The Supermassive Black Holes in Nearby Galaxies

Over the past decade it has become increasingly clear that supermassive black holes are an essential component of a galaxy, as demonstrated by the correlations connecting black hole masses and galaxy bulge properties. Roughly 80 dynamical black hole mass measurements have been made to date, however the local black hole mass census is highly incomplete. Gaining a more complete picture of black hole demographics and deeper understanding the mechanisms that drive black hole/galaxy evolution requires the secure measurement of many more black holes, particularly those at the extremes of the black hole mass scale, in a wider range of galaxy types. In this talk, Dr. Walsh will discuss the results and implications from my work that combine high angular resolution observations with comprehensive dynamical models to measure the masses of such black holes in nearby galaxies. She will close with a discussion of the impact that future observational facilities, such as GMT, will have on this field.