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NEW PERIOD OF CT TAURI

The eclipsing system CT Tau containing stars of B2 spectral type belongs to the small group of contact binaries with hot components. This unusual system has not been analysed in detail yet, so we decided to observe it.

The observations in B and V Johnson passbands were made on the 0.6 m telescope at Mt. Suhora Astronomical Observatory. We used the double beam photometer donated by ESO thanks to initiative of Prof. E.H. Geyer. This photometer was described by Szymański and Udalski (1989).

We obtained BV light curves during two consecutive nights 25/26 and 26/27 January 1989. In observing runs BD+26^o917 was used as the comparison star. The integration times in both filters were fixed at 20 seconds.

During the final reduction we found that the present observations could not be phased with the period $P = 0.^d6668303$ determined in 1983 and given in GCVS. So, we have examined the data with the Kwee method to determine the times of minima and the new orbital period. The times of minima calculated from B and V light curves are slightly different.

For B we obtained:

$$\text{minI} = \text{HJD } 2447553.5486 \pm 0.0004$$

$$\text{minII} = \text{HJD } 2447552.5462 \pm 0.0003$$

and for V:

$$\text{minI} = \text{HJD } 2447553.5443 \pm 0.0004$$

$$\text{minII} = \text{HJD } 2447552.5432 \pm 0.0008$$

These differences are caused by small asymmetry of eclipse profiles. To calculate the new orbital period the mean times of minima were used. We obtained the following linear ephemeris:

$$\text{minI} = \text{HJD } 2447553.5464 + 0.^d6678537 * E$$

The observations phased with the new ephemeris are presented in Figure 1. Our result was strongly confirmed by Kałużny (1989) who found $\text{minI} =$

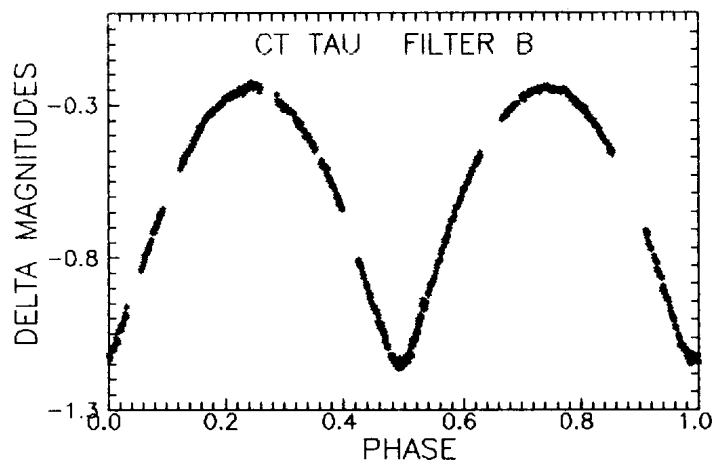


Figure 1. The observations of CT Tau in B filter phased with the new ephemeris

HJD 2447507.4622 in December 1988. So, we can conclude that the period of CT Tau has increased by 1.47 minutes during the last six years. This indicates that the rate of period change $\dot{P} = 4.76 \times 10^{-7}$.

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