Japan Geoscience Union Meeting 2013
(May 19-24 2013 at Makuhari, Chiba, Japan)

PEM28-P01 Room:Convention Hall Time:May 23 18:15-19:30

Spatio-temporal of the O+ outflow caused by enhancement of the solar wind dynamic pressure : KAGUYA UPI-TEX observation

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In 1980s, terrestrial Oxygen ion (O+) outflow was observed much more than expected amount in the polar region where the magnetic field connects to interplanetary space. However, it is not yet obvious when and how much O+ outflow are produced. The purpose of this study is to observe changing O+ outflow from the polar region when solar wind came with Upper Atmosphere and Plasma Imager -Telescope of Extreme ultraviolet (UPI-TEX). Observed spatio-temporal of O+ rexonance scattering emission is mapped with magnetic field model. Because O+ estimated by changing emission in and out magnetic line. As a result, O+ outflow observed by increasing the solar dynamic pressure. After it, O+ increased in magnetic line and it correlated with an aurora.

Keywords: KAGUYA Satellite, UPI-TEX, Oxygen ion, Magnetic field model, Geomagnetic activity