

## LIGHTCURVE ANALYSIS OF 758 MANCUNIA

Brian D. Warner

Palmer Divide Observatory/Space Science Institute  
17995 Bakers Farm Rd., Colorado Springs, CO 80908  
brian@MinorPlanetObserver.com

Raoul Behrend

Neuchâtel University, Switzerland  
Observatoire de Genève, CH-1290 Sauverny – SUISSE

Raymond Poncy

Rue des Ecoles 2, F-34920 Le Crès, FRANCE

Jean-François Coliac

Observatoire Farigourette, F-13012 Marseille, FRANCE

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Analysis of observations made independently by Warner and Behrend/Poncy/Coliac of the main belt asteroid 758 Mancunia indicated a period of approximately 12.7 hr. The combined data set allowed refinement of the analysis and revealed a lightcurve with a period of  $12.7253 \pm 0.0006$  hr and amplitude of  $0.26 \pm 0.02$  mag.

In middle December 2006, authors Warner, Poncy, and Coliac began independent observations of the main belt asteroid 758 Mancunia. Warner made his observations at the request of Michael Shepard of Bloomsburg University (PA). Shepard had been conducting radar observations of the asteroid using the Arecibo radar telescope and saw indications that the previously reported period of 6.902 hr (Holliday 1996) might be in error (private communications).

Data were obtained at Palmer Divide Observatory on December 24-27 and confirmed that the period was  $12.738 \pm 0.003$  hr. In the meantime, Poncy observed the asteroid on Dec. 21-22, 2006, and Jan. 05, 2007, while Coliac observed on Jan. 3-4, 2007. Poncy and Coliac reported their observations to Behrend who analyzed the data and posted results of  $12.723 \pm 0.001$  hr on his web site (Behrend 2007). Upon learning of the two data sets, Behrend and Warner agreed to merge them in order to obtain a more accurate determination of the synodic period. Using a Fourier period analysis algorithm developed by Harris (1989), Warner combined the sets and found a best fit of  $12.7253 \pm 0.0006$  hr.

For confirmation, the data were also used to check the previously reported period. This resulted in two monomodal curves superimposed on one another, which might be expected due to the asymmetry of the solution at 12.7 hr. Therefore, we believe that the new value of 12.7253 hr should be adopted.

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### References

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