

March 5, 2003

## **KST UHF operation memorandum for March 5 BY S. Nozawa**

*(Using Netscape might be in trouble on this page.)*

Experiment name: arc1 (normal arc1 with the field-aligned-position:(184.0,77.1, 292.9)

We will make an optical campaign using high resolution aurora cameras and 4-wavelength photometer with EISCAT UHF radar. We strongly hope to use the ARC mode (at field-aligned position) with the UHF radar. Sweden will contribute 8hrs to this campaign. Also Norway will contribute 16hrs. NI(18), SW(8), NO(16)

elan files: arc1-u.elan, arc1-k.elan, arc-s.elan (just use arc1 series)

directory: /kst/exp/arc1-u (arc-k, arc1-s)

Pulse scheme: arc1

Start time: 19:00 UT on March 5, 2003

End time: 01:00 UT on March 6, 2003

Participants: Satonori Nozawa, Shuei Tomida, and Maarten Blixt

Before our experiment: arc1-u from 18:40 (Vikki Howells/Ivan Finch)

After our experiment: Nothing

VHF is running (ALTA:lt1nw-F2N) until 22:32

Heating is running until about 22:05

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Note: (time in UT)

March 5

It was a very nice day. A lot of sunshine at daytime. It was rather warm, 7 deg!

At 18:30, it was clear sky and the ionosphere was rather active. Great!

**19:00 START (already started, though)**

**We will share the data with UK group between 19:00 and 20:30.**

19:03 1245 kW

19:50 Strong particle precipitation occurred.  $N_e$  in the E-region was about  $10^{12}$ .

20:03 -6 degree.  
20:06 Very high.  $N_e$  was  $19 \times 10^{11} \text{ m}^{-3}$  (but not calibrated).  
20:32 1263 kW  
20:54 1268 kW  
21:11 getting cloudy ?  
22:05 Heating Off

22:20 The sky has been cloudy, but now stars can be seen.  
The ionosphere was quiet, though.

22:32 VHF stopped.

**22:51 High voltage drop (?)**

**22:51-22:58 Down**

22:59 1088 kW

23:14 1212 IW

22:36  $N_e$  in the F-region was high ( $5 \times 10^{11}$ )

### **March 6**

00:04  $N_e$  in the F-region was still high ( $5 \times 10^{11}$ )

**01:00 stopexperiment**

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**Summary:**

**Moderate Tx power (about 1200 - 1300 kW).**

**Tx was stable. Only one break occurred between 22:51 and 22:59.**

**Relatively good weather.**

**Geomagnetical activity was high.**  
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**ALTA UK(40), GE(40), SW(20) Mike Kosch**

*UHF*

This is the UHF part of the artificial aurora and Langmuir turbulence experiment. The mode will probably be similar to previous artificial aurora campaigns, namely tau2 on the UHF with a dedicated Langmuir turbulence experiment (developed by Brett Isham) on the VHF and simultaneous heating. This experiment needs good optical conditions, but low geomagnetic activity. It can therefore be treated as an alternative to the CP1-ARC experiment on days when both are scheduled, as conditions for these are mutually exclusive. Because of the requirements on optical conditions, there will almost inevitably be some degree of cancellation.

*Heating*

This is the heater part of the artificial Langmuir turbulence and aurora experiment, see the notes for the UHF part. This booking supersedes the Swedish "HFoptical" booking, which should be deleted. Note that the Swedish "arcHeating" booking still stands, as this is part of the alternative experiment on natural auroras, which requires more active conditions.

*VHF*

This is the VHF part of the artificial Langmuir turbulence and aurora experiment, see the notes for the UHF part. Although a four-hour run has been requested, this will be followed by a two-hour run requested by France (FR-AURORA), from 2030-2230, using the same modulation to constitute a six-hour continuous VHF run in compliance with the rules.