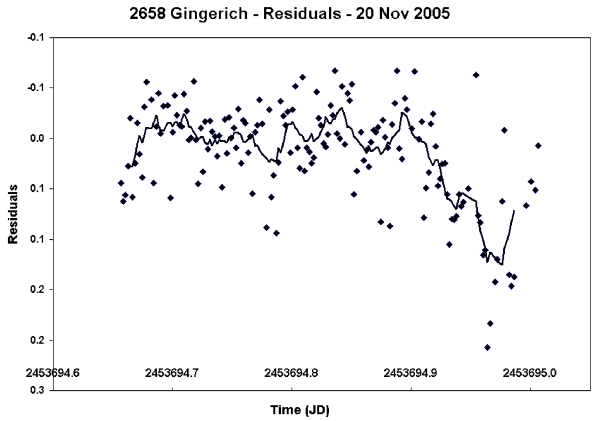

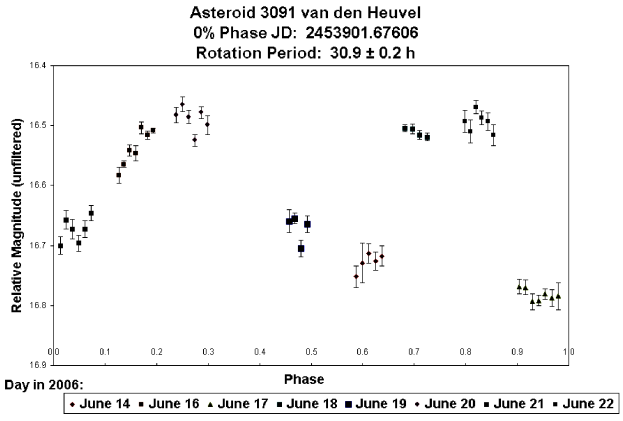

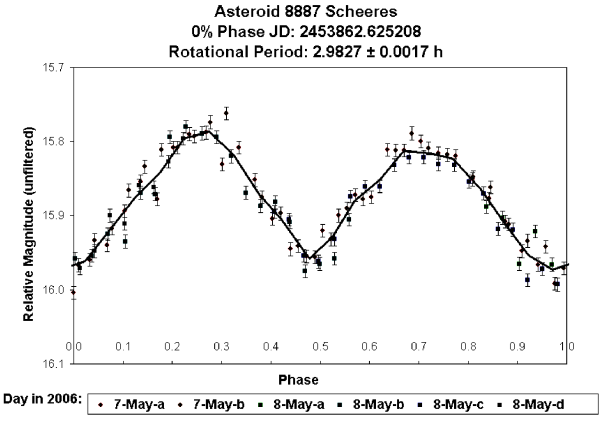

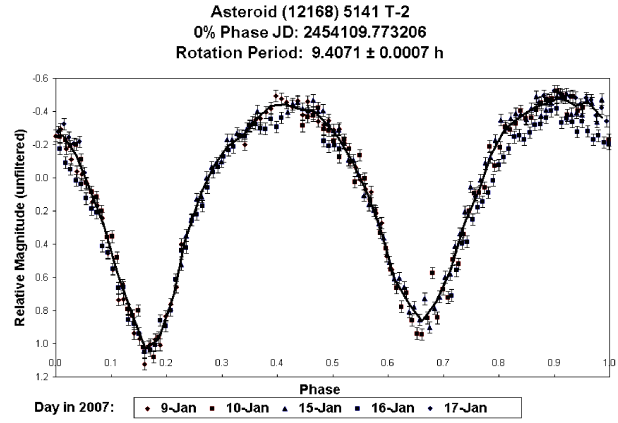

THE ROTATION PERIOD OF 3406 OMSK

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Minor planet 3406 Omsk was observed over six nights in May 2007. The synodic period was determined as 7.275 ± 0.006 hr. The peak to peak amplitude was approximately 0.28 magnitudes, implying an axial ratio (a/b) of 1.3.

