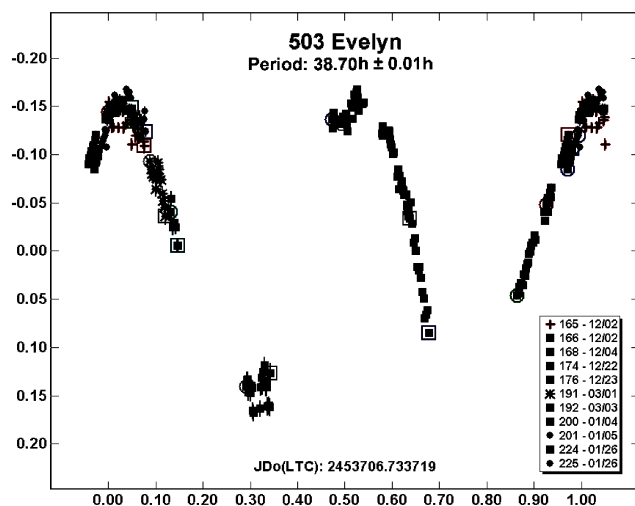
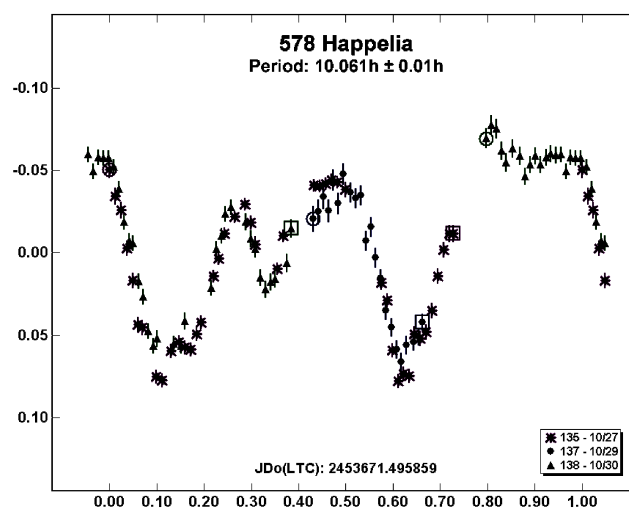
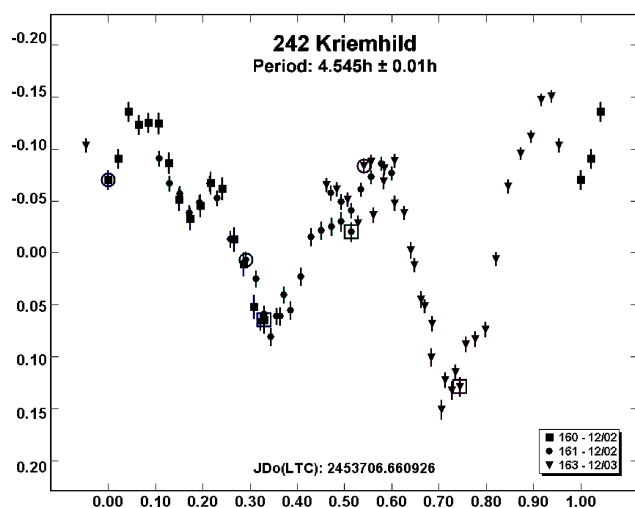
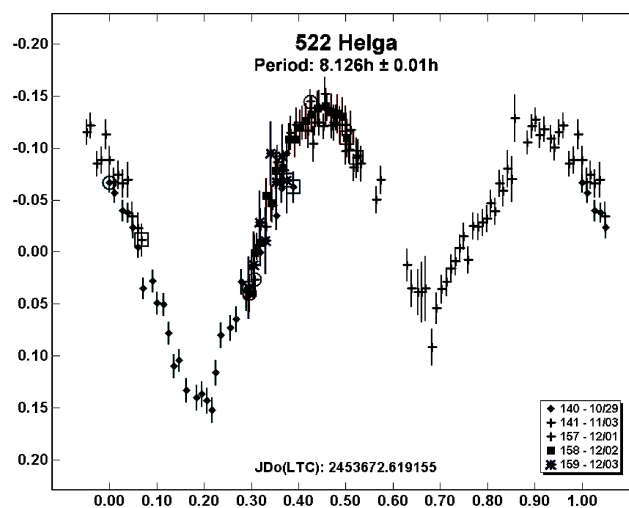
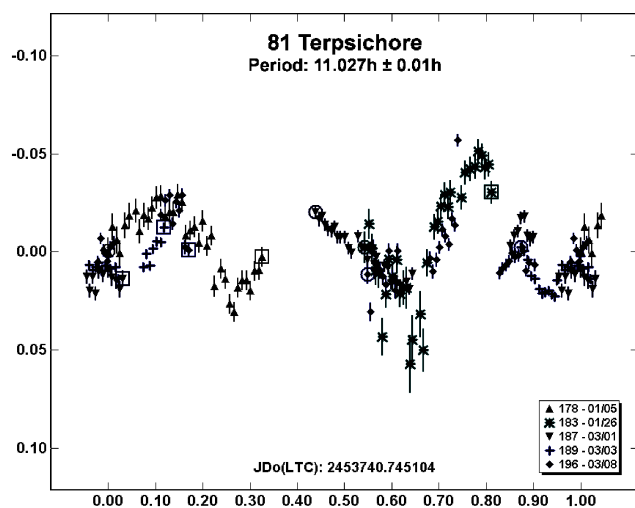




