LIGHTCURVE OF MINOR PLANET 7304 NAMIKI

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Lightcurve measurements of 7304 Namiki were performed April – May 2007. Data analysis produced a lightcurve with a synodic period of 8.8586 ± 0.0006 hrs and amplitude about 0.73 mag.

Our lightcurve of 7304 Namiki is the second attempt of photometry observations from Osservatorio Astronomico Margherita Hack, Firenze (MPC code A57). 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 Namiki. In addition, no information was found on the Minor Planet Center "Minor Planet Lightcurve Parameters" web page.

The observations were obtained with a SC Meade 0.25m LX200 Classic + Focal reducer f/6.3 and Optec TCF-S electronic focuser. The CCD camera was SBIG ST7 XME. Exposure times varied between 120 – 240 s. All the observations were performed on 5 nights between 25 April and 08 May 2007.

Analysis of the combined data sets was made using the MPO Canopus software. The derived synodic rotation period was 8.8586 ± 0.0006 hrs, which agrees with the one published by Brinsfield (2007) and Wagner (2007). The 19th session was performed under less than perfect weather conditions and a nearly full moon (phase = 94%) only 35° away. This resulted in more scatter within the data set due to lower S/N ratios. Regardless, the derived synodic rotation period was unchanged when using the data from the 19th session.

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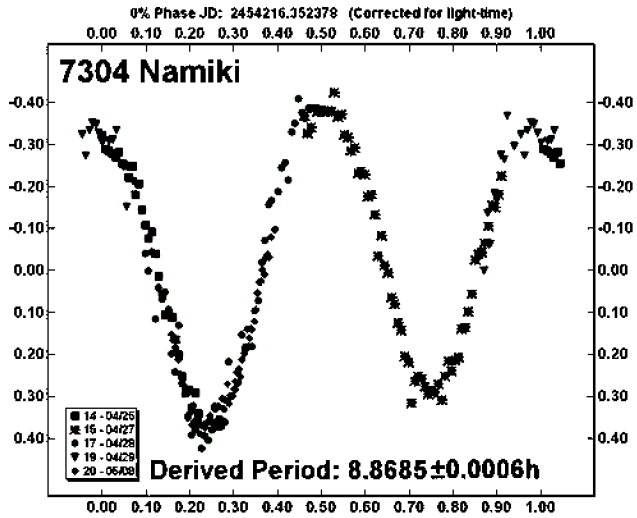

THE ROTATION PERIODS OF 872 HOLDA, 3028 ZHANGGUOXI, 3497 INNANEN, 5484 INODA, 5654 TERNI, AND 7304 NAMIKI

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Lightcurves for 872 Holda, 3028 Zhangguoxi, 3497 Innanen, 5484 Inoda, 5654 Terni, and 7304 Namiki were obtained at the Via Capote Observatory in April and May 2007. The derived synodic periods were: 872 Holda, 5.943 ± 0.002 hr; 3028 Zhangguoxi, 4.827 ± 0.001 hr; 3497 Innanen, 7.181 ± 0.001 hr; 5484 Inoda, 14.144 ± 0.009 hr; 5654 Terni, 9.99 ± 0.01 hr; 7304 Namiki, 8.90 ± 0.02 hr.

Observations reported here were made using a Takahashi Cassegrain at prime focus with a focal length of 136 inches and focal ratio of 11.5. The CCD imager was an Alta U6 featuring a 1024x1024 array of 24 μ-meter pixels. The CCD was operating at a temperature of –30°C. All observations were made at 1x binning yielding an image scale of 1.43" per pixel. All images were guided, 120 second exposures except where noted. Images were dark and flat field corrected. Images were measured using MPO Canopus (Bdw Publishing). All observations were made using unfiltered differential photometry and all data were light-time corrected. Period analysis was done with Canopus, incorporating the Fourier analysis algorithm by Harris (1989).

