

ジオスペース探査衛星に搭載する積層型シリコンストリップ半導体MeV電子検出器の開発 Development of stacked silicon strip detectors for MeV electron on board the Geospace exploration satellite “ERG”

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The Energization and Radiation in Geospace (ERG) project will explore how relativistic electrons in the radiation belts are generated during space storms. “High energy particle (electron)” instrument (HEP-e) on board ERG satellite will measure 3-D distribution of high energy electron between 70 keV and 2 MeV. In high resolution mode, HEP-e measures the energy and incident direction of each electron with time resolution of 2 μ sec.

The detection parts of HEP-e are six pinhole cameras which consist of mechanical collimators, silicon semiconductor detectors and readout ASICs. Three camera measure electrons with energy of 70 keV - 1 MeV and other three with energy of 700 keV - 2 MeV.

The flight model of HEP-e is under manufacture and the verification tests before integration are ongoing. In this presentation we introduce HEP-e instrument and report results of the step-by-step verification tests of each component before final assembly.

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