

MINOR PLANET LIGHTCURVE ANALYSIS OF 1157 ARABIA AND (1836) KOMAROV

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Minor planet 1157 Arabia was observed over eight nights in 2008 May and June and 1836 Komarov was observed over five nights in 2008 June and July. Rotational periods of 15.225 h with an amplitude of 0.35 mag and 9.695 h with an amplitude of 0.55 mag, respectively, were determined.

BDI observatory is located 22 km South of Sydney, Australia. The equipment used was a 0.2-m f/6 Newtonian with an SAC-8II CCD camera at prime focus. A typical session lasted from 2.5 to 4 hours. *Astrovideo* was used to capture the unfiltered images, which were dark and flat corrected. Automatic stacking was performed using *DeepSkyStacker* and custom written software. Stacking was required to prevent saturation and to keep the image in the linear portion of the camera's response curve. The resulting images were measured using *MPO Canopus* (Warner 2008a), which uses differential aperture photometry to determine the values used for analysis.

1157 Arabia This asteroid is a main-belt object with an assumed diameter is 65.9 km based on an assumed albedo of 0.04 (Gray 2008). It was selected as a result of importing lightcurve data from the Minor Planet Center's "Minor Planet Lightcurve Parameters" and CALL's "Lightcurve Parameters" (Harris *et al.* 2008) into a data base. The data base was then queried for the brightest minor planet that had no known period and was in a favourable location for BDI observatory considering light pollution and obstructions. Raoul Behrend's website (Behrend 2008) was also considered. The lightcurves exhibits a typical bimodal curve. *MPO Canopus* was used to determine a period of 15.225 ± 0.005 h and an estimated peak-to-peak amplitude of 0.35 mag.

1836 Komarov. This is a main-belt object with an assumed diameter is 36.2 km based on an assumed albedo of 0.04 (Gray 2008). This target was selected from the CALL's lightcurve targets page (Warner 2008b) since it was relatively bright and in a favourable location for BDI Observatory. The target had no known period. The lightcurve exhibits a typical bimodal curve. *MPO Canopus* was used to determine a period of 9.695 ± 0.005 h and an estimated peak-to-peak amplitude of 0.55 mag.

References

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