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**TWO NEW ECLIPSING BINARY SYSTEMS:
 GSC 0619-0232 AND GSC 3658-0076**

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Observed star(s):				
Star name	GCVS type	Coordinates (J2000)		Comp./check star(s)
		RA	Dec	
GSC 0619-0232	EW	01 ^h 18 ^m 48 ^s .50	+13°21'07".81	GSC 0619-0928 GSC 0619-0432 GSC-0619 0408
GSC 3658-0076	EB	00 ^h 26 ^m 49 ^s .28	+55°27'23".95	GSC 3658-0270 GSC 3658-0042 GSC 3657-0379

Observatory and telescope:	
Torrecilla de Valmadrid Observatory: Schmidt-Cassegrain 20-cm	
Rodeno: Schmidt-Cassegrain 20-cm	
Hostalets de Pierola: Newtonian 41-cm	
Monegrillo: Newtonian 41-cm	

Detector:	SBIG ST-6 and Starlight Xpress CCD cameras
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Filter(s):	V
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Date(s) of the observation(s):	
GSC 0619-0232: from 29 Dec 2002 to 8 Feb 2003	
GSC 3658-0076: from 28 Dec 2002 to 8 Feb 2003	

Method of data reduction:	
Synthetic aperture differential magnitude extraction method using software package LAIA (Laboratory for Astronomical Image Analysis) by Joan A. Cano	

Transformed to a standard system:	No
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Availability of the data:
Upon request

Method of minimum determination:
Kwee – van Woerden algorithm

Ephemeris:			
Star name	E 2400000+	P [day]	Source
GSC 0619-0232	52668.3010(4)	0.34396(8)	present paper
GSC 3658-0076	52668.3556(6)	0.75986(15)	”

Times of minima for GSC 0619-0232:			
Time of min. HJD 2400000+	Error	Type	Epoch
52652.307	1	II	–46.5
52655.4006	5	II	–37.5
52663.3143	6	II	–14.5
52664.3471	2	II	–11.5
52665.3761	7	II	–8.5
52668.3010	4	I	0.0

Times of minima for GSC 3658-0076:			
Time of min. HJD 2400000+	Error	Type	Epoch
52668.3556	6	I	0.0
52671.3945	9	I	4.0
52679.3671	8	II	14.5

Remarks:
<p>The variability of GSC 0619-0232 (photovisual magnitude of 14.3) was discovered from Observatorio Rodeno while performing comet photometry and astrometry. To obtain a more accurate light-curve this star was observed from Hostalets de Pierola and Monegrillo observatories. The new photometric observations allowed to characterise GSC 0619-0232 as a new EW variable with a 8.26-hour period (Figure 1). This variable shows an average V amplitude of 0.40 mag, and an O’Connell effect (O’Connell, 1951) of +0.05 mag at phase 0.75. A preliminary analysis of the data by using Binary Maker 2.0 (Bradstreet, 1993), suggests that the components of this binary system present a large mass ratio between 6 and 8. The flat bottom at primary minimum is due to the transit of the less massive star across the disk of the other component.</p> <p>The variability of GSC 3658-0076 ($V=11.95$, $B - V=0.128$, from Tycho) was discovered during a program for searching new variables performed from Monegrillo Observatory between 21 August and 20 November 2001. To characterise GSC 3658-0076 the star was monitored from Torrecilla de Valmadrid for 14 nights. The new observations indicate that this object is an EB eclipsing binary system whose primary and secondary minima are 0.36 mag and 0.16 mag deep respectively (Figure 2). A preliminary analysis of the photometric data by using Binary Maker 2.0 (Bradstreet, 1993), suggests that GSC 3658-0076 might be a semidetached system with a mass ratio q close to 0.3.</p>

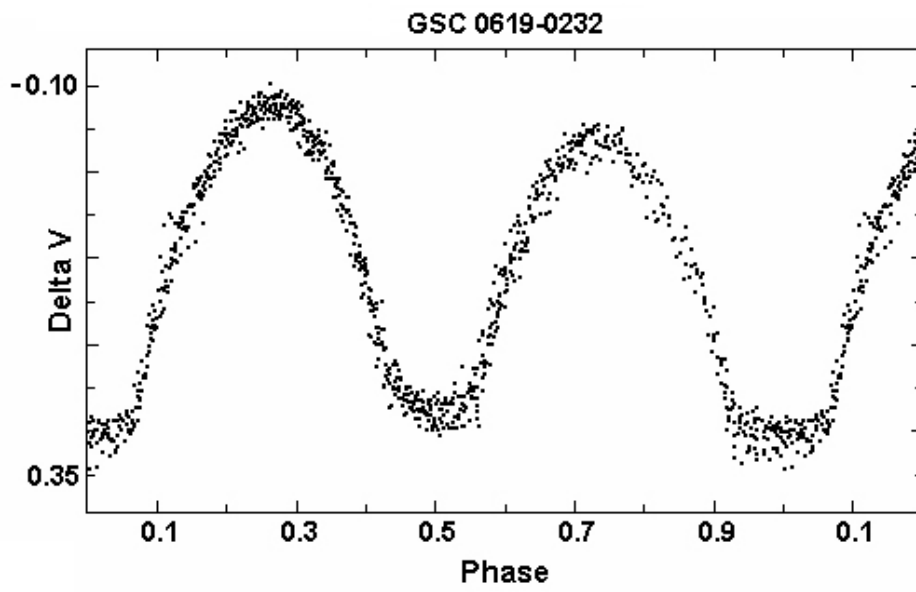


Figure 1. Light-curve of GSC 0619-0232 folded on a 0.34396-day period

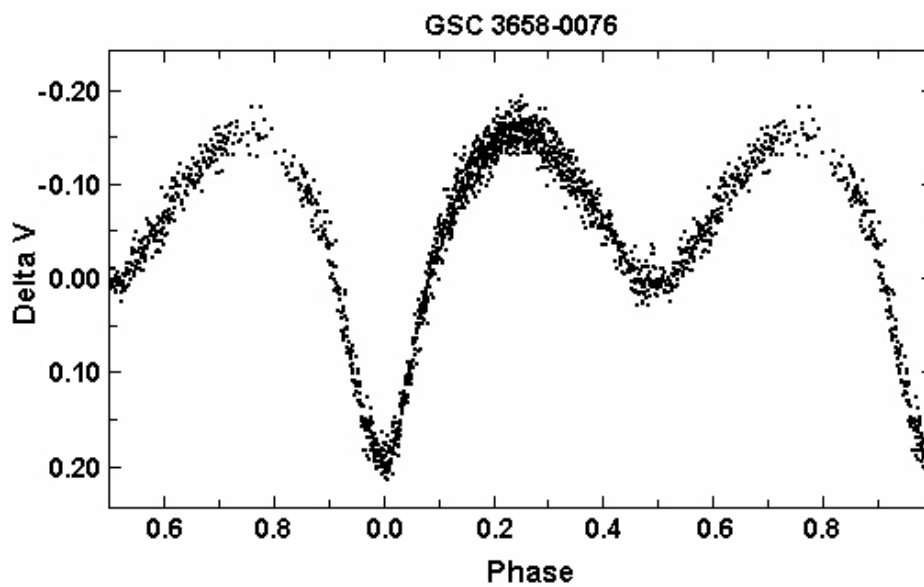


Figure 2. Light-curve of GSC 3658-0076 folded on a 0.75986-day period

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References:

- Bradstreet, D. H., 1993, *Binary Maker 2.0 User Manual*, Contact Software, Norristown, Pennsylvania
- O'Connell, D. M. K., 1951, *Riverview Pub.*, **2**, 85