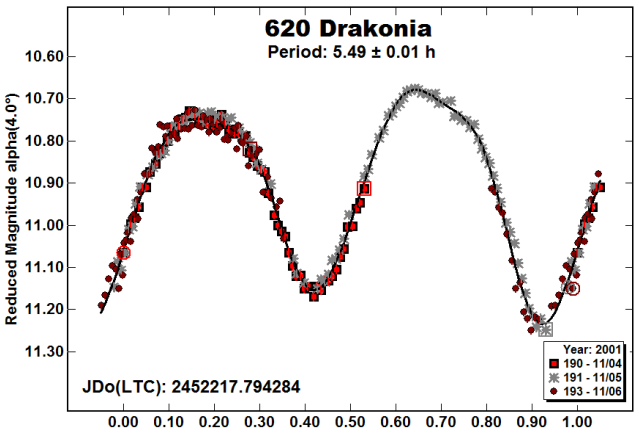

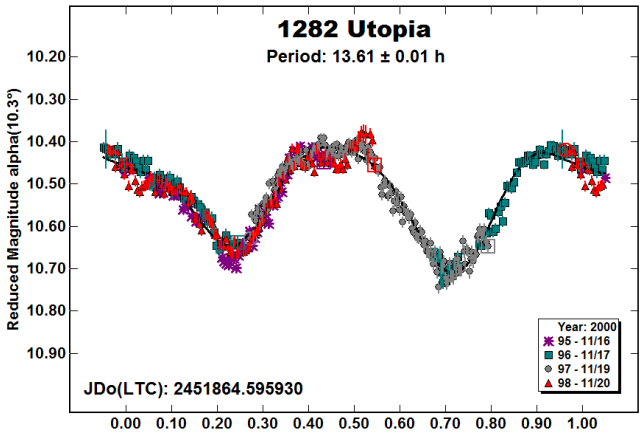

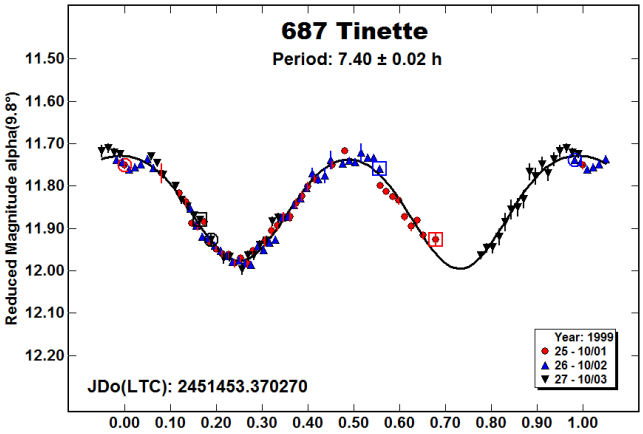

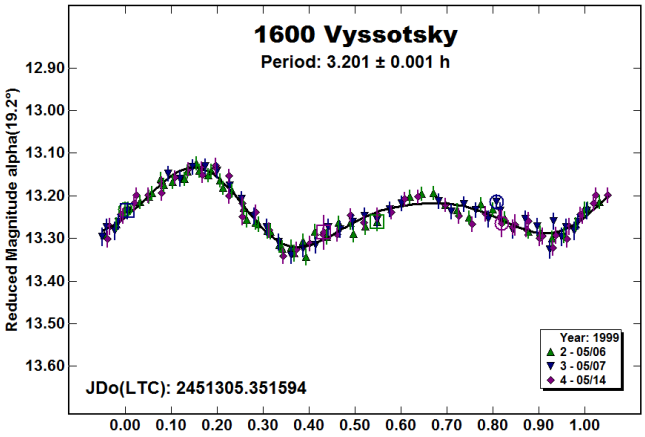

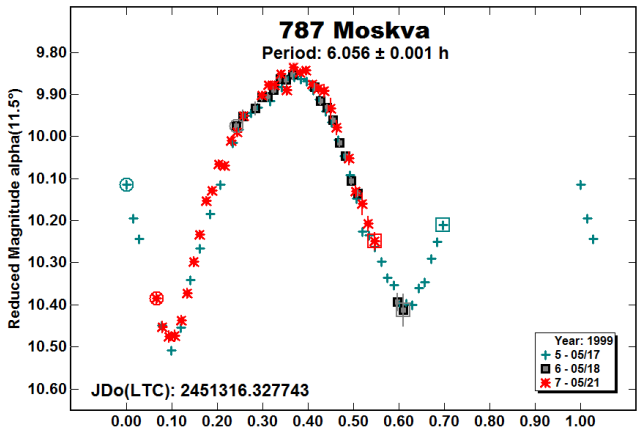

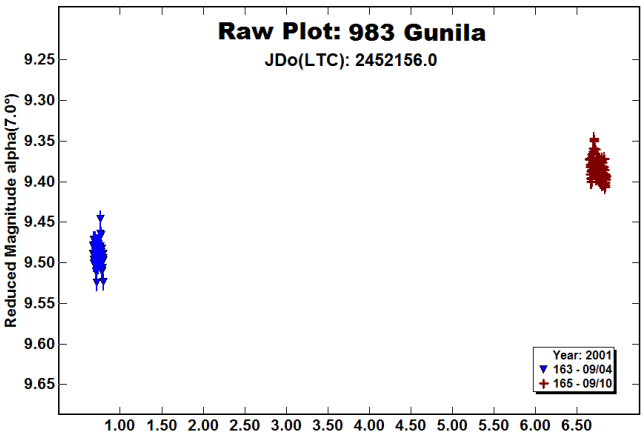

PERIOD DETERMINATION FOR 448 NATALIE

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Lightcurve analysis for 448 Natalie was performed from observations during its 2010 opposition. The synodic rotation period was found to be 8.0646 ± 0.0004 h and the lightcurve amplitude was 0.32 ± 0.04 mag.

As of early September 2010, only 6 of the first 500 numbered asteroids appeared to have no previously reported rotation periods (only four years ago, that number was seven times greater). One of those six, 448 Natalie, was chosen for observations since it would be favorably placed for several weeks during the 2010 apparition and because it was one of the recommended asteroids in the "Potential Lightcurve Targets 2010 July - September" included at the Collaborative Asteroid Lightcurve Link (CALL) web-site (Warner, 2010).

