

Lunar impact flash observation of Geminids and application to lunar impact monitoring from deep space

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A Lunar Impact Flash (LIF) can be detected as a short duration luminous phenomenon in VIS and NIR wavelength regions when a meteoroid impacts on the night side of the moon. The LIF provides absolutely essential for understanding the Earth-Moon meteoroid environment, especially centimeter to sub-meter sized impactors, which is as a bridge between visual meteors and small asteroids. Here we report a tremendous impacting rate of Geminids, a dozen LIFs in 2-hours, which were observed on Dec 15 2018 from Nihon University and the University of Electro-Communications simultaneously. Derived physical parameters will be discussed. We will also introduce DELPHINUS (DEtection camera for Lunar impact PHenomena IN 6U Spacecraft), one of the scientific instruments onboard the world's smallest spacecraft EQUULEUS (EQUilibriUm Lunar-Earth point 6U Spacecraft) to explore the Earth-Moon Lagrange point which will be launched by NASA/SLS in 2020.