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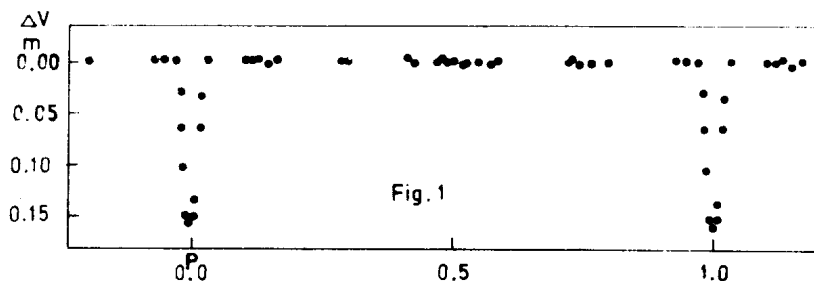
Konkoly Observatory
 Budapest
 1976 February 19

FURTHER DETAILS ABOUT THE NEW ECLIPSING BINARY
 S 10796 = 71 DRACONIS

In IBVS 1071 W. Fürtig announced that the bright star 71 Dra = HD 193 964 (B9V, $m_v = 5.6$) probably is an eclipsing binary. Hube (1973) found a spectroscopic period of $P = 5^d.298$ 111. With the aid of this period W. Fürtig observed another minimum on January 28/29, 1976 (comparison star HD 192 455). From these observations the following elements were found:

$$\text{Min.} = \text{JD } 244\ 2806.415 + 5^d.2984 \cdot E$$

The light outside eclipse seems to be constant. No secondary minimum could be found (Fig. 1).

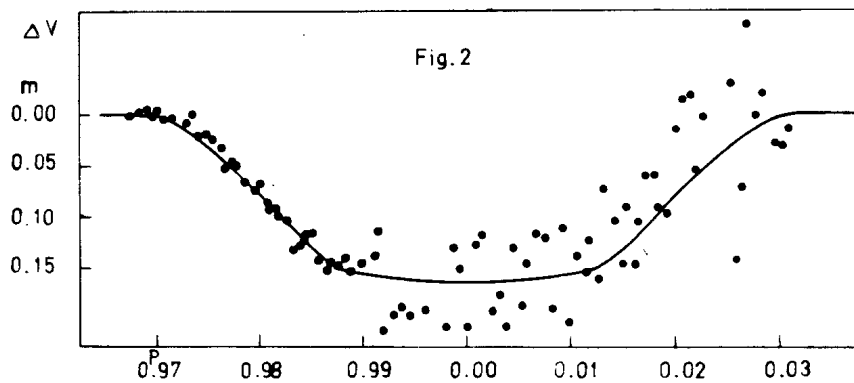


One of us (L.M.) determined photometric elements according to a method given by Irwin (1962). During the time of the observed minimum 71 Dra was very near the horizon and the observations are only of poor quality. Therefore the derived photometric elements are only preliminary. The primary minimum is a transit. The following elements have been found:

$R = 1.75$	$\phi_1 = 0.2688$	$i = 86^{\circ}.85$
$k = 0.35$	$\phi_2 = 0.3381$	$L_g = 1.00$
$A = 0.015\ 060$	$r_g = 0.157$	$x_g = 0.5$
$B = 0.006\ 115$	$r_s = 0.055$	$e = 0$

From these elements we can conclude that the invisible companion is a sun-like star. This is also in agreement with the spectroscopic elements given by Hube (1973). In Fig. 2 the theoretical light curve and the observed points are plotted.

We hope to get better observations and better elements in summer.



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References:

- Hube, P. 1973: The Spectrographic Orbit of HD 193 964.
JRAS Canada 67, 161.
- Irwin, J. 1962: Orbit Determinations of Eclipsing Binaries.
Stars and Stellar Systems Vol. II, 584. Chicago.