

Optical Observation of Oxygen Ion Upflow in the Cusp/Cleft Region

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We built the Extreme ultraviolet scanner (XUV) for imaging oxygen ions to outflow from the polar ionosphere into the magnetosphere. The XUV onboard a sounding rocket SS-520-2 imaged the oxygen ions above 1000 km altitude near the polar cusp on December 4, 2000.

The XUV is a normal incidence telescope that has a peak sensitivity at the wavelength 83.4 [nm] of OII emission. The observed OII emission intensity is proportional to the ion density integrated along the line of sight. Therefore The observed OII emission intensity distribution makes possible to determine the oxygen ion distribution.

We will evaluate the oxygen ion flux distribution in the Cusp/Cleft region based on the observed oxygen ion distribution.