THE ROTATION PERIODS OF 36 ATALANTE AND 416 VATICANA

James W. Brinsfield
Via Capote Observatory
5180 Via Capote, Thousand Oaks CA 91320
jbrinsfi@gmail.com

(Received: 7 April)

Lightcurves for 36 Atalante and 416 Vaticana were obtained at Via Capote Observatory during 2007 February-March. The synodic rotation periods were found to be: 9.93 ± 0.01 hr and 5.38 ± 0.01 hr, respectively. A lower amplitude (0.06 mag.) than previously reported may be due to a more pole-on aspect for 416 Vaticana.

Observations of 36 Atalante and 416 Vaticana were made using a Takahashi Cassegrain at prime focus resulting in a focal length of 136 inches and a focal ratio of f11.5. 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 un-guided, 45 second exposures. 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 also done with Canopus, incorporating the Fourier analysis algorithm by Harris (1989).

36 Atalante. Observations were conducted on four consecutive nights from UT March 10-13. A total of 232 observations were made. The synodic period was found to be 9.93 ± 0.01 hr, which agrees well with previous reports, e.g., Harris (1980) and Schober (1981). The amplitude of the curve was 0.12 ± 0.02 mag.

416 Vaticana. Observations were conducted on 3 consecutive nights from UT February 15-17. A total of 130 observations were made. Miles (1990) and Michalowski (2000) both report a period of 5.372 hr, consistent with the 5.38 ± 0.01 hr result based on my analysis. Both Miles and Michalowski reported an amplitude of about 0.37 mag, which is considerably larger than the 0.06 ± 0.01 mag. value seen at this, perhaps more pole-on aspect, apparition.

References

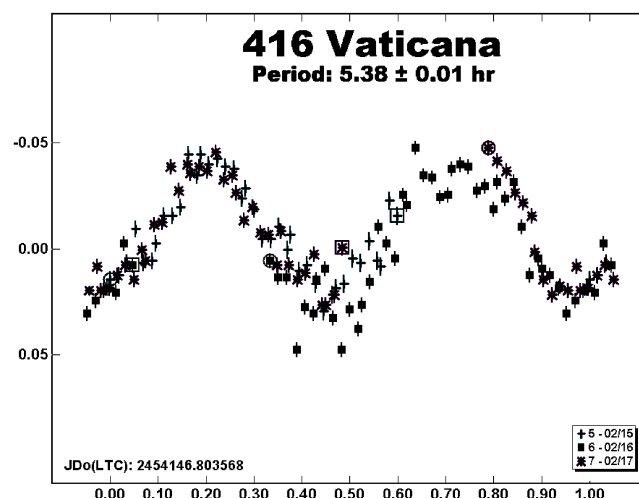
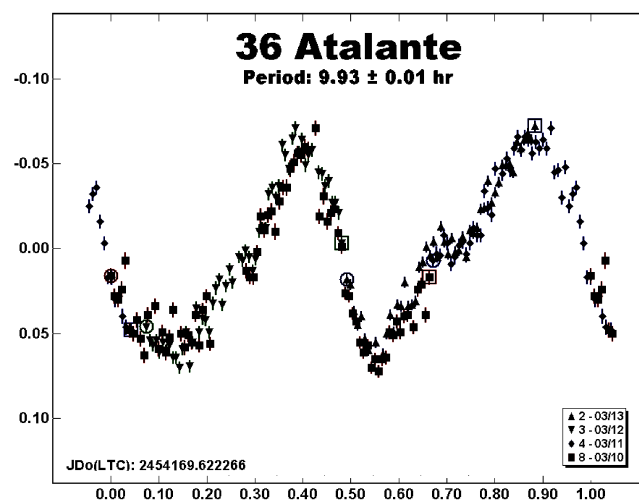
Harris, A.W., and Young, J.W. (1980). *Icarus* **43**, 20-32.

