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AY LYRAE SUPEROUTBURST PHOTOMETRY

AY Lyr is a member of SU UMA subclass of dwarf novae. Main characteristic of this class is the occurrence of brighter and longer lasting "superoutbursts" in addition to normal dwarf nova outbursts. During these superoutbursts SU UMA stars show periodic light variations called "superhumps".

Although AY Lyr has been continuously monitored by AAVSO observers for many years and its visual light curves during eruptions are well defined (Danskin and Mattei, 1978), only one precise photometry of a superoutburst has been published by now (Patterson, 1979).

In this paper we present observations of AY Lyr made in September 1987. We started on the night of Sept. 21/22 and found that the star was already in superoutburst. Observations were continued on the following 8 nights (Table I).

Table I

No.	Date	Run Start (UT)	Duration (hours)
1	1987-09-21	19.3	4.2
2	1987-09-22	19.2	4.0
3	1987-09-23	18.3	1.8
4	1987-09-24	18.3	2.9
5	1987-09-25	18.3	5.3
6	1987-09-27	18.0	4.5
7	1987-09-28	18.1	2.8
8	1987-09-29	20.2	2.3

The observations were obtained with the 60 cm reflector of the Ostrowik Station of the Warsaw University Observatory using the Double-Beam Photometer System (Szymański and Udalski, 1987). The comparison star, BD+38^o3272 was monitored simultaneously in the second channel in order to remove effects of atmospheric transparency variations. Its constancy was checked for by occasional comparison with BD+38^o3276 star on each night. We made observations in white light with integrations lasting 10 - 30 seconds depending on weather conditions and star brightness.

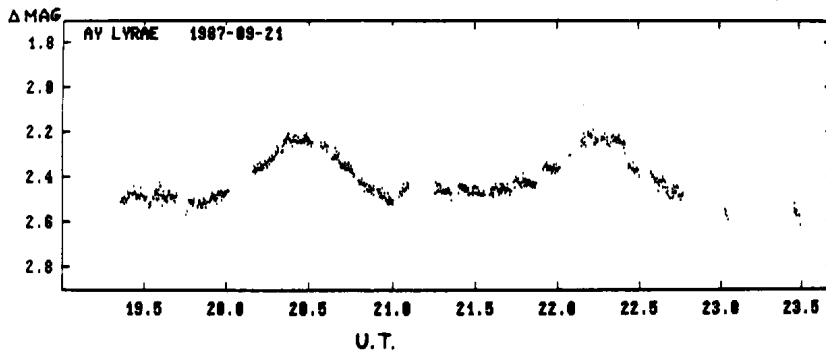


Figure 1

In Fig.1. the Sept. 21/22 light curve is presented. The superhumps with an amplitude of 0.3 mag were clearly visible and so they were on the following 4 nights. On the subsequent two runs they were partly masked by the flickering and finally they disappeared completely on Sept. 29/30.

Preliminary inspection of the data yields the superhump period of 109.4 min. This is somewhat larger than one derived by Patterson (1979) who obtained 108.8 min.

Full details of our analysis will be published elsewhere.

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