LIGHT ELEMENTS OF THE ECLIPSING BINARY LY AURIGAE

Light elements of the bright O-type eclipsing variable
LY Aur published by now have been based on observations which
cover only a rather short time span. Therefore, elements given
by Wood (1971)

Pri.Min. = J.D. $2440942.649 + 4^{d}.002521 \cdot E$

as well as by Mayer and Horak (1971)

Pri.Min. = J.D. $2439061.463 + 4^{d}.002496 \cdot E$

may not be reliable.

Observation of a primary minimum made at Hvar Observatory
on November 6, 1978, allows a new determination of light elements.
Measurements were made in B and V colours and HD36212 served as
a comparison star. Since the star HD 35619 was used as a compari-
son one during former studies of LY Aur, both stars were measur-
ed on several nights in order to get differences of their bright-
ness. From 5 nights (more than one hundred of individual measure-
ments) the differences $\Delta V = 0^{m}.781$ and $\Delta B = 0^{m}.796$ were found, HD 36212
being the brighter one. The measurements of LY Aur are presented
in Fig.1 as differences HD 35619 minus variable (points). In the
figure the measurements obtained during a minimum on J.D.2440850
(Mayer and Horák,1971) are also given (circles).

The time of minimum light computed from the new measurements
is J.D.hel. 2443820.4324 ± 0.0010. To get more epochs of minima, a
mean primary minimum has been computed from observations by
Landolt and Blondeau (1972) and Hall and Heiser (1972). All avail-
able epochs are listed in Table I; the first epoch is an estima-
tion only. The column $(O-C)_{old}$ is computed from elements by Mayer
and Horák (1971). Since the minimum by Wood (1971) gives a large
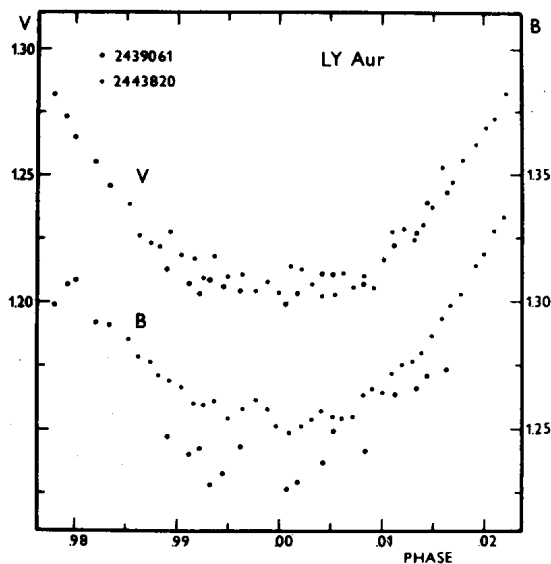O-C, it was not considered when applying LSM to correct the ele-

Figure 1. LY Aur. V and B light curves with points for J.D. 2439061 and 2443820.

Table I

Observed time J.D. 2400000+	Mean error	Epoch	$(O-C)_{old}$	$(O-C)_{new}$	References
39061.463	$0\overset{d}{.}002$	0	$0\overset{d}{.}0$	$-0\overset{d}{.}0010$	
40858.5835	0.0015	449	-0.0002	-0.0004	Mayer and Horak,1971
40942.649		470	+0.0129	+0.0127	Wood, 1971
41102.7381	0.0016	510	+0.0022	+0.0021	a mean minimum (see text)
43820.4290	0.0010	1189	-0.0017	-0.0007	this note

ments. The resulting elements

$$\text{Pri.Min.} = \text{J.D.}\ 2439061.4640 + 4\overset{d}{.}0024943 \cdot E$$
$$\pm 10 \qquad\qquad \pm 20$$

differ only insignificantly from the elements by Mayer and
Horák. The corresponding O-C are given in the column $(O-C)_{new}$.

The data presented in Fig.1 as well as data by Landolt and
Blondeau (1972) and Hall and Heiser (1972) are consistent with
the estimation (Mayer and Horák, 1971) that the totality lasts
about 100 minutes. The bottom level of the totality may change
by $0\overset{m}{.}02$ to $0\overset{m}{.}03$ from one minimum to another one.

P. MAYER

Department of Astronomy and
Astrophysics, Charles University
Praha, Czechoslovakia

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