872 Holda. The observations were conducted on six nights from May 5 thru May 18, 2007. A total of 138 observations were made spanning approximately 318 hours or 54 rotational cycles. The

synodic period was found to be 5.943 ± 0.002 hr with an estimated amplitude of 0.22 ± 0.02 mag. These results agree well with a recently reported period of 5.94054 hr and amplitude of 0.20 mag. by Sheridan (2007). Casulli (2007) reported a period of 0.24770 ± 0.0001 day (5.94 ± 0.0024 hr). Finally, Lagerkvist et al. (1998) reported "ambiguous" periods of 6.78 and 7.2 hours and curve amplitudes of 0.2 and 0.4 mag depending on the aspect angle.

3028 Zhangguoxi. A total of 122 observations were made, from May 6 thru May 19, 2007, spanning approximately 318 hours or 66 rotational cycles. The synodic period was found to be 4.827 ± 0.001 hr with an estimated amplitude of 0.29 ± 0.05 mag. These results agree well with recently reported periods of 4.826 ± 0.001 hr, amplitude 0.20 ± 0.03 mag (Stephens 2007) and 4.401 ± 0.003 hr, amplitude 0.12 mag (Gross 2005). Additionally, Antonini (2007a) reports very similar provisional results of 0.20108 ± 0.00005 day (4.826 ± 0.001 hr).

3497 Innanen. The observations were conducted on five nights from April 10 thru April 17, 2007. A total of 251 observations were made, spanning approximately 126 hours or 18 rotational cycles. The synodic period was found to be 7.181 ± 0.001 hr. The amplitude of the curve was 0.60 ± 0.05 mag. These values agree reasonably well with a recently submitted reported period of 7.310 ± 0.001 hr, and amplitude 0.0562 ± 0.0430 mag (Fleenor 2007). based on a single session during the same observation time. Antonini and Casulli (2007d) report very similar results 0.298936 ± 0.000018 day (7.1745 ± 0.0004 hr).

5484 Inoda. The observations were conducted on six nights from April 10 thru April 28. A total of 287 observations were made spanning approximately 384 hours or 27 rotational cycles. Due to equipment limitations at the time this data was acquired, 90 seconds was the maximum available data integration time and the images were unguided. This restriction, combined with high sky background levels due to moon light, resulted in low S/N data. Furthermore, restrictions in the field of view at the Via Capote Observatory limited maximum on target times for any one session to approximately 4 hours. With these limitations in view, the synodic period was found to be 14.144 ± 0.009 hr. The amplitude of the curve was 0.17 ± 0.1 mag. Pravec (2007) reported similar findings of 14.1479 ± 0.0008 hr. and amplitude of 0.16. Antonini (2007b) reports provisional_findings of 0.458 ±0.023 day (10.99 ± 0.55 hr).

5654 Terni. The observations were conducted on five nights from May 6 thru May 10, 2007. A total of 149 observations were made spanning approximately 102 hours or 10 rotational cycles. Due to equipment limitations at the time this data was acquired, 120 seconds was the maximum available data integration time available. This restriction, combined with the low magnitude of the target of interest, resulted in poor S/N data. With these limitations in view, the synodic period was found to be 9.99 ± 0.01 hr with and estimated amplitude of 0.41 ± 0.07 mag. Antonini (2007c) reports similar provisional findings of 0.411 ± 0.022 day (9.86 ± 0.53 hr) Additionally, these findings agree reasonably well with a reported period of 9.255 ± 0.02 hr and amplitude of 0.33 ± 0.06 mag by Pietschnig (2007).

7304 Namiki. The observations were conducted on three nights from May 15 thru May 20, 2007. A total of 52 observations were made, spanning approximately 120 hours or 14 rotational cycles. The synodic period was found to be 8.90 ± 0.02 hr with an estimated amplitude of 0.66 ± 0.01 mag. These results agree well with recently reported periods of 8.8586 ± 0.0006 hr, amplitude 0.73 mag (Mannucci 2007) and 8.8754 ± 0.0001 hr, amplitude 0.30 ± 0.025 mag (Sheridan 2007). Additionally, these findings agree reasonably well with provisional data indicating a period of 0.376 ± 0.005 day, or 9.02 ± 0.12 hr (Poncy 2007).

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