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**LSS2854 AND LSS2895 : TWO REDDENED  $\beta$  LYRAE SYSTEMS**

A recent note by Kilkenny et al. (1991) described a new  $\beta$  Lyrae type binary, LSS1160, discovered in a photometric study of reddened OB stars from the Stephenson & Sanduleak (1971) catalogue of Luminous Stars in the Southern Milky Way. This note reports two further eclipsing binaries found in the same programme.

The two binaries, LSS2854 and 2895, were observed during 1989–92 with UBV filters in the Modular photometer on the 0.5 m telescope at the Sutherland site of the South African Astronomical Observatory (SAAO). Three nearby reddened OB stars from the Stephenson & Sanduleak (1971) catalogue, LSS2571, 2863 and 3014, were used as local comparison stars. All data were reduced to the E-region system of Cousins (see Menzies et al., 1989) and the mean UBV values for the comparison stars during the 1989–90 and 1990–91 seasons are given in Table 1 together with their standard deviations and adopted (weighted) values. LSS3014 shows a rather large standard deviation for the 1990–91 data and may be a small amplitude variable; the V-magnitudes of this star were not used to correct the data for LSS2854 and 2895.

A phase-dispersion minimisation program was used to find periods for the two stars of  $5.35875 \pm 0.00005$  day (2854) and  $10.6043 \pm 0.0002$  day (2895) and provisional ephemerides are:

$$\begin{array}{ll} \text{LSS2854} & \text{HJD (primary min.)} = 2447958.065 + 5.35875 \text{ E} \\ \text{LSS2895} & \text{HJD (primary min.)} = 2447954.141 + 10.6043 \text{ E} \end{array}$$

The V-magnitude data phased with these ephemerides are shown in Figure 1. The continuously variable light curves, relatively long periods and the early-type nature of the stars indicate that both systems are  $\beta$  Lyrae-type eclipsing binaries. From the data available so far, it appears that both systems exhibit total eclipses. Preliminary uvby $\beta$  photometry of the combined light of the systems indicates that both are composed of early B stars and that the reddening is  $E(b-y) \sim 1.04$  equivalent to  $A_V \sim 4.5$  mag, in both cases.

Neither binary appears in the Wackerling (1970) list of H $\alpha$  emission objects, but low dispersion (210Å/mm) spectroscopy shows that H $\alpha$  is very weak in LSS2895, presumably partly filled by emission; the other Balmer series lines appear normal. LSS2854 shows no obvious signs of emission.

Although both systems are of very similar apparent brightness, the photometry for LSS2895 appears to show more scatter than for LSS2854, even though the stars were observed more-or-less consecutively. Examination of plates of the fields reveals that both stars have faint nearby "companions"; in the case of LSS2854 about 15 arcsec SE and in the case of LSS2895 about 15 arcsec South. Although these stars would have been excluded from the aperture, it is possible that some mild contamination may have

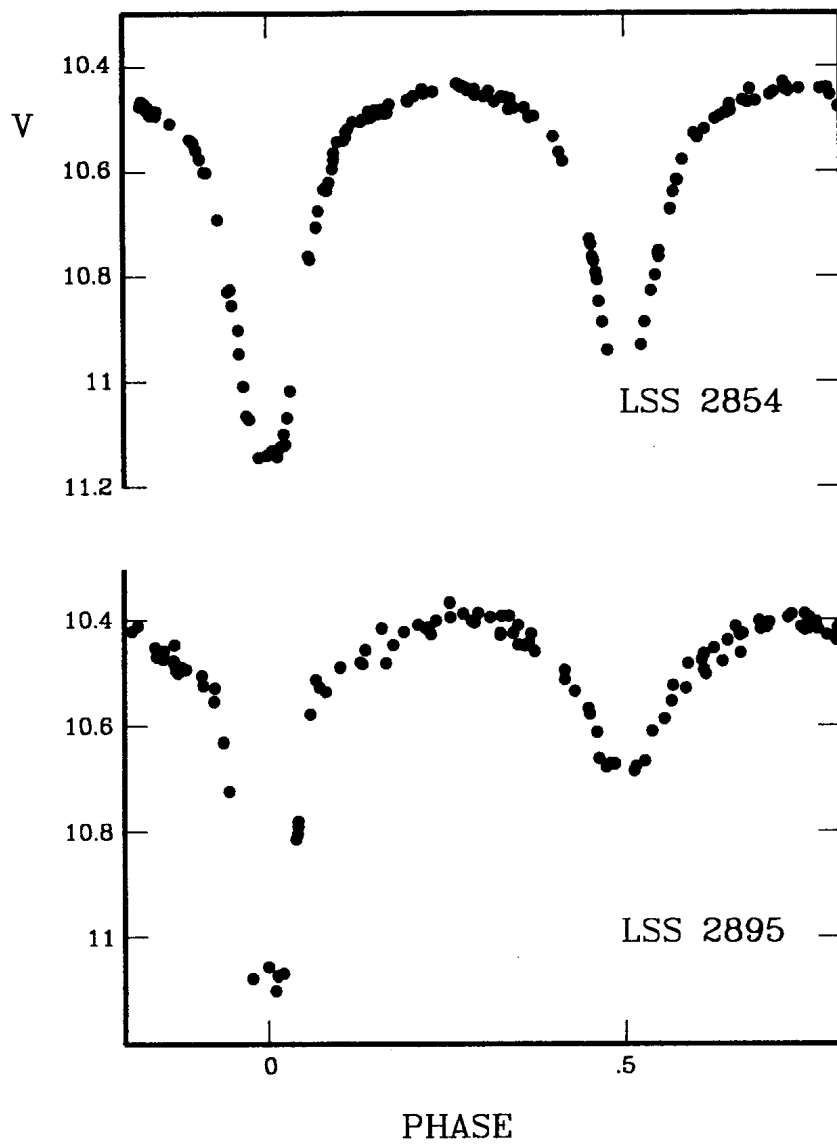


Figure 1. Light curves for LSS2854 and LSS2895 phased according to the ephemerides given in the text.

Table 1. Mean UBV photometry of comparison stars

		V	(B-V)	(U-B)	n
LSS 2571	1989-90	7.334 ±0.005	+0.049 ±0.005	-0.763 ±0.006	20
	1990-91	7.330 7	+0.054 7	-0.752 7	63
	adopted	7.331	±0.053	-0.755	
LSS 2863	1989-90	10.341 7	+1.238 7	+0.186 12	18
	1990-91	10.354 12	+1.249 9	+0.196 11	62
	adopted	10.350	+1.246	+0.194	
LSS 3014	1989-90	7.782 8	+0.621 5	-0.458 4	17
	1990-91	7.790 20	+0.626 6	-0.451 7	60
	adopted	7.788	+0.625	-0.453	

occured and since the star near LSS2895 appears (photographically) somewhat brighter than that near LSS2854, this may have contributed to the observed scatter.

Photometry of both systems is continuing and a programme of spectroscopy for radial velocity determination has been started.

D. KILKENNY,  
 F. VAN WYK,  
 F. MARANG,  
 G. ROBERTS  
 K. SEKIGUCHI  
 South African Astronomical  
 Observatory,  
 PO Box 9, Observatory, 7935,  
 South Africa

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