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PHOTOELECTRIC BEHAVIOUR OF V 818 Sco AND X-Per

The variable star V 818 Sco identified as the optical counterpart of Scorpius X-1 (Sandage et al., 1966) has been extensively studied by many photometric observers. Despite these extensive observations including those with high time resolutions, the nature of Sco X-1 is still uncertain. This star was observed with the 104 cm reflector, having a thermoelectrically cooled EMI 6094 S photomultiplier at the Uttar Pradesh State Observatory. Usual d.c. techniques were used to record the observations on four nights during April 1977 - May 1978. Star C (Lyutyi, 1972) was used as the comparison star.

Behaviour of the star through the U, B and V filters is shown in Figures 1-3 while Figure 4 shows observations of 16 May, 1978 in B filter when the star could not be observed through other filters. In these figures the differential instrumental magnitudes against the universal time have been plotted. The standard deviations in the U, B and V filters for a single observation of the comparison star are $0^m.065$, $0^m.035$ and $0^m.032$, respectively. The light curves show that the active and the quiescent states can last for hours at a time. It can also be seen that the magnitude of the star and shape of the light curve change from night to night. Durations of the anomalous behaviour (Figs. 1-4) are too long in our observations as compared to the short duration dips reported by Sharma et al. (1979), while the magnitude changes are comparable.

X-Per was also observed during 1974-1977 for 6 nights and no variability in UBV was recorded. Even a continuous monitoring on 28 February 1977 for three hours did not show any variability in B filter.

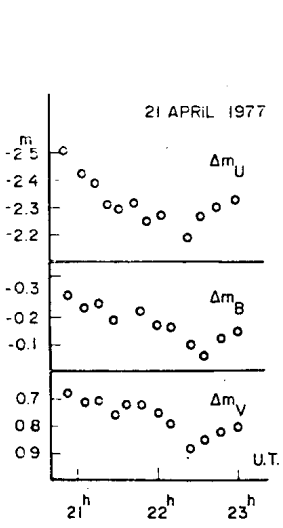


Fig. 1

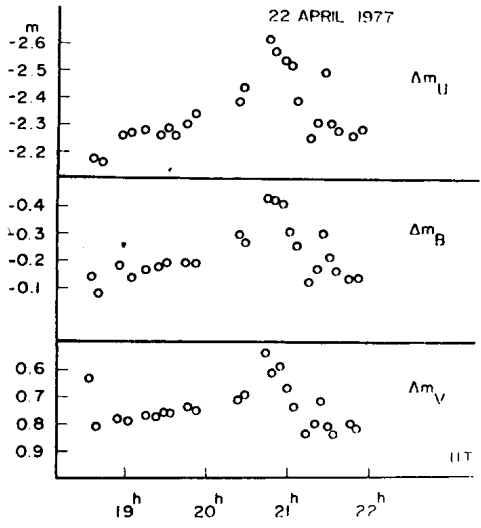


Fig. 2

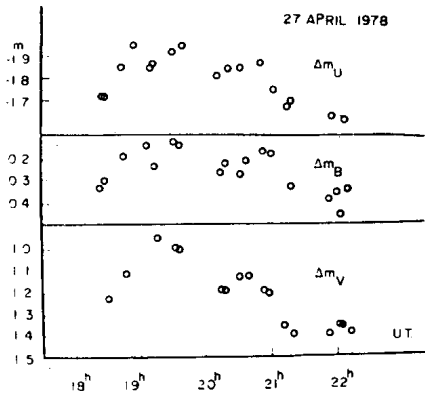


Fig. 3

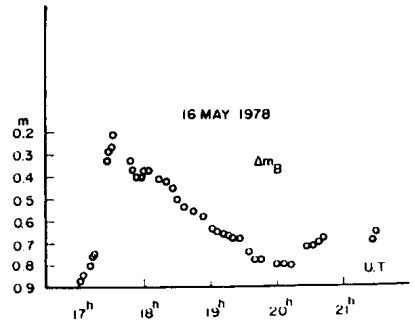


Fig. 4

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