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1981 UBVR PHOTOMETRY OF UV Psc

As part of an on-going program of UBVR photometry of RS CVn binaries, we have observed the short-period system UV Psc (BD $+6^{o}189$) in October and November of 1981. The observations were made with the University of New Mexico's 61-cm Capilla Peak Observatory telescope. A photon-counting system using a cooled (-20^{o}C) EMR 641A phototube was employed. The star BD $+6^{o}185$ (SAO 108761) was used as the comparison star.

The results of these observations are shown in Figure 1-4. Magnitudes are given in the instrumental UBVR system. The data has been folded so that both primary and secondary minima are clearly visible and the presence of any distortion wave more easily detected. The statistical error of any single point is on the order of ± 0.01 magnitude. The phases were calculated using HJD=2443463.3493 + 0.861046 E (Oliver, 1974; IBVS #1415). Table I gives a phase log of the observations.

Few observations of UV Psc have been published to date. Oliver (1974) observed UV Psc photometrically and found that the light curve of UV Psc did not have any large asymmetries. Also, Oliver presented a light curve made by Carr in 1968. The similarities between the light curves of Oliver and Carr indicated that UV Psc had a rather consistent light curve. Previous observations we made in 1979 and 1980 (Zeilik et al., 1981; IBVS #2006) did not show any evidence for an asymmetrical distortion wave, but did indicate that the system undergoes radical changes in its light curve.

