COMMISSIONS 27 AND 42 OF THE IAU
INFORMATION BULLETIN ON VARIABLE STARS

Number 4469

Konkoly Observatory
Budapest
16 April 1997

HU ISSN 0374 – 0676

PHOTOMETRIC RESULTS ON THREE HIPPARCOS VARIABLES: THE NEW ECLIPSING BINARY SYSTEMS HD 125488 AND HD 126080, AND THE STAR HD 341508

An analysis of the photometric data from the Tycho Mean Photometric Catalogue and the Tycho Photometric Observations Catalogue performed by Woitas (1997), yielded a list of 43 new bright variables. Several boreal stars of this list were included in the program for the identification and characterization of new variable stars carried out by the Grup d'Estudis Astronomics and the Esteve Duran Observatory. The first objects monitored were HD 125488, HD 126080 and HD 341508.

HD 125488 (= SAO 120401 = PPM 160531 = BD +06°2869 = AGK +06°1704 = GSC 323.930) was observed in the V band for 6 nights, from 13 to 21 March 1997, using a CCD camera and a 6-cm refracting telescope at Esteve Duran Observatory. HD 124929 was used as comparison star, and HD 125452, HD 125322, and GSC 323.1326 as check stars. HD 125488 has an average photovisual magnitude of $7\overset{m}{.}3$ and F2 spectral type. According to Woitas, this object is an RR Lyr variable with a 0.20 day period. Observations show that HD 125488 is not an RR Lyr star but an eclipsing binary system with a period of 0.48 days (Figure 1). The light curve indicates that both minima are almost equally deep, the amplitude being $0\overset{m}{.}37$ in V. There was ambiguity in the selection of the primary minimum, so it was arbitrarily assigned to the best observed minimum. Additional photometric observations should be performed to clarify this point. The following ephemeris was computed:

$$\text{Min. I} = \text{HJD } 2450525.6434 + 0\overset{d}{.}48069 \times \text{E}$$
$$\pm 0.0003 \pm 0.00010$$

Table 1 gives a list of minimum timings and O−C residuals.

Table 1

HJD	Epoch	Minimum	O−C
2450520.5961	−10.5	II	$-0\overset{d}{.}0001$
2450525.6434	0.0	I	0.0000
2450526.6051	2.0	I	0.0003
2450528.5274	6.0	I	−0.0001

A preliminary analysis suggests that the mass ratio of the components in this binary system is close to 1, the minima are due to partial occultations, and than the fill out factor f is bigger that 0.25.

HD 126080 (= SAO 45017 = PPM 54091 = BD +42°2486 = AGK3 +41°1245 = GSC 3038.0566) was observed in the V band for 16 nights, from 12 March to 13 April 1997, at Mollet del Valles Observatory, using also a CCD camera and a 6-cm refractor. It is

