

GLOBAL IMAGES OF THE PLASMASPHERE FROM THE MERIDIAN PERSPECTIVE OBSERVED BY KAGUYA

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Recent advances in satellite-based imaging techniques have made it possible to routinely obtain full global images of the plasmasphere. The Extreme Ultraviolet Imager (EUV) on the Imager for Magnetopause-to-Aurora Global Exploration (IMAGE) satellite gave us complete sequential pictures. The EUV instrument could obtain the equatorial distribution of the plasmasphere from near apogee of the polar orbit. In 2007 we have succeeded in observations by the Telescope of Extreme Ultraviolet (TEX) aboard Japan's lunar orbiter KAGUYA. The TEX instrument detects the resonance scattering emissions of helium ions (He II: 30.4 nm) and oxygen ions (O II: 83.4 nm) to take images of the plasmasphere, the polar wind, and the inner magnetosphere. The maximum spatial and time resolutions are 0.07 Re and 1 min, respectively. The view afforded by the KAGUYA orbit encompasses the plasma distribution in a single exposure, enabling us to examine for the first time the globally-averaged properties of the plasmasphere from the meridian view. Using the images of the plasmaspheric radiation at 30.4 nm obtained by the TEX instrument, we investigated the meridian distributions of the plasmasphere in the quiet and disturbed period. In this presentation, we report the initial results, especially of the meridian distribution of the plasmaspause, obtained by the TEX instrument between March and June 2008.

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