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UBV LIGHT CURVES OF AK Her

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The variable star AK Her, an eclipsing binary with a period of 0.42152207 days is the brighter component of the visual double ADS 10408. The fainter component is at the distance of $4''.7$ in position angle 322° . The variability of AK Her was discovered by Metcalf (cf: Pickering 1917) and since then it has been the target of photometric and spectroscopic observations by many observers (see Lifang Li et al. 2001). The system shows WUMA-type light curve with obvious O'Connell effect and period variation. AK Her was observed through *UBV* standard filters at Khadjeh Nassir Addin Observatory of Tabriz University (Iran) during the summer 2001. The phases of the observations were calculated from the elements used by Rovithis et al. (1999):

$$\text{Min I} = \text{HJD } 2422977.254 + 0.42152207 \times E$$

The derived light curves of *U*, *B* and *V* colors are illustrated in Fig. 1. The times of primary and secondary minima were obtained by a parabolic fitting to the profiles of the minima in each filter. Table 1 shows the derived times of minima in Heliocentric Julian Date and also *O – C* residuals (average of three filters), where $(O - C)_1$ and $(O - C)_2$ values have been calculated according to the ephemeris used by Rovithis et al. (1999) and Lifang Li et al. (2001) respectively. In Table 2 the O'Connell effect ($\text{Max}_I - \text{Max}_{II}$) is given.

Table 1.

| Hel. JD | Min-Type | $(O - C)_1$ | $(O - C)_2$ |
|--------------|----------|-------------|-------------|
| 2452143.2440 | I | 0.0349 | -0.0308 |
| 2452136.2880 | II | 0.0340 | -0.0317 |

Table 2.

| $\text{Max}_I - \text{Max}_{II}$ | Filter |
|----------------------------------|--------|
| 0.026 | U |
| 0.017 | B |
| 0.028 | V |

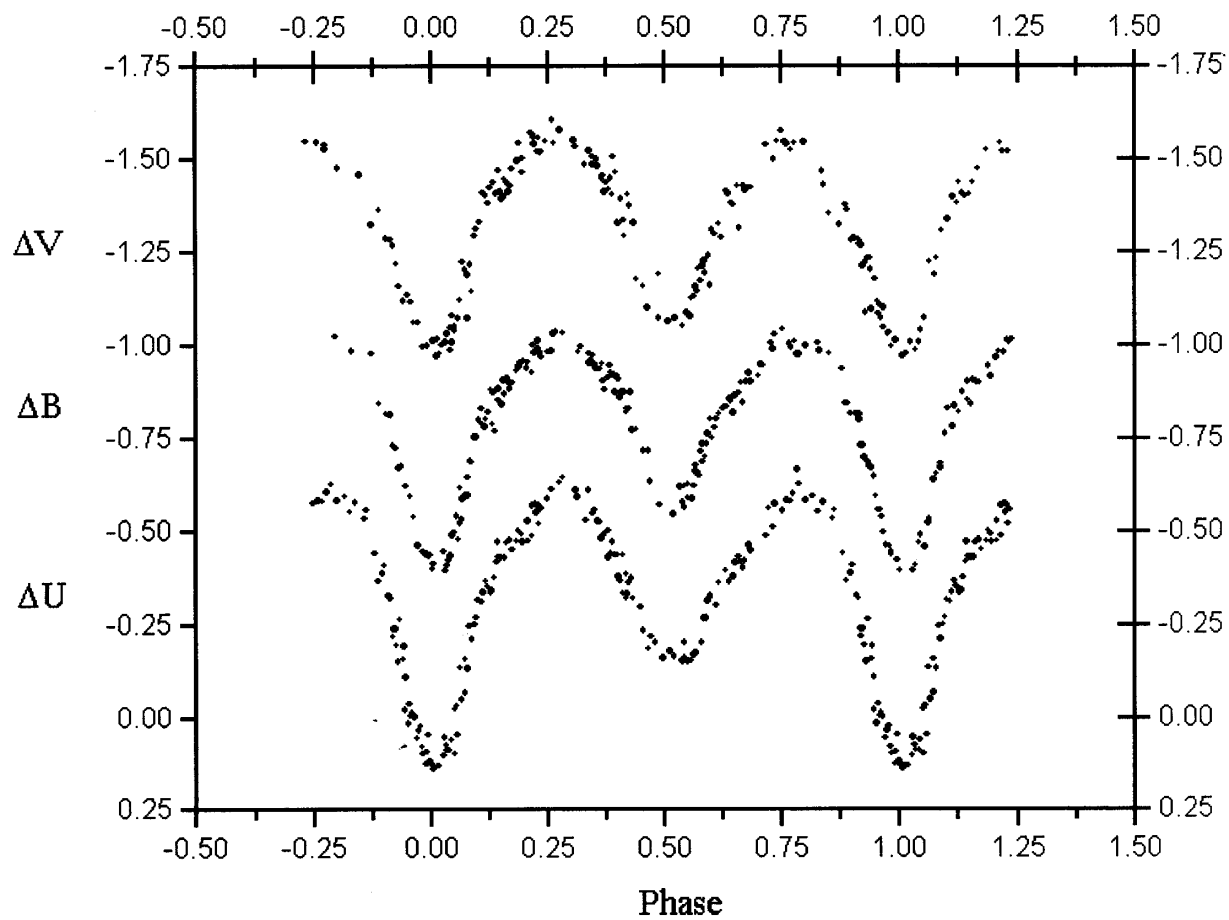


Figure 1.

References:

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