

COMMISSION 27 OF THE I. A. U.  
 INFORMATION BULLETIN ON VARIABLE STARS

Number 3006

Konkoly Observatory  
 Budapest  
 3 April 1987  
 HU ISSN 0374-0676

AN UNEXPECTEDLY EARLY FADING OF V644 CEN (CPD -60° 3278)

This star was discovered to be variable by O'Connell (1951) who observed the star fade by 0.65 magnitudes on plates taken between 1931 and 1950. O'Connell proposed that V644 Cen was an eclipsing variable having a period of at least 65 years and a minimum lasting 17 to 18 years. Gaposchkin (1951) examined Harvard patrol plates covering the period 1890 to 1949 and concluded that whilst the star underwent minor disturbances of approximately 0.2 magnitudes between 1901 and 1920, there was no evidence for a deep minimum until the one reported by O'Connell. Sahade (1952) noted that the star had a shell spectrum at the time of the 1951 minimum. Hopp and Kiehl (1977) reported analysis of Bamberg sky survey plates which showed that during the period 1964-1975 the star had returned to a new maximum light of approximately 8.86 mpg.

We observed this star in the Johnson UBV bands on 18 occasions between JD 2444742 and JD 2445809 during a shell star monitoring programme (Kilkenny et al. 1985). Our results (Table I and Figure 1) show that during this period

Table I:	MJD	V	B-V	U-B
	4742.327	9.911	0.083	-0.632
	4979.571	10.025	0.081	-0.585
	4979.573	10.021	0.082	-0.587
	4980.560	10.018	0.083	-0.591
	4980.565	10.031	0.075	-0.592
	5075.368	10.148	0.089	-0.433
	5101.406	10.100	0.096	-0.526
	5102.304	10.106	0.094	-0.528
	5106.284	10.096	0.096	-0.524
	5140.236	10.123	0.087	-0.496
	5419.429	10.235	0.077	-0.339
	5419.473	10.257	0.048	-0.342
	5420.490	10.228	0.077	-0.358
	5424.389	10.235	0.073	-0.355
	5427.419	10.262	0.072	-0.343
	5710.592	10.294	0.054	-0.405
	5715.592	10.327	0.046	-0.372
	5809.459	10.213	0.069	-0.365

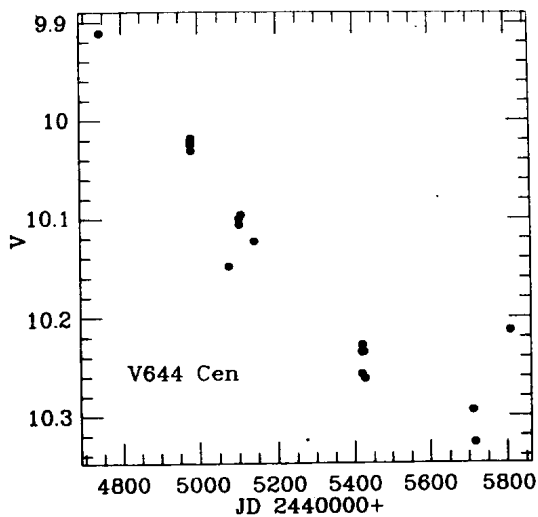


Figure 1

the star was fading steadily and towards the end of our programme had reached a V magnitude of approximately 10.3 (equivalent to mpg of 10.2) which is close to the value reported by O'Connell (1951) and Gaposchkin (1951) for the 1950 minimum. We obtained a single point which may indicate that the star was beginning to brighten again on JD 2445809, but this may be related to small fluctuations superimposed on the minimum such as was seen in the data of O'Connell (1951).

These results clearly show that the lightcurve is more complex than that of a simple eclipsing variable for which, on the evidence of the Harvard plates, no deep minimum would be expected until at least the year 2010.

The current minimum may last until the end of the decade and further observations of the star, both photometric and spectroscopic, would be valuable.

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