

COMMISSIONS 27 AND 42 OF THE IAU
 INFORMATION BULLETIN ON VARIABLE STARS

Number 3858

Konkoly Observatory
 Budapest
 16 March 1993

HU ISSN 0324 - 0676

SUSPECTED VARIABLE STAR NEAR V654 Her

BD+35°2891=SAO 65670 was used as a check star of V654 Her in the beginning of 1991. On 8 May, 1991 the star was found to flare. A group of 3 fast flares was detected, using a single channel photon-counting photoelectric photometer, attached to the 60 cm telescope at the Belogradchik Observatory (Antov and Konstantinova-Antova, 1992). The flares were observed in the U-band of the UBV system with integration time of 1 sec. Data for the flares are given in Table 1 in the following form:

- date;
- serial number of the flare;
- U.T. of the beginning;
- U.T. of the maximum;
- the duration of the flare;
- the amplitude of the flare $\Delta m(U)$, where $m(U)$ is the magnitude in U-band of the UBV system. $\Delta m(U)$ was calculated regarding the quiet state phase of the star;
- the standard deviation of random noise fluctuation $\sigma(\text{mag})=2.5 \log (I_0+\sigma)/I_0$, where I_0 is intensity in impulses of the quiet star, lessened with the sky background and σ is the standard deviation of random noise fluctuation in impulses.

Table 1

Date	Flare No.	U.T. beginning	U.T. max	Duration (sec)	$\Delta m(U)$	$\sigma(\text{mag})$
8 May 1991	1	23 ^h 07 ^m 07 ^s	23 ^h 07 ^m 17 ^s	34	0.17	0.03
Belogradchik	2	23 13 13	23 13 31	47	0.16	0.03
	3	23 14 11	23 14 30	36	0.13	0.03

The data processing has been made by Kirov, Antov and Genkov's program package (Kirov et al., 1991).

The light curves of the detected flares are shown in Figures 1a and 1b. The identification chart is given in Figure 2.

The authors carried out an intensive monitoring of the suspected variable star, using the two identical single channel photon-counting photometers, attached to the 60 cm Cassegrain telescopes at the Belogradchik Observatory and at the National Astronomical Observatory Rozhen. No more flares were detected during 24 hours 23 min 08 sec total monitoring time in 1991 and 8 hours 57 min 21 sec total monitoring time in 1992.

Estimates of the colors of the star in the UBV system were obtained at Belogradchik Observatory in 1992. HD 153472 was used as a comparison star for all the estimates. They are given in Table 2.