The asteroid was observed from 2010 mid-September to early October at Observatorio Los Algarrobos, Salto, Uruguay (MPC Code I38), using a 0.3-m Meade LX-200R working at f/6.3 with a focal reducer. The CCD imager was a QSI 516wsg NABG with a 1536 x 1024 array of 9-micron pixels. Exposures were 60 s

working at –10C, unguided, and unfiltered at 2x2 binning, yielding an image scale of 1.9 arcseconds per pixel. All images were dark and flat field corrected. The images were measured using *MPO Canopus* version 10.2.0.2 (Bdw Publishing) with a differential photometry technique. The data were light-time corrected. Period analysis was also done with *Canopus*, which incorporates the Fourier analysis algorithm developed by Harris (Harris *et al.*, 1989).

From more than 2,200 data points obtained during 7 sessions, (2 of them longer than 7 h and totaling in all more than 35 h), the synodic rotation period was found to be P = 8.0646 ± 0.0004 h with an amplitude of A = 0.32 ± 0.04 mag. During the time of the observations, the phase angle increased from 9.1º to 14.8º.

This leaves only five asteroids numbered below 500 for which no rotational parameters could be found. They are, in ascending order, 330 Adalberta, 398 Admete, 414 Liriope, 457 Alleghenia, and 473 Nolli.