Harris, A.W., Young, J.W., Bowell, E., Martin, L.J., Millis, R.L., Poutanen, M., Scaltriti, F., Zappala, V., Schober, H.J., Debehogne, H., and Zeigler, K.W. (1989). "Photoelectric Observations of Asteroids 3, 24, 60, 261, and 863." *Icarus* **77**, 171-186.

Michalowski, T., Pych, W., Berthier, J., Kryszczyńska, A., Kwiatkowski, T., Boussuge, J., Fauvaud, S., Denchev, P., and Baranowski, R. (2000). *Astron. Astrophys. Suppl. Ser.* **146**, 471-479.

Miles, R. (1990). *Minor Planet Bul.* **17**, 25-29.

Schober, H.J., Schroll, A. (1982). *Astron. Astrophys.* **107**, 402-405.



ASTEROID LIGHTCURVE ANALYSIS AT THE OAKLEY OBSERVATORY – NOVEMBER 2006

Richard Ditteon, Scot Hawkins
Rose-Hulman Institute of Technology CM 171
5500 Wabash Avenue
Terre Haute, IN 47803
ditteon@rose-hulman.edu

(Received: 14 Feb Revised: 4 April)

Lightcurves for 23 asteroids were obtained at the Oakley Observatory over six nights in November of 2006: 24 Themis, 26 Proserpina, 57 Mnemosyne, 66 Maja, 67 Asia, 89 Julia, 143 Adria, 159 Aemilia, 179 Klytaemnestra, 227 Philosophia, 242 Kriemhild, 298 Baptistina, 340 Eduarda, 381 Myrrha, 536 Merapi, 563 Suleika, 665 Sabine, 799 Gudula, 1046 Edwin, 1087 Arabis, 1321 Majuba, 1621 Druzhba, 2152 Hannibal, and 5142 Okutama.

We were able to collect data on a total of 32 main belt asteroids over six nights in November of 2006 from the Oakley Observatory

on the campus of Rose-Hulman Institute of Technology in Terre Haute, Indiana. The data gave us useful lightcurves and rotational periods for 23 asteroids. Of these 23 periods, 14 agreed reasonably well with previously published periods, 5 periods disagreed or removed ambiguity from previously published periods, and 4 were completely new results.

Three telescopes were used on all but one night. Each telescope is a 14-inch Celestron optical tube assembly mounted on a Paramount ME. One camera was an Apogee AP-8p which operated unfiltered at a pixel scale of 2.00 arcseconds per pixel. The other two cameras were SBIG STL-1001E which used a V filter at a pixel scale of 1.75 arcseconds per pixel. Two minute exposures were used for all data frames. Images were calibrated with master twilight flats and master darks. About half of the images were calibrated using MaxImDL and half using CCDSoft. All images were then measured with MPO Canopus.

Asteroids were selected based on their position in the sky one hour after sunset. Priority was given to asteroids without previously published lightcurves, but asteroids with well known periods were also targeted with the hope that the new data would help with shape modeling and determination of the pole orientation. After the first two nights, it was realized that there was considerable

Minor Planet Bulletin **34** (2007)