

Surface properties of asteroids inferred from light curves and 3-D models.

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Generally, surface properties of asteroids are observed by a spectral photometry or a spacecraft. However, we thought that surface properties of asteroids might be inferred from light curves and 3-D models.

Our method is as follows. (1) We observed asteroids (using 65cm reflector) and made a light curve. We call it "Light curve by observation". (2) We measured sectional areas of asteroid 3-D models. (3) We made a line graph about a change on standing of the sectional area. We call it "Light curve from 3-D models". (4) We compare those two kinds of light curves.

It is considered that if those light curves indicate good agreement, the surface properties of an asteroid are homogeneous. If those light curves indicate disagreement, the surface properties of an asteroid are heterogeneous.

It was concluded that (1) the flux ratio (amplitude) of the observed light curve agrees with that calculated from 3-D models, (2) sectional areas of an asteroid can be regarded as flux of an asteroid, (3) surface properties (geology, geomorphology) of an asteroid can be inferred from light curves and 3-D models.

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