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GSC 156_1365, A NEW EB ECLIPSING BINARY STAR IN MONOCEROS

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Name of the object:	
GSC 156_1365 = PPM 151295 = AGK +05°0881	
Equatorial coordinates:	Equinox:
R.A. = 6 ^h 48 ^m 43 ^s .5 DEC. = +5°02'01"	2000.0
Observatory and telescope:	
Mollet Observatory, 0.41-m Newtonian telescope US Naval Observatory, 1-m Ritchey–Chretien telescope Piera Observatory, 0.09-m Maksutov telescope	

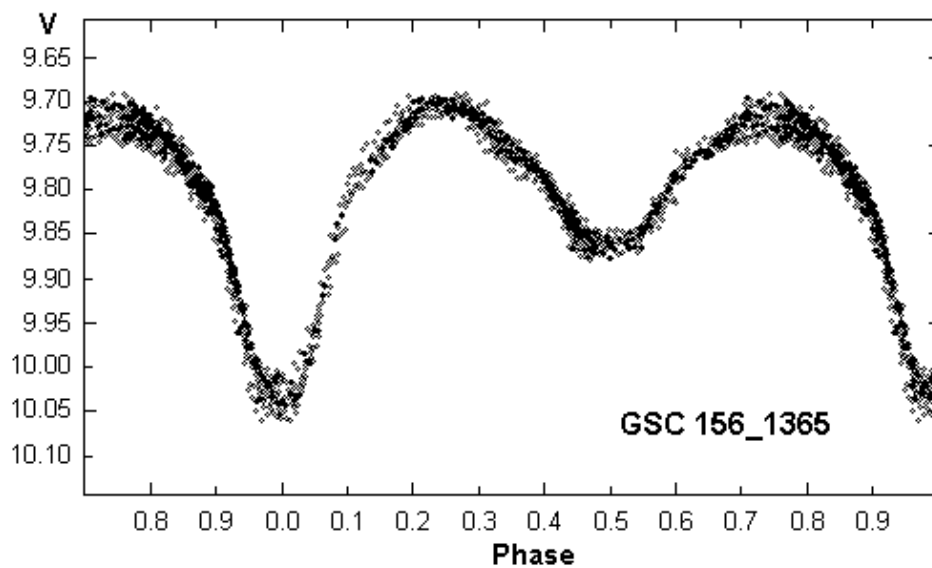


Figure 1.

Detector:	CCD
Filter(s):	V
Comparison star(s):	GSC 156_1475
Transformed to a standard system:	Standard Johnson
Standard stars (field) used:	Landolt standards (1992)
Availability of the data:	
Upon request	
Type of variability:	EB
Remarks:	
<p>The variability of GSC 156_1365, a star with a V magnitude of 9.74 and B9 spectral type ($B - V = 0.130$), was discovered by chance with a 9-cm telescope at Piera Observatory while performing observations of NSV 03217. To improve photometric precision, the star was monitored for 95 nights from 29 January 1997 to 27 March 1998 with the 41-cm telescope at Mollet del Valles Observatory. The stars in the field of GSC 156_1365 were also placed in the Johnson–Cousins system in the $BVRI$ bands with the Ritchey–Chretien 1-m telescope at the US Naval Observatory Flagstaff Station.</p> <p>Photometric data, with an average scatter of 0^m007, indicated that GSC 156_1365 is an EB type eclipsing binary star with a period close to 1 day, with a variation in the V band from 9^m375 to 10^m075 for minimum I, and to 9^m889 for minimum II. The light curve showed a transient O’Connell effect (O’Connell 1951) of 0^m025 during the maximum preceding the primary minimum, whose shape and depth were also variable with time. These time-variable phenomena were incidentally observed after monitoring the star for 14 months, since its period close to 1 day forced to a long observational time span to complete the light curve. Thus, at the beginning of 1997 the O’Connell effect was present with a 0^m025 amplitude, and the primary minimum was 0^m032 shallower. By the end of 1997 and the beginning of 1998, the O’Connell effect was not detectable at all, and primary minimum was deeper. Observations also allowed to determine the following ephemeris:</p> $\text{Min I} = \text{HJD } 2450869.40404 + 0^d989888 \times E.$ $\pm 0.00043 \pm 0.000004$	

References:

- Landolt, A.U., 1992, *AJ*, **104**, 340
O’Connell, D.M.K., 1951, *Riverview Pub.*, **2**, 85