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NEW B,V LIGHT CURVES OF AA URSAE MAJORIS

AA UMa (S4758) was discovered as an eclipsing variable by Hoffmeister (1948). A number of periods have been determined. Tsessewitch (1956) gave a period of 3.0703 days and classified it as an Algol system; Meinunger (1961)  $0.^d466352$  as a W UMa binary; Strohmeier and Ott (1963)  $0.^d763839$  as a Beta Lyrae variable; Meinunger (1976)  $0.^d468106$  and giving UBV light curves but the scatter being fairly large ; and Borovicka (1985)  $0.^d46812555$ . The spectral type of the system was given to be G2 by Götz and Wenzel (1961); F8 by Mc Donald (1964) ; GO listed in GCVS ; and GO by Lu (1988). The system was observed with the 60-cm reflector at Xinglong station of Beijing Astronomical Observatory on 7 nights in 1987. Its light curves were both in B and V well covered in phase. Six minima secured are as follows :

(JD hel 2,440,000+)

6,857.2571(II)	6,885.1121 (I)
6,859.1304(II)	6,886.0493 (I)
6,860.0650(II)	7,118.2393 (I)

The stars BD  $+46^{\circ}1544$  and  $+46^{\circ}1545$  were employed as the comparison and check stars, respectively. In order to determine the magnitudes and colours of the variable, comparison and check, the star HD 84035(BD $+43^{\circ}1953$ ) was used. The standard deviation in a single check-comparison magnitude was 0.007 in B and V, which indicated that the comparison was satisfactorily constant. The new observations showed that the depths of the primary and the secondary eclipses were almost identical in B, but in V the depth at phase zero was definitely deeper than that at phase 0.5.

Combining 39 moments of minima found in the literature, the new light elements of the system derived is :

Hel. Min. I =  $2,446,885.1119 + 0.^d46812583 E$   
 $\quad \quad \quad \underline{+ 21} \quad \quad \quad \underline{+21}$

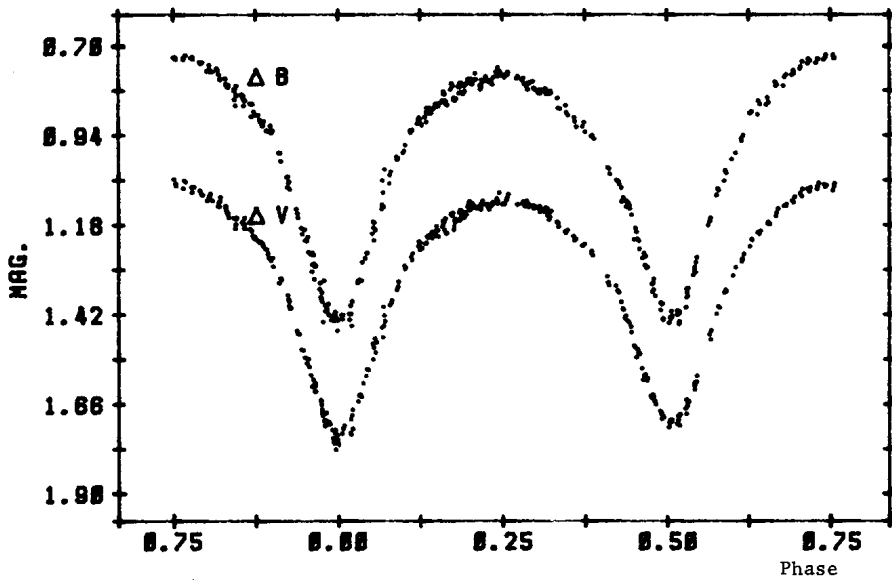


Figure 1 : Light curves of AA UMa

By comparing our minima with those determined by Meinunger, a correction of half a cycle was made to Meinunger's. This would imply that the light curves of AA UMa were variable like in the case of TZ Boo. A plot of differential magnitudes of the system with the new elements is shown in Figure 1. It is noted that the B-V index determined here is  $0^m.60$  at maxima instead of  $0^m.64$  given by Meinunger. The former is in very good agreement with G0 from the spectroscopic classification by Lu. It is also noted that O'Connell effect in AA UMa is obvious. A united photometric and spectroscopic analysis of the system is under way and will be given elsewhere.

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