SUPEROUTBURST OF V1504 CYGNI IN 2003

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ABSTRACT. The photometry of the SU UMa-type dwarf nova V1504 Cygni during the superoutburst is performed. The star displayed the superoutburst decay at a rate about 0.15 mag/day. Evolution of superhumps during the superoutbursts is discussed.

Key words: Stars: binary: cataclysmic; stars: individual: V1504 Cyg.

V1504 Cyg belongs to SU UMa-type dwarf nova. As a variable star it was discovered by Belyavskij (1936). Kurochkin (1981) first suggested this star to be a dwarf nova binary, Rajkov and Yuschenko (1988) found SU UMa subgroup in V1504 Cyg: two types of outbursts similar to the normal outbursts and superoutbursts. Nogami and Masuda (1997) discovered the superhumps during one of superoutburst and first counted period of superhumps. Pavlenko and Dudka (2002) received improved value of superhumps period, $P = 0.^{\rm d}072$.

CCD observations of V1504 Cyg have been carried out at the 380-cm Cassegrain telescope of the Crimean Astrophysical Observatory in summer 2003. V1504 observed mostly in the standard R (Johnson) system. The finding chart is presented in Fig.1. The brightness of comparison star is $14.^{\rm m}65$ in band R (Shugarov, private communication).

The superoutburst of V1504 Cyg lasts 15 days. The amplitude of the superoutburst is 3^m. The maximum brightness is about $13.^{\rm m}6$. During the plateau stage brightness decreases with a rate $0.^{\rm m}15$ /day.

The superhumps appear at the early phases of superoutburst. In Fig.3 it's presents an evolution of superhumps during three night in band R. At first night an amplitude of superhump was $0.^{\rm m}5$. Further an amplitude decreased and superhump lost its clear profile. During the superoutburst superhumps are destroyed and split gradually.

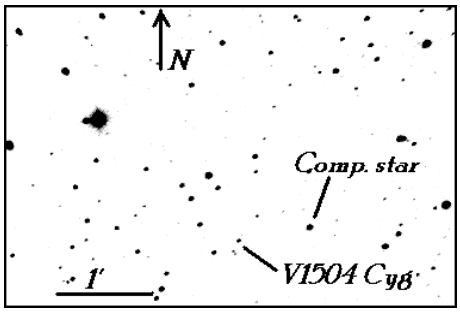

Figure 1: The finding chart.

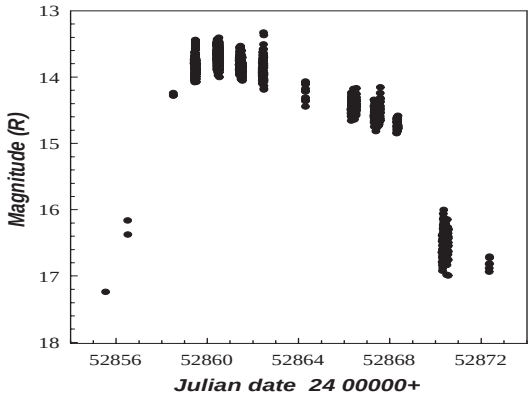

Figure 2: The light curve of superoutburst in band R.

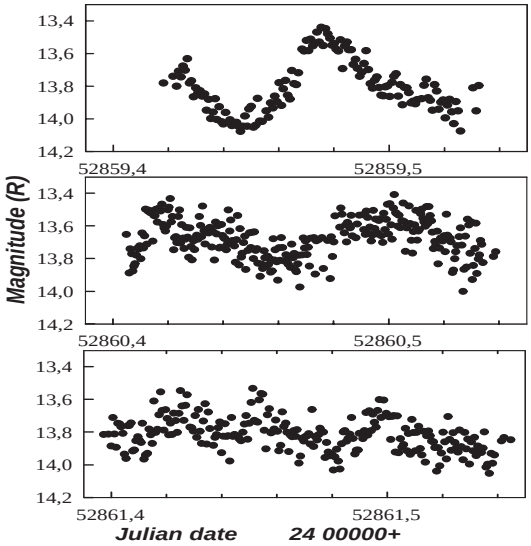

Figure 3: An evolution of superhumps during the first days of superoutburst.

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