

Development of Longwave Infrared camera onboard onboard PLANET-C

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The Longwave Infrared Imager (LIR) onboard PLANET-C measures thermal radiation of 8-12 μm 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. Then, the Prototype Model of LIR has been manufactured and the first evaluation test under vacuum environment has been carried out. It succeeded in taking a picture of low-temperature (-40 degree) target. The result is reported in the present study.