DETERMINING THE ROTATIONAL PERIOD OF MAIN-BELT ASTEROID 282 CLORINDE

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Based on CCD photometric observations of the main-belt asteroid 282 Clorinde, we report the results of the lightcurve analysis: P = 49.353 ± 0.004 h, A = 0.26 mag.

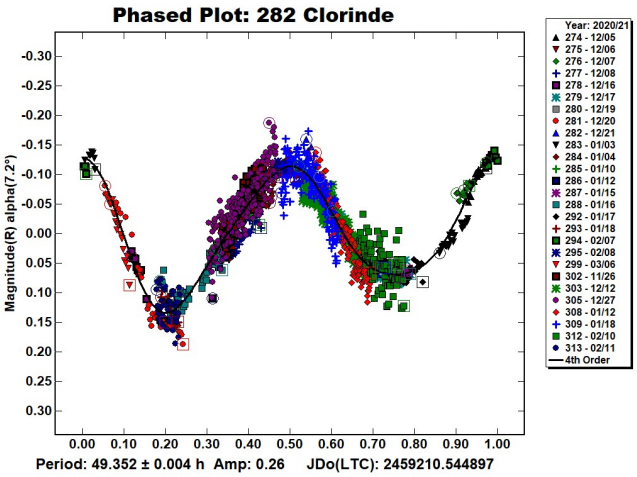
In the framework of the asteroid scientific project that is called "Investigating the most ancient asteroids" (*http://users.uoa.gr/~kgaze/research_asteroids_en.html*), we obtained time resolved photometry of the asteroid 282 Clorinde.

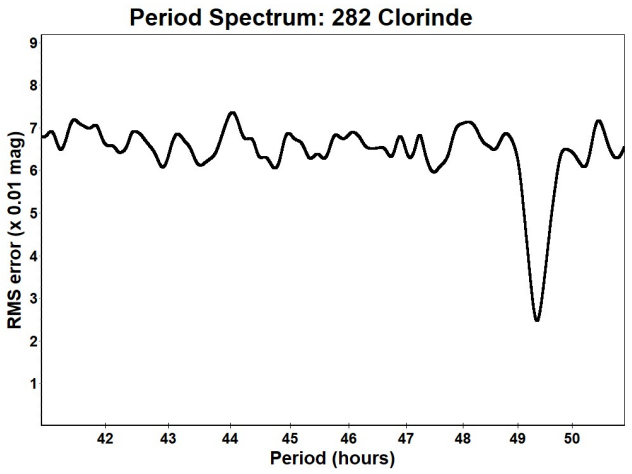
Thanks to the integration of the data obtained from the measurements obtained at two astronomical observatories: Astronomical Observatory BSA and Lowell Observatory Anderson Mesa, it was possible to observe Clorinde for a long interval, namely from 26 November 2020 to 06 March 2021. From all of these data sessions, we obtained almost complete coverage of the phase angle range between 9.6 and 27.3 degrees. The equipment and the respective sessions by each author are reported in Table I. The calibration stars were: For Astronomical Observatory BSA; catalog CMC15; for Lowell Observatory Anderson Mesa; from the Panstarrs_transformed catalog.

Sessions from the several individual observers were adjusted vertically for best fit. The resulting period becomes P = 49.352 h and the lightcurve amplitude A = 0.26. These results differ substantially from previous published ones: Behrend (*http://obswww.unige.ch/~behrend/page_cou.html*) P = 12.142 h, and Binzel and Mulholland (1983) P = 6.42 h.

Observer Observatory (MPC code)	Telescope	CCD	F	Sessions
Roberto Bonamico Osservatorio Astronomico BSA (K76)	0.30-m NRT f/5	ATIK 314L+	C	302, 313
Gerard van Belle Lowell Observatory Anderson Mesa (688)	PW1000 1-m CDK	FLI ML16803	C	274, 299

Table I. Observing equipment and sessions. NRT: Newtonian Reflector, CDK: Corrected Dall Kirkham.





References

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Warner, B.D.; Harris, A.W.; Pravec, P. (2009). "The Asteroid Lightcurve Database." *Icarus* **202**, 134-146. Updated 2021 04 13. *http://www.minorplanet.info/lightcurvedatabase.html*

Number	Name	yyyy mm/dd	Phase	L_{PAB}	B_{PAB}	Period(h)	P.E.	Amp	A.E.	Grp
282	Clorinde	2020/11/26-2021/03/06	9.6,27.3	81.1	-9.0	49.352	0.004	0.26	0.01	

Table II. Observing circumstances and results. The phase angle is given for the first and last date. If preceded by an asterisk, the phase angle reached an extrema during the period. L_{PAB} and B_{PAB} are the approximate phase angle bisector longitude/latitude at mid-date range (see Harris et al., 1984). Grp is the asteroid family/group (Warner et al., 2009).