The LSST 10-year survey of the southern sky: what it will produce and how our department can use it

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Sharp Lab 215 4:00 p.m.

The Large Synoptic Survey Telescope (LSST) is the US flagship ground-based astronomical project of the 2020s, ranked top-priority in the 2010 report by the Committee for a Decadal Survey of Astronomy and Astrophysics. Starting in 2023, LSST will conduct a 10-year survey of the southern sky generating a "movie of the southern sky" with repeated observations every few days. Uniquely, LSST promises to enable a diverse science return, from Solar System Near Earth Asteroid studies, to studies of the most distant explosions in the visible Universe, to cosmology. LSST will produce an unprecedented amount of information-dense data: 20Tb/night, 75Pb of images over the life of the survey, two 3.2 gigapixel images per minute, 10 million real-time alerts per night delivered at 30 seconds cadence. This requires a significant lead-time to prepare for the fast-approaching LSST survey, including substantial advancements in data-science applied to astronomy. I will describe the LSST capabilities and expected data products to initiate a discussion about what LSST can do for the University of Delaware DPA and DSI.