

Medium energy particle analysers for ERG: performances of engineering models and designs of flight models

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ERG (Exploration of energization and Radiation in Geospace) is a geospace exploration spacecraft, which is planned to be launched in FY2015. The mission goal is to understand the radiation belt dynamics especially during space storms. The key of this mission is the observations of electrons and ions in medium-energy range (10 Ó 200 keV), since these particles account for the significant portion of energy density in the radiation belt region, and also excite various electromagnetic waves (e.g., EMIC waves, magnetosonic waves, and whistler waves), which are believed to play significant roles in the relativistic electron acceleration and loss. Engineering models (EMs) of medium energy electron analyser and ion mass spectrometer have been developed and their performances are evaluated. The results are reflected in the design of the flight models.