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PHOTOELECTRIC OBSERVATIONS OF WW DRA

The RS CVn-type eclipsing binary WW Dra (=HD150708A=BD+60°1691A=ADS 10152A) is the brighter component of the visual binary ADS 10152. Joy (1941) and Popper (1967) derived spectroscopic elements, whereas Plaut (1940) obtained a photographic lightcurve. Eggen (1963) measured the UBV magnitudes of WW Dra and of its visual companion; but no photoelectric lightcurve is as yet available in the literature.

Photoelectric observations of WW Dra were made by us on 7 nights in 1975 with the 50 cm Newtonian telescope of the Astronomical Observatory of Trieste and on 20 nights in 1976 with the 30 cm Cassegrain telescope of the same Observatory. Both telescopes were equipped with a photoelectric photometer bearing filters very close to the B and V standard system. BD+61°1595 was used as comparison star and was connected with the check stars BD+58°1645, BD+60°1682, BD+61°1600, and BD+63°1281. ADS 10152B, distant about 18" from the eclipsing pair, was always measured together with WW Dra. Our measures were not transformed to the B and V standard magnitudes, though they are expected to be close to them. The extra-atmospheric magnitude differences (variable minus comparison) were obtained by applying the extinction corrections.

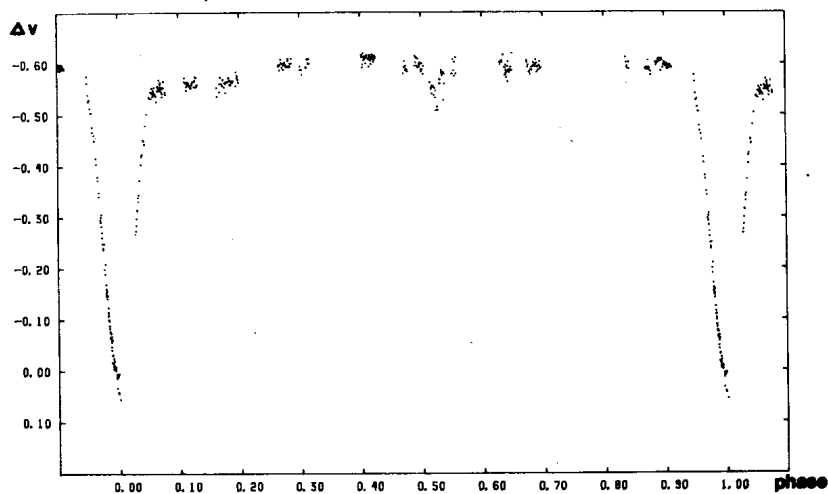


Figure 1

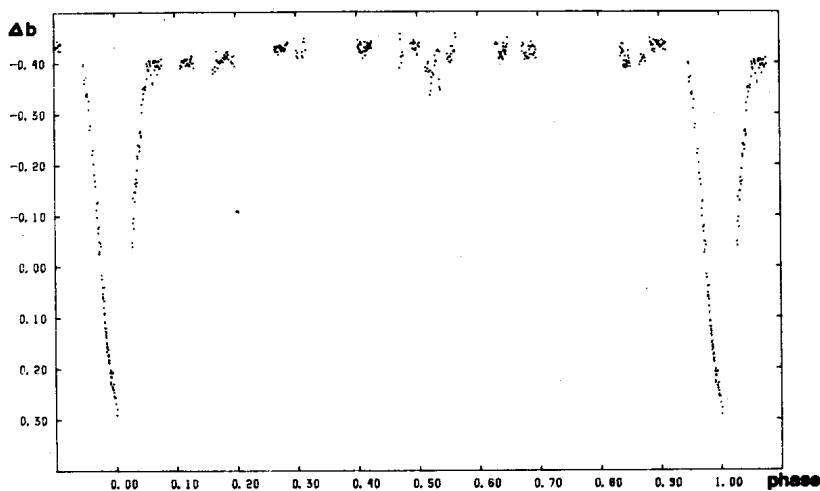


Figure 2

Figs. 1 and 2 show our yellow (Δv) and blue (Δb) observations (obtained in 1976), phased by means of Plaut's (1940) ephemeris.

Though coverage of the lightcurves of WW Dra at various phases is not very good, some general characteristics may be pointed out. The lightcurves characterized by two minima of quite unequal depth, show cycle-to-cycle intrinsic variations and appreciable asymmetry in the maxima. These photometric disturbances are common to the RS CVn-type binaries. The position of the ascending and descending branches of the primary eclipse shows a small displacement of the minimum from phase zero (about 0.03 in phase units). The secondary eclipse, though poorly delineated, seems to be displaced from phase 0.5 by a larger phase shift. An attempt at searching for a photometric solution of our data will be presented in a forthcoming paper.

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References:

- Eggen, O.J., 1963, *Astron.J.* 68, 483.
 Joy, A.H., 1941, *Astrophys.J.* 94, 407.
 Plaut, L., 1940, *Bull.Astron.Inst.Neth.* 9, 121.
 Popper, D.M., 1967, *Astron.J.* 72, 316.