Observations of this asteroid were conducted from two sites in Australia – Mt Tarana Observatory undertook unfiltered observations and Bagnall Beach Observatory observed in V band. All observations were light-time corrected. The aspect data (Table I) also shows the percentage of the light curve observed each night. Analysis was carried out using the "Peranso" software (Vanmunster, 2006), using various routines available including the "FALC" routine (based on Harris, et al, 1989).

The final analysis determined a synodic period of 7.275 ± 0.006 hours which was used to compile the composite light curve, with the arbitrary epoch of maximum at JD 2454231.60298. The peak to peak variation in the lightcurve implies an axial ratio (a/b) of 1.3 if we are observing at near-equatorial aspect. Full phase coverage was achieved and this is considered a secure result. At 3.3 rev/day Omsk is an average asteroid with regards to spin rate vs. size (Pravec et al 2002). The latest list of parameters (Harris & Warner, 2007) has no data for this asteroid.

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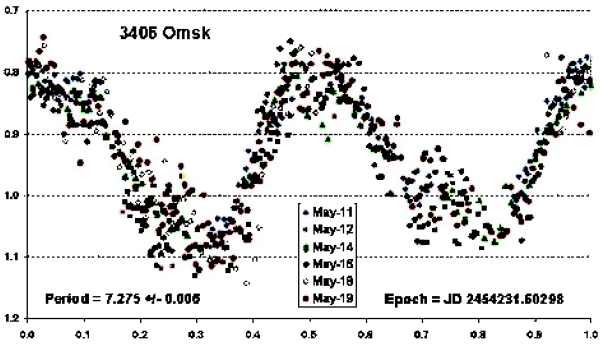

Table I. Aspect data for Omsk in 2007.

UT Date	L_{PAB}	B_{PAB}	Phase Angle	%Phase Coverage
2007 May 11	229.8	-7.3	3.8	82
2007 May 12	229.8	-7.3	3.9	66
2007 May 14	229.9	-7.2	4.1	86
2007 May 16	229.9	-7.1	4.6	89
2007 May 18	230.0	-7.0	5.2	58
2007 May 19	230.0	-6.9	5.5	124

ASTEROID LIGHTCURVE ANALYSIS FROM VOLUNTEER OBSERVATORY DURING APRIL AND MAY 2007

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Lightcurve period and amplitude results for asteroid 533 Sara are reported. The derived period is 11.654 ± 0.001hrs and the amplitude is 0.280 ± 0.015mag.

The author operates Volunteer Observatory at Knoxville, Tennessee at an elevation of 330 meters. Instrumentation used for asteroid photometry includes a 0.35m Meade SCT mounted on an Astrophysics 1200 GTO mounting and an SBIG ST10XME CCD camera. The image scale for all observations was approximately 1.21 arc-seconds per pixel with 2x2 binning. Data were acquired with a custom blue-blocking clear filter inline using 45-second exposures. The CCD operating temperature was maintained at –20°C. Image acquisition and observatory automation is accomplished with Maxim DL and Astronomer's Control Panel software. Additional details of the equipment used are located at the author's personal website: http://www.mikefleenor.com. All images were measured using MPO Canopus, which employs differential aperture photometry to determine the values used for analysis. The period determination was accomplished with Canopus incorporating the Fourier analysis algorithm developed by Harris (1989). Amplitude determination was accomplished using photometry data generated by Canopus and the author's custom MS Excel spreadsheets.

533 Sara was selected from a list of asteroid photometry opportunities published by Brian Warner and Alan Harris on the Collaborative Asteroid Lightcurve Link (CALL 2007). The asteroid was chosen principally based on its favorable declination. 533 Sara was also listed in the lightcurve opportunities table in the *Minor Planet Bulletin* (Warner 2007), where the period was given as 12 hrs with an amplitude of 0.26 mag. Analysis of observations covering four nights in April and May 2007 resulted in a synodic period determination of 11.654 ±0.001 hrs. and amplitude 0.280 ±0.015 mag. Full coverage of the asteroid's rotation was secured and found to be especially important in determining the synodic period to a high degree of precision.

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