Extreme Emission Line Galaxies at $z > 1$

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Abstract

Recently we uncovered with Hubble Space Telescope (HST) WFC3 imaging and spectroscopy an abundant population of extreme emission line galaxies (EELGs) at $1.3 < z < 2.3$. While rare in the local universe, such EELGs are ubiquitous at higher redshift and plausibly represent the star-forming progenitors of today's dwarf galaxies. I will present ground-based follow-up spectroscopy using the VLT and the LBT, as well as SED modeling of broad-band photometry and emission line fluxes, which confirms high star formation rates, young ages, low stellar masses, and low metallicities. I will also present a comprehensive search for EELGs in data from the 3D-HST grism-spectroscopic survey, providing a first measurement of their cosmic number density evolution. I will use this to constrain the duty cycle of this bursty mode of star formation, and argue that most stars in today's dwarf galaxies formed in a small number of these bursts at $z > 1$.