The advent of deep and wide multi-wavelength surveys provides unprecedented new opportunities to search for very high redshift active galactic nuclei (AGN) by constructing samples of sources that are detected at radio or X-ray wavelengths but completely undetected at optical wavelengths to very deep limits. I will describe recent work on constructing samples of candidate AGN at or beyond redshift 7, such as the ‘EXO’s selected from deep multiband HST/Chandra/Spitzer surveys, including the Extended Chandra Deep Field South, GOODS, and COSMOS. The optical flux limits are combined with near-IR and Spitzer detections, together with X-ray and radio fluxes, to model the spectral energy distributions of the sources and help discriminate intermediate-redshift interlopers from the rare number of likely high-redshift sources. The resulting constraints on the number of candidate AGN at or above redshift 7 are used to examine the evolution of the AGN luminosity function at high redshift, with corresponding implications for the co-evolution of galaxies and their central black holes.