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STAFF POSITION OPENING - ASSOCIATE PRODUCER, MINOR PLANET BULLETIN

The *Minor Planet Bulletin* announces the opening a new staff position of Associate Producer, with the probability of taking over the *MPB* Producer's position in about two years following a period of mentoring and collaboration. The responsibilities will be to assist the current Producer, Bob Werner, with the layout construction of each quarterly issue of the *Minor Planet Bulletin*, demonstrating proficiency for transitioning to the Producer position. For each *MPB* issue produced, the required tasks and capabilities to be demonstrated include:

- Reformatting approximately 30–40 manuscript documents from the editors.
- Responsive communication with the editorial and distribution staff.
- Able to commit to and adhere to deadlines throughout the calendar year.
- Corresponding with authors via email with article proofs.
- Handling formatting inquiries from new and seasoned authors who contribute manuscripts to the *MPB*.
- Laying out an issue's articles in a single master document, resulting in the ready-to-print and ready-to-release electronic version of each *MPB* issue.
- Constructing a full index of each annual volume.
- Maintaining a long-term electronic archive of all issues.

The skills required for the position of Associate Producer, *Minor Planet Bulletin* include:

- Proficiency with Microsoft Word 2013/2010, Portable Document Format (pdf) computer documents, and email. Production status is tracked using Excel.
- Knowledgeable expertise with asteroid astronomy sufficient for some error checking and recommending editorial corrections.
- Strong skills with written English.

The time commitment required varies from issue to issue, but typically occupies 25 or 30 hours each quarter. *The Minor Planet Bulletin* publishes four issues per year. All *MPB* staff positions, including this announced opening for Associate Producer, are volunteer positions without pay or other compensation. Materials and postage costs, as necessary, are reimbursed.

Persons wishing to be considered for the Associate Producer position should send a statement of interest, a statement on the level of available commitment, and a summary of qualifications to the Editor: rpb@mit.edu Review of applications will begin February 1, 2019. The position will remain open until filled.

PHOTOMETRIC OBSERVATIONS OF MAIN-BELT ASTEROIDS 917 LYKA, 5703 HEVELIUS, (6638) 1989 CA AND 8073 JOHNHARMON

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Photometric observations of four main-belt asteroids were obtained from October 26 to December 05, 2018 from Malta and the United States in order to update or determine their synodic rotation periods. We provide lightcurves for 917 Lyka, 5703 Hevelius, (6638) 1989 CA and 8073 Johnharmon.

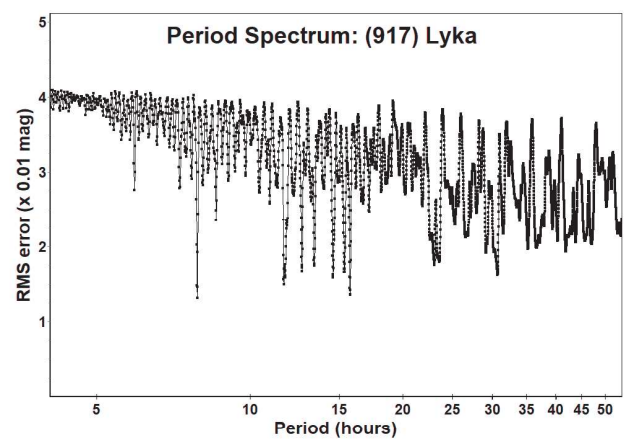
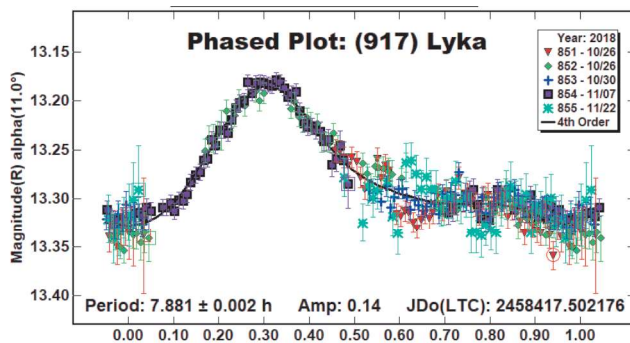
Photometric observations of four main-belt asteroids were carried out from three observatories located in Malta (Europe) and one in the United States. Observations for asteroids 917 Lyka, (6638) 1989 CA and 8073 Johnharmon were obtained from observatories located in Malta that utilized the following configurations. Znith Observatory employed a 0.20-m Schmidt-Cassegrain (SCT) equipped with a Moravian G2-1600 CCD camera at 1x1 binning, whilst Flarestar Observatory utilized the same CCD model coupled with a 0.25-m SCT telescope at 1x1 binning. Antares Observatory used an SBIG STL-11000 CCD camera at 2x2 binning attached to a 0.28-m SCT telescope. The asteroid 5703 Hevelius was observed from Sierra Remote Observatory at Auberry, CA (USA) that utilized a 0.48-m RC telescope coupled with an Apogee U42 CCD camera, at a pixel scale of 0.74 arcseconds/pixel.

