

## Application possibility to other planet missions of the Longwave Infrared Imager (LIR) onboard PLANET-C

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The Longwave Infrared Imager (LIR) onboard PLANET-C measures thermal radiation of 8-12  $\mu\text{m}$  emitted from the cloud-top of the Venusian atmosphere. LIR uses an uncooled microbolometer array which needs no cryogenic apparatus, and it contributes to cost reduction and weight saving. A commercial uncooled microbolometer camera was modified to the Bread Board Model of LIR and the Noise Equivalent Temperature Difference (NETD) was evaluated. Although some noises are conspicuous in the image of low temperature target, NETD of 0.1K is achieved by processing of noise reduction.

LIR will be a camera useful not only to atmospheric observation but also to observations for the surface of a planet or an asteroid. When small terrestrial rocks and meteorites under the experimental environment of high temperature (340 K) and low temperature (230 K) were observed by LIR, temperature differences that would be caused by the difference of the thermal inertia or emissivity of each mineral appeared clearly. It shows that LIR is effective in observation of the surface of a planet and an asteroid.