"Peremennye Zvezdy",
Prilozhenie,
vol. 11, N 26 **(2011)**

Discovery of Three W UMa Type Eclipsing Binaries

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Received: 18.04.2011; accepted: 4.07.2011
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#	Name	Other	Coord (J2000)	Type	Max	Min	System	Period	Epoch (JD)	type	Sp	Comment	L.Curve	Find.Chart	Data
1		GSC 3787-00502	07 58 44.10, +54 25 13.8	EW	14.5	15.1	B	0.25828(1)	2455576.5815(6)	Min		Comm. 1	lc37870502.jpg	37870502.jpg	37870502.txt
2		USNO-A2.0 0900-04405532	07 10 29.75, +00 24 07.3	EW	15.2	15.5	V	0.44408(6)	2455603.426(3)	Min		Comm. 2	lc04405532.jpg	04405532.jpg	04405532.txt
3		USNO-A2.0 0900-05986449	08 28 22.91, +05 36 52.8	EW	15.4	16.08	R	0.32243(6)	2455581.550(1)	Min		Comm. 3	lc05986449.jpg	05986449.jpg	05986449.txt

Comments:

1. The system GSC 3787-00502 (indicated as V in the finding chart) is situated in the field of view of the known variable star CL Lyn. GSC 3787-00524 and GSC 3783-00027 were used as the comparison (C) and check (K) stars, respectively, and they are also indicated in the finding chart. MaxI–MinI = –0.60 mag and MaxI–MinII = –0.48 mag in the B filter. The tabulated magnitude in maximum is that given for the star in the USNO-A2.0 Catalogue (Monet et al. 1998). The system was observed with a 25-cm reflector telescope (f/4.7) equipped with the ST-8XMEI CCD camera and Bessell photometric filters.

2. The system USNO-A2.0 0900-04405532 (indicated as V in the finding chart) is situated in the field of view of the known variable star HO Mon. USNO-A2.0 0900-04404074 and USNO-A2.0 0900-04404538 were used as the comparison (C) and check (K) stars, respectively, and they are also indicated in the finding chart. MaxI–MinI = –0.32 mag and MaxI–MinII = –0.30 mag in the V filter. The tabulated magnitude in maximum is that given for the star in the NOMAD catalogue (Zacharias et al. 2004). The system was observed with a 40-cm Cassegrain telescope (f/5.1) equipped with the ST-10XME CCD camera and Bessell photometric filters.
P = 0.36319 d is also possible.

3. The system USNO-A2.0 0900-05986449 (indicated as V in the finding chart) is situated in the field of view of the known variable star DE Hya. USNO-A2.0 0900-05985839 and USNO-A2.0 0900-05983689 were used as the comparison (C) and check (K) stars, respectively, and they are also indicated in the finding chart. MaxI–MinI = –0.68 mag and MaxI–MinII = –0.48 mag in the R filter. The tabulated magnitude in maximum is that given for the star in the USNO-A2.0 Catalogue (Monet et al. 1998). The system was observed with a 40-cm Cassegrain telescope (f/8.1) equipped with the ST-10XME CCD camera and Bessell photometric filters.

Remarks:

In this study we present the first photometric elements of three newly discovered W UMa-type eclipsing binaries. Their variability was detected for the first time as a by-product during our observations of other eclipsing binaries. The observations were carried out at the Gerostathopoulion Observatory of the University of Athens during January – March 2011. Differential magnitudes were obtained for all targets using the Muniwin v.1.1.26 software (Hroch 1998). All the three new variables presented in this study need more photometric and spectroscopic observations, using larger telescopes, in order to obtain better light curves and determine their spectral characteristics. Then, it would be possible to obtain absolute elements of the systems and enrich the bibliography of this type of stars.

Acknowledgments: This work has been financially supported by the Special Account for Research Grants No 70/4/9709 of the National and Kapodistrian University of Athens, Greece.

References:

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