

Searching for Dwarf Galaxies Around Isolated, Low-Mass Hosts

Dwarf galaxies are the oldest, least evolved, and most dark-matter-dominated galaxies in the universe, therefore studying them can shed light on the formation of some of the first galaxies to exist, the evolution of larger host galaxies like our Milky Way, as well as the abundance and distribution of dark matter across the Local Universe. Most research to date involving dwarf galaxies has focused specifically on those orbiting the Milky Way and Andromeda. However, despite being more difficult to observe, it is important to also study dwarf galaxies beyond the Local Group in order to learn about the properties of dwarf galaxies located in different environments – i.e., those orbiting galaxies with different masses and morphologies than that of the Milky Way. To do this, the DECam Local Volume Exploration (DELVE) - DEEP Survey performs 135 deg² of deep imaging in the g and i bands around four Magellanic analogs in the Local Volume: NGC55, NGC300, Sextans B, and IC 5152. I will present an overview of our survey around one of these galaxies, NGC55, and our efforts to search for dwarf galaxy satellites around this low-mass host. With the full DECam coverage of its dark matter halo, our efforts will be able to produce the first complete satellite luminosity function for a distant LMC-mass galaxy down to an unprecedented limit of $M_V \sim -7$.

Session Classification: SpinQuest