

Mapping the Circumgalactic Medium: The Origin and Structure of the Hidden Reservoir of Gas Around Galaxies

TUESDAY

NOVEMBER 10

12:30 P.M.

RM 184 NSH

Dr. Rongmon Bordoloi, MIT

Our current understanding of how galaxies evolve over cosmic time is highly incomplete without understanding what is now known as the major baryonic component: the Circumgalactic medium (CGM). The CGM contains both the fuel for and the end products of star-formation in galaxies, but these regions are relatively hard to explore owing to their extremely low gas densities. The installation of the Cosmic Origins Spectrograph (COS) aboard the Hubble Space Telescope (HST) has allowed us to make major advances in our ability to systematically map and study these diffuse regions of gaseous galaxy halos. I will present the latest results from two large HST/COS surveys which systematically characterize the CGM in HI and metal lines over more than three decades of galactic stellar mass. The CGM as seen by these programs is nearly ubiquitous in HI, patchy in most metals, and generally cool and bound. I will describe the implications of these results for galactic fueling and quenching, and speculate on where we might go from here.