

COMMISSION 27 OF THE I. A. U.
INFORMATION BULLETIN ON VARIABLE STARS
Number 1179

Konkoly Observatory
Budapest
1976 September 13

UBVRI PRIMARY AND SECONDARY ECLIPSE CURVES OF RW TAURI

RW Tauri, BD+27^o623, is the first eclipsing binary system in which the presence of gas streaming was established, and a gaseous ring around the B component was postulated by Joy (P.A.S.P. 54, 35, 1942; P.A.S.P. 59, 171, 1947). According to Plavec (B.A.C. 13, 224, 1962) the marked eccentricity of the spectrographic orbit is probably spurious, resulting from the gas streaming. However, up to the time of the present observations there was no direct proof from photometric observations that the true orbit is nearly circular since the secondary minimum had not been observed.

The present observations were made in 1967-68 with the Johnson UBVRI photometer attached to the 0.7 m and the 1.5 m telescopes then housed at the Catalina Observatory of the University of Arizona. The photometer houses two cooled photomultiplier tubes. A movable mirror in the light path permits the directing of the beam to the RCA 1P21 for the UB observations or to the RCA 7102 for the RI observations.

Approximately 250 observations were obtained at each effective wavelength. BD+27^o628 and BD+27^o629 were used as the comparison and check stars, respectively; and on several nights a network of standard stars was also observed. Figure 1 shows the light curve as defined by the I observations. The phases were computed from the ephemeris determined by Maddox (to be published, 1976), JD Hel. Min. I = 2440160.3771 + 2^d.7688425 E. The observations have not been corrected for the light of the visual companion, which is at a separation of about 1".

The observations have been prepared for publication and anyone wishing a tabulation prior to publication should contact the author.

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