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HD 218179: A NEW LONG PERIOD BRIGHT EB IN CEPHEUS

GOMEZ-FORRELLAD, J.M.

Grup d'Estudis Astronomics, Apartado 9481, 08080 Barcelona, Spain

Esteve Duran Observatory Foundation, Montseny 46 — Urb. El Montanya, 08553 Seva, Barcelona, Spain
e-mail:jmgomez@astrogea.org

Name of the object:
HD 218179 = BD +63°1925 = PPM 24170 = SAO 20407 = AGK +63°1302 = GSC 4286_80

Equatorial coordinates:	**Equinox:**
R.A.= $23^h04^m47^s$ **DEC.**= +64°05′25″	2000.0

Observatory and telescope:
Mollet Observatory, 8-cm automatic refracting telescope

Detector:	CCD

Filter(s):	V

Comparison star(s):	SAO 20384 = PPM 24142 = HIP 113793 = HD 217872 = GSC 4282_919

Check star(s):	1: SAO 20422 = PPM 24186 = HIP 114070 = HD 218342 = GSC 4282_391 2: SAO 20405 = PPM 24168 = HIP 113947 = HD 218139 = GSC 4282_255

Transformed to a standard system:	No

Availability of the data:
Upon request

Type of variability:	EB

Remarks:

HD 218179 whose spectral type is F0, is listed in the TYCHO Catalogue with flag 'V' (strong evidence of variability in de Tycho data) with an amplitude variation between 7.47 and 7.76. The variability of this star was initially reported by Olsen (1983), who detected light changes while performing Strömgren photometry of nearly all Henry Draper stars of types A5 to G0 and brighter than $m_v = 8\overset{\mathrm{m}}{.}3$. This star is also listed in the New Catalogue of Suspected Variable Stars Supplement with number 26012 (Kazarovets et al., 1998). In addition, in an analysis for searching sinusoidal light variations of the stars in the Tycho Catalogue, Koen and Schumann (1999) concluded that this star was variable with a 17.950 day period. Satellite photometric data from the Tycho instrument was reanalized and the results suggested that this star might be an EB variable with a period of 35.9 days. To verify this point the star was observed for 100 nights between 9 September 1997 and 25 February 1999. This star is a visual double (MLR 7) with $8\overset{\mathrm{m}}{.}1$ and $8\overset{\mathrm{m}}{.}9$ components separated by 0.4 arcseconds (Olsen, 1980), so joint photometry had to be performed. Present observations confirmed the preliminary analysis, showing that HD 218179 is an EB variable with a period of 35.93 days and a 0.33 magnitude variation (from 7.41 to 7.74 in V) for minimum I. In addition, its light curve shows that the secondary minimum, $0\overset{\mathrm{m}}{.}21$ deep, is centered at phase 0.486 ± 0.006. In spite of Tycho data scatter, they were of great help to obtain the following ephemeris:

$$\begin{aligned} \mathrm{HJD\ Min\,I} &= 2451018.846 + 35.928 \times E. \\ &\pm 0.2 \quad \pm 0.004 \end{aligned}$$

Also the following single secondary minimum was determined: HJD Min II = 2451036.319 ± 0.16.

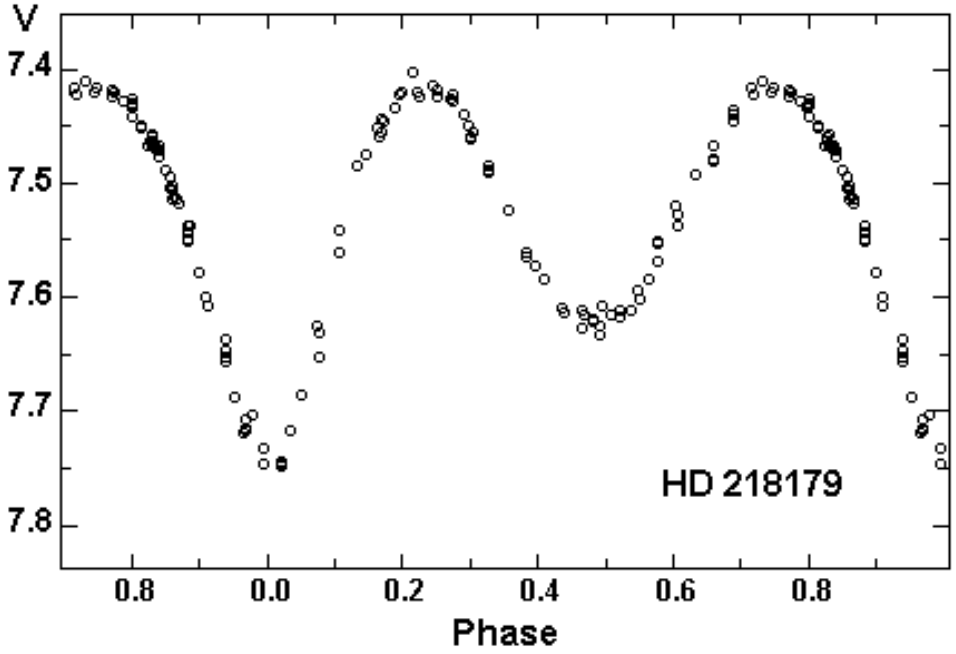

Figure 1.

Acknowledgements:
For this research the SIMBAD database, operated by CDS, Strasbourg, France, was utilized.

References:

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