

The Brightest Galaxies at Cosmic Dawn

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Abstract

Recent Hubble's near-IR observations transformed our view of early galaxy formation by building reliable samples of galaxies out to redshift $z \sim 8$ (~ 700 Myr after the Big Bang) and hinting at a dramatic evolution in properties at yet earlier times. From $z \sim 8$ to $z \sim 10$ (~ 200 Myr) the luminosity density seems to decrease by a factor ten, but bright galaxies may remain relatively common based on a handful of bright ($m < 27$) sources detected in legacy fields (GOODS/CANDELS). I will present our existing observations at $z \sim 8 - 10$ and combine them with spectroscopic followup data and with the measurement of the two point correlation function at $z > 7$ to discuss the connection between dark-matter halos, assembly of galaxies, and production of reionizing photons during cosmic dawn. Finally, I will preview the first results from the new extra-large (32 days) Brightest of Reionizing Galaxies (BoRG) HST survey, designed to find the most luminous $z \sim 9 - 10$ sources accessible before the next generation of IR space telescopes.