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**PERIOD CORRECTION FOR THE NEW ECLIPSING BINARY DHK 41**

Recently, Kaiser (1994) announced that the 9th magnitude G0 star HD 284195 = SAO 76494 is a detached eclipsing binary, which he designated DHK 41 in his discovery list. He reported a preliminary period of 3.176 days. However, JG and BH soon observed the non-occurrence of an eclipse predicted by this period.

Continued visual monitoring by MEB and CS revealed that this eclipsing binary has an eccentric orbit with secondary minimum occurring at phase 0.3. The reported period, 3.176 days, is actually the interval from secondary minimum to the following primary minimum in a true period of 4.5 days.

Table 1 contains heliocentric times of minima obtained to date. DHK, DT, JG, and BH have observed photoelectrically, MEB and CS have monitored the star visually. The photoelectric timings were reduced with a program based on the Kwee-Van Woerden (1956) method, and the mean errors are given. These errors are large for photoelectric data, due mostly to poor observing conditions.

The period was determined by least squares using the minima from Table 1. The data were weighted as follows, discovery photograph 1, visual 3 and photoelectric 10. The O-C residuals in the table were calculated according to the following light elements:

$$\text{Min. I} = \text{HJD } 2\,449\,701.7062 + 4^{\text{d}} 49407 \times E \quad (1)$$

$$\pm 0.0004 \pm .00005$$

**DHK 41 = SAO 76494**

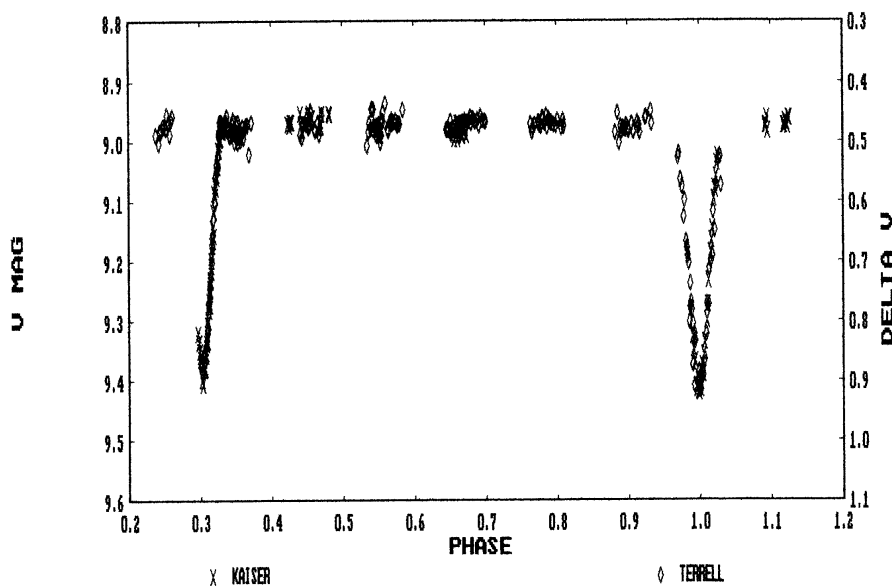


Figure 1

Table 1

HJD 2400000+	Min.		O-C	Observer
49602.846	I	ptg*	+0.008	Kaiser
49653.632	II	vis	-0.004	Baldwin
49680.597	II	vis	-0.003	Baldwin
49701.7061	I	pep	0.000	Terrell
$\pm 0.0013$				
49707.5649	II	pep	0.001	Kaiser
$\pm 0.0018$				
49755.6355	I	pep	0.001	Kaiser
$\pm 0.0020$				

\* – Discovery photograph

Figure 1 has DHK's V data and DT's delta V data merged into one graph to show phase coverage. The two eclipses are nearly equal in depth, about 0.44 V. At this time, our choice of primary eclipse is nominal, the slightly greater apparent depth of Min.I being similar to the scatter in the observations.

In a poster paper presented at the January 1995 meeting of the American Astronomical Society (Terrell and Kaiser, 1994), DT and DHK estimated the orbital eccentricity to be near 0.3 and noted that the star may be a distant member of the Hyades cluster. Photoelectric and radial velocity observations of this interesting binary system are continuing, and a full analysis will be published when these observations have been completed.

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#### References:

- Kaiser, D. H., 1994, *IBVS*, No. 4119  
 Kwee, K. K., and Van Woerden, H., 1956, *BAN*, **12**, No. 464, 327  
 Terrell, D., and Kaiser, D. H., 1994, *BAAS*, **26**, No. 4, 1461 (abstract)