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New Eclipsing Variable Star GSC 02707-01173 in the Field of DM Cyg

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Star Name:	GSC 02707-01173		
Coordinates (J2000):	21 21 27.68, +32 10 02.6		
Variability type:	EA;	**Limits, System:**	12.80 - 13.65 (V);
Period:	4.34427 +/- 0.00002 d;	**Epoch(min):**	JD 2455070.360

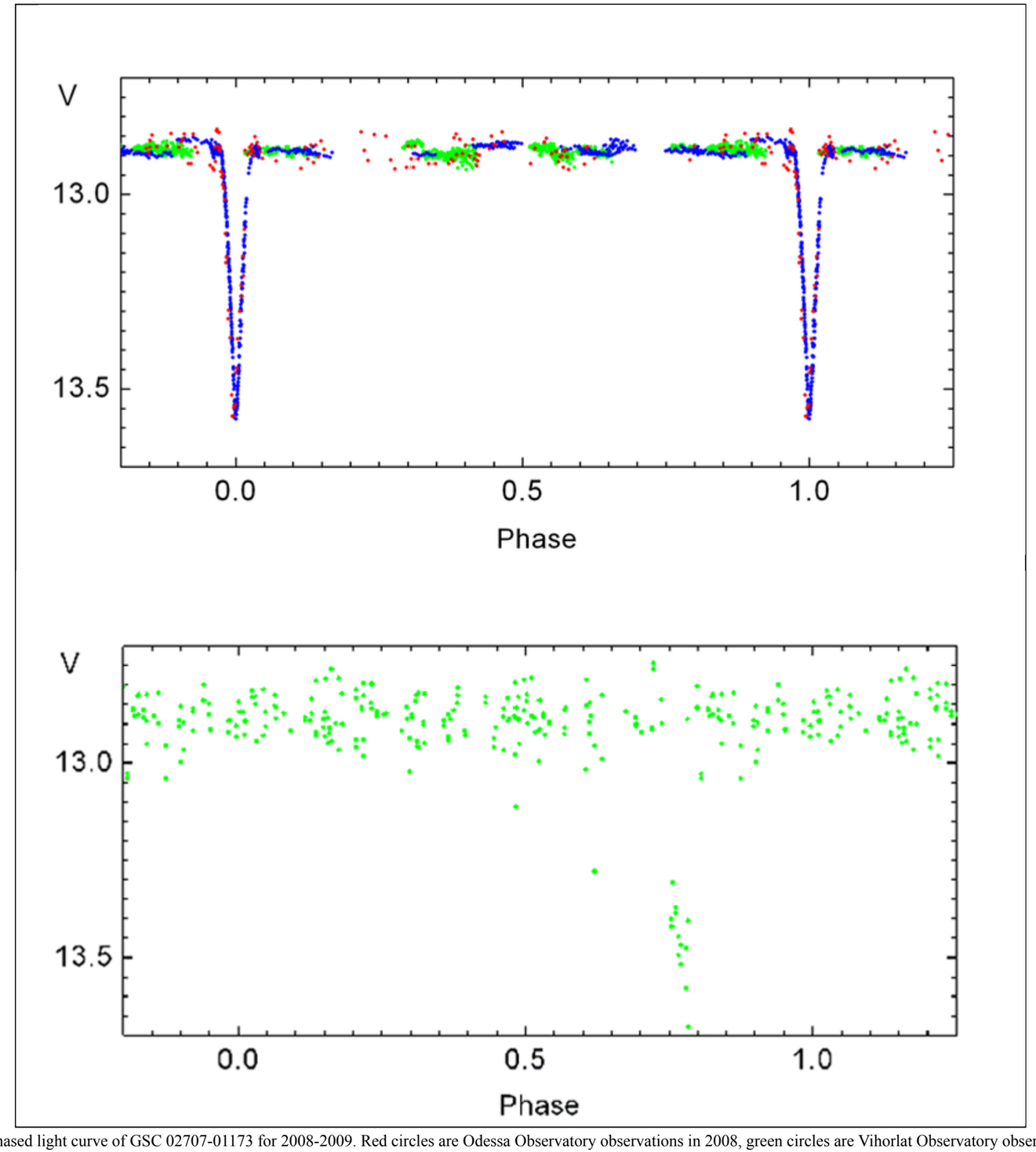
Remarks:

The new eclipsing variable star GSC 02707-01173 in the field of DM Cyg was discovered during cooperative observations of the latter variable star in the Astronomical Observatory of Odessa University and the Astronomical Observatory on Kolonica Saddle. A 48-cm AZT-3 reflector (Newtonian focus) with a CCD photometer (Sony ICX429ALL chip, Peltier cooler) and a 28-cm reflector (Newtonian focus) with a Meade DSI Pro CCD camera (Sony ICX254AL chip) were used, respectively. Our photometric measurements were collected during 2008-2009. The reductions of the CCD frames were carried out using the MUNIPACK (http://integral.sci.muni.cz/cmunipack) software. The comparison star TYC 2707 0891 1 and the check star TYC 2707 1687 1 were used. The shape of the light curve indicates that the star is an EA eclipsing variable. The secondary minimum was not detected. For period determination, we used the following codes: Persea (based on the method suggested for uneven sampled observations by Schwarzenberg-Czerny 1996) and MCV (Andronov 1994). The data from NSVS database (Wozniak et al. 2004) confirm variability of the star, but it is impossible to find a common set of light elements for our observations (2008-2009) and for those from the NSVS database (1999). Possibly, this is due to a period variation of the star.

