CG DRACONIS – A PARTICULARLY ACTIVE DWARF NOVA

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CG Dra is believed to be a U Gem type Dwarf Nova, whose discovery was announced by Hofmeister in 1965. In a later paper, Hofmeister suggested that CG Dra may be a member of the CN Ori group: this group comprises dwarf novae which exhibit rapid sequences of outbursts without well defined quiescent states in between the outbursts. However, very few observations of this star existed , so that the outburst behaviour was poorly characterised. A report in IBVS 5124 by astronomers at Kyoto University, which was based on a campaign in 1996, suggested an outburst frequency of less than 82 days. This was based on two observed outbursts, although the observational data was limited, and each outburst was only caught during the declining phase.

CG Dra was added to the ROP by Gary Poyner in 200; it is also on the VSS CCD observing programme, whose aim is to encourage people to take up CCD photometry.

CG Dra was detected in outburst by Jeremy Shears on 2005 April 9 at 16.09C, as shown in Figure 1 below. Subsequently, an intensive observing campaign has been

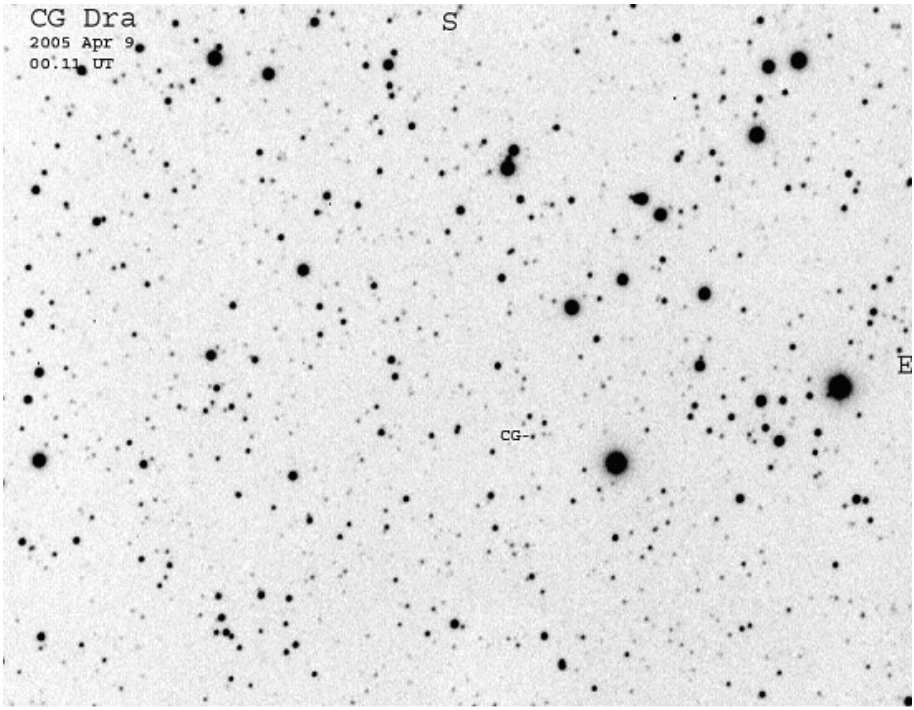

Figure 1, CG Dra in outburst, Jeremy Shears, 2005 April 9, 00.11UT. Takahashi FS102, 0.1 mm refractor, unfiltered CCD. Field 25' x 19'

mounted by several observers, including David Boyd, Roger Pickard, Gary Poyner (visual) and Jeremy Shears. The lightcurve in Figure 2 below, shows that several outbursts have been detected during the period April 9th to October 21st. In the second half of the observing period, there is the suggestion of an outburst period of 10 to 15 days. It is not clear whether there were less frequent outbursts in the first half, or whether outbursts were missed due to incomplete coverage. The fact that CG Dra is particularly active, and seems to spend little time in quiescence supports Hofmeister's idea that this may be a CN Ori star.

Time-resolved CCD photometry conducted by Boyd, Pickard, Shears and Vanmunster (CBA Belgium) has shown small-amplitude flickering. However, there is an intriguing hint of a 0.1 magnitude dip of 20 to 30 minutes duration in some of the data. Whilst there are many possible explanations, one is that the dip might be caused by (partial) eclipses. This needs to be investigated by further photometric runs covering multiple orbital periods; the orbital period is currently uncertain, however. One source [1] reports possible periods of 4h 32m or 5h 32m, although even these are unreliable; hence long photometric runs may be required to confirm or refute this hypothesis.

In view of the high frequency of outbursts, CG Dra will be dropped from the ROP (which is meant for stars having outburst periods of more than a year). However, CG Dra remains an intriguing star and fully warrants further attention from both visual and CCD observers.

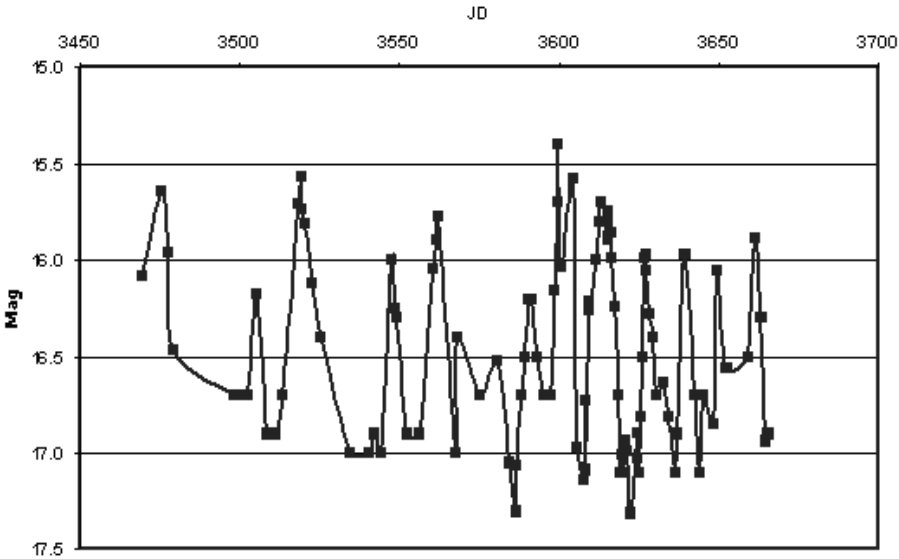

Figure 2. Light curve of CG Dra: Combined CCD and visual data from VSS and AAVSO QL. 2005 Apr 9 to Oct 21

References

[1] Bruch et al, Astron. Astrophys. 325, 601,1997