COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 2025

Konkoly Observatory
Budapest
1981 October 13
HU ISSN 0374-0676

A LIGHT CURVE OF THE ECLIPSING BINARY LU LACERTAE

The variability of LU Lac was detected by Miller (Miller and Wachmann, 1973), who found, that the object is an eclipsing binary of W UMa type with a period just below $0^d.3$. Photoelectric observations of LU Lac were obtained in five nights between May and August, 1981. The star was measured with the double beam photometer at the 1.06m telescope of Hoher List Observatory. The light curve was completed only in B, but some observations were also made in V to determine at least the colour difference between the variable and the comparison star. The latter, BD+50°3680, is a redder object than LU Lac ($\Delta B-V \sim 0^m.7$). So significant second order extinction corrections had to be applied.

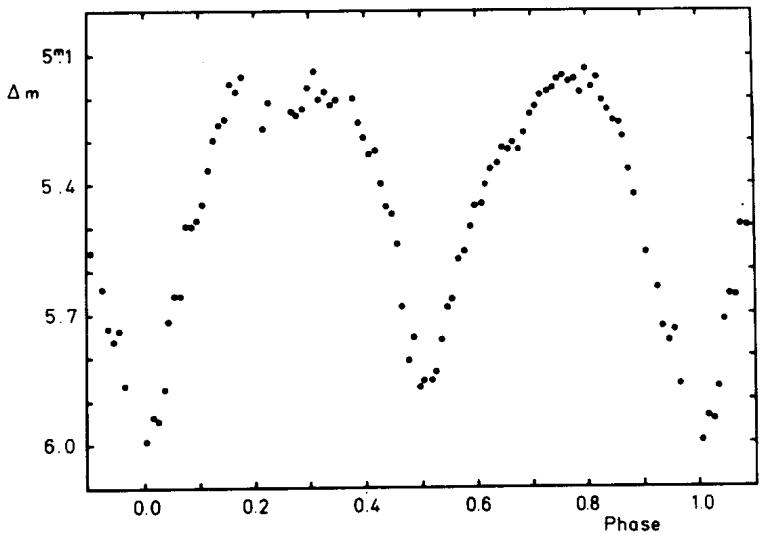

Fig. 1: B light curve of LU Lacertae

Times of minimum light were found at

JD hel.	2444726.5380	O-C $+0^d.0042$	Ep. 37526.5
	2444815.4282	$+0^d.0010$	37824.0
	2444843.3680	$+0^d.0029$	37917.5

The O-C's were calculated according to the light elements given by Miller and Wachmann (1973)

JD hel. Min. I = 2433513.5649 + 0.29880135 E

The deviation of the observations from these elements are still small. Figure 1 shows the B light curve of LU Lac relative to the comparison star (normal observations). Larger scatter around phase 0.25 results from observations at greater atmospheric extinction, when the star became quite faint for a 1m telescope (m_{pg} 14.6...15.5). The primary minimum is distinctly wider than the secondary minimum. So LU Lac seems to be of W type with an occultation at the primary minimum, which is normal for contact binaries of its period. A rectification of the light curve was tried with only a limited success. The eclipses are at least close to completeness. The ratio of the radii has a lower limit $k \geq 0.85$ which indicates a mass ratio $q \geq 0.75$. As usual for short period W UMa stars the constancy of the light curve should be checked at a later time.

M. HOFFMANN

Observatorium Hoher List
5568 Daun / Eifel, BRD

Reference:

Miller, W. J., Wachmann, A. A., 1973, Ric. Astron. 8, No. 12