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**PHOTOMETRY OF TWO BRIGHT EARLY-TYPE BINARIES:
HD 101205 and HD 152248 ¹⁾**

During observing periods with the 50 cm telescope at La Silla in February/March and May 1992, several early-type eclipsing binaries were measured in the UBV system. Here the results on two of them are reported. Both are listed in the New Catalogue of Suspected Variable Stars (Kholopov 1982), are members of open clusters and are brighter than 6.5^m, though not listed in the Bright Star Catalogue.

HD 101205: A member of the open cluster IC 2944; NSV 5277, spectral type is O7 III n((f)) according to Walborn (1973). Recently Balona (1992) discovered that this star is an eclipsing binary with a period of 2.084^d (in this paper HD 101205 was erroneously designated as HD 101191). Our new light curve is plotted in Fig. 1. The comparison star was HD 101298, the check star HD 101131. A normal minimum time of JDhel. 2448684.737 ± 0.004^d was derived from the light curve. Unfortunately the period is not known accurately enough to fix the number of cycles between our new minimum and Balona's determination unambiguously; among the possible alias periods, the value closest to the period given by Balona is 2.0842^d. The amplitude in both minima is about 0.08^m, in agreement with Balona's measurements. According to Thackeray and Wesselink (1965) as well as to Ardeberg and Maurice (1977), the star has variable radial velocity (SB1 type).

HD 152248: This is a member of the well-studied open cluster NGC 6231; NSV 8022, spectral type is O7 Ib:(n)(f)p according to Walborn (1972). Perry et al. (1991) classified the star as EB - but no period or light curve has been published. As known from spectroscopy by Struve (1944), Hill et al. (1974) and Levato and Morrell (1983), the star is of SB2 type with a period close to 6 days (two radial velocities reported by Hayford (1932) also do not contradict this period). From our Feb./March photometry the period should be about 5.85^d ± 0.05^d. The May data, compared with this photometry, are shifted by 63.95^d ± 0.04^d; this shift must equal to 11 cycles, yielding an

¹⁾ Based on observations collected at the European Southern Observatory, La Silla, Chile

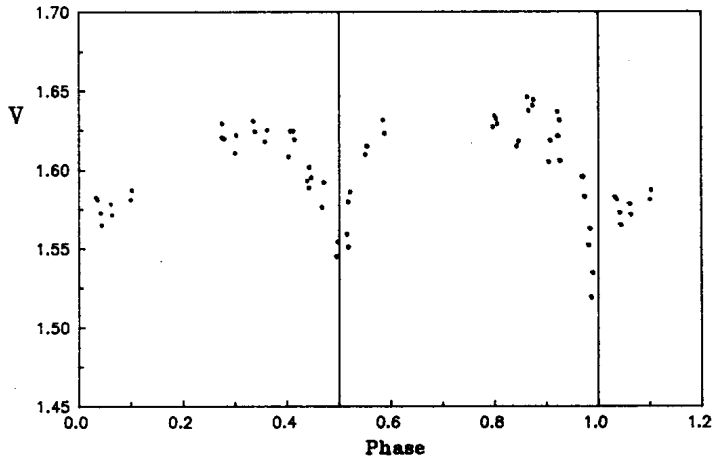


Fig. 1. Light curve in V colour of the eclipsing binary HD 101205. Differences of magnitudes HD 101205 minus HD 101298 are given.

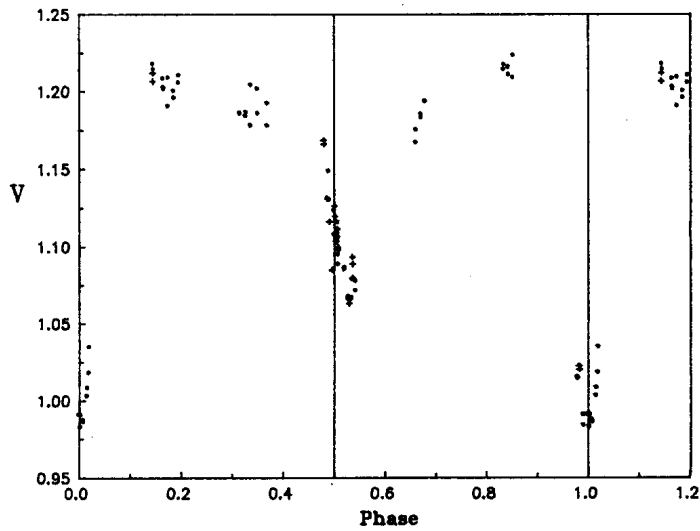


Fig. 2. Light curve in V colour of the eclipsing binary HD 152248. Differences of magnitudes HD 152248 minus HD 152147 are given, ephemeris is $\text{Pri.Min.} = \text{JDhel. } 2448688.77 + 5.814^d \text{ E.}$ Points - data from JD 2448682 to 2448691, crosses - data from JD 2448749, 2448752, 2448753 and 2448755.

improved period of $5.814^d \pm 0.004^d$. Further information on the period should follow from the spectroscopic conjunction phases. However, the present accuracy of the period is not sufficient to rule out all aliases when considering the complete sample of all individual observations. The radial velocity curves are affected by such a large scatter that they cannot help in resolving the ambiguity. Due to the same reason, the eccentricity determined from spectroscopy (Hill et al.: $e = 0$; Levato and Morrell: $e = 0.18$) is of low weight. It however seems, that a non-zero eccentricity is supported by photometry, since the secondary minimum phase is 0.525 ± 0.010 . Definite values of the period and eccentricity can hopefully be determined from future photometry scheduled for 1993. Our V light curve is plotted in Fig. 2. HD 152147 and 152314 served as comparison and check stars and were always measured with the variable, and no sign of variability was detected.

The time of the primary minimum is JDhel. 2448688.77 and amplitudes of minima are 0.24^m (primary) and 0.13^m (secondary) in all colours. HD 152248 is one of the earliest eclipsing binaries known. Its further study can help to improve our limited knowledge of accurate parameters and the temperature scale of hot stars.

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