

Physics Department Seminar

3pm March 2, 2018

Physical Sciences room 301



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# Understanding Quasars: The Study of Galaxies Far, Far Away...

Quasars are among the most luminous objects in the sky. These very energetic regions lie at the center of massive galaxies and are powered by super-massive black holes. While it has been found that there is a correlation between the mass of these super-massive black holes and the mass of the surrounding galaxies, the co-evolution of galaxies and quasars is barely understood. Outflows launched from the vicinity of super-massive black holes are a key piece in this puzzle, possibly linking the small and the large scale phenomena.

We have discovered that some of this gas is outflowing at very high speeds (up to 216 million km/hr, 20% of the speed of light!). To better characterize the frequency and properties of these outflows, our group is

conducting an encompassing multi-wavelength study using data from, among others, the Sloan Digital Sky Survey, Hubble Space Telescope and Chandra X-ray Observatory. All these results have implications for current theoretical models and will help us better understand the quasar phenomenon and their environments.

