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OBSERVATIONS OF VARIABLES

Date: 10 November 2011
Reported by: Liakos, A. - Department of Astrophysics, Astronomy and Mechanics, Faculty of Physics, National and Kapodistrian University of Athens, GR 157 84, Panepistimiopolis, Zografos, Athens, Greece, alliakos@phys.uoa.gr Niarchos, P. - Department of Astrophysics, Astronomy and Mechanics, Faculty of Physics, National and Kapodistrian University of Athens, GR 157 84, Panepistimiopolis, Zografos, Athens, Greece, pniarcho@phys.uoa.gr
Name of the object: TU UMa
Remarks: New UBVRI observations of TU UMa are presented. A normal maximum time is derived: Max = HJD 2455664.2930 (4)

Date: 5 December 2011
Reported by: Monninger, G. - Bundesdeutsche Arbeitsgemeinschaft für Veränderliche Sterne e.V. (BAV), Munsterdamm 90, DE-12169 Berlin, Germany, gerold.monninger@online.de Hoffman, D.I. - Infrared Processing and Analysis Center, California Institute of Technology, Pasadena, CA 91125, USA, dhoffman@ipac.caltech.edu
Name of the object: GSC 01924-01134
Remarks: GSC 01924-01134 was identified as a variable object and classified into the variable star class 'Short Period Delta Scuti Candidates' (Hoffman et al., 2009). Our observation confirmed the classification for the first time. GSC 01924-01134 is a high amplitude delta scuti variable (HADS), with a modulation in its light curve. The main period is 0.088535 d.

Date: 7 December 2011
Reported by: Hojjatpanah, S. - Department of Physics, Biruni Observatory, Shiraz University, P.O.Box 71454, Shiraz, Iran, saeedm31@gmail.com Zangi, P. - Department of Physics, Biruni Observatory, Shiraz University, P.O.Box 71454, Shiraz, Iran Khazraei, M. - Astronomical society of Mehr, Shiraz, P.O. Box 71878-35691 Riazi, N. - Department of Physics, Biruni Observatory, Shiraz University, P.O.Box 71454, Shiraz, Iran

Name of the object:
DY Peg
Remarks:
We observed DY Peg during August 2011 at Biruni Observatory of Shiraz University. We used an 11 inch Schmidt-Cassegrain robotic telescope with focal reducer and monochrome DSI pro II as the detector with a cooling system. The observations were carried out in the standard Johnson V band. We had 7 uninterrupted clear nights and ~ 7000 FITS images with 30 seconds exposure times were taken. We reduced the data by using dark, bias and flat-field frames. The differential photometry was obtained and HD 218587 ($V = 9^m80$) was observed as the comparison star. The times of maxima were listed in 6099-t3.txt calculated by fitting a parabolic curve to the data around the maxima.

Name of the object:
CY Aqr
Remarks:
Observations of CY Aqr were carried out in Johnson's V band during August 2011 at Biruni Observatory. We observed CY Aqr with the same instruments that were mentioned for DY Peg, also the same data reduction and analysis were done on the data for obtaining maximum times. However, the moments of maxima were obtained by third degree polynomial fitting. The star GSC 00567-01826 ($V=12^m1$) was used as the comparison star. The times of maxima are presented in 6099-t5.txt which are obtained for 2 nights of observations and ~ 2100 good FITS images.

Date: 10 January 2012
Reported by: Martignoni, Massimiliano - Stazione Astronomica Betelgeuse, Magnago, Milano, Italy, massimiliano.martignoni@alice.it
Name of the object:
KM And
Remarks:
KM And, a possibly RR type variable star, was observed between JD 2455838 and JD 2455890 with a 0.25m Schmidt-Cassegrain Telescope (f/10) of the „Stazione Astronomica Betelgeuse” in Magnago, Italy equipped with a 512×512 pixels Kodak KAF261E CCD cooled to (typ.) -20°C ; 1.6 arcsec per pixel (1×1 binning); $14' \times 14'$ field of view, with BVR_CI_C photometric filters. As comparison and check stars Tycho2 02831-01169-1 and Tycho2 02831-02445-1 were used. A total of 119 measures in (V) and 90 in (R_C) band were collected; reduction to standard photometric system was performed. No evidence of variation has been detected beyond the standard deviation of our measures.

