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# ROTATION PERIODS OF 1660 WOOD, 7173 SEPKOSKI, 12738 SATOSHIMIKI, AND (23233) 2000 WM72

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## ROTATION PERIODS OF 1660 WOOD, 7173 SEPKOSKI, 12738 SATOSHIMIKI, AND (23233) 2000 WM72

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We present rotation periods of four asteroids: 1660 Wood, 7173 Sepkoski, 12738 Satoshimiki, and (23233) 2000 WM72. The observations were undertaken using the SARA (Southeastern Association for Research in Astronomy) South telescope, located in Cerro Tololo Inter-American Observatory in Chile, from 2011 December to 2012 April. The following synodic periods were found: 1660 Wood,  $P = 6.8088 \pm 0.0002$  h; 7173 Sepkoski,  $P = 2.44 \pm 0.02$  h; 12738 Satoshimiki,  $P = 8.708 \pm 0.001$  h; and (23233) 2000 WM72,  $P = 3.732 \pm 0.003$  h.

All observational data reported here were obtained using the remotely-operated 0.61-m SARA South telescope located at the Cerro Tololo Inter-American Observatory in Chile. The telescope has an effective focal ratio of  $f/13.5$ . Coupled to a QSI 683s CCD camera, this resulted in a resolution of 0.41 arcsec/pixel (binned  $3 \times 3$ ) and field of view (FOV) =  $7.51 \times 5.70$  arcminutes. Bessell R or IR blocking (clear) filters were used when taking images. The camera temperatures were set to between  $-25^\circ\text{C}$  and  $-35^\circ\text{C}$ . Image acquisition was done with *MaxIm DL*. All images were reduced with master bias, dark, and flat frames. All calibration frames were created using *IDL*. *MPO Canopus* was used for analyzing the processed images and extracting the periods from the lightcurves. The asteroids were selected from the list of asteroid photometry opportunities published on the Collaborative Asteroid Lightcurve Link (CALL) website (Warner *et al.*, 2008)

**1660 Wood.** We observed this potentially hazardous asteroid (PHA) for three nights from 2012 Jan 15 to Mar 26. We obtained a period  $P = 6.8088 \pm 0.0002$  h. Its amplitude ( $A$ ) steadily increased from about  $0.16 \pm 0.02$  mag in January to  $0.26 \pm 0.02$  mag in March. The large time span in the observations and the variation in the observed amplitudes may prove to be useful for future shape modeling. Our period is consistent with  $6.8090 \pm 0.0002$  h obtained by Oey and Alvarez (2012), who carried out their studies during the same observation season.

**7173 Sepkoski.** We selected this asteroid to accumulate lightcurve data for future shape modeling. We observed it on the evening of 2012 Mar 26 and obtained a period  $P = 2.44 \pm 0.02$  h and an amplitude  $A = 0.20 \pm 0.05$  mag. The period is consistent with the 2.50 h period obtained by Warner (2011).

**12738 Satoshimiki.** We observed this asteroid for four nights from 2011 Dec 6 to 2012 Jan 7. We obtained a period  $P = 8.708 \pm 0.001$  h and an amplitude  $A = 0.25 \pm 0.02$  mag. During the same observation season, Melton *et al.* (2012) obtained an amplitude of 0.20 mag, and Oey (2012) obtained a period of  $8.7081 \pm 0.0006$  h

and an amplitude of 0.20 mag. Our results are consistent with these previously published results.

**(23233) 2000 WM72.** We observed this asteroid for three nights from 2012 Apr 4-8. We obtained a period  $P = 3.732 \pm 0.003$  h and amplitude  $A = 0.35 \pm 0.02$  mag. No previously published results were found.

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