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Lightcurve Analysis of 3366 Godel, 5685 Sanenobufukui, 6438 Suarez, and 15224 Penttila KARL MADDEN, SAMUEL MONTGOMERY, New Mexico Institute of Mining and Technology — Over 690,000 minor planets have been discovered within the solar system, only one percent of which have well-defined rotational periods. The purpose of this project was to construct a visual magnitude versus time plot, called a lightcurve, for four main-belt asteroids in order to determine their rotational periods. In general, all asteroids spin as they orbit the sun, allowing observers from earth to view an asteroid from multiple perspectives. The area of the asteroid's visible surface will change as it rotates, which proportionally affects the amount of light reflected towards the earth. The variation in reflected light alters the asteroid's brightness over a measurable synodic period correlating to its rotational period. The C-14 telescopes at the Etscorn Campus Observatory were used to image the asteroids 3366 Godel, 5685 Sanenobufukui, 6438 Suarez, and 15224 Penttila over several weeks. Corrections for vignetting and artifacts were made with flat-field techniques. The software package *MPOCanopus* was then used to construct the plots based on the apparent magnitude of the asteroid in each image. The periods determined were 4.687 hours, 3.388 hours, 2.941 hours, and 4.377 hours respectively.

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