

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

Number 1799

Konkoly Observatory  
Budapest  
1980 June 5

PHOTOELECTRIC OBSERVATIONS OF THE FLARE STAR BD+55°1823 IN 1975

Continuous photoelectric monitoring of the flare star BD+55°1823 has been carried out at the Stephanion Observatory ( $\lambda = -22^{\circ}49'44''$   $\varphi = +37^{\circ}45'15''$ ) during the year 1975 using the 30-inch Cassegrain reflector of the Department of Geodetic Astronomy, University of Thessaloniki. Observations have been made with a Johnson dual channel photoelectric photometer in the B colour of the international UBV system. The telescope and photometer will be described elsewhere. Here we mention only that the transformation of our instrumental ubv system to the international UBV System is given by the following equations:

for the time interval from 5-2-1975 to 24-6-1975

$$V = v_0 + 0.001(b-v)_0 + 2.278,$$

$$(B-V) = 0.908 + 1.037(b-v)_0,$$

$$(U-B) = -1.895 + 1.031(u-b)_0,$$

for the time interval from 25-6-1975 to 30-7-1975

$$V = v_0 + 0.119(b-v)_0 + 2.163,$$

$$(B-V) = 0.819 + 1.047(b-v)_0,$$

$$(U-B) = -1.509 + 1.006(u-b)_0,$$

and for the time interval from 31-7-1975 to 16-9-1975

$$V = v_0 + 0.046(b-v)_0 + 2.440,$$

$$(B-V) = 0.782 + 1.062(b-v)_0,$$

$$(U-B) = -1.612 + 1.063(u-b)_0.$$

The monitoring intervals in UT as well as the total monitoring time for each night are given in Table I. Any interruption of more than one minute has been noted. In the fourth column of Table I the standard deviation of random noise fluctuation  $\sigma(\text{mag}) = 2.5 \log(I_0 + \sigma) / I_0$  for different times (UT) of the corresponding monitoring intervals is given.

During the 46.88 hours of monitoring time no flare was observed.

Flare Star BD+55°1823, 1975

Table I

Date 1975	Monitoring Intervals (U.T.)	Total Monitoring Time	$\sigma$ (U.T.)
June			
13-14	21 <sup>h</sup> 25 <sup>m</sup> -21 <sup>h</sup> 54 <sup>m</sup> , 21 <sup>h</sup> 58 <sup>m</sup> -22 <sup>h</sup> 27 <sup>m</sup> , 22 <sup>h</sup> 31 <sup>m</sup> -22 <sup>h</sup> 49 <sup>m</sup> , 22 52-22 58, 00 41-01 00.	1 <sup>h</sup> 41 <sup>m</sup>	0.02(21 <sup>h</sup> 45 <sup>m</sup> ), 0.02(22 <sup>h</sup> 07 <sup>m</sup> ), 0.02(22 42 ), 0.02(00 44 ).
17	20 01-20 26, 20 39-21 11, 21 16-21 46.	1 27	0.03(20 12.), 0.02(20 55 ), 0.02(21 28 ).
18	20 32-21 00.	28	0.02(20 47 ).
27-28	20 00-20 29, 20 33-20 44, 20 48-21 01, 21 06-21 17, 21 20-21 41, 22 58-23 28, 23 33-00 01, 00 04-00 31.	2 50	0.02(20 15 ), 0.04(20 37 ), 0.02(20 51 ), 0.02(21 13 ), 0.03(21 26 ), 0.03(23 11 ), 0.03(23 40 ), 0.03(00 12 ).
28-29	22 20-22 46, 22 49-23 15, 23 18-23 44, 23 58-00 31, 00 36-00 57, 01 01-01 25.	2 37	0.03(22 26 ), 0.02(22 56 ), 0.03(23 20 ), 0.03(00 11 ), 0.03(00 43 ), 0.03(01 09 ).
July			
4- 5	20 26-20 55, 21 00-21 28, 21 33-22 00, 22 27-22 54, 23 00-23 35, 23 40-00 10, 00 13-00 20, 00 35-01 00, 01 04-01 37.	4 01	0.01(20 35 ), 0.01(21 20 ), 0.01(21 49 ), 0.01(22 38 ), 0.01(23 19 ), 0.02(23 59 ), 0.02(00 42 ), 0.02(01 07 ).
5- 6	19 38-20 06, 21 24-22 00, 22 05-22 19, 22 30-22 58, 23 04-23 27, 23 30-23 42, 23 58-00 33, 00 36-01 01, 01 06-01 31.	3 46	0.02(19 46 ), 0.01(21 38 ), 0.01(22 13 ), 0.01(22 37 ), 0.02(23 17 ), 0.02(00 19 ), 0.01(00 42 ), 0.02(01 15 ).
8- 9	21 09-21 35, 21 39-22 12, 22 35-22 52, 23 06-23 27, 23 41-00 07, 00 11-00 26, 00 28-00 43, 01 02-01 37.	3 08	0.02(21 12 ), 0.02(21 53 ), 0.02(22 42 ), 0.03(23 19 ), 0.02(23 58 ), 0.02(00 30 ), 0.02(01 20 ).
9-10	20 42-21 10, 21 13-21 42, 21 45-22 13, 22 28-22 59, 23 02-23 32, 23 36-00 02, 00 21-00 49, 00 52-01 16, 01 22-01 37.	0 01	0.01(20 56 ), 0.02(21 29 ), 0.01(22 01 ), 0.02(22 46 ), 0.02(23 16 ), 0.02(23 53 ), 0.02(00 37 ), 0.02(01 05 ), 0.02(01 28 ).