References:

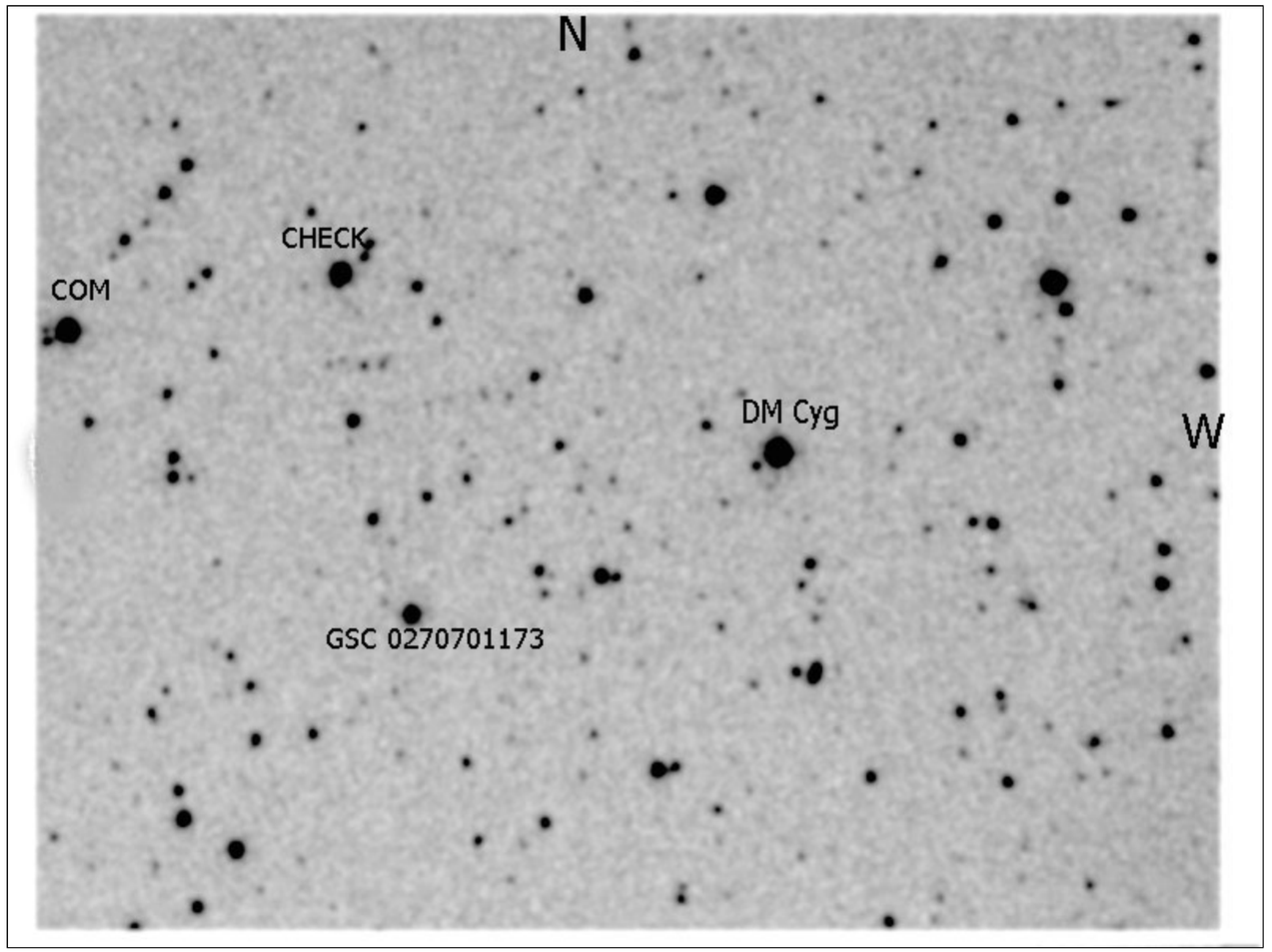
Andronov, I.L., 1994, Odessa Astron. Publ., 7, 49
Schwarzenberg-Czerny, A., 1996, Astrophys. J., 460, 107
Wozniak, P.R., Vestrand, W.T., Akerlof, C.W., et al., 2004, Astron. J., 127, 2436

Light Curve



Upper figure: The phased light curve of GSC 02707-01173 for 2008-2009. Red circles are Odessa Observatory observations in 2008, green circles are Vihorlat Observatory observations in 2008, blue circles are Odessa Observatory observations in 2009. Lower figure: The phased light curve of GSC 02707-01173 from NSVS data of 1999, plotted with the same light elements after introducing the heliocentric correction.

Finding Chart



The finding chart with the comparison and check stars marked (a CCD image taken with the 48-cm telescope).

Data Source

1. gsc0270701173.txt