

COLLOQUIUM

The present and future of the Sloan Digital Sky Survey

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The Sloan Digital Sky Survey (SDSS) has been mapping the universe for about 20 years at Apache Point Observatory (APO), through four phases of operation and with an evolving and expanding suite of capabilities. I will review its legacy in mapping large scale structure in the galaxy distribution, which was one of the key goals of the project at its beginning at the time of Fermilab's leadership, and which SDSS will finish its observations of in early 2019. I will describe how SDSS will continue to study the astrophysics of stars and galaxies using a unique suite of instrumentation at both APO and at Las Campanas Observatory, where we are now also operating. These surveys are measuring the dark matter content, stellar formation history, ionized gas properties, and internal structure of the Milky Way and nearby galaxies. The fifth phase of the program, SDSS-V, will greatly expand these investigations at both observatories with new capabilities allowing a more rapid and complete coverage of the entire sky.