Name of the object:
CI Com
Remarks:
CI Com, type RRC, was observed between JD2455644 and JD2455664 with a 0.25m Schmidt-Cassegrain Telescope (f/10) of the „Stazione Astronomica Betelgeuse” in Magnago, Italy equipped with a 512×512 pixels Kodak KAF261E CCD cooled to (typ.) -20°C ; 1.6 arcsec per pixel (1×1 binning); 14'×14' field of view, with BVR_CI_C photometric filters. As comparison and check stars Tycho2 00872-00598-1 and 2MASS J12140380+1403031 were used. A total of 251 measures in (V) and 267 in (I_C) band were collected; reduction to standard photometric system was performed. The following new elements have been determined: $\text{Max} = \text{JD}2450925.4670 + 0^{\text{d}}3599876 \times \text{E}$.

Name of the object:
V2369 Cyg
Remarks:
V2369 Cyg, type RRC, was observed between JD2453573 and JD2454718 with a 0.2 m Schmidt-Cassegrain Telescope (f/10) of the „Stazione Astronomica Betelgeuse” in Magnago, Italy equipped with a 765×510 pixels Kodak KAF401E CCD cooled to (typ.) -20°C ; 1.9 arcsec per pixel (2×2 binning); 12'×8' field of view, with BVR_CI_C photometric filters. As comparison and check stars Tycho2 03136-00628-1 and Tycho2 03135-00976-1 were used. A total of 169 measures in (B), 208 in (V), 165 in (R_C) and 132 in (I_C) band were collected; reduction to standard photometric system was performed. The following new elements have been determined: $\text{Max} = \text{JD}2452907.3292 + 0^{\text{d}}2972438 \times \text{E}$.

Name of the object:
AV Peg
Remarks:
AV Peg, type RRAB, was observed between JD2453613 and JD2454417 with a 0.2 m Schmidt-Cassegrain Telescope (f/10) of the „Stazione Astronomica Betelgeuse” in Magnago, Italy equipped with a 765×510 pixels Kodak KAF401E CCD cooled to (typ.) -20°C ; 1.9 arcsec per pixel (2×2 binning); 12'×8' field of view; with BVR_CI_C photometric filters. As comparison and check stars Tycho2 02202-01658-1 and Tycho2 02202-01459-1 were used. A total of 267 measures in (B) and 401 in (V) band were collected; reduction to standard photometric system was performed. The following new elements have been determined: $\text{Max} = \text{JD}2443790.3160 + 0^{\text{d}}3903788 \times \text{E}$.

Name of the object:
EV Psc
Remarks:
EV Psc, type RRC, was observed between JD2453350 and JD2455498 with a 0.2 m Schmidt-Cassegrain Telescope (f/10) of the „Stazione Astronomica Betelgeuse” in Magnago, Italy equipped with a 765×510 pixels Kodak KAF401E CCD cooled to (typ.) -20°C ; 1.9 arcsec per pixel (2×2 binning); 12'×8' field of view; with BVR_CI_C photometric filters. As comparison and check stars Tycho2 00587-00360-1 and Tycho2 00587-00477-1 were used. A total of 246 measures in (V) band were collected; no reduction to standard photometric system was performed. The following new elements have been determined: $\text{Max} = \text{JD}2451463.6800 + 0^{\text{d}}3062573 \times \text{E}$.

Date: 27 February 2012

Reported by:

Pollmann, E. - Spektroskopische Arbeitsgemeinschaft ASPA, 51375 Leverkusen, Germany
 Mauclair, B. - Observatoire du Val de l'Arc, Bouches de Rhône 13, France
 Bücke, R. - Spektroskopische Arbeitsgemeinschaft ASPA, 21035 Hamburg, Germany

Name of the object:

ζ Tau

Remarks:

The binary Be star ζ Tau shows periodic behaviour in the radial velocity of the HeI 6678 absorption line. We observed zeta Tau from February 2008 until March 2009 at different locations with 20 cm Newton- and 40 cm SC-telescopes, 0.1 and 0.3 Å/pix spectrographs. The spectra have been reduced with standard professional procedures (instr. response, normalisation, wavelength calibration) by using of the program VSPEC.

We started our long-term observing campaign of the HeI 6678 line at the time, when the investigations of Ruzdjak et al. (2009) ended, approximately at JD 2454500. Our findings on the long-term variability of the radial velocity of HeI 6678 is shown in Fig. 1 (113 measurements). We present the results of our period analysis (after subtracting the long-term component fitted by a 3rd order polynomial).

