

非熱的中性粒子観測器による木星探査 Measurement low-energy energetic neutral atoms around Jupiter's satellite

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We are proposing a measurement of low-energy (10eV-3keV) energetic neutral atoms around Jupiter's satellite especially Ganymede. Ganymede has its own intrinsic magnetic moment. There is considered to be a mini-magnetosphere around Ganymede because of interactions between plasma in Jovian magnetosphere and Ganymede's magnetic field. However, its characteristics will be different from terrestrial one, since Alfvén Mach number of upstream plasma flow (corotational plasma flow around Jupiter) is small. JNA (Jovian Neutral Analyzer) will reveal characteristics of Ganymede's magnetosphere in terms of measurement of scattered/sputtered particles generated by precipitation of plasma particles onto Ganymede's surface. Measurement of these particles will provide spatial distribution of plasmas in remote sense, since electric/magnetic field do not affect trajectories of neutral particles. JNA is a part of PEP (Particle Environment Package) led by Swedish Institute of Space Physics, which was proposed as potential instruments onboard JUICE mission.

We will discuss current status of JNA.

Keywords: low-energy energetic neutral atoms, Ganymede, magnetosphere, remote observation