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TIMES OF MINIMA OF SOME ECLIPSING BINARIES

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We present minima times derived from photometric observations of some eclipsing binaries. These observations were carried out at the Ege University Observatory (EGE for short) with the 48-cm telescope and at the TÜBİTAK (Scientific and Technical Research Council of Turkey) National Observatory (TUG for short) with the 40-cm telescope in Johnson B, V and R filters. Heliocentric times of minima were estimated for each filter by using the method of Kwee and Van Woerden (1956) with their standard errors. In Table 1, primary eclipses are designated as type 1 eclipses, and secondary eclipses as type 2. The $O-C$ values in column 5 were calculated using ephemeris times given in Table 2. Ephemeris times for YY CrB, V972 Her and V357 Peg were calculated with the least squares method using the obtained minima times. For KP Peg, we have combined other minima times (Keskin & Akan, 1989) with our values in order to calculate the new epoch and period in Table 2. We have used the ephemeris times given by Depasquale et al. (1999) for W UMa.

Table 1

Star	JD of Min (− 2400000)	Type	Filter	$O-C$	Observatory & Observer(s)
V376 And	51510.5408 ± 0.0014	2	R	−0.0008	TUG – 1, 4
	51510.5419 ± 0.0010	2	V	0.0003	TUG – 1, 4
	51510.5421 ± 0.0008	2	B	0.0005	TUG – 1, 4
YY CrB	51361.4267 ± 0.0003	1	B	−0.0006	EGE – 1, 2, 3
	51361.4268 ± 0.0002	1	V	−0.0005	EGE – 1, 2, 3
	51368.3957 ± 0.0004	2	V	0.0012	EGE – 1, 2, 3
	51368.3958 ± 0.0004	2	B	0.0013	EGE – 1, 2, 3
	51368.3958 ± 0.0004	2	R	0.0013	EGE – 1, 2, 3
	51370.4652 ± 0.0006	1	R	−0.0007	TUG – 1
	51370.4652 ± 0.0005	1	V	−0.0006	TUG – 1
	51370.4655 ± 0.0006	1	B	−0.0004	TUG – 1
	51372.3484 ± 0.0003	1	R	−0.0005	TUG – 1
	51372.3486 ± 0.0003	1	V	−0.0003	TUG – 1
	51372.3486 ± 0.0003	1	B	−0.0003	TUG – 1

Table 1 (cont.)

Star	JD of Min (− 2400000)	Type	Filter	$O-C$	Observatory & Observer(s)
V972 Her	51386.3979 ± 0.0001	1	V	−0.0004	TUG – 1
	51386.3984 ± 0.0013	1	B	0.0001	TUG – 1
	51386.3986 ± 0.0007	1	R	0.0003	TUG – 1
	51392.3840 ± 0.0015	2	B	−0.0002	EGE – 2, 3
	51392.3843 ± 0.0015	2	R	0.0001	EGE – 2, 3
	51392.3843 ± 0.0026	2	V	0.0001	EGE – 2, 3
KP Peg	51421.3872 ± 0.0046	1	B	−0.0002	TUG – 2, 3
	51421.3873 ± 0.0010	1	V	−0.0001	TUG – 2, 3
	51421.3874 ± 0.0020	1	R	0.0000	TUG – 2, 3
V357 Peg	51465.4520 ± 0.0003	2	R	−0.0008	EGE – 2, 3
	51465.4521 ± 0.0005	2	B	−0.0007	EGE – 2, 3
	51465.4530 ± 0.0003	2	V	0.0002	EGE – 2, 3
	51489.4591 ± 0.0010	1	B	0.0008	EGE – 1, 2, 3
	51489.4594 ± 0.0011	1	R	0.0011	EGE – 1, 2, 3
	51489.4595 ± 0.0005	1	V	0.0011	EGE – 1, 2, 3
	51510.2804 ± 0.0015	1	B	−0.0020	EGE – 2, 3
	51510.2808 ± 0.0028	1	R	−0.0016	EGE – 2, 3
	51514.3320 ± 0.0003	1	B	0.0004	EGE – 1, 2, 3
	51514.3321 ± 0.0003	1	R	0.0006	EGE – 1, 2, 3
	51514.3324 ± 0.0002	1	V	0.0009	EGE – 1, 2, 3
W UMa	51249.3721 ± 0.0001	1	V	−0.0002	EGE – 1, 2, 3
	51249.3723 ± 0.0002	1	B	0.0000	EGE – 1, 2, 3
	51249.5381 ± 0.0004	2	B	−0.0010	EGE – 1, 2, 3
	51249.5387 ± 0.0001	2	V	−0.0004	EGE – 1, 2, 3
	51276.3966 ± 0.0001	1	B	−0.0004	EGE – 1, 2, 3
	51276.3967 ± 0.0001	1	V	−0.0003	EGE – 1, 2, 3
	51276.3967 ± 0.0002	1	R	−0.0003	EGE – 1, 2, 3
	51276.5630 ± 0.0003	2	V	−0.0008	EGE – 1, 2, 3
	51276.5631 ± 0.0004	2	R	−0.0007	EGE – 1, 2, 3
	51276.5635 ± 0.0001	2	B	−0.0003	EGE – 1, 2, 3
	51291.4099 ± 0.0001	1	B	−0.0008	EGE – 1
	51291.4100 ± 0.0001	1	V	−0.0007	EGE – 1
	51298.4165 ± 0.0002	1	B	−0.0006	EGE – 1, 2, 3
	51298.4169 ± 0.0002	1	V	−0.0002	EGE – 1, 2, 3

1: Varol Keskin, 2: Bülent Yaşarsoy, 3: Esin Sipahi, 4: Selim Selam

Due to the large scattering of observations especially in R filter, the mean values become less reliable. Therefore, we have given minima times separately for each colour in Table 1.

Table 2

Star	HIP No.	Period (days)	Epoch (HJD) − 2400000
V376 And	12039	0.7987	51510.5416
YY CrB	77598	0.376606 ± 0.000027	51372.3489 ± 0.0009
V972 Her	87958	0.443401 ± 0.000018	51386.3983 ± 0.0003
KP Peg	105882	0.7272060 ± 0.0000010	46730.1813 ± 0.0020
V357 Peg	117185	0.578447 ± 0.000010	51489.4583 ± 0.0012
W UMa	47727	0.333638	51268.7233

Due to the lack of more observed minima times of V376 And in different cycles, we have used the average value of minima times obtained in B, V and R filters for the epoch. Period was obtained from HIPPARCOS (ESA, 1997) (http://astro.estec.esa.nl) for calculation of the $O - C$ values.

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Erratum

See IBVS 5282.

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