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B, V, R, I OBSERVATIONS OF CE LEONIS

The very short period eclipsing binary system CE Leo (S 7763) was discovered by Hoffmeister (1963). Finder charts are included in his paper. Meinunger and Wenzel (1968) give 21 visual times of minimum light as well as visual light curve. Other visual epochs of minimum light appear in BBSAG Bulletins No. 9, 14, 15, 21 and 37. Two photo-electric epochs of minimum light have been determined by Hoffman (1983).

The present observations were made on the nights of January 31 and February 1, 1987. The 0.9m #2 reflector at Kitt Peak National Observatory was used with a photometer which housed standard B,V,R,I filters in the Cousins system (Bessell, 1976) and a dry-ice-cooled RCA 31034a Ga-As photomultiplier tube. The positions of the check, comparison and variable stars are given in Table I. Neither the check nor the comparison star has a known catalogue identification. Approximately 200 observations were made at each effective wavelength in the phase interval 0.6 - 0.1. The B, V, R, I observations of CE Leo defined by the individual observations are shown in Figure 1 as Δm versus phase.

Table I

STAR	R.A. (1950)	Dec. (1950)
CE Leo	11 ^h 41 ^m 27 ^s	23°37'
Comparison	11 ^h 41 ^m 10 ^s	23°34'
Check	11 ^h 41 ^m 05 ^s	23°39'

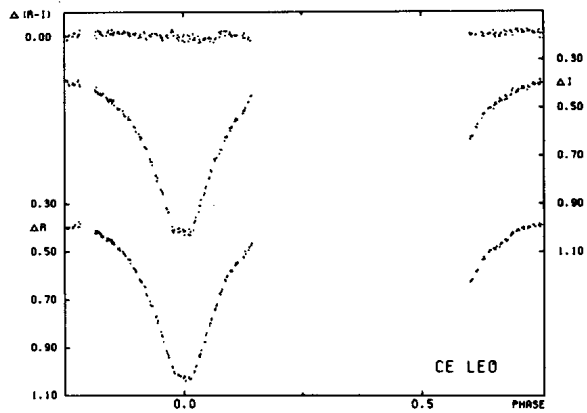
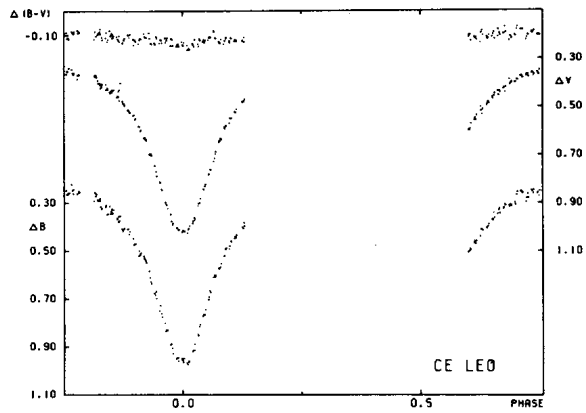


Fig. 1 - Light curves of CE Leo defined by individual observations.

Times of minimum light were determined in all four colors from the observation of one primary eclipse. An iterative technique based on the Hertzsprung method (1928) was utilized. The mean of these four times (p.e. = ± 0.0002) is listed in Table II along with Hoffman's (1983) data.

Table II

Photoelectric Epochs of Minimum Light, CE Leo			
JD Hel. 2440000+	Cycles	(O-C)	Source
5044.5495	-5877.5	-0.0002	Hoffman
5047.4325	-5868.0	0.0002	Hoffman
6828.0131	0.0	-0.0000	Samec

The ephemeris published by Meinunger and Wenzel (1968, MVS 1966), is JD Hel. Min I = $2437651.650 + 0.^d.3034286E$. Since this set of light elements does not satisfactorily represent the present data, a new ephemeris was calculated. Using the period from the ephemeris given by Meinunger and Wenzel and the epoch determined from the present observations, the three available photoelectric times of minimum light were introduced into a least squares solution. The resulting ephemeris,

$$\text{JD Hel Min. I} = 2446828.0131 + 0.^d.30343912E$$

was employed in calculating the O-C's in Table II and the phases of the present observations.

Additional photoelectric data are needed to improve this ephemeris.

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