All telescopes and cameras were controlled remotely. The observatories in Malta were operated from a nearby location via *Sequence Generator Pro* (Binary Star Software), while the Sierra Remote Observatory was controlled over the internet. Photometric reduction, lightcurve construction and analyses were derived through *MPO Canopus* software (Warner, 2017). Differential aperture photometry was utilized and photometric measurements were derived through the use of *MPO Canopus*. The Comparison Star Selector (CSS) that utilized comparison stars of near-solar color was used by the same software. All measurements were based on the CMC-15 catalogue with magnitudes converted from J-K to BVRI. All images utilized in this research were dark subtracted and flat-fielded

917 Lyka is a large main-belt asteroid that was discovered on 1915 September 05 by Neujmin, G. at Simeis Observatory, Crimea. The asteroid orbits the sun with a semi-major axis of 2.382 AU,

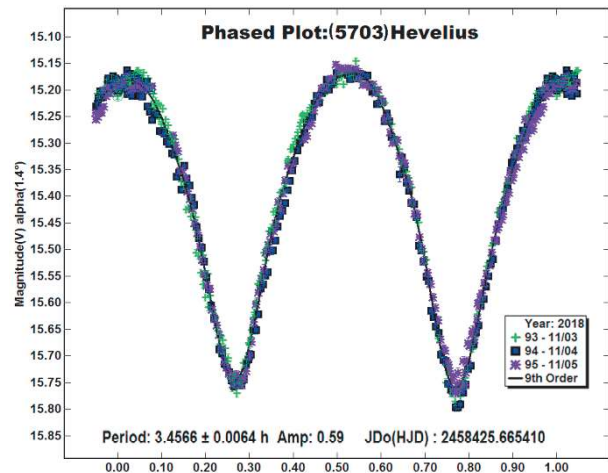
eccentricity 0.200, and orbital period of 3.68 years (JPL, 2019). The JPL Small-Bodies Database Browser lists the diameter of 917 Lyka as 34.878 ± 0.184 km based on an absolute magnitude (H) of 11.6 (JPL, 2019). Behrend, R (2018) has published on the web two synodic periods of (917) Lyka through his website that makes reference to the data obtained by Bernasconi, L (2005) with a period of 7.8672 ± 0.0055 h and by Conjat, M. (2018) with a period of 7.883 ± 0.0003 h.

This asteroid was observed from Znith Observatory on 2018 October 26, 30 and November 07 and 22. We determined the synodic period of 917 Lyka as 7.881 ± 0.002 h with an amplitude of 0.14 mag. Our results are consistent with those obtained by Conjat, M. (2018), and Behrend, R. (2018).



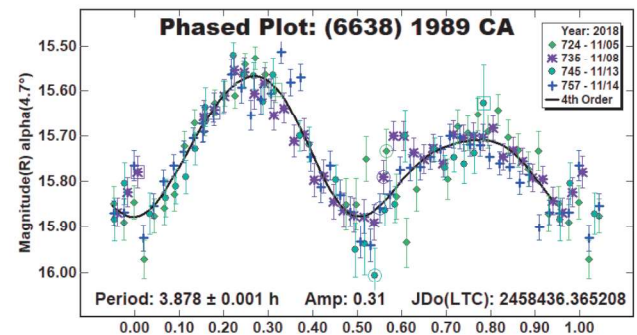
5703 Hevelius is a main-belt asteroid that was discovered on 1931 November 15 by Reinmuth, K. at Heidelberg. It was named after the eminent astronomer Johannes Hevelius (1611-1687), an ardent observer that depicted detailed lunar maps and made astrometric observations of stars and planets. This 5.8 km diameter asteroid has an absolute magnitude (H) of 13.0 and orbits the sun with a semi-major axis of 2.5829 AU. Its orbit has an eccentricity of 0.1762, and a period of 4.15 years (JPL, 2019).

Observations of the asteroid Hevelius were conducted on 3 nights from Sierra Remote Observatory on 2018 November 3, 4 and 5. Results indicate a synodic period of 3.4566 ± 0.0064 h and amplitude of 0.59 ± 0.02 mag. The Light Curve Data Base (LCDB) did not contain any references of the synodic period of this asteroid.