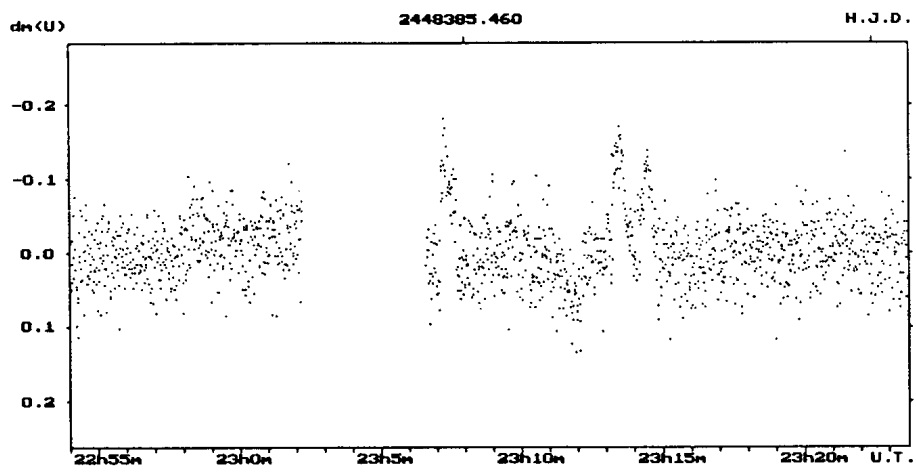


Figure 1a

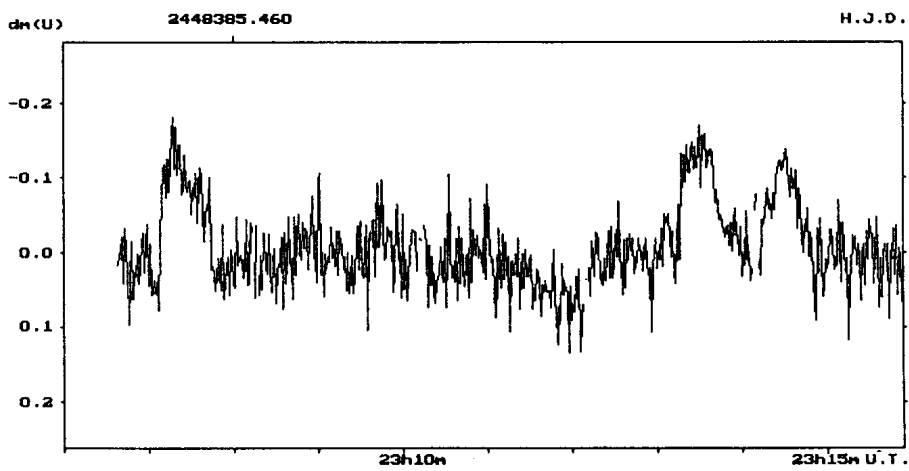


Figure 1b

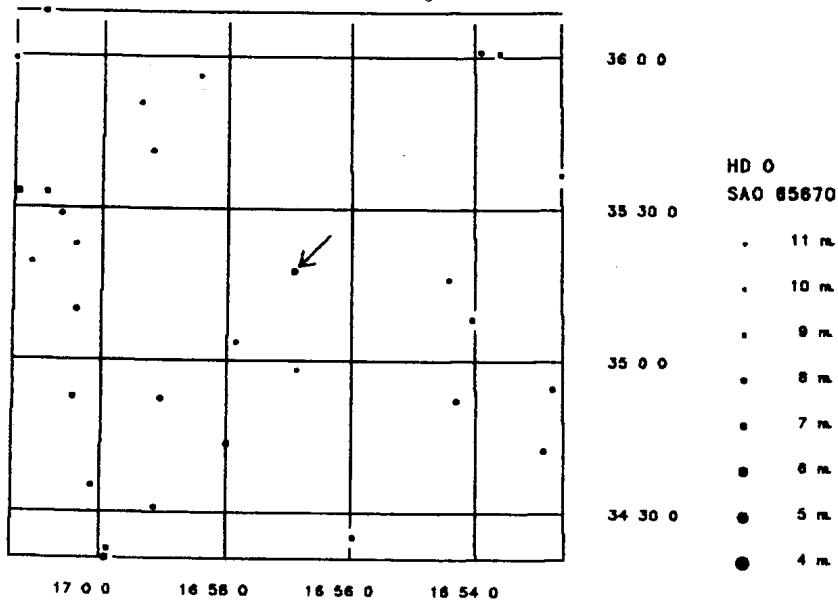


Figure 2. The identification chart is drawn using Valchev's SAO plot program package (Valchev, 1992). Center of the field: ($16^{\text{h}}56^{\text{m}}55^{\text{s}}$, $35^{\circ}17'47''$ (1993.0)). The suspected variable is indicated by an arrow.

Table 2

Date	U.T.	V	B-V	U-B	Notes
25/26 Apr 92	2 ^h 04 ^m	7.87	1.51	1.80	mean of 3 estimates
02/03 May 92	1 08	7.92	1.50	1.78	mean of 3 estimates
04/05 May 92	1 20	7.93	1.50	1.79	a single estimate
07/08 May 92	1 29	7.95	1.50	1.80	mean of 3 estimates

Mean values:

$V=7.92\pm 0.03$; $B-V=1.50\pm 0.01$; $U-B=1.79\pm 0.01$

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References:

- Antov, A. P., Konstantinova-Antova, R. K., 1992, IAU Coll., 136; Stellar Photometry, Trinity College, Dublin, Ireland, 4-7 Aug., ed. M.F. Bode, in press
- Kirov, N. K., Antov A. P., Genkov V. V., 1991, Compt. Rend. Bulg. Acad. Sci., 44
- Valchev, T., 1992, private communication