

Discovery of Three New W UMa Stars

[A. Liakos](#), [P. Niarchos](#)

Department of Astrophysics, Astronomy and Mechanics, National and Kapodistrian University of Athens, Athens, Greece

Received: 2.12.2011; accepted: 17.02.2012

(E-mail for contact: alliakos@phys.uoa.gr)

#	Name	Other	Coord (J2000)	Type	Max	Min	System	Period	Epoch (JD)	type	Sp	Comment	L.Curve	Find.Chart	Data
1		GSC 0163-01415	07 10 27.94, +00 20 25.5	EW	13.14	13.24	I	0.72010	2455632.3604	Min		Comm. 1	LC1.jpg	FoV1.jpg	1.txt
2		GSC 3332-00638	04 15 59.59, +47 26 55.7	EW	13.30	13.56	R	0.40971	2455847.4918	Min		Comm. 2	LC2.jpg	FoV2.jpg	2.txt
3		USNO-A2.0 1275-01929590	03 00 31.11, +37 59 07.9	EW	14.20	14.74	R	0.38801	2455819.5027	Min		Comm. 3	LC3.jpg	FoV3.jpg	3.txt

Comments:

1. The system GSC 0163-01415 (indicated as V in the finding chart) is situated in the field of view of the known variable star HO Mon and the recently discovered variable USNO-A2.0 0900-04405532 (Liakos & Niarchos 2011). GSC 0163-03003 and GSC 0163-01917 were used as Comparison (C) and Check (K) stars, respectively, and they are also indicated in the finding chart. $\text{MaxI}-\text{MinI} = -0.1$ mag and $\text{MaxI}-\text{MinII} = -0.1$ mag in the I filter. The tabulated magnitude in maximum is that given for the star in the TASS Mark IV Photometric Survey of the Northern Sky (Droege et al. 2007).

2. The system GSC 3332-00638 (indicated as V in the finding chart) is situated in the field of view of the known variable star V482 Per. USNO-A2.0 1350-04389588 and GSC 3332-00358 were used as Comparison (C) and Check (K) stars, respectively, and they are also indicated in the finding chart. $\text{MaxI}-\text{MinI} = -0.26$ mag and $\text{MaxI}-\text{MinII} = -0.22$ mag in the R filter. The tabulated magnitude in maximum is that given for the star in the USNO-A2.0 Catalog (Monet et al. 1998).

3. The system USNO-A2.0 1275-01929590 (indicated as V in the finding chart) is situated in the field of view of the known variable star V881 Per. USNO A2.0 1275-01924782 and USNO A2.0 1275-01922582 were used as Comparison (C) and Check (K) stars, respectively, and they are also indicated in the finding chart. $\text{MaxI}-\text{MinI} = -0.54$ mag and $\text{MaxI}-\text{MinII} = -0.54$ mag in the R filter. The tabulated magnitude in maximum is that given for the star in the USNO-A2.0 Catalog (Monet et al. 1998).

Remarks:

In the present 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 by-product during our observations of other eclipsing binaries. The observations were carried out at the Gerostathopoulion Observatory of the University of Athens during February–November 2011, with a 40-cm Cassegrain telescope (f/8.1) equipped with the ST-10XME CCD and Bessell photometric filters. Differential magnitudes were obtained for all targets using the Muniwin v.1.1.26 software (Hroch 1998). All the targets presented in this study need additional photometric and spectroscopic observations, using larger telescopes, in order to obtain more accurate 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 70/4/11112 of the National and Kapodistrian University of Athens, Greece.

References:

Droege, T.F., Richmond, M.W., Sallman, M.P., Creager, R.P., 2006, Publ. of Astron. Society of Pacific, 118, 1666

Hroch, F., 1998, Proceedings of the 29th Conference on Variable Star Research, Brno, Czech Republic; eds.: Dušek, J. and Zejda, M., p. 30

Liakos, A., Niarchos, P., 2011, Peremennye Zvezdy Prilozhenie, 11, 26

Monet, D., Bird, A., Canzian, B., et al., 1998, USNO-A2.0, A Catalog of Astrometric Standards (U.S. Naval Observatory, Washington, DC), Centre de Donnees Astronomiques de Strasbourg, I/252