

PPS004-P07

Room: Convention Hall

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Photometry of impact flash by high-speed camera

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Impact flashes occur when meteoroids collide with the lunar surface [1]. In high velocity impacts, some fraction of kinetic energy is converted to optical energy. We are interested in the luminous efficiency, that is the ratio of the optical energy to the impact energy. We conducted with hypervelocity impact by using the two-stage light gas gun at JAXA to determine the luminous efficiency. We made photometry of impact flashes by analyzing images obtained with a high-speed camera. Luminous efficiencies we obtained are larger than those determined by the measurements with a photo-diode. The difference may be due to the large field of view of the high-speed camera compared with photo-diode [2]. We also revealed that difference in projectile's porosity causes the difference in luminous efficiency. I consider the cause difference of surface area.

References

- [1] Yanagisawa, M., H. Ikegami, Workshop for space plasma(Institute of Space and Astronautical Science), pp. 68-71, 2007
- [2] Ishigure, Y., Society for planetary science, pp.308.2009

Keywords: High Speed Camera, High Velocity Impact