

THE FLARE ACTIVITY OF TWO PECULIAR RED DWARFS

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ABSTRACT. Photoelectric observations of flares on the two red dwarfs Gliese 171.2A and CM Dra are reported.

We have carried out photoelectric observations of Gliese 171.2A in U-band on 4 and 5 December 1983 with the 1.25 m telescope of Crimean Astrophysical Observatory using a one-channel photon-counting photometer. During the first night five flares were observed, but the next night the star showed no activity. The photoelectric recordings are shown in Fig. 1.

The short period, low mass, eclipsing binary CM Dra was observed concurrently with IUE on July 5, 1986. Two partially overlapping flares (Fig. 2) were detected in the U-band.

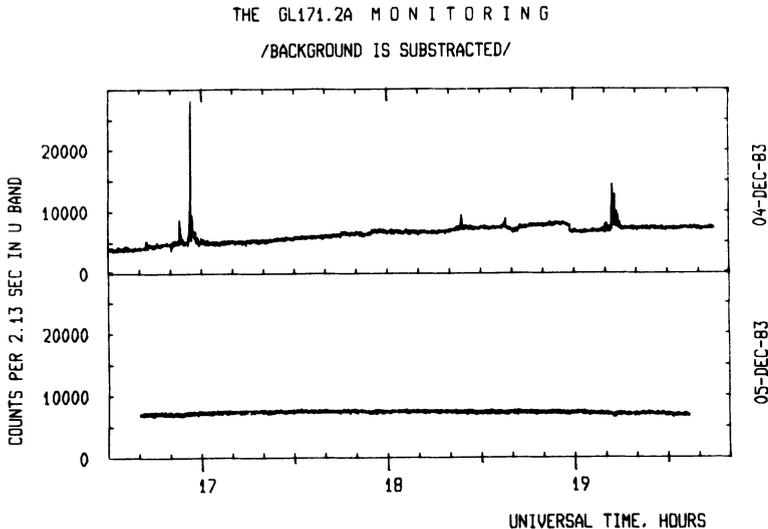


Figure 1. Flare monitoring of Gliese 171.2A.

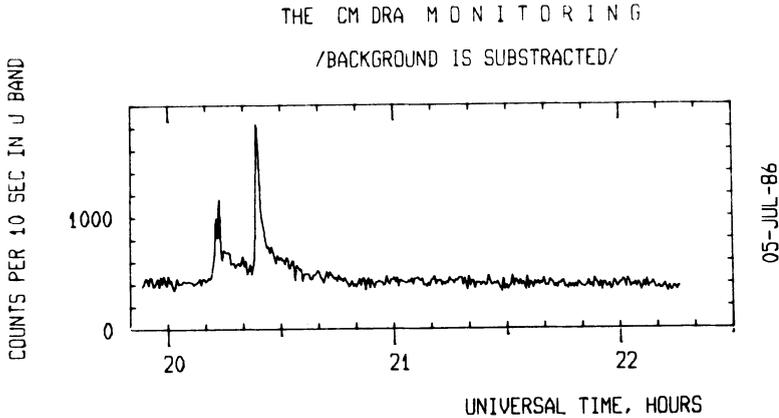


Figure 2. Flare monitoring of CM Dra.

PETERSEN: From my own (unpublished) observations at McDonald Observatory I can confirm the flare activity of Gliese 171.2A=V833 Tau. My flares are longer than yours and I do not have a feature in my results like the sharp drop in your data during the first night. What is the cause of this unusual feature?

ILYIN: The cause of this feature is not clear. It may be an equipment effect. The photometer system does not allow simultaneous observations of a comparison star so further discussion of this feature cannot be made.

BROMAGE: How many hours of monitoring were performed on CM Dra?

ILYIN: We monitored for 2.5 hours.

BROMAGE: I remember that previous observations indicated that this old (population II) star had a very low flare rate, about one flare in 40 hours. I assume that your observations do not change the statistics, because the star has been observed very little overall?

ILYIN: It is somewhat unexpected to record two flares in such a short time. Perhaps it is a random effect.