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はやぶさ２熱赤外カメラを利用したアルベドと放射率の測定
Separation of effects of albedo and emissivity on the thermal evolution of asteroid by using TIR on board Hayabusa-2

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Surface temperature of an air-less body is thought to be determined by balance of the energy received from the sun and the energy emitted as black body radiation. The energy received from the sun per unit area is calculated as a function of the solar distance, D, and the albedo of the body, A. The energy emitted as black body radiation per unit area is calculated as a function of the surface temperature, Ts, and emissivity, E. Thus it is said that the resulting surface temperature is simply calculated as a function of D and (1-A)/E. However this is only the case for a thermally non-conductive body.

For the case of time evolution of surfae temperature is affected by thermal flux from/ to the underground. The effect can be observed as time-delay of peak temperature relative to sub-solar longitude. This indicate that a time-series observation of surface temperature allow the separation of effects of albedo and emissivity on the evolution.

In this presentation, we will show our storategy to estimate the albedo and the emissivity of the target asteroid of Hayabusa-2,1999JU3, by using TIR (Thermal InfraRed) imager.

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