CCD LIGHTCURVE ANALYSIS OF 176 IDUNA

Kevin B. Alton
UnderOak Observatory
70 Summit Ave
Cedar Knolls, NJ 07927

(Received: 28 October)

Clear filter CCD images for 176 Iduna were obtained over ten nights in September 2007. A composite lightcurve was produced and a synodic period of 11.2880 ± 0.0001 h was deduced.

176 Iduna (121 km) is a main-belt asteroid first discovered by C.H.F. Peters in 1887. Infrequently reported, only two other lightcurves from this minor planet are described in the literature. (Riccioli 2001; Hansen and Arentoft 1997).

Equipment included a focal reduced (f/6.3) 0.2-m NexStar 8 GPS SCT with a thermoelectrically cooled (5 °C) SBIG ST 402ME CCD camera mounted at the Cassegrain focus. Clear filter imaging (unbinned for 20 sec) was carried out on a total of ten nights with exposures automatically taken at least every 60 seconds. Image acquisition (raw lights, darks and flats) was performed by CCDSOFT 5 (SBIG) while calibration and registration were accomplished with AIP4WIN (Berry and Burnell 2005). Further image reduction with MPO Canopus (Warner 2006) used at least four non-varying comparison stars to generate lightcurves by differential aperture photometry. Data were light-time corrected but not reduced to standard magnitudes.

A total of 1326 photometric readings were collected over 28.0711 days. Relevant aspect parameters for 176 Iduna taken at the mid-point from each session are tabulated below. MPO Canopus provided a period solution for the folded data sets using Fourier analysis. The synodic period, determined to be 11.2880 ± 0.0001 h, was in good agreement with rotational periods for 176 Iduna published by Hansen and Arentoft (1997), Krajewski (2008), and that found by the "Small-Body Database Browser" at the JPL Solar System Dynamics website. The lightcurve amplitude (~0.35 m) is consistent with findings from Hansen and Arentoft (1997).

Acknowledgement. Thanks to Brian D. Warner for his continued support of MPO Canopus without which this photometric investigation and many others would be extremely tedious.

References

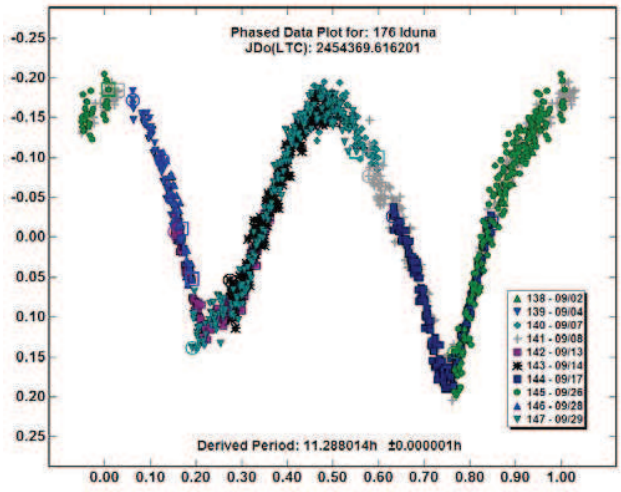
Berry, R. and Burnell, J. (2005). AIP4WIN version 2.1.0, Willmann-Bell, Inc, Richmond, VA.

Hansen, A.T. and Arentoft, T. (1997). "The Rotational Period of 176 Iduna". *Minor Planet Bulletin* **24**, 14.

Krajewski, R. (2008). "Lightcurve Analysis of 176 Iduna". *Minor Planet Bulletin* **35**, 77.

Riccioli, D., Blanco, C. and Cigna, M. (2001). "Rotational Periods of Asteroids II". *Planetary and Space Science* **49**, 656-671.

Warner, B. D. (2006). *MPO Canopus* software, version 9.2.1.0. Bdw Publishing, Colorado Springs, CO.



UT Date (2007)	Obs	Phase Angle	L_{PAB}	B_{PAB}
Sept 02	57	8.3	339.5	19.5
Sept 04	69	8.3	339.5	19.3
Sept 07	98	8.3	339.5	19.1
Sept 08	250	8.4	339.5	19.0
Sept 13	136	9.0	339.5	18.5
Sept 14	145	9.1	339.6	18.4
Sept 17	154	9.6	339.6	18.1
Sept 26	157	11.7	339.8	17.2
Sept 29	46	12.4	339.9	16.8
Sept 30	214	12.6	339.9	16.7

LIGHTCURVES OF MINOR PLANET 2445 BLAZHKO

Stefano Moretti, Salvatore Tomaselli
Bastia Obs. (MPC 197) – ARAR – Ravenna
Via Erbosa – Bastia (Ravenna)
ITALY
stefanomoretti_001@fastwebnet.it

(Received: 12 December)

Lightcurves of 2445 Blazhko performed on Nov. and Dec. 2007 reveal a rotation period of 3.6197 ± 0.0005 h and amplitude of about 0.65 mag.

Our lightcurve of 2445 Blazhko is the first attempt of asteroid photometry observations from Osservatorio Don Molesi – Bastia –Ravenna – Italy (MPC 197). The target was selected from the list of asteroid photometry opportunities published by Warner et al. (2007). This list doesn't show any available information about 2445 Blazhko. In addition, no information was found on the Minor Planet Center "Minor Planet Lightcurve Parameters" web page.

The observations were obtained with a Newtonian telescope D=0.42m and F=2.250m. The CCD camera was an Apogee Alta U260e with 40s of exp. time (S/N >300) and Schuler Clear filter. All the observations were performed on nights of Nov. 30, 2007, and Dec. 5, 2007. On each night, the photometric curve was well-covered (about 3.5 h and 3.3 h). A total of 557 measurements were