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Searching for Milky Way Satellites with the Dark Energy Survey¹

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We currently know of roughly two dozen satellite galaxies surrounding the Milky Way. Nearly half of these satellites were discovered in the last decade with the Sloan Digital Sky Survey (SDSS). As the nearest and most dark-matter dominated galaxies known, Milky Way satellites are unique laboratories for fundamental physics. Milky Way satellite galaxies probe the low-mass end of the matter power spectrum, provide a unique testing ground for CDM, and are pristine targets for indirect searches for dark matter annihilation. Due to the limited magnitude range and sky coverage of SDSS, the census of these objects is far from complete. We present results from a recent search for new satellite galaxies in the first year of Dark Energy Survey data and briefly discuss some implications for tests of fundamental physics.

¹on behalf of the DES Collaboration