Table 1:

Element	Sol. 3	Sol. 4	Sol. 5	Our result
P (d)	132.92±0.013	133.0±0.034	132.901±0.044	132.2±0.8 AVE 131.3±0.9 SPS
T _{RV} (HJD, 24...)	47016.4±3.6	47027.2±3.5	47027.9±1.3	54608.9
K (km s ⁻¹)	9.74±0.41	7.6±1.2	8.29±0.61	9.1±0.8
rms (km s ⁻¹)	8.09	16.25	4.44	5.94
No. of RVs	801	509	178	113

Columns 2-4: from Ruzdjak et al. (2009), column 5: our results, using the programs AVE and SPS.

As can be seen in Figure 2 and Table 1, our findings are very close to those of Ruzdjak et al. (2009) for the most important parameters. Sometimes significant intensity variations of the continuum in the area of the blue and/or red side, as well within the wings of the HeI 6678 absorption line, are seen. So-called “co-rotating circumstellar clouds and/or matter” in the outer photosphere of the primary could be the cause (Balona & Kaye, 1999). Because of this phenomenon we cannot expect a smooth continuum within this area all the time.

Date: 10 October 2012

Reported by:

Monninger, G. - Bundesdeutsche Arbeitsgemeinschaft für Veränderliche Sterne e.V. (BAV), Munsterdamm 90, DE-12169 Berlin, Germany, gerold.monninger@online.de
 Hoffman, D.I. - Infrared Processing and Analysis Center, California Institute of Technology, Pasadena, CA 91125, USA, dhoffman@ipac.caltech.edu

Name of the object:

GSC 01750-01237

Remarks:
<p>The variability of GSC 01750-01237 was discovered by Pojmanski (2002). GSC 01750-01237 was also identified as a variable object and classified into the variable star class 'Short Period/Delta Scuti Candidates' (Hoffman et al., 2009). GSC 01750-01237 is a high amplitude delta Scuti variable (HADS). The photometric observations of the variable star were carried out with a SBIG ST10XME CCD camera and V filter attached at a 14 inch cassegrain telescope at f/6 in Gemmingen (Germany). The revised ephemeris is based on our follow-up observations in 2011 and 6 maxima published in the literature (Wils et al., 2011, 2012). A linear fit to the 16 times of maxima provides the following ephemeris: $\text{HJD}_{\text{max}} = 2455824.4952(1) + 0.08697753(6) \text{ d} * \text{E}$</p>

Date: 8 January 2013
Reported by:
<p>Nesci, R. - INAF/IAPS, Roma, Italia; e-mail: roberto.nesci@inaf.iaps.it Falasca, V. - Osservatorio Cittadino, via Bolletta 18, 06034, Foligno, Italia Villani, L. - Osservatorio Cittadino, via Bolletta 18, 06034, Foligno, Italia Caravano, A. - Osservatorio Cittadino, via Bolletta 18, 06034, Foligno, Italia Fantauilli, S. - Osservatorio Cittadino, via Bolletta 18, 06034, Foligno, Italia</p>

Name of the object:
MASTER OT J211322.9+260647.4
Remarks:
<p>We observed the optical transient OT 211322.9+260647.4 (Shurpakov et al. 2012, ATel No. 4675) with the 0.30 m Schmidt-Cassegrain telescope of the Foligno Observatory, equipped with a Nikon D50 camera. Exposure times of 900 s were obtained stacking 30 consecutive frames of 30 seconds each. Aperture photometry was performed with IRAF/apphot, using a sequence of 32 comparison stars, within 5 arcmin from the source, taken from the UCAC4 catalogue. The star showed a monotonic decreasing trend of approximately 0.1 mag/day, similar to that observed in the large flare by WZ Sge in 2001 (Patterson et al. 2002). Our observations therefore support the suggestion by Shurpakov et al. (2012) that the source OT 211322.9+260647 is likely a star of the WZ Sge type.</p>

Date: 22 May 2013
Reported by:
<p>Hasanzadeh, A. - The International Occultation Timing Association-Middle East section (IOTA-ME); Institute of Geophysics, University of Tehran, Tehran, Iran, iotamiddleeast@yahoo.com Bay, M. - IOTA-ME Khaleghi, K. - IOTA-ME Porro, A. - IOTA-ME</p>

Name of the object:
V873 Per

Remarks:

V873 Per (TYC 2853-18-1, GSC 2853-0018) was discovered by TYCHO-2 as an eclipsing binary (Nicholson and Varley 2006). The V magnitude range is 10.8-11.5 and the variable was identified as an EW type (Samec et al. 2009). The B,V,R light curves were taken at Iranian Space Agency (ISA) observatory in Iran. The phases of the observations were calculated from ephemeris

$$\text{Min I (HJD)} = 2451370.875 + 0.2949039 \times E(1)$$

given by Samec et al. (2009).