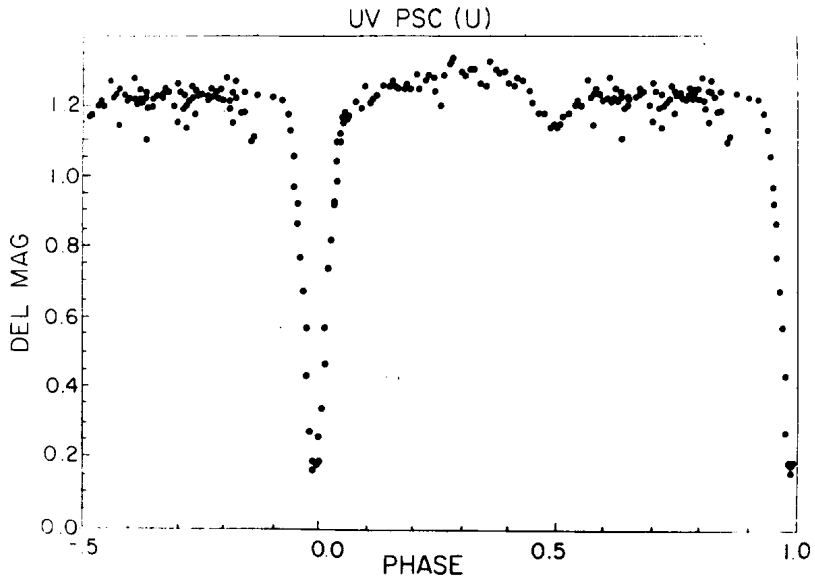

Figure 1

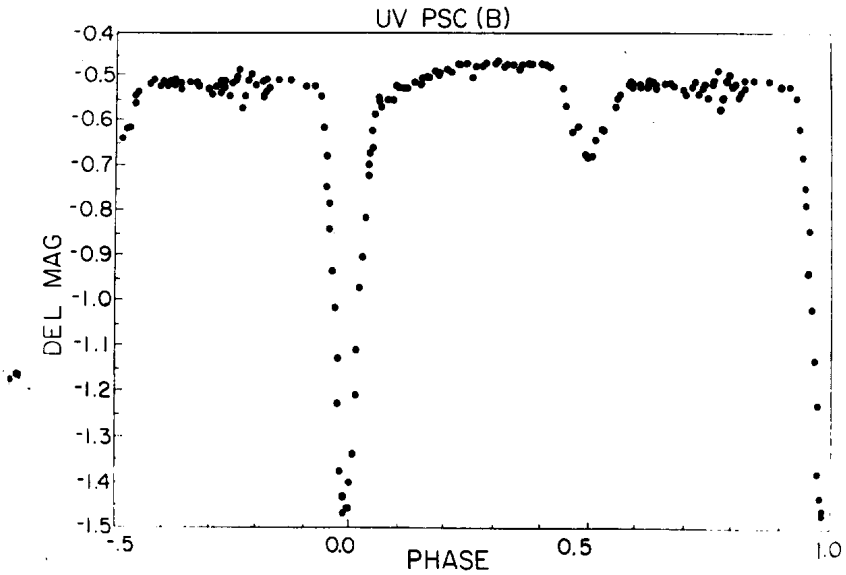

Figure 2

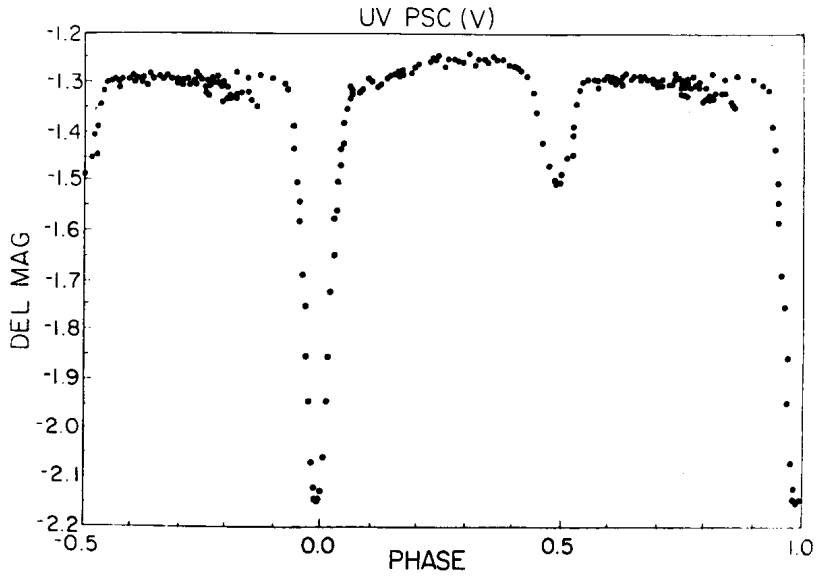

Figure 3

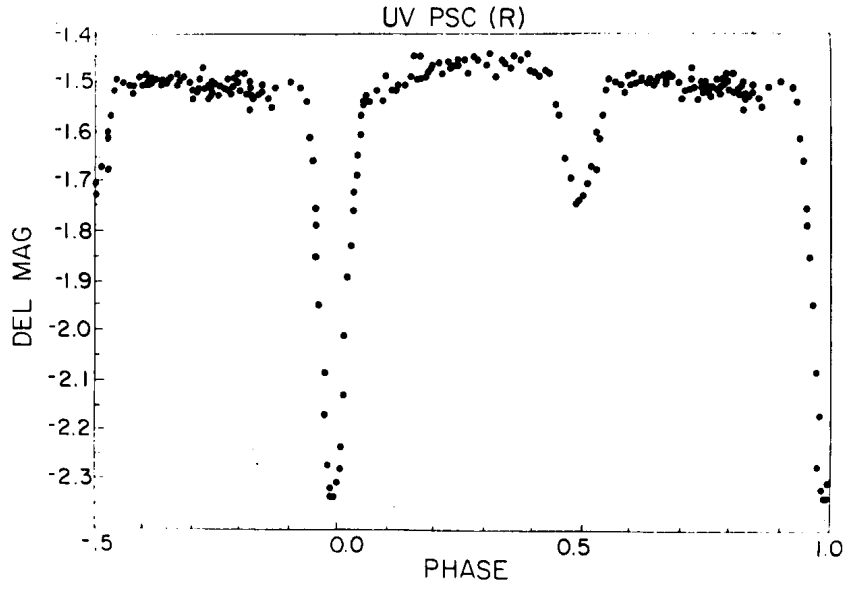

Figure 4

Our present light curves are much improved over those obtained in 1979 and 1980. The span of observations was on a much shorter time scale and phase coverage more complete. These observations do indicate the presence of an asymmetrical distortion wave with a maximum amplitude near 0.3 phase. A large asymmetry in the secondary eclipse is also evident. The system still appears to be quite active as noted by a large depression going into the primary minimum on 11/13/81, especially evident at U and V. Depths of the secondary minima relative to the primary remain consistent with those of the 1980 observations with the secondary depth increasing at longer wavelengths relative to the primary.

TABLE I - 1981 Phase Log of UV Psc

Date (UT)	Phase
10/18	0.62→0.72
10/20	0.83→0.06
10/24	0.58→0.64
10/26	0.73→0.83
11/3	0.04→0.25
11/5	0.25→0.58
11/13	0.74→0.87

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