



ANALYZING ASTEROIDS



Using Light Curves to Determine Rotation Period and Shape of Asteroids

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Introduction

An asteroid is a small, rocky object in our solar system that orbits the sun. Asteroids are typically found in the asteroid belt, which is located between Mars and Jupiter. There are over 500,000 known asteroids in our solar system. For a large majority of these asteroids, no physical characteristics about the asteroid, except orbital period, are known. The goal of this research project is to measure both the rotation period and shape of the asteroid 4201 Orosz by measuring the asteroid's light curve.

Data Collection

All of the data that was used for this research project was collected at the University of Maryland's observatory using the 7" astrophysics telescope located there. Jacob Shpeice and I gathered our data for the asteroid over a period of several nights to ensure that we had a full light curve profile for our asteroid.

Conclusion

After analyzing our data, we found that the rotation period of 4201 Orosz was (data not analyzed yet). This asteroid has a relatively (short/average/long) rotation period compared to other asteroids of similar size and distance from the sun. (If rotation period is abnormal, propose hypothesis for what could be the cause of the long/short rotation period).

Graphs (no data yet)

Analysis

We used the program MPO Canopus to analyze our data. The graphs above show the light curve of the asteroid 4201 Orosz, which was generated using MPO Canopus. The graphs show that the asteroid has a rotation period of approximately (rotation period) days. The graphs indicate that the shape of 4201 Orosz is approximately (data not analyzed yet)