The light curve in filter *B* shows that transit depths are about the same for primary and secondary transits, even transit depths for secondary (in filter *V* and *R*) are deeper than the primary. It can imply starspot activity. The high quality observations can be investigated for this effect.

We determined two times of minimum light from our observations using Kwee & van Woerden method (1956) and are the mean values from *B*, *V* and *R* observations. The derived times of minima in HJD and O–C residuals calculated from Equation 1 are given in the data file.

To improve the ephemeris of V873 Per, we collected all available times of minimum light and listed them in Table 1). The (O–C)1 and (O–C)2 values computed with the old (Equation 1) and new ephemerides, respectively. We calculated the following ephemeris form times of minimum light (except the first one):

Min I (HJD) = 2451370.8993 (± 0.0017) + 0.29490155 (± 0.00000012) $\times E$ (2) The corresponding O–C values were calculated with the new ephemeris (equation 2). The resultant O–C diagrams from times of minima is shown in figures 20 and 21 (available electronically). As displayed in fig. 21, the scatter of new residuals is less, so it can be used for predicting minimum times for V873 Per.

Thanks to: Iranian Space Agency for help and disposal of the ISA observatory in Mahdasht, Iran.

Date: 30 August 2013

Reported by:

Saad, M.S. - National Research Institute of Astronomy and Geophysics (NRIAG), Helwan, Cairo, Egypt, saadmhsaad@gmail.com ; Kottamia Center of Scientific Excellence for Astronomy and Space Sciences

Elkhateeb, M.M. - NRIAG, Helwan, Cairo, Egypt ; Physics Dept., College of Science, Northern Border University, Arar, Saudi Arabia

Shokry, A.A. - NRIAG, Helwan, Cairo, Egypt ; Kottamia Center of Scientific Excellence for Astronomy and Space Sciences

Name of the object:

1SWASP J133105.91+121538.0

Remarks:

We have obtained new light curves with the 1.8m Kottamia optical telescope using a 2Kx2K CCD camera in BVRI filters for the short period eclipsing binary 1SWASP J133105.91+121538.0.

New timings of one primary and one secondary minimum were obtained for each filter using the Kwee & Van Woerden (1956) method. A new ephemeris was determined from the present time of minimum.

HJD $T_{\text{MinI}}=2456417.31329+0^{\text{d}}21801\times E$.

HJD	Error	Filter	Min
2456417.31311	0.00008	<i>B</i>	I
2456417.31329	0.00004	<i>V</i>	I
2456417.31337	0.00007	<i>R</i>	I
2456417.31337	0.00011	<i>I</i>	I
2456417.42178	0.00001	<i>B</i>	II
2456417.42190	0.00008	<i>V</i>	II
2456417.42211	0.00006	<i>R</i>	II
2456417.42235	0.00010	<i>I</i>	II

This research has made use of Science and Technology Development Fund (STDF) N5217, Academy of Scientific Research and Technology (ASRT), Cairo, Egypt, and Kottamia Center of Scientific Excellence for Astronomy and Space Sciences (KCSE_ASSc), National Research Institute of Astronomy and Geophysics (NRIAG).

Date: 16 October 2013

Reported by:

Nilforoushan, M. - Mahdasht Observatory of Iranian Space Agency (ISA), Alborz, Iran; Department of Physics, Zanjan University, Zanjan, Iran, nilforoushan@znu.ac.ir

Asadishad, T. - Mahdasht Observatory of Iranian Space Agency (ISA), Alborz, Iran; Faculty of Physics, Shahid Beheshti University, Evin, Tehran, Iran, asadishad@sbu.ac.ir

Name of the object:

