

Marginally low mass ratio close binary system V1191 Cyg

B. Ulas, B. Kalomeni, V. Keskin, O. Kose, K. Yakut

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In this study, we present photometric and spectroscopic variations of the extremely small mass ratio ($q \simeq 0.1$) late-type contact binary system V1191 Cyg . The parameters for the hot and cooler companions have been determined as $M_{\text{hot}} = 0.13 (1) M_{\odot}$, $M_{\text{cool}} = 1.29 (8) M_{\odot}$, $R_{\text{hot}} = 0.52 (15) R_{\odot}$, $R_{\text{cool}} = 1.31 (18) R_{\odot}$, $L_{\text{hot}} = 0.46 (25) L_{\odot}$, $L_{\text{cool}} = 2.71 (80) L_{\odot}$, the separation of the components is $a = 2.20(8) R_{\odot}$ and the distance of the system is estimated as $278(31)$ pc. Analyses of the times of minima indicates a period increase of $\frac{dP}{dt} = 1.3(1) \times 10^{-6}$ days/yr that reveals a very high mass transfer rate of $\frac{dM}{dt} = 2.0(4) \times 10^{-7} M_{\odot}/\text{yr}$ from the less massive component to the more massive one. New observations show that the depths of the minima of the light curve have been interchanged.

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