COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 1739

Konkoly Observatory
Budapest
1980 February 5

FLARE LIKE ACTIVITIES IN ECLIPSING BINARY DI Peg

The eclipsing binary DI Peg (BD +14°5006, HD 220619) was selected for UBV photometry because earlier photometric investigations drew attention to its interesting nature (Jensch, 1934, Rucinski, 1967 and Binnendijk, 1973). Rucinski (1967) derived an orbital solution by assuming 24 % extra light in V light. The magnitude and spectral type, according to him, are:

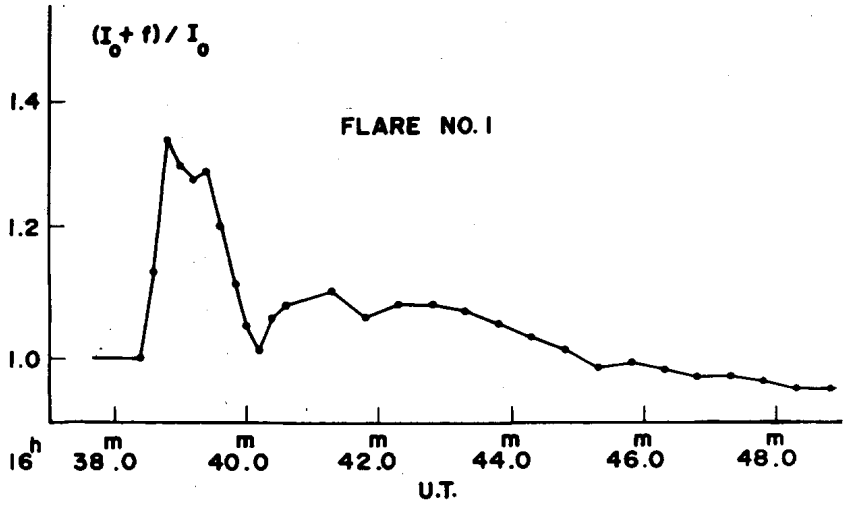
Magnitudes: $U=9^{m}.96$, $B=9^{m}.92$, $V=9^{m}.45$

Spectral type: F4 + G9 to K1.

The system was observed with the 104-cm telescope of Uttar Pradesh State Observatory using the conventional d.c. techniques of photoelectric photometry to obtain the full UBV light curves. The telescope is equipped with a refrigerated EMI6094S photomultiplier and standard UBV filters. A diaphragm covering 15 arc sec of the sky was used to exclude a nearby companion of magnitude $\simeq$14 (visual estimate).

During four nights (17,18 October and 11, 12 December 1979), we had about 15 hours of total observation. On December 12, 1979 during the secondary minimum two flares were observed.

Figure 1 and 2 show the light curves of the observed flares in B filter. The characteristics of the flares are given in Table I. Δm_B is the difference in instrumental B magnitude between the steady flux and peak of the flares and F(z) is air mass at the time of the peak of the flares.


(I0 + f) / I0
1.4
1.2
1.0
FLARE NO. 1
16h 38.0m 40.0m 42.0m 44.0m 46.0m 48.0m
U.T.

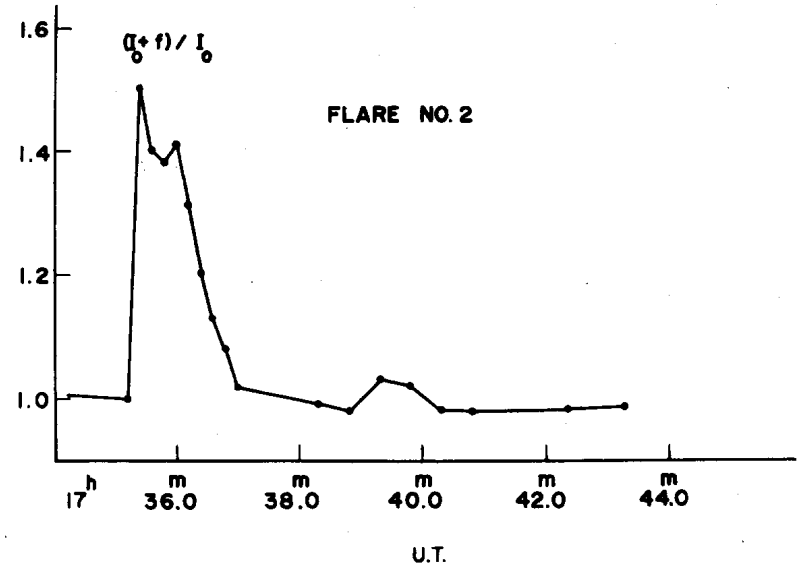

(I0 + f) / I0
1.6
1.4
1.2
1.0
FLARE NO. 2
17h 36.0m 38.0m 40.0m 42.0m 44.0m
U.T.

Table I

Flare No.	Time of occurrence of peak in U.T.	Duration rise time in minute	Duration decay time in minute	F(z)	Δm_B
1	$16^h38^m.8$	0.4	9.5	1.713	$0^m.31$
2	17 36.0	0.2	4.9	2.529	0.44

It can be seen from Table I and Figures 1 and 2 that the ratio between the rise time and decay time of both the flares are similar to the other flares observed in AD Leo, YZ CMi and UV Ceti (Sinvhal and Sanwal, 1977).

Acknowledgements: We would like to express our thanks to Drs. M.C. Pande, S.C. Joshi, C.D. Kandpal and to Mr. B.B. Sanwal for their helpful discussions and valuable remarks.

U.S. CHAUBEY
Uttar Pradesh State Observatory
Naini Tal, 263129, India

References:

Binnendijk, L.: 1973, Astron. J. 78, 97
Jensch, A.: 1934, Astron. Nachr. 252, 396
Rucinski, S.M.: 1967, Acta Astr. 17, 271
Sinvhal, S.D. and Sanwal, B.B.: 1977, I.B.V.S. No. 1263