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CALL FOR OBSERVATIONS

Frederick Pilcher
4438 Organ Mesa Loop
Las Cruces, NM 88011 USA
fpilcher35@gmail.com

Observers who have made visual, photographic, or CCD measurements of positions of minor planets in calendar 2017 are encouraged to report them to this author on or before 2018 April 15. This will be the deadline for receipt of reports which can be included in the "General Report of Position Observations for 2017" to be published in *MPB* Vol. 45 No. 3.

3122 FLORENCE LIGHTCURVE ANALYSIS AT ASTEROIDS OBSERVERS (OBAS) – MPPD: 2017 SEP

Onofre Rodrigo
Bétera Observatory, Valencia, SPAIN
obas@minorplanet.es

Gonzalo Fornas, CAAT
Centro Astronómico del Alto Turia, SPAIN

Enrique Arce
Vallbona Observatory, Valencia, SPAIN

Vicente Mas, CAAT
Centro Astronómico del Alto Turia, SPAIN

Alfonso Carreño
Zonalunar Observatory, Valencia, SPAIN

Pedro Brines
TRZ Observatory, Valencia, SPAIN

Alvaro Fornas
Oropesa Observatory, Castellón, SPAIN

David Herrero
Serra Observatory, Valencia, SPAIN

Juan Lozano
Elche Observatory, Alicante, SPAIN

Faustino García
La Vara Observatory, Valdés, SPAIN

(Received: 2017 Nov 13)

We report on the results of photometric analysis of 3122 Florence, a near-Earth asteroid (NEA) by Asteroids Observers (OBAS). This work is part of the Minor Planet Photometric Database effort that was initiated by a group of Spanish amateur astronomers. We have managed to obtain a number of accurate and complete lightcurves as well as some additional incomplete lightcurves to help analysis at future oppositions.

In this paper we publish lightcurve results for 3122 Florence, a near-Earth asteroid analyzed under the Minor Planet Photometric Database project (*http://www.minorplanet.es*). The data and results were made possible thanks to the collaboration of the Astronomical Center Alto Turia (CAAT) observatory located in Aras de los Olmos, operated by members of the Valencia Astronomy Association (AVA) (*http://www.astroava..org*) and La Vara Observatory located in Valdés (Asturias).

Table I shows the equipment at observatories that participated in this work. We concentrated on asteroids with no reported period and those where the reported period needed confirmation. All the targets were selected from the Collaborative Asteroid Lightcurve (CALL) website at (*http://www.minorplanet.info/call.html)* and Minor Planet Center (*http://www.minorplanet.net*).

Images were measured using *MPO Canopus* (Bdw Publishing) with a differential photometry technique.

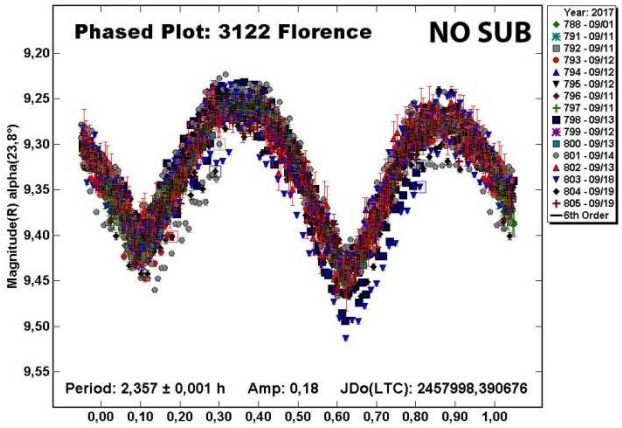
Number	Name	2017 mm/dd	Pts	Phase	L_{PAB}	B_{PAB}	Period(h)	P.E.	Amp	A.E.
3122	Florence	09/01-09/19	4986	23.8,78.9	328-358	7-48	2.357	0.001	0.18	0.02

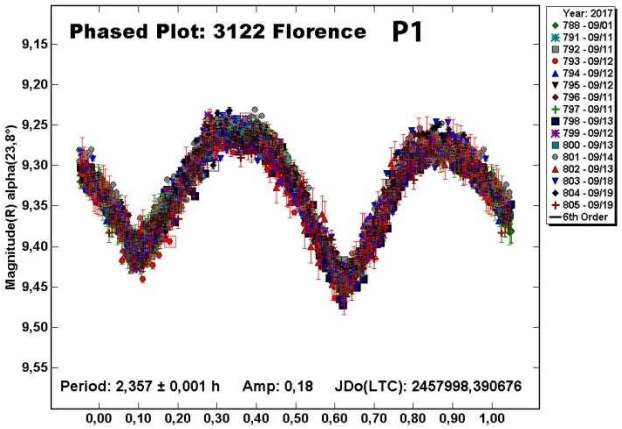
Table I. Observing circumstances and results. Pts is the number of data points. The phase angle is given for the first and last date. L_{PAB} and B_{PAB} are the phase angle bisector longitude and latitude at on the first and last date of observation. (see Harris *et al.*, 1984).

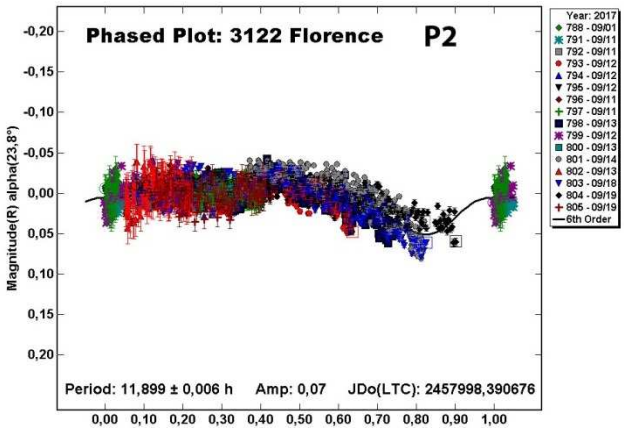
Observatory	Telescope (meters)	CCD
C.A.A.T.	0.45 DK	SBIG STL-11002
Zonalunar	0.20 NW	QHY6
Vallbona	0.25 SCT	SBIG ST7-XME
TRZ	0.20 R-C	QHY8
Elche	0.25 DK	SBIG ST8-XME
Oropesa	0.20 SCT	Atik 16I
Bétera	0.23 SCT	Atik 314L+
Serra	0.25 NW	Atik 414L+
La Vara	0.25 SCT	SBIG ST8-XME+AOL

Table I. List of instruments used for the observations. SCT: Schmidt-Cassegrain. R-C: Ritchey-Chrétien. DK: Dall-Kirkham. NW: Newtonian.

3122 Florence is a stony trinary asteroid of the Amor group. Radar observations during the 2017 flyby showed that Florence has two moons. The rotation period measured by the Arecibo radar was 2.358 h. Warner (2016) found the same main period and a second period of 10.36 h.







We observed the asteroid for 16 nights from 2017 Sep 1-19 and obtained 4986 data points. The initial period analysis with *MPO Canopus* found a bimodal lightcurve with a period of 2.357 ± 0.001 h and amplitude of 0.18 mag. However, as seen in the "No Sub" plot, the fit was not very good and there were indications of a second period.

We used the dual-period search utility in *MPO Canopus* to see if there was a second period in the lightcurve. From this, we found the same dominant period, P_1 = 2.357 h but the fit to the Fourier curve was much improved ("P1") after subtracting a second period of P_2 = 11.899 ± 0.006 h with an amplitude of 0.07 mag.

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We express our gratitude to Brian Warner for supporting the CALL web site and his suggestions made to OBAS group.

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