

SAN DIEGO STATE UNIVERSITY DEPARTMENT OF PHYSICS AND DEPARTMENT OF
ASTRONOMY COLLOQUIUM

Speaker: Prof. Rychard Bouwens (University of Leiden)

Topic: Young Galaxies Forming in the High-Redshift Universe

Time: 3:00 PM, Friday, May 5, 2017 (refreshments served at
2:45 PM)

Place: Room 215, Physics-Astronomy Building (PA-215)

Abstract:

Over the last few years, enormous progress has been made in studying galaxies in the first two billion years thanks to the incredible capabilities of the Hubble and Spitzer Space Telescopes. Already, more than 1500 probable galaxies are known at redshifts above $z \sim 6$, and now the current frontier is at $z \sim 9-10$, with 50 plausible galaxy identifications to date, and a spectroscopic redshift measurement to $z=11.1$. Noteworthy advances are also being made in characterizing the physical properties of these distant galaxies, with probes of the nebular emission lines and specific star formation rates to $z \sim 8.5$ and new constraints on dust-enshrouded star formation at $z > \sim 2$ from ALMA. One area where there has been particularly exciting activity is in the study of ultra-faint galaxies in the early universe with the Hubble Frontier Fields (HFF) program, combining the power of long exposures with Hubble and Spitzer with gravitational lensing by massive galaxy clusters. In this colloquium, I survey these and other highlights of current research on high redshift galaxies, while looking forward to future work with JWST.