AY LYRAE SUPERHUMPS PHOTOMETRY

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ABSTRACT. During the superoutburst the superhumps with an amplitude of 0.2 mag in BV were observed. The superhumps period changed from 90 min at the maximum of the outbursts (12.8 V) up to 108 min at V = 13.2. These values are less than that obtained by previous authors.

Key words: Stars: Dwarf Novae, Binaries

Dwarf nova AY Lyr belongs to SU Uma subtype with a 24 days average cycle between the outbursts. The superoutbursts, in average, appear within 200 days.

Patterson (1979) and Szymanski and Udalski (1987) obtained precise photoelectric observations and found superhumps with a period of 108.8 and 109.4 minutes, respectively..

We have got new photoelectric BV observations during three outbursts. One of these outbursts was a superoutburst and lasted nealy 20 days. There have been obtained 105 observations in each filter.

Light at maximum of normal outbursts reached 13.4 V, at maximum of superoutbursts 12.8 V. (B-V) = 0.1 mag at maximum of the outburst.

During the superoutburst the superhumps with an amplitude of 0.2 mag in two filters were observed. The superhumps period changed from 90 min at the maximum of the outbursts (12.8 V) up to 108 min at V = 13.2. It is considerably less than it was obtained by the above mentioned authors. Unfortunately, they didn't show the phase of the outburst. If their observations of AY Lyr were taking place during the slump of the outburst, then the superhumps period should be considered 90 min exactly. Otherwise it changes from outburst to outburst.

Out of all systems of this type, which are included in the "Atlas of cataclysmic variables" by Khruzina and Shugarov (1991), the superhump period of AY Lyr is smaller than the orbital one (by nearly 20%). In such a way AY Lyr is either a unique system of the given type, or it's orbital period is not correctly determined.

References

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