

Astronomy Seminar

February 8, 2017

### **The Centers of Dwarf Galaxies: from Ultra-Diffuse to Central Black Holes**

I will discuss our ongoing efforts to characterize the lowest-mass supermassive black holes, and the occupation fraction of black holes in dwarf galaxies. This distribution has the potential to teach us how the first supermassive black holes formed. Black holes are typically found in the most centrally concentrated galaxies in the universe. At the other extreme, I will describe our new search for some of the most diffuse galaxies: ultra-diffuse galaxies, with the mass of a typical dwarf galaxy spread over the size of the Milky Way. With the Hyper-Suprime Camera survey we are able to search for these galaxies in a wide range of environments, and we are starting to characterize their specific frequency in halos with a wide range of mass.