

## Initial Report of the High Frequency Analyzer (HFA) onboard the ARASE (ERG) Satellite

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The ERG (Exploration of energization and Radiation in Geospace, ARASE) was launched on December 20, 2016. The purpose of the ERG is to explore the dynamics of the Earth's radiation belt using electric and magnetic field instruments covering a wide frequency range and electron and ion detectors over a wide energy range. New instruments named S-WPIA (Software-Type Wave Particle Interaction Analyzer) was installed on the satellite to measure energy exchange processes between plasma waves and particles directly.

High Frequency Analyzer (HFA) is a subcomponent of the Plasma Wave Experiment (PWE) for observation of radio and plasma waves in a frequency range from 0.01 to 10 MHz. The bandwidth is 1.2 kHz in 0.01-1 MHz, and 12 kHz in 1-10 MHz. The time

In ERG mission, HFA is expected to perform the following observations:

(1) Observation of upper hybrid resonance (UHR) waves in order to determine the electron number density around the spacecraft and provide it to SWPIA.

Keywords: The ARASE (ERG) satellite, PWE, HFA