

CCD-PHOTOMETRY OF CATAclySMIC VARIABLE ES Dra IN 2001

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ABSTRACT. On the base of our 34-day photometry of ES Dra we found its ~ 20 -d light variations with amplitude of $1^m.6$ and suggest this star could belong to the nova-like subclass of cataclysmic variable stars.

Key words: Stars: variable: cataclysmic: ES Dra

ES Dra was first discovered by Green et al. (1986). They suspected this star to be cataclysmic variable. In the Catalog of Downes et al. (1997), ES Dra is preliminary classified as the UG - type binary which varies in the region $13^m.9 - 16^m.3$. Several efforts were undertaken in order to get the value of orbital period of this binary. Andronov (1991) found $P = 3h$, however Ringwald (1995) obtained $P = 4.24h$.

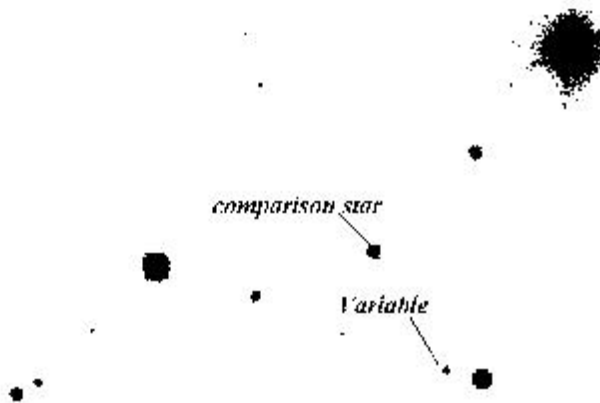


Figure 1: The finding chart of ES Dra. An additional designations of the binary are given accordingly to Downes and Shara (1993).

We made photometric observations of this binary during 34 nights in 2001 at the K-380 Cassegrain telescope of the Crimean astrophysical observatory in unfiltered light. In total we obtained 1732 brightness measurements of the variable and comparison star. We can see that ES Dra displays the long-term light variations with ~ 20 -d typical time and amplitude $1^m.6$.

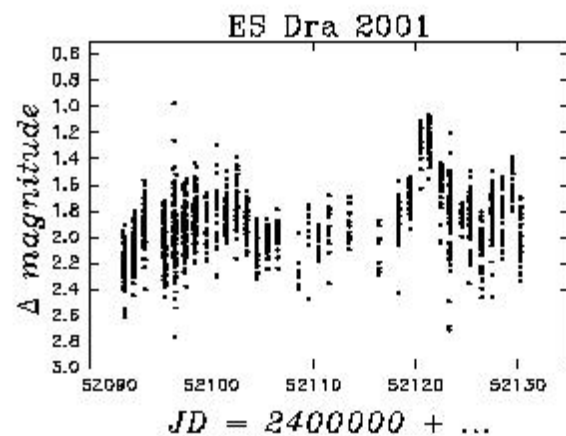


Figure 2: light curve of ES Dra in 2001. The stellar magnitude is given in respect to the comparison star ($m_{ph} = 14^m.8$).

The profile of the brightenings is changing from cycle to cycle. It seems that the ES Dra behaviour could be an attribute of rather nova-like star than that of a dwarf nova. Note that the brightness variations of the similar cycle was found in the SU UMa type binary RZ LMi (19d), classical nova V446 Her = Nova Her 1960 (22d), and nova-like RW Tri (25d) (R.K. Honeycutt et al., 1995). A detail analysis of the variability will be performed later.

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References

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