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SPECTRA OF FLARE STARS

Spectra of eight flare stars have been obtained at the Bulgarian National Astronomical Observatory at 50 and 200 Å/mm. The 2m telescope was equipped with a cassegrain spectrograph with a cooled Vidicon detector (Tsvetkov and Markov 1984), and produced spectra with a resolution between 2.5 Å and 5 Å. Exposure times varied between 2 and 20 minutes. All observations were done between March 9 and March 11, 1983. We present the observed results in Table I and in the Figure.

Table I

Star	Gliese No.	Hydrogen Balmer line emission	Ca II H and K emission
AD Leo	388	Yes	Yes
BF CVn	490 A	Yes	-
V1054 Oph	644 AB	Yes (a)	Yes
CU Cnc	G9-8	Yes (a)	Yes
VW Com	516 A	No	No
-	516 B	No (b)	No (b)
V774 Her	718	No	-
V654 Her	-	No	No

a) Structure in H α emission line. Spectroscopic binary.

b) Noisy spectrum, low signal-to-noise.

The first three stars in the Table are well known flare stars and their spectra show hydrogen Balmer lines as well as Ca II H and K lines in emission. CU Cnc also has a typical flare star emission line spectrum. Several flares have been recorded photographically (Haro et al. 1975, Jankovics et al. 1978) and photoelectrically (Pettersen 1982). The Figure shows the spectral region around H α . The emission line shows indication of splitting, a feature that had disappeared the next night. We suggest that CU Cnc is a spectroscopic binary. Some structure was also seen in the H α emission line profile of V1054 Oph, thus supporting the binary suggestion by Pettersen et al. (1984).

The last four stars in Table I show no sign of emission in either the hydrogen Balmer lines or the Ca II H and K lines. Photoelectric light curves of flares have been published for all stars (Gliese 516 A and B were observed jointly during the flare). The flare activity of V774 Her was confirmed by Chugainov (1984), and V654 Her was shown to be a giant by Tsvetkov and Pettersen (1984). Together with the objects discussed by Pettersen and Griffin (1980),

several non-emission line flare stars have now been identified.

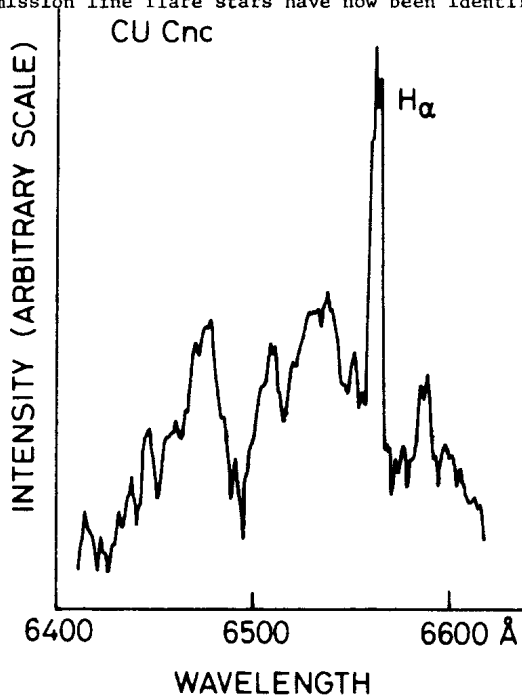


Figure 1

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