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Exploring LSST's Ability to Discover Transiting Exoplanets

The Large Synoptic Survey Telescope will observe more than half the sky and will produce light curves spanning ten years for ~ 1 billion stars. These observations will include stars in the Magellanic Clouds, red dwarfs, and stars located in clusters and near the galactic bulge, all populations that have not usually been targeted by transiting planet searches. We examine LSST's ability to recover transiting planets as a function of exoplanet period and radius, as well as the efficiency with which these signals can be separated from signals caused by white noise. We also demonstrate the value of LSST's deep drilling fields, selected fields that will be observed at high cadences and probe how stellar and exoplanet population distributions will impact exoplanet yields.