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FINDING UNIQUE EXOPLANETS WITH ULTRASAT

Abstract

ULTRASAT is a wide field UV orbital observatory designed to survey the sky for astrophysical transients. The telescope will stare at each field of view of $210\,deg^2$ for up to 6 months, measuring the flux of all point sources continuously to high precision (relative precision no worse than 1%, with a goal of 0.1%). Such long, high-cadance, high-precision and continuous light curves lend themselves naturally to transiting exoplanets searches. While not part of ULTRASAT's primary mission goals, significant opportunities are presented. In particular, ULTRASAT's Near UV (220-280nm) bandpass and unusual pointing (for transit searches) will allow it to be sensitive to exoplanets in different populations than other longer-wavelength surveys: younger hotter stars, white dwarfs, galactic halo stars and more.