Table I (Continued)

10-11	20 <sup>h</sup> 55 <sup>m</sup> 21 <sup>h</sup> 23 <sup>m</sup> , 21 <sup>h</sup> 26 <sup>m</sup> 21 <sup>h</sup> 42 <sup>m</sup> , 21 <sup>h</sup> 45 <sup>m</sup> 21 <sup>h</sup> 57 <sup>m</sup> , 22 00-22 32, 22 46-23 14, 23 17-23 46, 23 49-00 04, 00 07-00 19, 00 35-00 57, 01 00-01 11.	0.02(21 <sup>h</sup> 09 <sup>m</sup> ), 0.02(21 <sup>h</sup> 47 <sup>m</sup> ), 0.02(22 20 ), 0.02(22 57 ), 0.02(23 35 ), 0.02(24 00 ), 3 <sup>h</sup> 25 <sup>m</sup> 0.02(00 48 ).
13-14	20 16-20 35, 20 40-21 07, 21 12-21 44, 22 01-22 29, 22 35-23 03, 23 08-23 32, 23 35-23 40, 23 56-00 31.	0.02(20 30 ), 0.02(20 48 ), 0.02(21 30 ), 0.02(22 23 ), 3 18 0.02(22 57 ), 0.02(23 23 ), 0.02(00 09 ).
15-16	20 57-21 23, 21 27-21 37, 21 41-21 49, 21 55-22 24, 22 46-22 54, 22 57-23 14, 23 18-23 27, 23 31-23 41, 23 44-23 57, 00 02-00 14, 00 16-00 27, 00 42-00 53, 00 56-01 07, 01 15-01 24, 01 26-01 37, 3 15	0.02(21 16 ), 0.02(21 34 ), 0.02(22 10 ), 0.02(23 05 ), 0.02(23 47 ), 0.02(00 10 ), 0.03(00 49 ), 0.03(01 32 ).
17-18	20 37-21 10, 21 14-21 38, 21 41-22 06, 22 22-22 49, 22 54-23 04, 23 10-23 21, 23 27-23 55, 00 14-00 25, 00 29-00 42, 00 46-01 17, 01 23-01 32, 01 35-01 39. 3 49	0.02(21 01 ), 0.02(21 25 ), 0.02(22 00 ), 0.02(22 39 ), 0.02(23 15 ), 0.02(23 44 ), 0.02(00 31 ), 0.02(01 02 ), 0.03(21 27 ).
18-19	22 44-23 12, 23 17-23 29, 23 31-23 44, 23 49-24 00, 00 04-00 15. 1 15	0.03(22 54 ), 0.03(23 33 ), 0.04(23 56 ),
24-25	21 20-21 48, 21 52-22 21, 22 24-22 54, 23 11-23 39, 23 44-00 14, 00 18-00 51, 01 15-01 40. 3 23	0.05(21 35 ), 0.05(22 09 ), 0.06(22 35 ), 0.08(23 30 ), 0.06(23 54 ), 0.09(00 36 ), 0.10(01 24 ).
August		
5	21 50-22 21, 22 23-22 51, 22 54-23 22. 1 27	0.02(22 09 ), 0.03(22 41 ), 0.03(23 08 ).
10	19 25-19 54, 19 55-20 29, 20 31-21 00. 1 32	0.02(19 40 ), 0.03(20 11 ), 0.02(20 46 ).
11	19 46-20 14, 20 15-20 44, 20 47-21 20. 1 30	0.02(19 59 ), 0.02(20 30 ), 0.03(21 01 ).
	TOTAL 46 <sup>h</sup> 53 <sup>m</sup>	

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