

# Laboratory photometry of surface analogue of small bodies ~Wavelength dependence of scattered light at small solar phase angles~

# Takayuki Honda[1]; Akiko Nakamura[2]; Tadashi Mukai[3]

[1] Earth and Planetary Sci., Kobe Univ; [2] Grad. Sch. of Sci. and Tech., Kobe Univ.; [3] Earth and Planetary System Sciences, Kobe Univ

Surface material and structure of small bodies are studied by comparisons of the reflected light from the bodies with those measured in the laboratory. The intensity of the scattered light nonlinearly increases, at small solar phase angles, the angle between the light source and the detector as seen from the target. The degree and the sharpness of the phenomena, opposition effect, depend on the material and the particle size on the surface.

The phase angle of the observation of the bodies in the outer region of the solar system, such as Trans Neptunian Objects (TNOs), becomes much smaller than those of the near Earth objects. It is, therefore, of importance to take the opposition effect into account in the studies of the color of such bodies. However, experimental data of wavelength dependence is sparse.

In this study, we used the same samples as the previous studies (sandpapers and meteorite powders) performed at the wavelength of a He-Ne laser (633 nm), while at the wavelength of a YAG laser (1064 nm). The measurements were done with varying the phase angle from 1 to 30 degree. We will present the wavelength dependence of the opposition effect.