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1990 BV PHOTOELECTRIC OBSERVATIONS OF CG Cyg

The eclipsing binary CG Cyg was observed from 24 July through 1 Aug with the 1.2m Kryonerion telescope and a single channel photon counting photometer described by Dapergolas and Korakitis (1987). The photometer employs a high gain 9789QB phototube and conventional BV filters. Its output is fed directly to a microcomputer enabling rapid data access.

Photometric observations for this star have been reported previously by Dapergolas et al., (1988), Dapergolas et al., (1989a), Dapergolas et al., (1989b) and other investigators listed by Dapergolas et al. (1989a).

The data reduction method is the standard one and as a comparison star was used the BD +34° 4216. The constancy of the comparison star was verified by Milone et al. (1979). The data presented here were obtained with an accuracy of  $\pm 0.015$ mag.

Table I lists the dates of observations and phases covered whereas Figures 1 and 2 summarize the results for B and V colours.

TABLE I

Date	Phase
16-7-1990	.96 .17
18-7-1990	.08 .41
19-7-1990	.60 .97
20-7-1990	.35 .58
23-7-1990	.94 .23
24-7-1990	.48 .85
25-7-1990	.07 .52
26-7-1990	.03 .09
20-8-1990	.33 .60

In Table II the times of minima and the O-C values are listed for the V and B bands respectively. Times of minima

CG CYG (B)

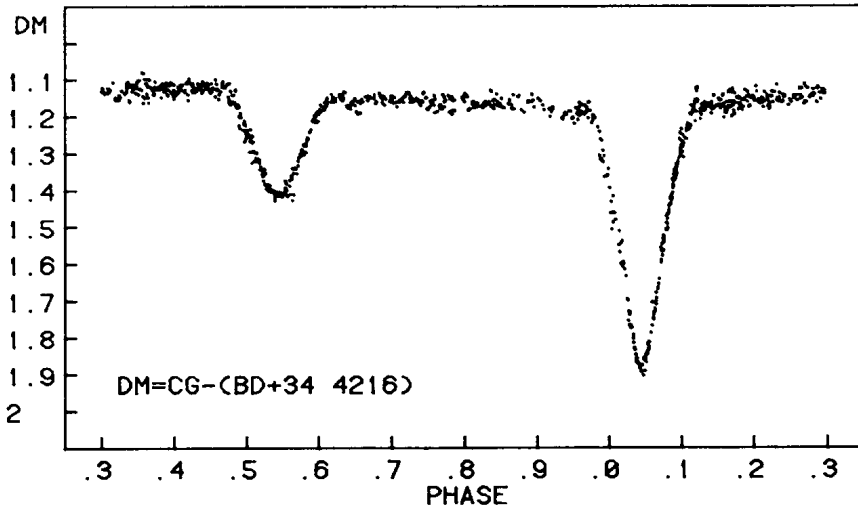


Figure 1

CG CYG (V)

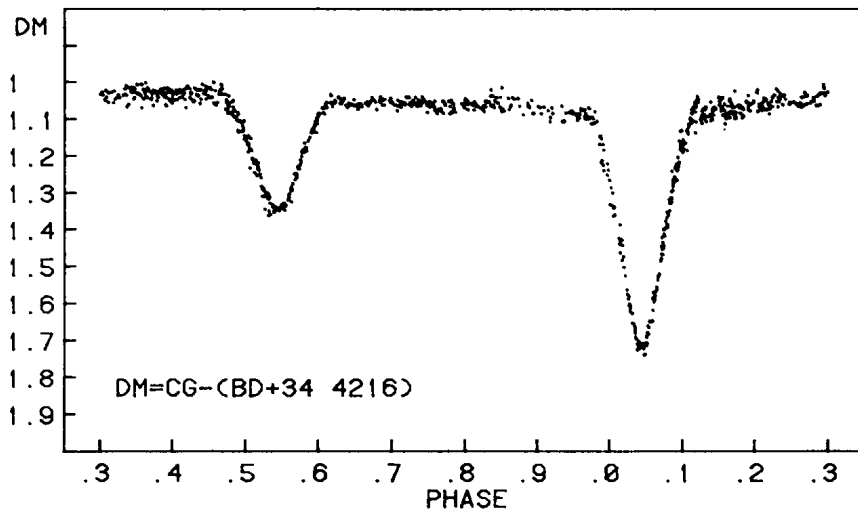


Figure 2

are calculated using the method described by Kwee and van Woerden (1956) whereas the O-C values were determined from the linear ephemeris  $T=2439425^d.1221 + 0.^d631141$  given by Milone et al. (1974).

TABLE II

Date	Type of minima	V COLOUR		B COLOUR	
		Heliocentric Jul. Day	(O-C) phase	Heliocentric Jul. Day	(O-C) phase
16/7	Primary	2448089.4531	0.043	2448089.4532	0.044
		$\pm 0.0002$		$\pm 0.0002$	
20/7	Secondary	2448093.5543	0.541	2448093.5577	0.547
		$\pm 0.0004$		$\pm 0.0003$	
23/7	Primary	2448096.3960	0.044	2448096.3961	0.044
		$\pm 0.0002$		$\pm 0.0002$	
24/7	Secondary	2448097.3431	0.544	2448097.3426	0.544
		$\pm 0.0003$		$\pm 0.0002$	
20/8	Secondary	2448124.4820	0.544	2448124.4821	0.544
		$\pm 0.0002$		$\pm 0.0002$	

From Fig. 1 and 2 it can be seen that there are irregularities outside the eclipse already reported by Milone et al. (1979); Dapergolas et al. (1989b) and Beckert et al. (1989).

The observed difference between the primary and secondary minima is 0.48mag for the B and 0.37mag for V whereas these values are 0.45mag and 0.39mag for 1989, 0.34mag and 0.30mag for 1988 and 0.41mag and 0.30mag for 1987 (Dapergolas et al., 1988; Dapergolas et al., 1989a; Dapergolas et al., 1989b).

From these values it can be seen that there is a variation in the difference of the two minima depths for both colours for the years 1987-1988, 1988-1989 and 1989-1990 with values -0.07mag, +0.11mag, -0.03mag for B and 0.00mag, +0.09mag and 0.02mag for V, probably due to the photospheric activity of the system.

From the times of minima found here and published by Dapergolas et al. (1989a), Dapergolas et al. (1989b) and Milone

et al. (1979) the residuals (O-C) show large variations which might be due to the continuous period variations of the system.

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