EG Cep

Remarks:						
<p>Observation of EG Cep was carried out at the Iranian Space Agency (ISA) Observatory, with a Meade 16'' 0.4-m f/10 Schmidt-Cassegrain telescope on Paramount GT-1100 mount at Mahdasht, Alborz province. The used detector was a 2745×4008 pixels CCD SBIG STL-11000M (9×9μm), with a 20'9×30'5 FOV, cooled to −10° Celsius.</p> <p>Reduction of the CCD images was done with the IRAF package. The Sky 6.0, SBIG CCDOps v5.51 and IRIS v5.59 were used for aperture photometry.</p> <p>The minimum times were computed by parabolic fit with the Kwee - van Woerden algorithm (1956) and TableCurve v5.01 for parallel activity around minimum times.</p>						
Star name	Time of min.	Error	Type	Filter	<i>O</i> − <i>C</i>	Rem.
	HJD 2400000+				[day]	
EG Cep	56167.459013	0.00014	I	BVR	0.011518	NM/AT
	56191.422608	0.00024	I	BVR	0.011336	NM/AT
	56192.252530	0.00051	II	BVR	0.025789	NM/AT
	56193.352083	0.00170	II	BVR	0.034799	NM/AT
Observers: NM ~ Mohammad Nilforoushan; AT ~ Tannaz Asadishad.						
<p>More than 1630 observations in standard Morgan-Johnson <i>BVR</i> filters were made at the Iranian Space Agency (ISA) Observatory to characterize the light curve. The amplitude of the star was found to be 0^m.92 in the <i>R</i> filter, 0^m.96 in the <i>V</i> filter and 1^m.00 in the <i>B</i> filter. Comparison/check stars were HD 194400 (F8, <i>V</i> = 9.72) and HD 194130 (F2, <i>V</i> = 8.87), respectively. The exposure time was 4 seconds. Standard deviations of the comparison/check star magnitudes were less than 0^m.04. We used O-C data from Mallama (1980) and Nelson (2012) along with our new measurements to derive an updated ephemeris and period for this system:</p> $\text{Min. I} = \text{HJD } 2440050.4551(\pm 10^{-4}) + 0^{\text{d}}54462168(\pm 4 \times 10^{-8}) \times E$ <p>The epoch and period above was adopted from the latest and best times of minima that reported in last years.</p>						
<p>Acknowledgements: We would like to thank the contributions of Mr. Hasan-zadeh. We also acknowledge the partial support by the Iranian Space Agency and the Alborz - Mahdasht Space Center Observatory Branch.</p>						

Date: 16 October 2013
Reported by: Behre, Otto Peter - Hamburger Sternwarte, Univ. Hamburg, Germany, opbehre@t-online.de Hünsch, Matthias - Hamburger Sternwarte, Univ. Hamburg, Germany, matthias@huensch.de

Name of the object:
RZ CrB

Remarks:
The star has been identified by Shapley (1923) as variable, by Bond (1978) as an F0-star and by Drake et al. (2013) as an RRab Lyrae-star. From 2010-06-17 to 2013-07-01 we performed 424 observations in V , 151 observations in B , and 173 observations in R . Corrected for atmospheric and interstellar extinction we obtained maximum magnitudes of $B = 14.177$, $V = 13.891$ and $R = 13.930$ and minimum values of $B = 15.699$, $V = 15.105$ and $R = 14.935$. Accordingly, T_{eff} changes between ≈ 6150 K at minimum and ≈ 7500 K at maximum. Combining our observations with those of Drake et al. for $MJD_{Peak} = 53479.90060$ we derive a period of 0.49637155d. The difference to the period given by Drake et al. from observations in 2005-2011 is smaller than -0.3 s and to our observations from 2010-2013 is smaller than $+0.1$ s. The period of RZ CrB seems to be rather constant. The lightcurves and these values support the classification as an RRab-Lyrae-star with a minimum at $JD = 2456474.951 + 0.49637155 \times E$ at a distance of $6.15 \text{ kpc} \pm 0.44 \text{ kpc}$.

Date: 11 March 2011
Reported by: Liakos, A. - National Observatory of Athens, Palaia Penteli, Athens, Greece, alliakos@noa.gr Niarchos, P. - National and Kapodistrian University of Athens, Zografos, Athens, Greece, pniarcho@phys.uoa.gr

Name of the object:
GSC 3159-1188
Remarks:
Detected in the FoV of V1187 Cyg and V1191 Cyg

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ERRATUM FOR IBVS 6099

Report No. 10., 2013 October 16., by Nilforoushan et al.

Editor's notice: The president of the IOTA/ME reported that these observations were already published in the local IOTA/ME paper Journal on Occultation and Eclipse (JOE, 2013, No. 29, pp. 20-21.) but the derived O-C values differ from the ones listed in this report.