X63a Resolved stellar populations of nearby galaxies

Sakurako Okamoto (NAOJ), Annette Ferguson, Rokas Zemaitis (University of Edinburgh), Mike Irwin (University of Cambridge)

Over the last decade, wide-field resolved star studies have led to the discovery of the vast number of stellar over-densities and faint satellites around the Milky Way and M31. Pushing these studies to galaxy systems beyond the Local Group is crucial to increasing sample size and deriving representative trends.

We present the photometric properties of early-type dwarf galaxies, stellar streams, and young stellar systems at the centre of the M81 group. The resolved stellar photometry covering a projected radius of 120 kpc from M81 with Subaru/HSC enables us to conduct a homogeneous analysis of dwarf satellite galaxies. One of the famous triplets, NGC3077, shows the stellar halo extending towards north and south in an S-shape. In contrast, other early-type dwarfs show no apparent features of the tidal effect from the recent interactions among M81, M82, and NGC3077. We discovered the giant tidal stream associated with one of the M81 satellites, pointing in the direction of M81. The spatial and colour variations along the stream show no evidence of a significant metallicity gradient. We also introduce the Subaru Near-field Cosmology survey, targeting several late-type galaxies located at 3-5 Mpc from the Milky Way to elucidate the dependence of stellar halo properties.