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# NEW LIGHT CURVES AND TIMES OF MINIMUM OF SW LACERTAE

The W UMa system SW Lac (=BD+37°4717) has been well known for its variable period and light curves. Monitoring these changes is significant for one to understand the physical nature of the system.

In 1992 season, when the International Summer School of Young Astronomers (ISYA) of IAU was holding at Beijing, the star SW Lac was observed photoelectrically by the students of ISYA and colleagues of Beijing Observatory. The observations were carried out in BV colors by using a single channel photon counting photometer attached to the 60 cm reflector at Xinglong station of Beijing Observatory.

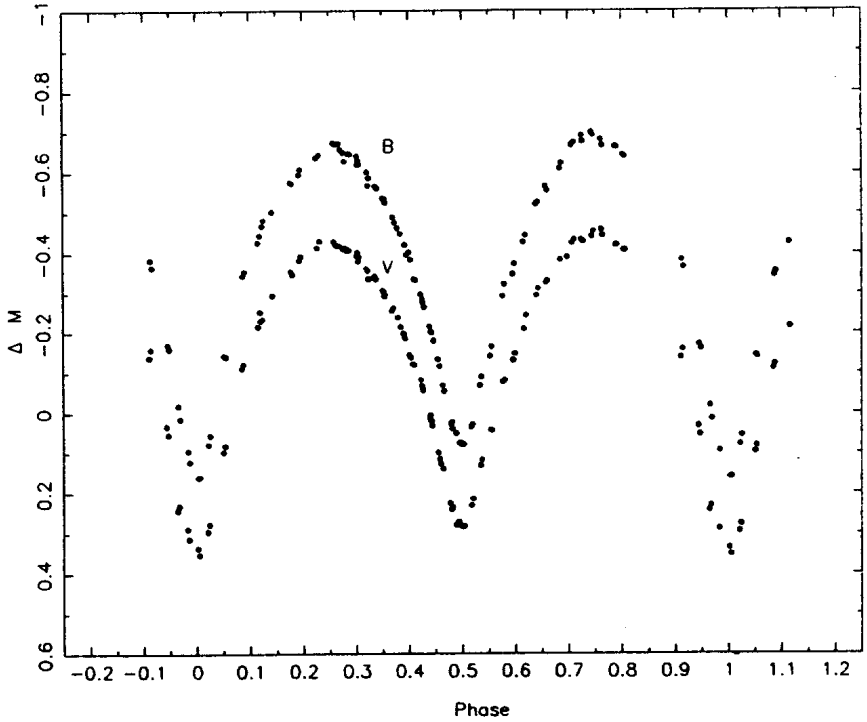


Figure 1. BV light curves of SW Lac in 1992

The stars BD+37°4710 and BD+37°4715 were adopted as comparison and check star, respectively.

A total of 109 photoelectric observations in each color were obtained on two nights from July 29 to 30, which covers completely an orbital cycle. The measurements have been corrected for differential extinction and transferred to the standard UBV system.

The new light curves as given in Figure 1 show the asymmetry with the Max. II brighter by about 0.02 mag than the Max. I in both B and V bands. It is just inverse to that of the 1986–1987 light curves obtained by Essam et al. (1992).

Table 1. New times of minima of SW Lac

| J. D. Hel 244 0000+ | filter | M. E. | Min. |
|---|---|---|---|
| 8833.0909 | V | ±0.0003 | I |
| 8833.0917 | B | 0.0001 | I |
| 8834.2127 | V | 0.0002 | II |
| 8834.2130 | B | 0.0001 | II |

Table 1 gives the new times of minima determined with K – W method. Figure 2 is the O–C diagram of minima for the interval after 1985 (Faulkner 1986, Soliman et al. 1986, Pohl et al. 1987, Mullis et al. 1991, Essam et al. 1992). The observations of Soliman et al. (1986) represented by cross signs may be questionable when they are compared with the observations of exactly the same minima obtained by Essam et al. (1992). If the minima of Soliman were excluded from consideration, the period of SW Lac is nearly constant and close to P = 0.32071966 days. However the new period of SW Lac is about 0.052 smaller than the period ( = 0.32072026) found by Zhai and Lu (1989) within the time interval 1977–1986.

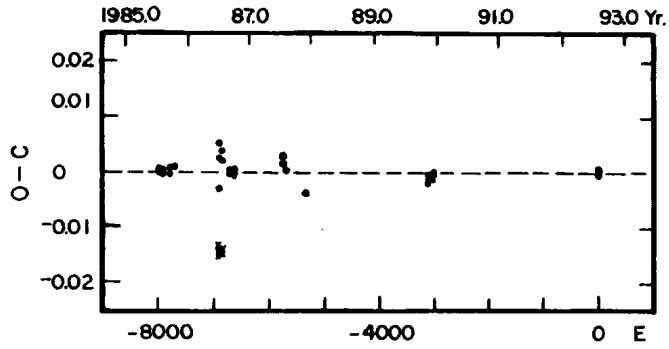


Figure 2. O–C diagram of minima of SW Lac during years 1985–1992

The following ephemeris can be used to predict the times of minima in near future:

$$Min.I = J.D.(hel)2448833.0910 + 0.32071966E$$

A further photometric analysis of the light curve is underway.

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