

THE ROTATION PERIOD OF 244 SITA

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

David Higgins
Hunters Hill Observatory (E14)
7 Mawalan Street
Ngunnawal ACT 2913 AUSTRALIA

(Received: 2008 July 22)

Data were acquired at both the Via Capote observatory in southern California, USA, and the Hunters Hill Observatory in Australia. A rotation period of 129.51 ± 0.03 h with a magnitude of 0.82 ± 0.25 mag was obtained in this collaborative effort.

The observations at the Via Capote Observatory were made using a Meade LX200 14-inch (356 mm) SCT working at f/10. The CCD imager was an Alta U6 featuring a 1024x1024 array of 24-micron pixels, working at 1x binning (1.44"/pixel). The observations at Hunters Hill Observatory were made using a 0.35-m Meade LX200GPS SCT working at f/10. The CCD imager was an SBIG ST-8E with 9-micron pixels, yielding an image scale of 1.31"/pixel. Download times were reduced by downloading sub-frames of 1148 x 765 pixels. The CCD was operating at a temperature of -15°C . Images at both observatories were dark and flat-field corrected. The table shows which sessions are due to each observer.

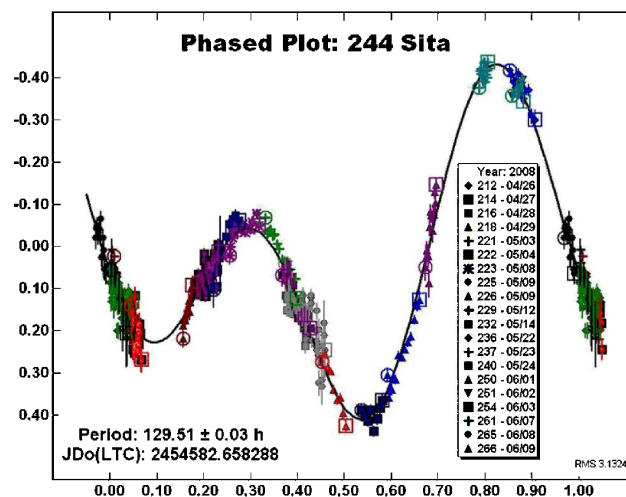
Images were measured using *MPO Canopus* (Bdw Publishing). All observations were made using unfiltered differential photometry and all data were light-time corrected. Period analysis was also done with *Canopus*, incorporating the Fourier analysis algorithm developed by Harris (1989). To make the lightcurve plot more readable, the original 1370 measurements were binned in

sets of 5 with a maximum separation between individual data points of 7 min.

References

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.

	Date Range (mm/dd/2008)	Data Points	Phase	L_{PAB}	B_{PAB}
244 Sita	04/26 -06/09	421	12.7	208.35	0.3
Observer	Plot Sessions				
Brinsfield	212, 214, 216, 225, 237, 250, 251, 254, 261, 265, 266				
Higgins	218, 221, 222, 223, 226, 229, 232, 236, 240				



PERIOD DETERMINATIONS FOR 33 POLYHYMNIA, 38 LEDA, 50 VIRGINIA, 189 PHTHIA, AND 290 BRUNA

Frederick Pilcher
4438 Organ Mesa Loop
Las Cruces, NM 88011
Pilcher@ic.edu

(Received: 2008 October 15)

Synodic rotation periods and amplitudes have been found for: 33 Polyhymnia 18.609 ± 0.002 h, 0.15 ± 0.02 mag; 38 Leda 12.838 ± 0.001 h, 0.05 ± 0.01 mag; 50 Virginia 14.315 ± 0.001 h, 0.19 ± 0.02 mag; 189 Phthia 22.346 ± 0.001 h, 0.26 ± 0.02 mag; 290 Bruna 13.807 ± 0.001 h, 0.54 ± 0.04 mag.

The lightcurve periods and amplitudes for five asteroids were found following observations made at the Organ Mesa Observatory. The equipment consisted of a Meade 35-cm LX200

GPS Schmidt-Cassegrain, SBIG STL 1001-E CCD camera, and clear filter. Unguided exposures of 60 seconds were used for all objects, except 50 Virginia. Due to its brightness, exposures were limited to 15 seconds. Image measurements using differential photometry and the subsequent lightcurve analysis were done with *MPO Canopus*. Due to the large number of data points acquired for each target in this study, the lightcurves have been binned in sets of three data points with a maximum of five minutes between points.

33 Polyhymnia. The only previous published lightcurve is by Zappala *et al.* (1982), who observed on 12 nights, 1980 Aug. 15 - Sept. 14, and obtained a period 18.601 ± 0.004 h. The amplitude was 0.14 mag at opposition and increased to 0.17 mag at phase angle 10 degrees. This result was assigned a reliability value of $U = 3$ (secure) by Harris *et al.* (2008). The rationale for the new observations reported here is to provide data leading to a spin/shape model. Observations on seven nights, 2008 Apr. 1-29, show a period of 18.609 ± 0.002 h and amplitude of 0.15 ± 0.02 mag, in good agreement with the 1980 observations.