## Galaxy Size and Star-formation at z~9-10



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## Abstract

Samples of high-redshift populations of galaxies have grown recently through the Lyman break selection in deep HST+Spitzer observations. Here we present a sample of bright z=9-10 sources, the most distant to date, identified in the CANDELS survey. Using measurements of their sizes, we derive the star-formation rate surface densities within these sources and find evidence for only a modest evolution in this quantity with cosmic time z~4-10. The size-mass relation at z~10, while uncertain, appears qualitatively similar to that at lower redshifts, suggesting that galaxy formation is largely self similar for much of the history of the

Universe.



z~9-10 nature; interlopers are redder and bigger.

Oesch+ (2014) found several bright z~9-10 candidates in CANDELS

Holwerda et al.ApJ, submitted arxiv: 1406.1180 Galaxy Sizes

7~9\_

Size-redshift relation is  $(1+z)^{-1}$  for brightest galaxies.

