

Abstract Submitted
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Waves in an accretion disk: nodal superhumps versus permanent superhumps in V378 Pegasi KENIA VELASCO, F.A. RINGWALD, JONATHAN ROVETO, California State University, Fresno — First science results from a new observatory, Fresno State's station at Sierra Remote Observatories, are presented. The nova-like cataclysmic variable V378 Pegasi (PG 2337+300) is discovered to show variable, often sawtooth-wave variations in its light curve, which have a period of 3.22 hours. These variations are present in light curves taken in 2001, 2008, and 2009, and have amplitudes between 0.2 and 0.4 magnitudes, as detected through a clear filter. We identify these as waves in this close binary star system's accretion disk, which are related to the superhump phenomenon shown by SU UMa stars. We also present the results of a radial velocity study to measure the orbital period, and discuss physical models for the variation in V378 Peg: either permanent superhumps, in which the disk is made elliptical and precessed by tidal forces from the stars' pronounced mass ratio, or nodal superhumps, from a tilted disk. We also discuss the evolutionary status of V378 Peg: at just above the period gap, this system may provide a critical test of cataclysmic variable evolution theory.

Kenia Velasco
California State University, Fresno

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