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LIGHT VARIABILITY OF HD 220 140, OPTICAL COUNTERPART OF THE
X-RAY SOURCE H 2311 + 77

By means of an EXOSAT imaging observation, the star HD 220 140 (SAO 010 697, G5) was indicated by Pravdo et al. (1985) as the optical counterpart of the bright X-ray source H 2311 + 77. Available spectra show typical features of RS CVn variables, and it is well known that these stars are often X-ray emitters.

In order to confirm this identification, B and V photometry of HD 220 140 was carried out with the 50 cm Marcon telescope at Merate Observatory. Differential measurements were made with respect to SAO 010 663 (8.6, G0) and SAO 010 653 (8.3, F8). As a period of about 10 days was expected (Pravdo et al., 1985), hence HD 220 140 was observed performing 8-10 measurements per night, which were grouped into B and V normal points. The 12 points so collected from 13 August to 8 September gave a scattered light curve suggesting a short term variability. Three 6-hour runs in B colour were carried out in the nights 10, 11, and 12 September and three segments of a sine-shaped light curve were obtained, clearly indicating a shorter period than 1 day.

These measurements were also grouped into normal points which were put together with the previous observations. The resulting time-series was analysed by means of the least squares power technique and a period of 0.5767 day was derived with a variance reduction of 76%. No other period seems to be plausible. The application of the PDM method (Stellingwerf, 1978) gave the same period. The B-full amplitude is about 0.04 mag., however, as for many other RS CVn variables, it seems to be variable. The eclipsing binaries RT And ($P=0.6289^d$, F8V+G5 (or K0)V) and SV Cam ($P=0.5930^d$, G2-3V+K4V) have similar characteristics but in the case of HD 220 140 no eclipse has been observed.

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