

## Ground-based spectroscopic observation of Io sodium cloud:2

# Hidetaka Ueto[1], Takeshi Sakanoi[2], Shoichi Okano[3], Shin Takahashi[1], Hiromasa Nozawa[1], Masato Kagitani[4]

[1] Planet. Plasma and Atmos. Res. Cent., Tohoku Univ., [2] PPARC, Grad. School of Sci., Tohoku Univ., [3] PPARC, Tohoku Univ., [4] PPARC, Tohoku Univ

The volcanic eruption on Jovian satellite Io is known to be the main source of plasma in the Jovian magnetosphere, and is thought to give large effects on the Jovian magnetosphere. Therefore, it is important to understand ionization and re-neutralization processes of volcanic gas originated from Io. Among the constituents of volcanic gas, sodium atom has high resonant scattering cross section and is easily observable from the ground. We are making observation of Io's sodium cloud to obtain spatial distribution of density and velocity of sodium atoms close to Io. The observation is being made using a 1m Czerny-Turner spectrograph (reciprocal dispersion 0.8nm/mm) with a liquid nitrogen cooled CCD detector, mounted at the Coude focus (F8.2) of the 60cm telescope of our Iitate observatory. The sodium emission was unusually bright on November 17, 2003. This data allowed us to examine the sodium emission extending outside of Io's orbit by a few R<sub>J</sub>. No data have been reported for this region so far. This data may be a clue to the sodium escaping process from Io, and results of this observation will be given in the presentation.