

Britt Lundgren

UW Astronomy



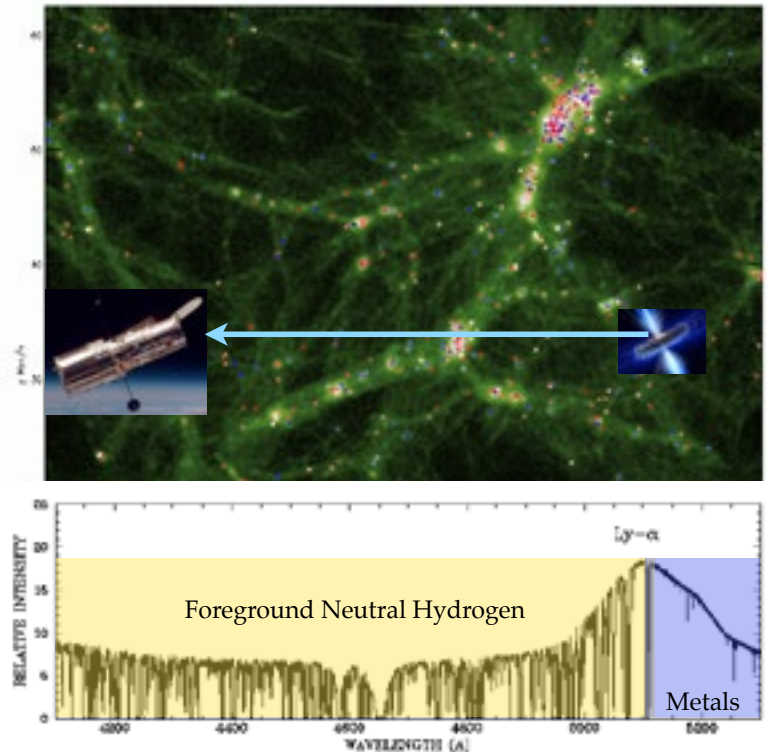
Shedding Light on Distant Galaxies with 200,000 Quasars

Department of Physics Colloquium



Distant quasars backlight the Universe across most of cosmic time and can be used to reveal the evolving content and distribution of the cosmic web. Absorption features in quasar spectra mark the locations of gas in the intergalactic medium and provide sensitive physical tracers of many of the gaseous processes understood to regulate the evolution of galaxies. However, studying these distant absorbers in the context of their luminous counterparts (i.e., stellar populations) has long presented an observational challenge, which has hindered the ability of quasar absorption data to usefully inform galaxy evolution models.

The ~200,000 quasars observed to date by the Sloan Digital Sky Survey (SDSS) have recently catalyzed our understanding of the host galaxies and physical environments of the most prolific absorption species detected in optical quasar spectra. I will present recent statistical measurements made possible by the vast quasar absorption line samples from the SDSS, and present new, direct observations of absorber host galaxies at high redshift using the Hubble Space Telescope. Together these studies reveal compelling links between metal-rich absorbers and large-scale star formation-driven outflows, providing new insights into the role of feedback in the evolution of galaxies over the past 10 Billion years.



Please Post