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The Dark Energy Survey: status and science prospects

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The Dark Energy Survey Collaboration will soon begin a 5000 sq. deg. imaging survey of the southern galactic cap using a new 3 sq. deg., 520 Megapixel CCD camera, the Dark Energy Camera (DECam), with 5 filters (g,r,i,z and Y) mounted on the Blanco 4-meter telescope at the Cerro-Tololo Inter-American Observatory. Construction of DECam is complete, and installation and commissioning on the telescope are taking place in spring and summer 2012, with the expectation that the survey will begin in fall 2012. The survey data will be used to place new and tight constraints on the nature of dark energy via the history of the cosmic expansion rate and the growth of large-scale structure, using the four complementary techniques recommended by the Dark Energy Task Force: weak gravitational lensing, galaxy cluster counts, large-scale structure including baryon acoustic oscillations, and Type Ia supernovae. The science projections and prospects will be described, together with the status of the DECam installation and commissioning.

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