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**NEW RESULTS ON THE HIGH AMPLITUDE
DELTA SCUTI STAR BE Lyn**

The variability of BE Lyn was discovered in April 1985 by Oja (1986) during routine UBV observations of astrometric standard stars. Oja (1987) and Rodriguez et al. (1990a) carried out two extensive sets of photometric observations, found the object to be a high amplitude Delta Scuti star, and published the following elements, respectively:

$$\begin{aligned} \text{JD hel. max.} &= 2446506.0074 + 0.0958697 \times E & \text{(I)} \\ \text{JD hel. max.} &= 2446951.41733 + 0.095869448 \times E & \text{(II)} \end{aligned}$$

The monop periodicity of BE Lyn is also confirmed by Poretti et al. (1990). Physical parameters of the pulsating variable are published by Rodriguez et al. (1990a), Rodriguez et al. (1990b) and Garrido et al. (1990).

As a result of a new set of photoelectric observations, obtained in 1991 at the 0.34m Cassegrain telescope of the Nürnberg Observatory, we present seven new times of maxima. Using a 1P21 phototube, all observations were made in V colour. The light curve of BE Lyn (April 1991) is shown in Figure 1. There seems to be an increased scatter at phase 0.1–0.3, which may be due to some bumps. The observational data is accessible on request.

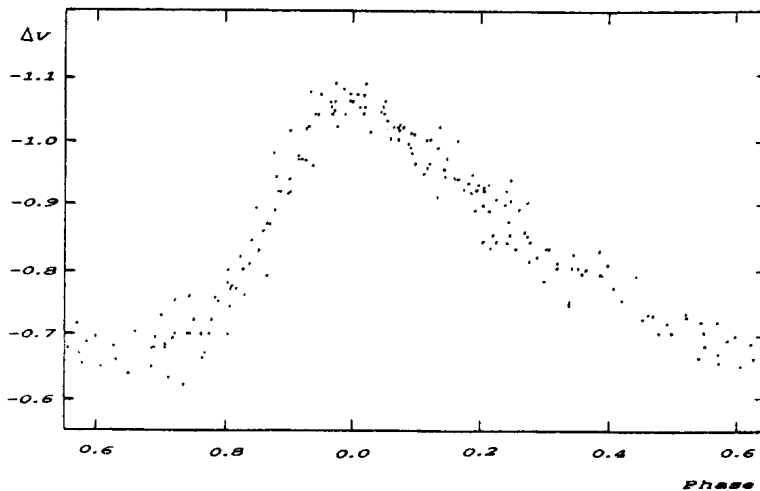


Fig.1. Light curve of BE Lyn ($P=0.095869483$)

Table 1
Photoelectric maxima of BE Lyn

JD hel. max.	Epoch	O-C(I)	O-C(II)	Obs.	Reference
2446498.3379	-19287	+0.0001	-0.0003		Oja (1987)
6507.3501	-19193	+0.0005	+0.0001		Oja (1987)
6507.4459	-19192	+0.0005	+0.0001		Oja (1987)
6508.4049	-19182	+0.0008	+0.0004		Oja (1987)
6509.4587	-19171	±0.0000	-0.0004		Oja (1987)
6510.4175	-19161	+0.0001	-0.0003		Oja (1987)
6524.4152	-19015	+0.0008	+0.0005		Oja (1987)
6950.4595	-14571	+0.0002	+0.0008		Rodríguez et al. (1990a)
6951.4174	-14561	-0.0006	±0.0000		Rodríguez et al. (1990a)
7115.6420	-12848	-0.0008	+0.0002		Rodríguez et al. (1990a)
7118.6131	-12817	-0.0017	-0.0006		Rodríguez et al. (1990a)
7118.7102	-12816	-0.0005	+0.0006		Rodríguez et al. (1990a)
7121.6813	-12785	-0.0013	-0.0003		Rodríguez et al. (1990a)
7219.5637	-11764	-0.0019	-0.0006		Rodríguez et al. (1990a)
7551.4645	-8302	-0.0020	±0.0000		Rodríguez et al. (1990a)
7551.5599	-8301	-0.0024	-0.0004		Rodríguez et al. (1990a)
7551.6560	-8300	-0.0022	-0.0002		Rodríguez et al. (1990a)
7553.5729	-8280	-0.0027	-0.0007		Rodríguez et al. (1990a)
7553.6692	-8279	-0.0023	-0.0003		Rodríguez et al. (1990a)
8347.3728	0	-0.0039	-0.0001	Wu	this paper
8347.4679	1	-0.0047	-0.0009	Wu	this paper
8357.3444	104	-0.0028	+0.0011	Wk/Wu	this paper
8358.3988	115	-0.0029	+0.0009	Wk/Wu	this paper
8359.3557	125	-0.0047	-0.0009	Gz/Wu	this paper
8367.5060	210	-0.0034	+0.0005	Wk	this paper
8624.3400	2889	-0.0043	+0.0002	Wk/Wu	this paper

Abbreviations of the observer's names:

Gz = M. Garzarolli Wk = M. Wieck Wu = E. Wunder

On the base of all known times of maxima, listed in Table 1, we calculated the improved elements of BE Lyn by the method of least squares:

$$\text{JD hel. max.} = 2448347.37290 + 0.095869483 \times E \quad (\text{III})$$

$$\pm 18 \qquad \qquad \pm 14$$

The difference to the elements of Oja (1987) and Rodríguez et al. (1990a) exceeds significantly the error of the new elements. We therefore propose to use the improved formula for ephemeris.

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References:

- Garrido, R., Garcia-Lobo, E., Rodriguez, E., 1990, *Astron. Astrophys.*, **234**, 262
Oja, T., 1986, *Astron. Astrophys. Suppl. Ser.*, **65**, 405
Oja, T., 1987, *Astron. Astrophys.*, **184**, 215
Poretti, E., Antonello, E., Le Borgne, J. F., 1990, *Astron. Astrophys.*, **228**, 350
Rodriguez, E., López de Coca, P., Rolland, A., Garrido, R., 1990a, *Rev. Mexicana Astron. Astrof.*, **20**, 37
Rodriguez, E., Rolland, A., López de Coca, P., 1990b, *Astrophys. Space Sci.*, **169**, 113