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PHOTOELECTRIC OBSERVATIONS OF THE FLARE STAR AD Leo

Continual photoelectric monitoring of the star AD Leo was realized on the 50 cm reflector of the Byurakan observatory during the series of co-operative observations of this star (10-24 February 1969). The observations were done in B approximately. The results of observations are:

1.- Coverage

Date of observations	Coverage UT
15-II-1969	1730-2400
16-II-1969	0000-0015
21-II-1969	1904-1913, 1930-1957, 2000-2032, 2035-2112, 2114-2200,

2.- Total coverage 9h 16<sup>m</sup>

3.- The limiting magnitude for these two nights was  $m_{lim} = 14.13$  (the normal B magnitude of AD Leo 10.90) and  $\sigma$  (mag) = +4.42

4.- No flare activity was noticed.

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FLARES OF AD LEONIS

The flare star AD Leo was observed photoelectrically for about 13 hours during the February 1969 international campaign. The continual photoelectric monitoring was carried out by the 24" telescope at the Konkoly Observatory using an EMI 9502B photomultiplier, Schott 13-BG12 filter combination and a quartz Fabry lens.

As comparison star we used the companion star at 1:7 N to AD Leo.

Table 1 shows the time of monitoring.

Table 1.

Date of observations	Coverage UT
1969 February 10	2104-2116, 2123-2141, 2150-2206, 2215-2231, 2238-2255, 2301-2317, 2323-2339, 2351-2400,
11	0000-0007, 0011-0027, 0031-0046, 0049-0108, 0110-0126, 0130-0145, 0150-0206, 0210-0226, 0231-0245, 2049-2057, 2101-2116, 2119-2135, 2138-2153, 2156-2210, 2213-2228, 2238-2254, 2257-2313, 2316-2333, 2333-2349, 2351-2400,
12	0000-0007, 0009-0025, 0027-0038, 0040-0101, 0103-0119, 0121-0137, 0140-0159, 0201-0220, 0222-0237, 0239-0255, 0257-0315, 0318-0331, 0348-0357
13	2237-2253, 2255-2306,
18	2002-2018, 2021-2037, 2040-2112, 2113-2131, (2132-2148, 2152-2210, 2211-2224, 2225-2241)

Total coverage: 12<sup>h</sup>55<sup>m</sup> (parentheses indicate poor sky conditions)

The limiting magnitude for the nights was about  $m_{lim} = 13.2$ .

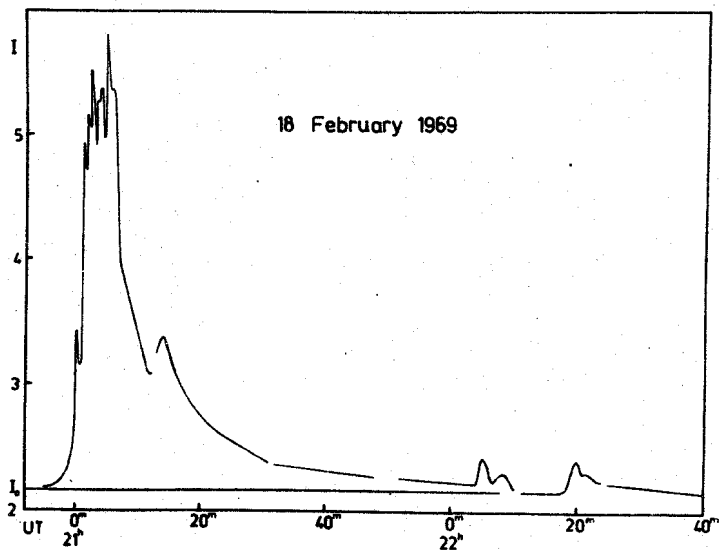
Some details of the recorded flares are summarized in Table 2.

Table 2.

UT of max	Maximum intensity ( $m_f - m_0$ )	Duration		Integrated intensity	Re-marks
		before max.	after max.		
1969, Febr.					
11 <sup>d</sup> 23 <sup>h</sup> 31 <sup>m</sup>	0.15 mag	-	-	-	(1)
18 <sup>d</sup> 21 <sup>h</sup> 05 <sup>m</sup>	1.06	9 min	45 min	18 min	(2)(3)
21 <sup>h</sup> 14 <sup>m</sup>	0.47	2	6	0.8	(2)(4)
22 <sup>h</sup> 05 <sup>m</sup>	0.12	0.6	5	0.4	(2)
22 <sup>h</sup> 20 <sup>m</sup>	0.1	1	4	0.5	(2)

Remarks: (1) doubtful  
 (2) definite  
 (3) with multiple maximum  
 (4) superposed on the descending branch of the one magnitude flare.

The light curves in intensity units are shown in the Figure.



Some measurements were also obtained in visual spectral band. From these we can conclude a visual amplitude of 0.45 magn. for the 1969 February 18<sup>d</sup>21<sup>h</sup>05<sup>m</sup> flare.

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