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GSC 628_290: A NEW EW/KW VARIABLE

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Name of the object:
GSC 628_290

Equatorial coordinates:	Equinox:
R.A. = 01 ^h 48 ^m 43 ^s .64 DEC. = +13°04'11".6	J2000

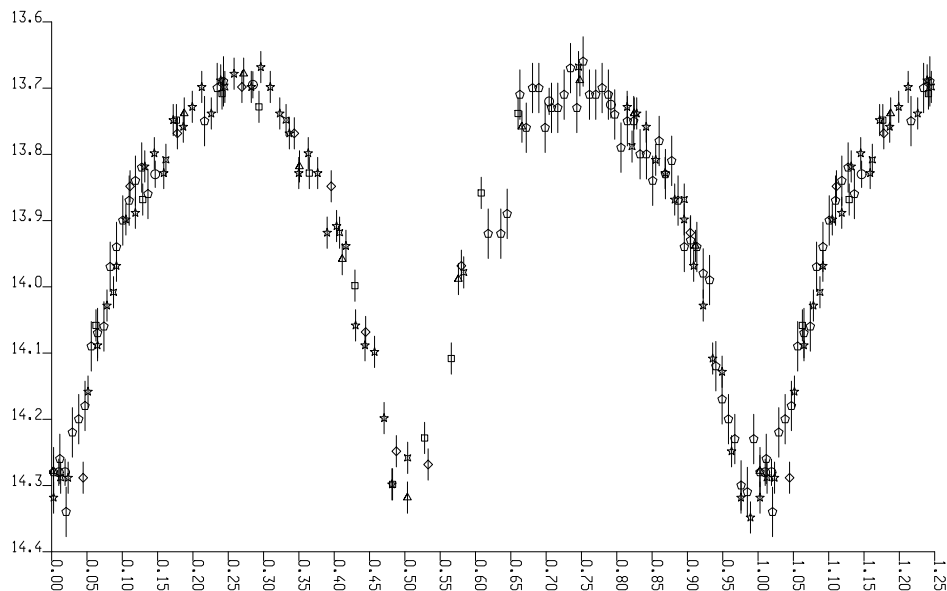


Figure 1. Unfiltered light curve of GSC 628_290

Observatory and telescope:	
Ramonville Saint Agne Observatory (IAU astrometric code 959), 0.19m f/d=4 reflector Bedoin Observatory (code 132), 0.16m f/d=3.5 reflector Village-Neuf Observatory (code 138), 0.20m f/d=6.3 Schmidt-Cassegrain telescope	
Detector:	KAF 400 CCD at 959 and 132, KAF 401e CCD at 138
Filter(s):	None, roughly <i>R</i>
Transformed to a standard system:	No
Availability of the data:	
Upon request	
Remarks:	
<p>The variability of GSC 628.290 was found by Buil on CCD frames taken around 1998-08-29 (circles in Figure 1), during a test of implementation in his <i>Iris</i> software of an optimal image subtraction algorithm for supernovae photometry. Antonini made several series of observations (1998-11-06, squares; 1998-11-07, diamonds; 1998-11-20, 4-branches stars; 1998-11-24, triangles; 1998-12-07, 5-branches stars) to establish the light curve and a preliminary period. Demeautis observed GSC 628.290 on 2001-10-12 (pentagons) to confirm the light curve and to better determine the period. The eighth order Fourier sum that was adjusted on the observations includes two additional constants to account at the first level of approximation for the different (unfiltered) photometric systems of each observer. The mean magnitude, the sixteen parameters of the periodic terms, the two constants, and the period are solved by least square technics using all the observations and their uncertainties. The time of a minimum is computed by a cut in the adjusted Fourier series near the principle minimum. The resulting light curve is shown in Figure 1. The numerical values obtained with the <i>CourbRot</i> software (Behrend, 2001) are as follows:</p> $\begin{aligned} \text{HJD of a principal minimum} &= 2452194.8429 \pm 0.0006 \\ \text{Period} &= 0^{\text{d}}38176699 \pm 0^{\text{d}}00000025 \\ \text{Total variation} &= 0.63 \pm 0.01 \text{ mag} \end{aligned}$ <p>The shape of the light curve indicates that the variability type of GSC 628.290 is probably EW/KW.</p>	

Reference:

Behrend, R., 2001, *Orion*, **304**, 12