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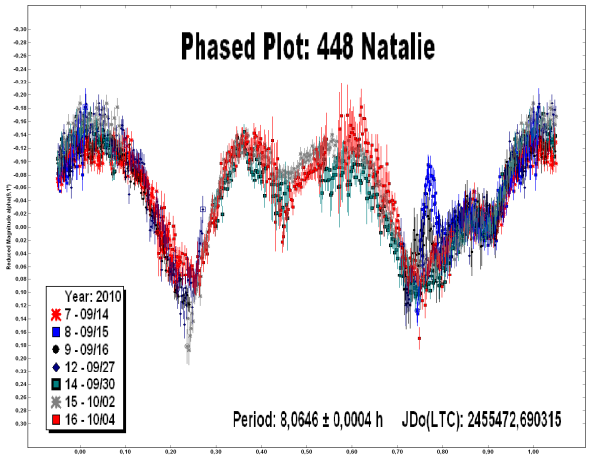

CCD PHOTOMETRY AND LIGHTCURVE ANALYSIS OF 1730 MARCELINE AND 1996 ADAMS FROM OBSERVATORI CARMELITA IN TIANA

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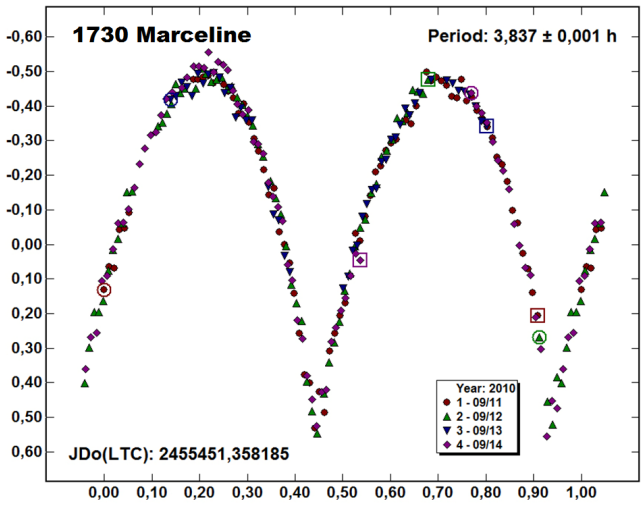
Analysis of observations carried out during 2010 September and October determined the synodic periods of 1730 Marceline (1936 UA) and 1996 Adams (1961 UA). For main-belt asteroid 1730 Marceline, a period of 3.837 ± 0.001 h was found. For 1996 Adams, also an MBA, a period of 3.311 ± 0.001 h was determined. This differs from the period of 3.56 h found by Alvarez-Candal et al. (2004).

The *Carmelita Observatory* (MPC B20) is situated in the town of Tiana, in the southernmost part of the *Serra de Marina*, a moderately polluted suburban park 15 km north of Barcelona, Spain. The observatory is equipped with an Astro-Physics AP900 GEM (German Equatorial Mount) on a fixed pier, a 25-cm Schmidt-Cassegrain telescope with a focal reducer, and a dual-chip SBIG ST8-XME CCD camera with filter wheel yielding a 34.0 x 22.7 arc minute field of view and an effective resolution of 1.33 arc sec/pix.

1730 Marceline. This main-belt asteroid was discovered by French astronomer Marguerite Laugier at the Observatoire de Nice in 1936. No lightcurve parameters had been previously reported (Warner *et al.*, 2010a). We collected 264 images during the four nights of 2010 September 11-14 through a C filter with *Maxim DL* acquisition software. Exposures were 120 s. The CCD camera was operated at -6º C to -10º C and all images were calibrated with master bias, dark, and flat frames. According to *Astrometrica* (Raab, 2010), the asteroid magnitude as measured against the CMC-14 catalogue in R band was 14.2-14.8.



On September 11 it became evident that the two minima were very deep. We performed differential photometry of the asteroid with *Fotodif* as the images were being downloaded. This routine makes it easier to follow the asteroid lightcurve in real time. Data