

October 18, 2006

KST UHF operation memorandum for the October 16, 2006 experiment

Experiment name: sp_ni_con: arc1 (CP1)
pointrheight 185.1 77.5 299.6

elan files:puny :/kst/exp/ arc1/arc1.elan

Pulse scheme: arc1

Start time: 20:00 UT on October 18, 2006

End time: 01:00 UT on October 19, 2006

Participants: Satonori Nozawa, and Takuo Tsuda.

Before our experiment: RIOE2006

After our experiment: Nothing

Other instruments.

Photometer, STEL digital camera (1-min interval), NIPR digital All-sky camera (30-sec interval), STEL proton imager.

Note: (time in UT)

October 18

Clear sky. Temperature is -4 deg at 1914 UT.

20:01 **runexp** /kst/exp/ arc1/arc1 **20:00 cp1 NI**

20:01 sod runexp /kst/exp/arc1/arc1 20:00 cp1 NI

kir runexp /kst/exp/ni/arc1/arc1 20:00 cp1 NI

at EROS4 console (UHF)

TX on (by knut)

20:01 enablerec

sod enablerec

kir enablerec

2193 kW (~1.5 MW)

rtg

webtg

20:15 (at matilda) guisdap –a

20:02 1.6 MW (according to guisdap, while 2520 kW in rtg: rtg is wrong)

Clear sky and diffuse aurora

20:31 1.5 MW

22:00 Clear sky

23:40 Clear sky, but the activity is low..... Temperature is -7 deg...

01:00 stopexp (all sites)

Summary

The weather was very good, but the ionosphere was weakly active or quiet.

Descriptions of SPs

sp_ni_mi

We will make an optical campaign using aurora cameras, proton imagers and 4-wavelength photometer with the EISCAT UHF radar. Clear sky and higher geomagnetic activity are desired. Although we made request for 5 nights, we will run only 3 nights depending on conditions.

RIOE2006

The main goal of the experiment is an investigation of the mechanisms of high power radio-wave interaction with F-region ionospheric plasma. The UHF EISCAT radar will run the tau2pl program to measure the spatial and temporal variations of the ionospheric parameters simultaneously with multispectral optical observations of the HF induced

optical emissions by ALIS (IRF) and ASK (KTH). In particular we are going to study: the differences in temporal behavior of the different optical emissions as well as the electron temperature and density; the pump-power dependences of the emission intensities. To conduct the experiment successfully quite geophysical conditions, strong enough ionospheric F region, and clear sky are needed. If ionospheric conditions will be insufficient (critical frequency less than 4 MHz) or there will be strong auroral activity we will run same observations (but the arc1 program will be used instead the tau2pl for the UHF radar) to study the influence of the HF heating on the ionosphere-magnetosphere interaction.