

The ZFOURGE survey: the evolution of galaxies since redshift $z=4$

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Abstract

I will review results from the ZFOURGE survey, a new imaging campaign to track galaxy evolution over the last 12 billion years. Deep Magellan/FOURSTAR near-infrared imaging taken with medium-bandpass filters allows us to finely sample galaxy spectral energy distributions and derive accurate photometric redshifts and stellar population parameters. Using ultra-deep Ks -band imaging ($25.5 - 26$ AB mag. $5 - \sigma$) in 3 deep fields (COSMOS, UDS, GOODS-S) to select galaxies, we have constructed large stellar mass-limited galaxy samples to redshift $z = 4$. With these catalogs we have: (1) conducted an evolutionary study of the star-forming and quiescent galaxy stellar mass functions to a redshift of $z = 3$, (2) demonstrated the existence of quiescent galaxies out to $z = 4$, (3) performed a general census of the massive galaxy population at $z = 3 - 4$ (4) tracked the evolution of active galactic nuclei host galaxies and (5) discovered one of the most distant galaxy clusters known so far.