

Near-future opportunities for international collaborations in magnetospheric research Near-future opportunities for international collaborations in magnetospheric research

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The successful launch of NASA's Van Allen Probes in August 2012 has opened a window of opportunities for collaborative magnetospheric research with other missions in the magnetosphere, including JAXA's ERG spacecraft scheduled for launch in 2015. Both missions have the radiation belt as the science target. NASA's soon-to-be-launched Magnetospheric Multiscale (MMS) mission will also provide a similar opportunity for the ERG mission. In this presentation, we will take the Van Allen Probes and ERG missions as an example to illustrate what kind of science can be achieved by international collaboration. The Van Allen Probes are two identical spacecraft orbiting on nearly identical elliptical orbits with apogee of 5.8 Re, inclination of 10 degrees, and orbital period of 10 hours. The spacecraft carry a comprehensive set of particle and fields experiment to address the spatial and temporal variations of particle phase space density and the interaction of particles with waves over a wide frequency range. ERG will be similarly instrumented and will have a similar orbit but with a higher inclination (~30 degrees). We use predicted orbits for the spacecraft to outline possible science focus areas during the nominal mission period (~1 year) of ERG.

キーワード: Van Allend Probes, ERG, Magnetosphere, Radiation belt

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