



Dissecting Galaxies in High-redshift Galaxy Clusters

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A comprehensive understanding of galaxy evolution requires a holistic view into the anatomy of galaxies and the baryonic processes that shape their growth. Using a triad of properties—environment, mass, and time—I will present multi-wavelength studies of the extreme end of these parameters: the rare, dense regions of galaxy clusters; the most massive galaxies in the Universe; and the peak epoch of star formation. I will focus on the first spatially-resolved images and kinematics of molecular gas and star formation within high-redshift clusters, from infalling clusters galaxies to the massive Brightest Cluster Galaxy (BCG) at the heart. Enabled by interferometric observations on the Atacama Large Millimeter Array (ALMA), I will highlight potential evidence for gas stripping and an unexpected channel for stellar mass growth in the centers of galaxy clusters at high redshift. With ALMA, the regime of spatially-resolved gas kinematics and morphologies is burgeoning from case studies to a rich field of data science, allowing us to push further back in cosmic time and opening up the potential for many new discoveries.

23 MAR 2021

3:30 PM EDT

VIRTUAL SEMINAR