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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 (+6°189) several times in 1979 and 1980. The observations were made with the University of New Mexico's 61-cm Capilla Peak Observatory telescope. A photon-counting system using a cooled EMR 641A phototube was employed along with KPNO filters; the R filter was not available until fall 1980. The star +6°185 (SAO 108761) was used as the comparison star.

The results of these observations are shown in Figure 1-4. The statistical error of any single point is on the order of ± 0.02 magnitude. The phases were calculated using $HJD = 2443463.3493 + 0.861046 E$ (Oliver, 1974; IBVS 1415).

Very few observations of UV Psc have been published to date. Popper (1969) noted that UV Psc had H and K emission from both components. He classified the system as being G2. 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. Oliver stated that his light curve was very similar to that of Carr's, with the exception of a depression in Carr's curve around 0.75 phase. The similarities between the light curves of Oliver and Carr indicated that UV Psc had a rather consistent light curve.

Our light curves appear quite different from those of Oliver and Carr. First, they do not show any evidence for an asymmetrical distortion wave in the light curve of UV Psc. Second, our observations do show that UV Psc is a very active system that undergoes radical changes in its light curve. At 0.0 phase, there is evidence for a large change in the depth of the primary minimum between the observations made on 12/16/1979 and those made on 10/8/1980. The difference in depth is greater at longer wavelengths. Also, there is a very large depression of the light curve just after the primary minimum at 0.1 phase on 12/16/1979. This depression is deeper at longer wavelengths. On 11/2/1980, the light

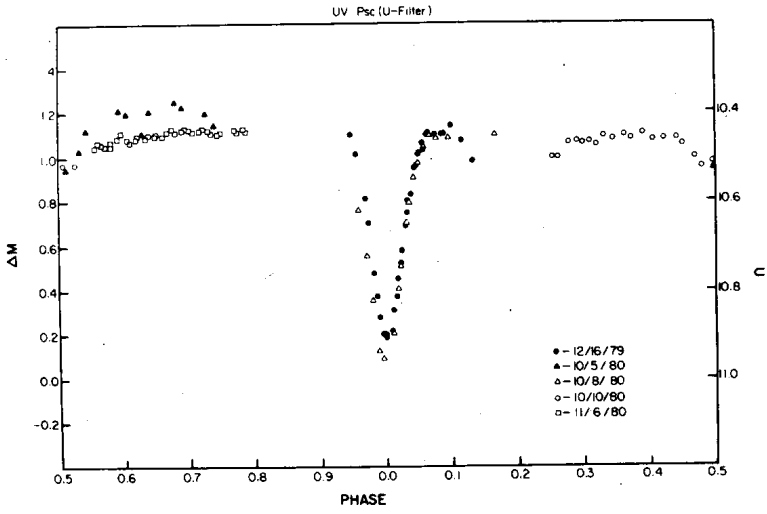


Figure 1

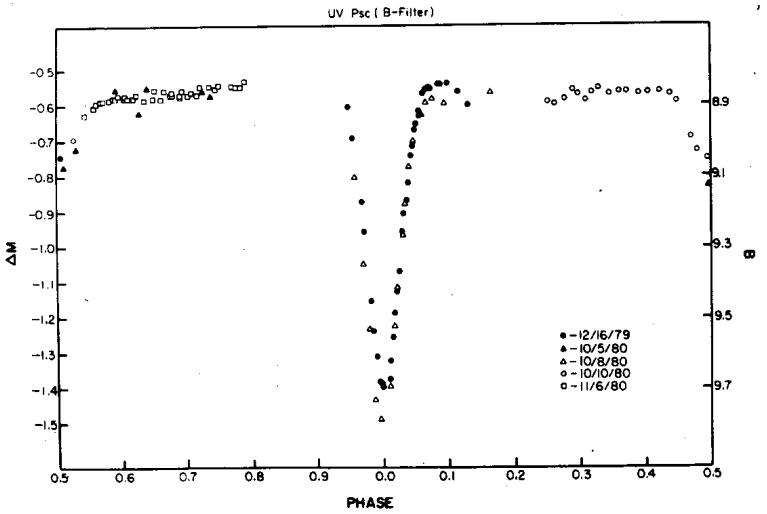


Figure 2

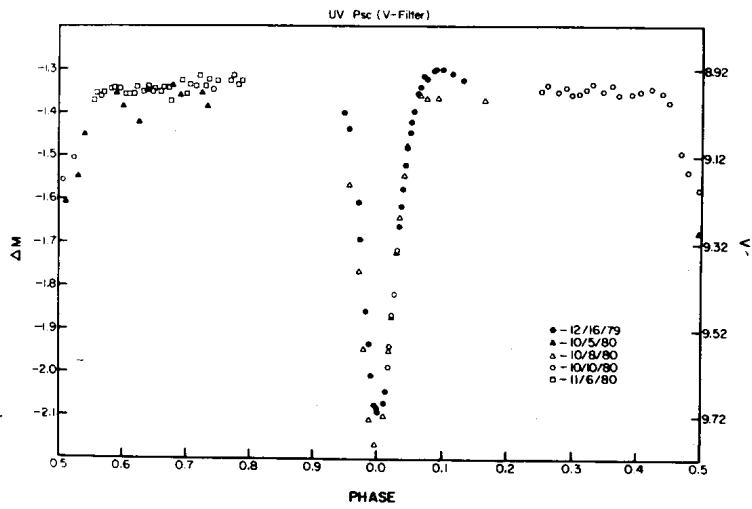


Figure 3

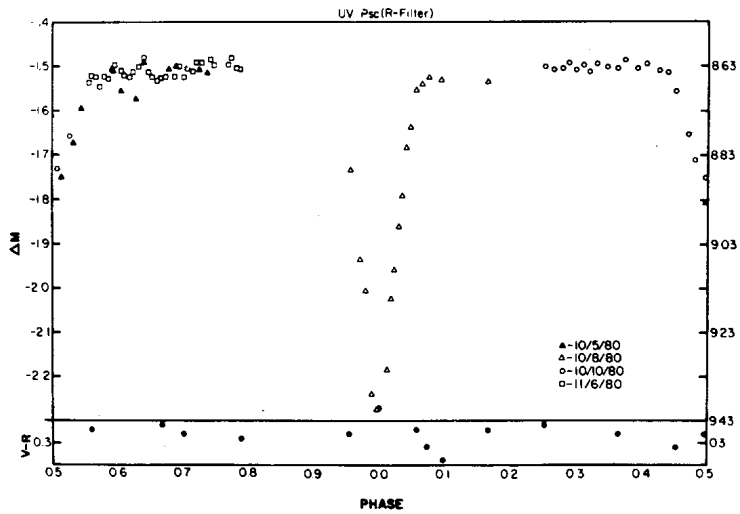


Figure 4

curve was depressed, only in the U, after the secondary minimum. Like the primary minimum, the secondary minimum increases in depth with longer wavelength.

We plan to continue our observations of UV Psc to fill the gaps in our light curves and to look for more unusual short-term features in them.

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