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FLARE STARS IN TAURUS

According to the regular search program of flare stars in stellar aggregates (Ambartsumian and Mirzoyan, 1971; Haro, 1976) we began systematic photographic monitoring observations by the multiexposure method (see, for example, Haro, 1968) in the region of the Taurus dark cloud complex.

The observations were carried out with the 21 in. Schmidt telescope of Byurakan Astrophysical Observatory on ORWO ZU-21 plates with 2-mm Schott filter GG 385 (B-light) and without filter (Pg-light). These observations were made during the period between October 1980 and December 1981. The observations covered a field $4.75^\circ \times 4.75^\circ$ around the star BD +23^o705 (R.A. = 04^h30^m, Decl. = +24^o10', 1950.0) (stellar association Taurus T 3). The multiexposure plates usually contained a series of six-exposures of 5 or 10 minutes each. The total patrolling time is equal to 127.87 hours.

The data on our observations including the number of plates, exposures and effective time of observations are presented in Table I.

Table I

Observational Material

Light	Number of plates	Number of exposures	T _{eff}	Mean limiting magnitude
B	38	226 (192x10 ^m +28x5 ^m +6x7 ^m)	35 ^h 02 ^m	16 ^m .5-17 ^m .0
Pg	101	569 (545x10 ^m +24x5 ^m)	92 ^h 50 ^m	17 ^m .0
Total	139	795	127 ^h 52 ^m	

Eleven new flare stars were discovered and some suspected flare events were detected. Data for the observed flare stars and suspected flare stars are given in Table II and Table III, correspondingly. In successive columns of these Tables the following data are presented:

1. Byurakan designation
- 2-3. Coordinates (1950.0)
- 4-5. Photographic magnitude at minimum and photographic amplitude

of the observed flare

6. Date of flare event
7. Moments of maximum brightness of stars (UT).

Table II

New Flare Stars

No.	R.A. 1950.0	Decl.	m _{pg}	Δm	Date	UT(max)
B1	4 ^h 19 ^m .8	+25° 28'	17 ^m .5(B)*	2 ^m .3	18/19.X.80	23 ^h 16 ^m .5
B2	4 21.5	23 48	17.1(B)*	1.1	28/29.I.81	17 23
B3	4 29.7	22 36	18.5(B)*	1.7	29/30.I.81	18 06.5
B4	4 25.2	24 18	20	5.1	5/6.II.81	18 00
B5	4 40.9	22 17	18.8	4.2	6/7.II.81	15 47
B6	4 31.8	26 28	17.1	1.2	6/7.II.81	20 15
B7	4 23.3	24 35	17.4	1.5	27/28.II.81	18 22
B8	4 22.7	21 51	19.5	5.0	9/10.III.81	17 54
B9	4 29.8	26 28	20.5	5.5	25/26.III.81	18 32
B10	4 28.2	26 25	20	5.3	30.IX/I.X.81	21 05
B11	4 32.4	22 54	17.8	2.2	22/23.X.81	01 56

Table III

Suspected Flare Stars

No.	R.A. 1950.0	Decl.	m _{pg}	Δm	Date	UT(max)
SB1	4 ^h 23 ^m .5	+24° 16'	16 ^m .9(B)*	0 ^m .7	27/28.I.81	17 ^h 05 ^m
SB2	4 21.5	23 45	17.3(B)*	0.4	28/29.I.81	17 23
SB3	4 21.4	24 45	16.9(B)*	0.6	28/29.I.81	18 03
SB4	4 31.3	23 02	17.0(B)*	0.8	29/30.I.81	18 54
SB5	4 34.5	21 51	15.7	0.7	3/4.II.81	16 37
SB6	4 31.4	26 27	18.2	2.4	4/5.III.81	16 45
SB7	4 32.4	21 54	17.5	1.5	9/10.III.81	17 44
SB8	4 27.1	22 53	16.4	1.0	9/10.III.81	18 04
SB9	4 33.2	26 16	16.6	1.6	25/26.III.81	17 27
SB10	4 34.9	22 59	17.2	0.9	2/3.X.81	23 23
SB11	4 33.5	23 29	17.5	1.5	26/27.X.81	01 03

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The observations were made in B light.

A.S. HOJAEV

Byurakan Astrophysical
Observatory, Armenia, USSR

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