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BV OBSERVATIONS OF HU TAURI

The variable star HU Tau (HR1471, B8V) was recognized as an eclipsing binary by Strohmeier and Knigge (1960). Photoelectric light curves of the system have been observed by Tümer and Kurutac (1979), Parthasarathy and Sarma (1980) and Melendo (1985). However, none of these could cover the whole phases satisfactorily.

With the purpose to obtain BV light curves covering the whole phases, HU Tau was photoelectrically observed with the 15-cm refractor of Kakuda Women's Senior High School during thirty-four clear nights in 1986 and 1987. The photometer is furnished with a Hamamatsu 1P21 photomultiplier tube, Schott filters (GG385+BG12 for B and GC495 for V), a high-quality IC amplifier and a personal computer for output reading. HR1375 ($V=5.99$, B8IV-V) was used as the comparison star and HR1497 ($V=4.29$, B3V) as the check star. A total of 957 individual observations in V and 944 in B were obtained. All these observations in $m_{\text{var}} - m_{\text{comp}}$ are plotted in Figure 1.

During the observations, three primary minima were observed with the following epochs:

JD(He1) 2446485.9948 \pm 0.0003
6815.0052 \pm 0.0013
6849.9584 \pm 0.0003

Combining with the previous epochs of primary minimum observed photoelectrically by Wood (1977), Tümer and Kurutac (1979) and Parthasarathy and Sarma (1980), the period can be revised as

$$\text{Min I} = \text{JD(He1)} 2446485.9967 + 2^{\text{d}}.0563056 \text{ E.}$$

The O-C values computed with this new ephemeris are given in the following table.

The depths of both minima in Figure 1 are found to be $0^{\text{m}}.830(V)$ and $0^{\text{m}}.868(B)$ for the primary minimum and $0^{\text{m}}.069(V)$ and $0^{\text{m}}.050(B)$ for the secondary minimum, respectively.

Preliminary analysis of the present light curves with Kitamura's (1965) incomplete Fourier method yields the geometrical elements $i=77^{\circ}$, $r_a=0.18$ and

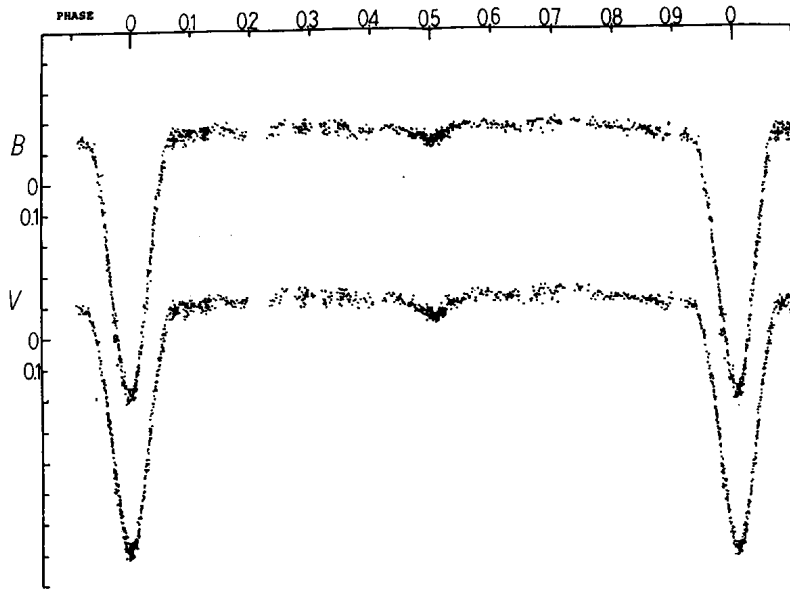


Figure 1. BV light curves of HU Tau.

Table I

JD(Hel)	E	O-C	Observers (photoelectric)
2440981.261	-2677	-0.0056	Parthasarathy and Sarma (1980)
1012.113	-2662	0.0018	"
1275.310	-2534	-0.0083	"
1707.145	-2324	0.0025	"
1984.745	-2189	0.0013	Wood (1977)
1986.801	-2188	0.0010	"
1990.914	-2186	0.0013	"
1992.970	-2185	0.0010	"
3833.3662	-1290	0.0037	Tümer and Kurutac (1979)
3835.4228	-1289	0.0040	"
3837.4797	-1288	0.0046	"
6485.9948	0	-0.0019	Present paper
6815.0052	160	-0.0004	"
6849.9584	177	-0.0044	"

$r_b = 0.28$, with $E_{pr} = 0.235$ and $E_{sec} = 0.109$ which indicates that the primary minimum should be due to the occultation and the secondary due to the transit.

The data of the individual observations given in $m_{var} - m_{comp}$ (B, V) are available upon request.

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