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FLARE STARS IN THE REGION OF NGC 7000. III.

During the year 1974 we have continued our observations in the region of Cygnus. The telescopes, the methods of observation and the examination of plates were the same as given in previous papers (1), (2).

The observational data are summarized in Table 1.

Table 1

Exp.time (min)	Telescope	Number of plates	Number of exp.	T_{eff}
10	40"	94	543	90^h30^m
	21"	110	610	101 40
5	40"	56	336	28 00
	21"	30	177	14 45

To the total effective observational time given in Table 1 2^h38^m should be added which correspond to four other multiple exposure plates (21") not included in this Table, because their exposure times differ from 5 and 10 minutes. Some of the plates form pairs obtained by both telescopes simultaneously ($t_{eff} = 35^h32^m$).

Our results are listed in Table 2 which contains the following data: Byurakan (B) or Tonantzintla (T) serial number, coordinates for 1950.0, brightness (pg or U) at minimum light, amplitude of flares (pg or U), date of flare-up, telescope used, length of each exposure on the multiple exposure plate on which the flare-up was found and the observer.

Table 2

Design.	RA. 1950.0	D.	m_{min} pg/U	m pg/U	Date of flare-up	Tele-scope	Exp. time (min)	Observer
B17	$20^h55^m.6$	$+44^o32'$	17.3U	1.0U	25.07.1973	40"	10	Tsvetkov
B18	53.7	43 23	20.5U	3.7U	2.08.1973	40	10	"
B19	41.0	41 11	16.2U	1.5U	19.08.1973	40	10	"
B17	55.6	44 32	17.3U	2.2U	27.08.1973	40	10	"
"	"	"	16.2pg	1.4pg	"	21	10	Erastova
B20	21 01.3	44 22	16.9U	1.6U	28.08.1973	40	10	Tsvetkov
B17	20 55.6	44 32	17.3U	0.7U	31.08.1973	40	10	"
B19	41.0	41 11	16.2U	1.3U	4.09.1973	40	10	Erastova
B21	21 01.6	40 59	20.5pg	4.3pg	22.05.1974	21	5	"
B22	20 50.6	42 48	19.5U	4.5U	17.06.1974	40	10	"
B19	41.0	41 11	16.2U	0.9U	18.06.1974	40	10	"
B23	21 02.3	43 24	21.5U	5.6U	20.06.1974	40	10	"
B24	20 55.5	40 53	19.7U	3.5U	24.06.1974	40	10	Tsvetkov
B17	55.6	44 32	17.3U	2.5U	26.06.1974	40	10	"
T1	21 00.7	42 08	18.0U	0.7U	27.06.1974	40	10	"
B19	20 41.0	41 11	16.2U	1.0U	28.06.1974	40	10	"
"	"	"	15.3pg	0.4pg	"	21	10	Erastova
B25	50.7	44 25	20.0U	3.8U	11.07.1974	40	10	Tsvetkov
B26	51.3	42 26	21.5U	6.5U	13.07.1974	40	10	"
"	"	"	20.5pg	5.1pg	"	21	10	Erastova
B27	41.7	43 08	16.3U	2.4U	13.07.1974	40	10	Tsvetkov
"	"	"	15.2pg	0.8pg	"	21	10	Erastova
B28	32.0	44 13	17.0pg	3.2pg	15.07.1974	21	10	"
B29	57.1	42 41	18.1U	1.9U	21.07.1974	40	5	Tsvetkov
B30	53.9	40 45	19.5U	3.2U	22.07.1974	40	10	"
B17	55.6	44 32	17.3U	2.3U	23.07.1974	40	10	"
B31	51.0	43 05	19.0U	3.6U	23.07.1974	40	10	"
B32	39.6	41 38	18.8pg	3.6pg	25.07.1974	21	10	Erastova
B33	51.1	41 45	18.9U	3.5U	25.07.1974	40	10	Tsvetkov
"	"	"	17.9pg	2.2pg	"	21	10	Erastova
B34	42.3	42 13	18.0U	1.5U	26.07.1974	40	5	Tsvetkov

Table 2 (continued)

Design.	RA. 1950.0	D.	m_{min} pg/U	m pg/U	Date of flare-up	Tele-scope	Exp. time (min)	Observer
B35	$20^h41^m.4$	$+40^o07'$	20.2pg	3.6pg	12.08.1974	21"	10	Erastova
B2	21 00.0	42 26	20.0U	3.8U	12.08.1974	40	5	Tsvetkov
B17	20 55.6	44 32	17.3U	2.3U	18.08.1974	40	5	"
"	"	"	no registered		"	21	10	Erastova
B19	41.0	41 11	16.2U	1.1U	19.08.1974	40	10	Tsvetkov
B17	55.6	44 32	17.3U	0.6U	8.09.1974	40	10	"
B36	48.7	43 15	16.6pg	0.8pg	10.10.1974	21	10	"
B17	55.6	44 32	17.3U	I.6U	16.10.1974	40	10	"
"	"	"	16.2pg	0.4pg	"	21	10	Tsvetkov
B37	54.5	42 49	18.0U	1.4U	18.10.1974	40	10	Tsvetkov
B17	55.6	44 32	17.3U	0.5U	18.10.1974	40	10	"
B38	41.4	44 08	19.0U	1.8U	18.10.1974	40	10	"
B39	47.2	42 10	20.7U	4.6U	18.10.1974	40	10	"
"	"	"	19.7pg	3.8pg	"	21	10	Erastova
B40	40.3	44 08	18.5pg	1.0pg	6.11.1974	21	20	"
B3	53.9	44 09	19.5U	3.6U	7.11.1974	40	10	"

We found the flare of B28 on a plate the centre of which was displaced for about 2^o to the West from our usual centre. A few other plates which have displaced centre were taken with the 21" telescope during this observational season as well.

Thus 22 new flare stars have been found in 1974 during 201^h40^m total effective time of observations. Among them the stars B17 and B19 have shown 6 and 3 flare-ups, respectively during the 1974 season.

Some flares given in the first part of Table 2 have been discovered after the re-examination of plates of earlier observational periods. It is very interesting to note that B17 and B19 had rather high flare activity.

Together with the 23 flare stars from previous lists (1), (2), (3) and L. Rosino's private communication the total number of observed flare stars in the region studied reaches 51.

According to Ambartsumian's formulae (4) the total number of flare stars in this region should be greater than 374. This estimate is somewhat higher than the previous one, obtained in the second article of this series (2).

It is necessary to stress once more that no conspicuous flare events have happened with stars known to have H_α line in emission (5), (6), (7).

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