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GSC 4261.1197: A NEW ECLIPSING BINARY

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In a photometric investigation in the field of PX Cep, one of the stars, GSC 4261.1197, proved to be variable. A check of the GCVS and NSV catalogs did not reveal any previously known variable at this position. The Guide Star Catalog quotes GSC 4261.1197 as a non-stellar object, possibly caused by a nearby 15^m star, merging with the new variable. The brightness of GSC 4261.1197 is given as 13^m96.

Observations were performed in 14 nights between June and November 1996. An ST6 CCD-camera without filters attached to a 20cm SC-telescope was used. The primary and secondary minima have an amplitude of 0^m45 and 0^m38 respectively. As the variable always was measured together with its companion in the differential aperture photometry, the real amplitude of both minima may be somewhat greater. GSC 4261.1333 served as comparison star; several other stars in the same field were used to check its constancy. The time between first and last contact is about 4.5 hours; a total eclipse could not be detected. The individual measurements are sent via e-mail on request. Obviously the brightness in maximum light is not constant. This may result from interference with the nearby companion. If not, GSC 4261.1197 may be of RS CVn-type.

A period analysis program based on the algorithm of Schwarzenberg-Czerny (1989) together with the times of minimum light resulted in the preliminary ephemeris:

$$\text{Min I} = \text{HJD } 2450249.4783 + 2^{\text{d}553689} \times E \quad (1)$$

$\pm 4 \qquad \qquad \pm 8$

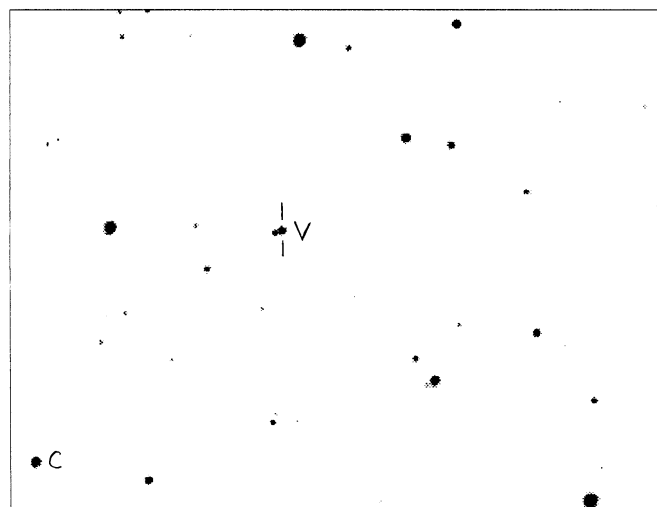


Figure 1. Finding chart for GSC 4261.1197 (v); the comparison star is c. North is up, east to the left. The field is 8.6 × 6.5.

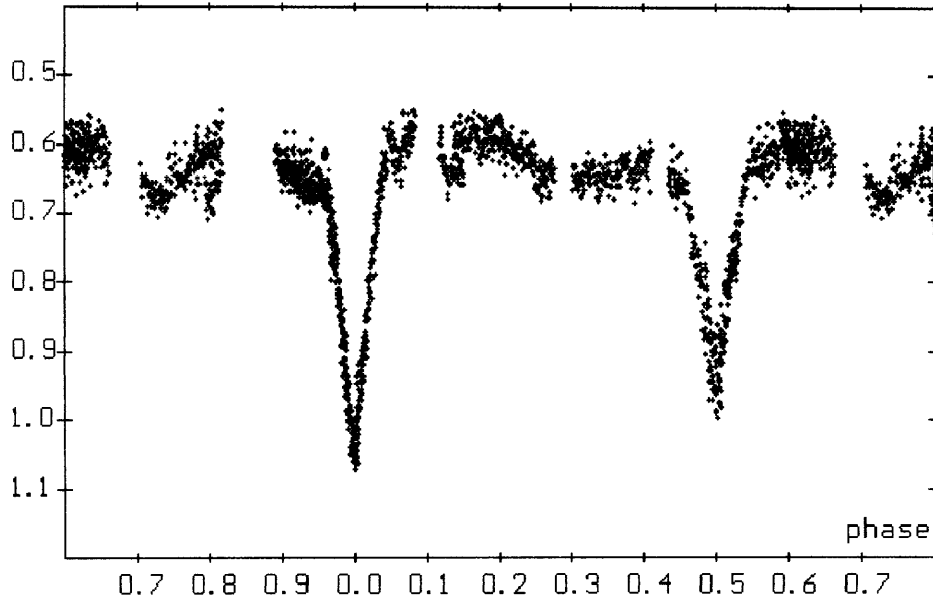


Figure 2. Differential light curve of GSC 4261.1197, drawn with the ephemeris derived in this paper.

Table 1. Times of CCD-measured minima for GSC 4261.1197, epochs and residuals computed with respect to the ephemeris derived in this paper.

N	JD hel	W	Epoch	O-C
1	2450249.4765	2	0.0	-0.0018
2	50304.3891	1	21.5	+0.0065
3	50360.5625	2	43.5	-0.0013
4	50369.5022	2	47.0	+0.0005
5	50392.4843	2	56.0	-0.0006

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Reference:

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