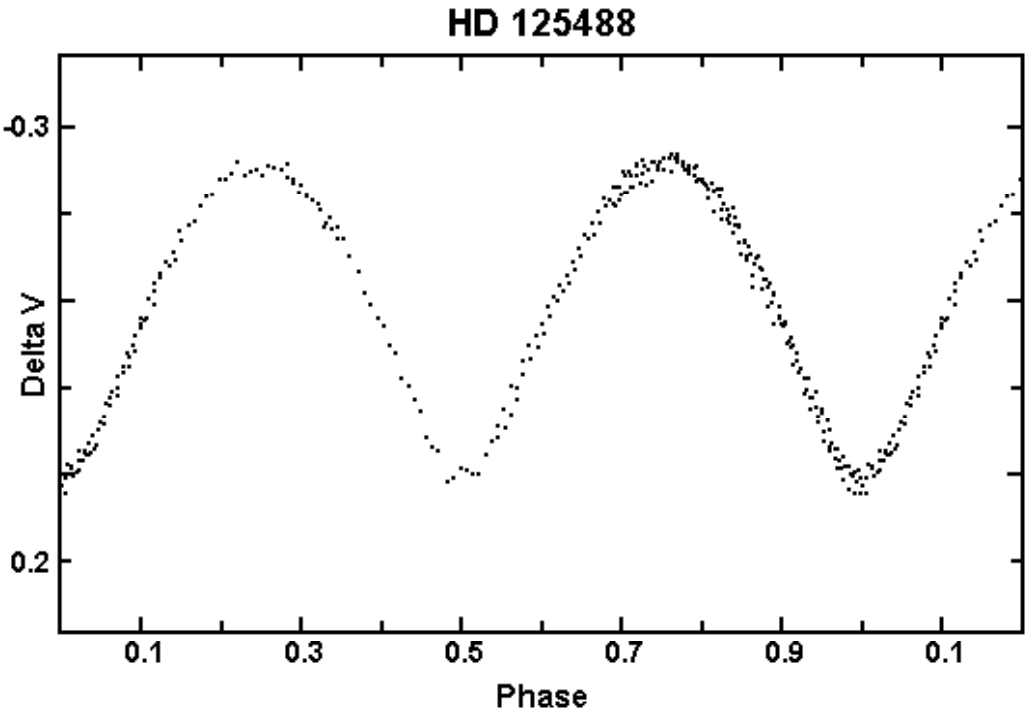

Figure 1

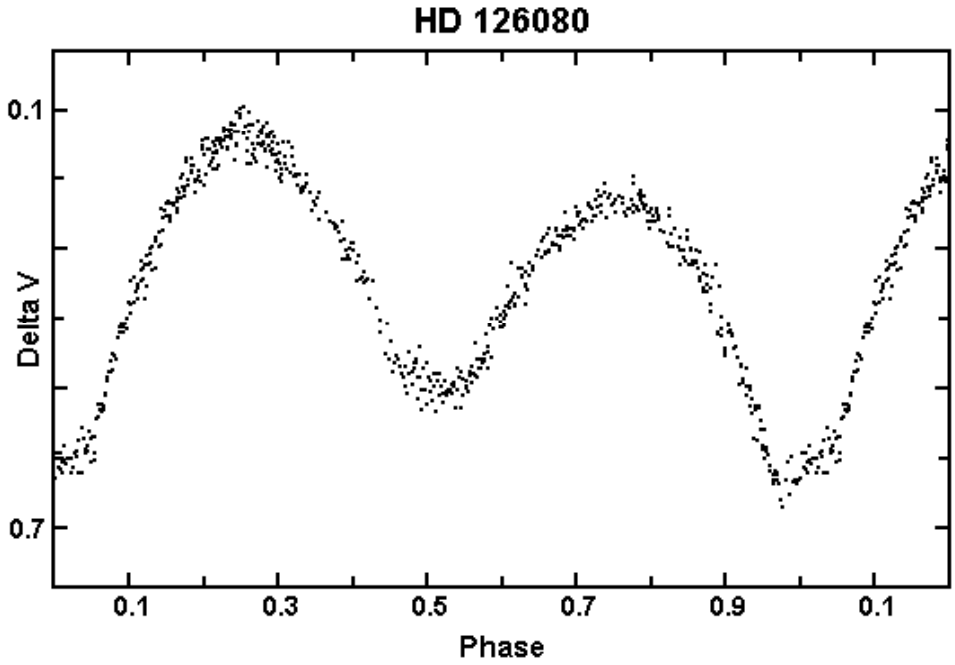

Figure 2

an object with an average photovisual magnitude of $8^m.6$ and A2 spectral type. HD 126511 and HD 126426 were used as comparison and check stars respectively. HD 126080 was classified as an RR Lyrae (Woitas) with a 0.69 day period. CCD observations show that this variable is not an RR Lyrae star but an eclipsing binary star with a period over 1 day (Figure 2). Photometric data indicate that the primary minimum has an amplitude of 0.48 magnitude, and the depth of the secondary minimum is $0^m.37$. The phase curve also displays an O'Connell effect (O'Connell 1951), amounting to $\Delta m = 0^m.1$ (Δm = Max.II−Max. I, where Max. I follows the primary minimum). The following ephemeris was computed:

$$\text{Min. I} = \text{HJD } 2450525.5234 + 1^d.056 \times E$$
$$\pm 0.0002 \pm 0.002$$

HD 341508 (= SAO 85688 = BD +23°3251 = PPM 106718 = AGK3+23°1697 = GSC 2091.1465), is a star of 9.3 magnitude (photovisual) and G0 spectral type which, according to Woitas, is a classical Cepheid variable with a period of 5.89 days. This object was observed in the V band for 19 hours during six consecutive nights, from 13 to 18 March 1997, with a CCD camera, using the 0.41-m telescope at Mollet del Valles Observatory. BD +23°3249 was used as comparison star and GSC 2091.2251 as check star. Observations show that HD 341508 remained constant during the six nights within ±0.015 magnitudes. Correct identification with HD 341508 has been checked. If this star is variable, photometric results indicate that it is not a Cepheid.

J.M. GOMEZ-FORRELLAD
Grup d'Estudis Astronomics
Apartado 9481
08080 Barcelona
Spain
e-mail: jmgomez@astro.gea.cesca.es

E. GARCIA-MELENDO
Esteve Duran Observatory
El Montanya - Seva
08553 Seva, Barcelona
Spain
e-mail: duranobs@astro.gea.cesca.es

References:

O'Connell, D.M.K., 1951, *Riverview Pub.*, **2**, 85
Woitas, J., 1997, *IBVS*, No. 4444