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NEW PHOTOELECTRIC MINIMA TIMES OF V505 SAGITTARII

In a recent report (Rovithis-Livaniou et al., 1991) the behaviour of the period of the eclipsing binary V505 Sagittarii was studied and new ephemeris formulae were proposed. Since most of the recent minima times were visual - exhibiting large scattering - we had call for new (and especially photoelectric) minima times. This was done during our recent observations of V505 Sgr, which were made using the 48 inch Cassegrain reflector at the Kryonerion Astronomical Station of the National Observatory of Athens, Greece. The star HD 187664 was used for comparison and reduction of the observations was made in the usual way (Hardie, 1962). During our observations three minima times were obtained and are presented in Table I, the successive columns of which give: the Hel. JD; the $(O-C)_C$ according to the linear ephemeris of Chambliss (1972); the $(O-C)_M$ according to Kholopov's et al. (1985) ephemeris formula and finally $(O-C)_{R1}$ and $(O-C)_{R2}$ according to our linear ephemeris formulae. (Equations (1.5) and (1.7) in Rovithis-Livaniou et al., 1991).

Table 1

Hel. JD 2448000.+	$(O-C)_C$ days	$(O-C)_M$	$(O-C)_{R1}$	$(O-C)_{R2}$
432.4871	0.0199	-0.0034	+0.0007	0.0013
442.5402	0.0189	-0.0047	-0.0006	0.0000
804.4984	0.0195	-0.0052	-0.0004	0.0001

From the values of both $(O-C)_{R1}$ and $(O-C)_{R2}$ it is obvious that the proposed new ephemeris formulae hold good. But if one wants to have a more accurate view and adds the 3 new minima times - given in Table I - to those of Chambliss (1972) and Rovithis-Livaniou et al., (1991), then some minor variations are found, thus:

Chambliss' (1972) linear ephemeris formula is improved to:

$$\text{MinI} = 2425501.3811 + 0^d182869342 \times E \quad (1.1)$$

while Kholopov's et al. (1985) to:

$$\text{MinI} = 2444461.5929 + 0^d18286938 \times E \quad (1.2)$$

continuing their changes.

Moreover, since there are only 3 secondary minima times for V505 Sgr in the literature, and the scatter in the primaries is too large, one cannot examine them separately now.

Concluding, we ask for more accurate (photoelectric) minima times – both primaries and secondaries – which together with more data for the third companion (e.g. Khalessch and Hill, 1991; Tomkin, 1992) will lead to the evaluation of the light–time effect which must be removed from the (O–C) diagram of V505 Sagittarii.

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