

## Searching for the most dark-matter dominated Galaxies with the DELVE Survey

Ultra-faint dwarf galaxies are among the oldest, faintest, and most dark-matter-dominated stellar systems known, which makes them excellent laboratories for probing the nature of dark matter. Over the past decade, the number of identified ultra-faint dwarf galaxies has nearly quadrupled due to advancements in large optical and near-infrared sky surveys. The Dark Energy Camera (DECam) on the 4m Blanco Telescope has been used to discover more ultra-faint dwarf galaxies than any other instrument. I will present the DELVE survey, which was designed to search for ultra-faint satellite galaxies using new and archival imaging data from DECam, covering over 20,000 square degrees of the high-galactic-latitude sky. I'll discuss the search methods used to discover dwarf galaxies in the survey and explore how the satellite galaxy population found in DELVE can be used to constrain dark matter properties. Specifically, by comparing observed satellite galaxy counts to predictions from various dark matter models, we can rule out models that either predict too few or too many galaxies. As a demonstration, I'll present a new application of this procedure to existing data from Dark Energy Survey and Pan-STARRS1 to obtain constraints on a mixed dark matter scenario that contains both cold and warm dark matter components.

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