LIGHTCURVE PHOTOMETRY OF 112 IPHIGENIA

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The main-belt asteroid 112 Iphigenia was observed over 6 nights between 2007 December 9 and December 14 at the Observatorio Astronomico de Mallorca (620). From the resulting data, we determined a synodic rotation period of 31.385 ± 0.006 h and lightcurve amplitude of 0.30 ± 0.02 mag.

122 Iphigenia was tracked over 6 nights between 2007 December 9 and December 14 with one, and sometimes two, identical telescopes (0.30-m f/9 Schmidt-Cassegrain) located at the Observatorio Astronomico de Mallorca in Spain. Both were equipped with an SBIG STL-1001E CCD camera. Image acquisition and calibration were performed using *Maxim DL*. All 1593 images were unfiltered and had exposures of 60 seconds. Image analysis was accomplished using differential aperture photometry with *MPO Canopus*. Period analysis was also done in *Canopus*, which implements the algorithm developed by Harris (Harris et al., 1989). From the data we determined a synodic period of 31.385 ± 0.006 h and a lightcurve amplitude of 0.30 ± 0.02 mag. The results are in good agreement with those reported by Pilcher (2008).

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References

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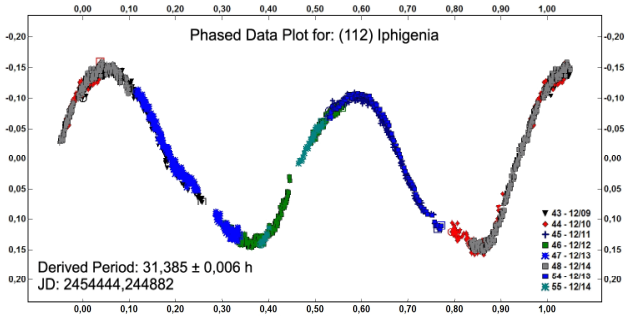

MINOR PLANET LIGHTCURVE ANALYSIS OF 347 PARIANA AND 6560 PRAVDO

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Minor planet 347 Pariana was observed in 2009 July and again in 2009 August and September resulting in two complete lightcurves both with a rotational period estimate of 4.052 ± 0.002 h and amplitude of 0.5 mag. These data were combined with data from previous apparitions to produce estimates for a sidereal period, spin axis, and shape model. Minor planet 6560 Pravdo was observed over nine nights in 2009 June and July resulting in a rotational period estimate of 19.229 ± 0.004 h and amplitude of 0.5 mag.

Equipment and imaging techniques employed at BDI Observatory are as described in Caspari (2008). The resulting images were measured using MPO Canopus (Warner 2010a), which uses differential aperture photometry to determine the values used for analysis. The MPO Canopus "derived magnitudes" mode was employed without the reduced magnitudes option. MPO Canopus applies distance corrections and adjusts magnitudes based on the first session centered on a mean magnitude. LC Invert (Warner 2010b) was used for the sidereal period search, spin axis and shape modeling solutions.

347 Pariana. This minor planet was selected for modeling as it was listed in The Minor Planet Bulletin's "Shape/Spin Modeling Opportunities" column (Volume 36-3). It was also in a favourable sky location for BDI Observatory. Data from a total of 11 observing sessions were used in this modeling process, 5 from the SAPC website (Torppa, 2008) and 6 collected at BDI Observatory (Table 1), covering a range of phase angles from 2.9° to 15.2°.

Data from the U.S. Naval Observatory was also trialed using various weightings however it only reduced the robustness of the solution and was discarded. Period reports range between 4.05 h and 4.11 h (Denchev 2000; Lagerkvist 1992). It has been established that sparse data, such as the available data for 347 Pariana, can result in a useful sidereal period, spin axis and shape modeling solutions (Durech et al. 2009).