Sizing Up Dwarf Galaxies at $z > 1$: UV Colors, Stellar Masses and Star Formation Rates

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Abstract

Deep HST imaging allows the detection and study of dwarf galaxies at $z > 1$. Our recent multiwavelength analyses of continuum and Ly-α selected galaxies in the Hubble UltraDeep Field (HUDF) and CANDELS fields reveals a diversity of physical properties. We show that these galaxies are on the whole bluer than comparable luminosity galaxies in the local universe, although they are as diverse in their UV colors as local dwarf galaxies (Kurczynski et al. 2014, ApJL 793 5). On the SFR-M_* diagram, Ly-α selected galaxies fall above the main sequence, implying bursty star formation (Vargas et al 2014, ApJ 783 26). In this presentation, we illustrate that low luminosity continuum selected galaxies appear to lie on the main sequence, suggesting a more quiescent evolution. The systematic study of low luminosity galaxies spanning the epoch of peak cosmic star formation will elucidate the mechanisms of formation and evolution for the bulk of the present day galaxy population.