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Constraining the Nature of Dark Matter with the Milky Way Satellite Galaxies

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The census of Milky Way satellite galaxies provides crucial tests of both galaxy formation models and the broader Cold Dark Matter paradigm. A total of 27 new Milky Way satellite candidates have been discovered in the last two years, primarily in data from the Dark Energy Survey. These discoveries may represent a 100% increase in the number of known Milky Way satellite galaxies, leading a huge advance in solving the missing satellite problem, if spectroscopic follow-up observations confirm the majority of these systems are dark matter dominated dwarf galaxies. Furthermore, many of these newly discovered dwarf galaxies are excellent targets for providing constraints on WIMP dark matter cross section and MACHO dark matter abundance with the spectroscopic follow-up analysis. In this talk, I will present the initial results from a spectroscopic campaign on the newly discovered dwarf galaxy candidates using 4-8 meter class telescopes in the southern hemisphere.

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