(6638) 1989 CA is a main-belt asteroid that was discovered on 1989 February 02 by Arai, M., Mori, H. at Yorii, Japan. This 5.715 ± 0.234 km diameter asteroid has an absolute magnitude (H) of 13.7 and orbits the sun with a semi-major axis of 2.437 AU. Its orbit has an eccentricity of 0.1619 and a period of 3.80 years (JPL, 2019).—Observations were conducted on 4 nights from Antares Observatory (1 night) and Flarestar Observatory, during the period between 2018 November 05 up to 2018 November 14. Our Results indicate a synodic period of 3.878 ± 0.001 h and amplitude of 0.31 ± 0.06 mag.

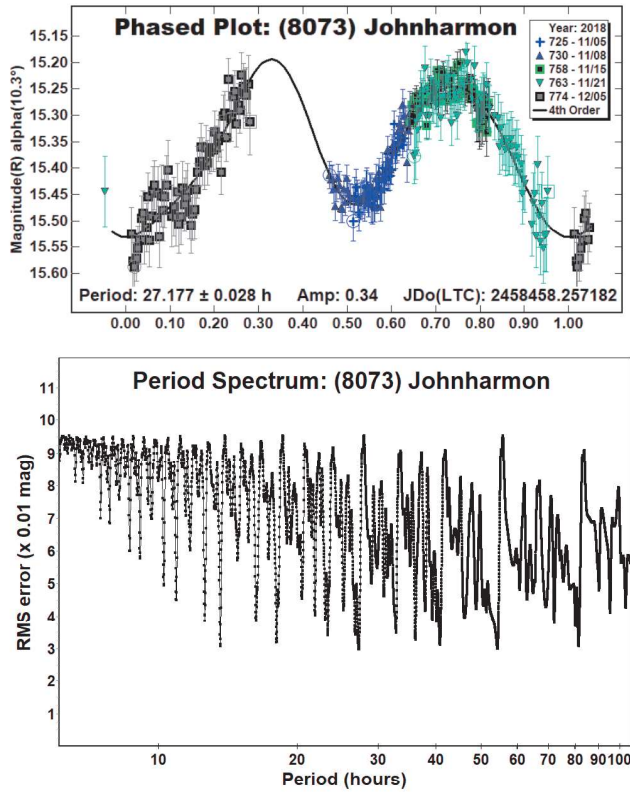
Đurech et. al.,(2018) utilized the lightcurve inversion method to derive the spin axis of asteroid (6638) and obtained a synodic period of 3.877233 ± 0.000002 h. Their lightcurve was listed as having a U quality of U2.



8073 Johnharmon is a main-belt asteroid that was discovered by E. Bowell on 1982 January 24 from the Anderson Mesa Station, Lowell Observatory. This asteroid was named after John K. Harmon (b. 1948), a scientist at the Arecibo Observatory who made outstanding contributions to planetary radar astronomy of Mars, Mercury, the Galilean satellites and comets.

This asteroid orbits the sun with a semi-major axis of 2.592 AU, eccentricity 0.169, and period of 4.17 years (JPL, 2019). The JPL Small-Bodies Database Browser (JPL, 2019) lists the diameter of this asteroid as 6.498 ± 0.185 km based on an absolute magnitude (H) of 12.9.

8073 Johnharmon was observed from Flarestar Observatory from 2018 November 11 to 2018 December 05. Our results yielded a synodic period of 27.177 ± 0.028 h and amplitude of 0.34 ± 0.05 mag. Based on the period spectrum and a search of half periods, the period of 27.177 h was found as being the best probable result. This asteroid does not appear to be in the Light Curve Data Base (LCDB).



Acknowledgements

We would like to thank Brian Warner his work in the development of *MPO Canopus* and for his efforts in maintaining the CALL website. This research has made use of the JPL’s Small-Body Database.

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Number	Name	yyyy/mm/dd	Pts	Phase	L _{PAB}	B _{PAB}	Period(h)	P.E.	Amp	A.E.	Group
917	Lyka	2018 10/26-11/22	315	11.5,22.3	018	4.9	7.881	0.002	0.14	0.02	ERI
5703	Hevelius	2018 11/03-11/05	162	1.2,2.3	038	01	3.4566	0.0064	0.59	0.02	EUN
6638	(1989 CA)	2018 11/05-11/14	148	5.3,0.4	051	-0.6	3.878	0.001	0.31	0.06	NYSA
8073	Johnharmon	2018 11/05-12/05	297	10.3,9.6,14.9	050	17	27.177	0.028	0.34	0.05	EUN

Table I. Observing circumstances and results. Pts is the number of data points. The phase angle is given for the first and last date. LPAB and BPAB are the approximate phase angle bisector longitude and latitude at mid-date range (see Harris et al., 1984). Grp is the asteroid family/group (Warner et al., 2009).