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PHOTOELECTRIC FLARE OBSERVATIONS OF GLIESE 867 B

The flare star Gliese 867 B was observed on 1 October 1981, as part of an international programme (Butler and Rodono 1981). The suggested interval for monitoring the star Gliese 867 B was from 17:30 to 20:00 UT. We were able to secure continuous observations of the star from 16:12 to 19:36 UT through the 104-cm Sampurnanand reflector equipped with thermo-electrically cooled EMI 6094S photomultiplier tube. The star was monitored through the U and B filters of Johnson and Morgan system. The monitoring interval through the U filter extended from 18:51 to 19:36 UT while through the B filter the intervals ranged from 16:12 to 16:31 UT and from 16:42 to 18:47 UT. Two flares were recorded during the observations through the U filter but no flare was present in the B filter observations. The stellar intensity was measured against sky background only without observing any comparison star.

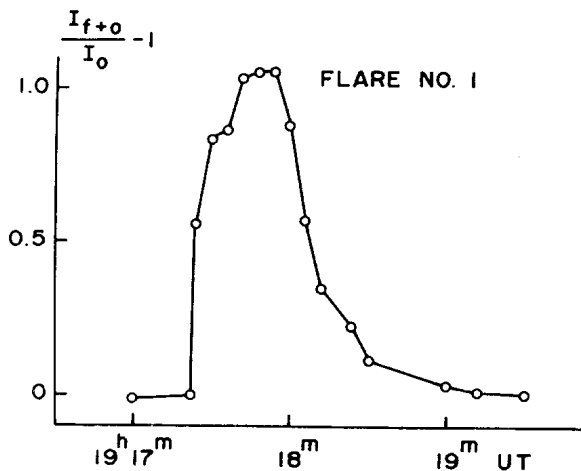


Figure 1

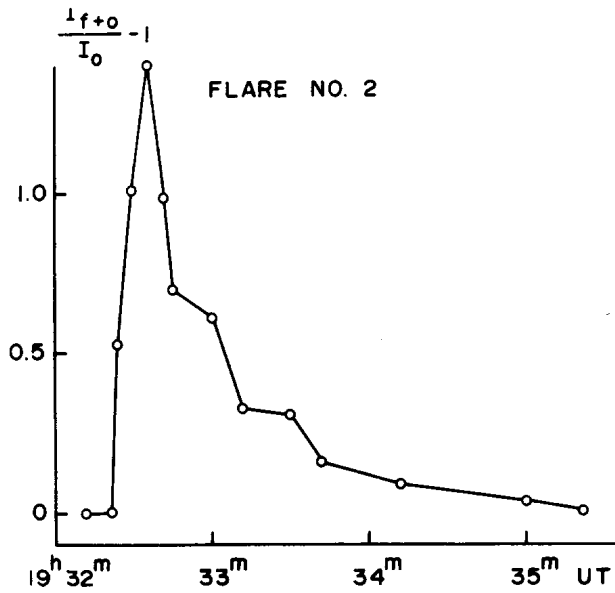


Figure 2

The light curves which represent the flow of excess radiation I_f radiated at a given moment expressed in units of flow I_0 from the star in normal non-excited state, with time, are given in Figures 1 and 2 (flare No. 1 and 2). These light curves show that they are Type I (Gurzadyan, 1980) flare events and no spikes are associated with them. Flare 1 is unusual at its maximum and the rate of development is also slow as compared to usual UV Ceti type flares. The light curve and the rate of development of flare 2 is normal of its kind.

Table I

Characteristics of the flares on Gliese 867 B (dM 4e: $V = 11^m.8$; $B-V = 1^m.61$
 $d = 8.3$ pc)

UT max	Flare duration (in minutes)		$\frac{I_{f+0}}{I_0}$	Δm_U	P (min)	F(z)	Energy released at flare max. 10^{29} ergs/s	Total emission during the event 10^{30} ergs/s
	Before max t_b	After max t_a						
19 ^h 17 ^m 9	0.50	1.6	2.05	0.78	0.82	2.22	0.45	1.08
19 ^h 32 ^m 6	0.25	2.8	2.40	0.95	0.89	2.40	0.52	1.17

Flare characteristics are given in Table I. The equivalent time of flare (P) was planimetered as the area under the light curve, to derive the total energy radiated by the flare event.

B.B. SANWAL
Uttar Pradesh State Observatory,
Manora Peak, Naini Tal-263129,
India

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Butler, J. and Rodono, M. 1981, Private Communication.
Gurzadyan, G.A., 1980, p 9, Flare Stars, Pergamon Press.