

COLLEGE OF THE HOLY CROSS

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ID-MAGE: Identifying Dwarfs of MC Analog GalaxiEs

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Satellite galaxies (galaxies which are gravitationally bound to a more massive host galaxy) are regarded as cosmological and astrophysical probes of dark matter on small-scales. The discovery and characterization of satellite galaxy systems is among the most important goals in the field of extragalactic astrophysics. Though much effort has been made in searching for satellite galaxies around Milky Way-mass hosts, the sample of satellites around lower-mass hosts is much less understood. I am presenting the results of an ongoing campaign to establish a statistical sample of satellites around Large Magellanic Cloud and Small Magellanic Cloud mass hosts (stellar mass between 10^8 to 10^{10} the mass of the sun). As part of the systematic search of areas around over 30 nearby low-mass hosts ($4 < d < 10$ Mpc), we have identified hundreds of candidate satellite galaxies in the archival Legacy Surveys imaging. The completed sample will provide quantitative constraints for galaxy formation physics and serve as an important benchmark for simulations to try and recover.