

March 4, 2003

## **KST UHF operation memorandum for March 4 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: 19:01 UT on March 4, 2003

End time: 01:00 UT on March 5, 2003

Participants: Satonori Nozawa, Shuei Tomida, and Maarten Blixt

Before our experiment: ALTA (Vikki Howells/Ivan Finch)

After our experiment: Nothing

VHF is running (ALTA:lt1nw-F2N) until 22:30

Heating is running until about 22

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Note: (time in UT)

March 4

It was cloudy at 17:20. However, I saw aurora at 18:40 !!!

The sky is almost clear. Moderate activity.

19:01 **START** (enablerec; kir enablerec; sod enablerec)

19:06 kir rtg. It worked. It is O.K. at Kiruna

19:07 something wrong at Sodankyla.

19:09 restarted arc1-s. Now it is O.K.

19:14 1253 kW

21:33 and 21:35 Pretty sharp E-region *Ne* enhancements.

22:13 Electron densities in the E-region and F-region are enhanced.

22:13 Cloudy?

22:30 VHF stopped.

23:09 1310 kW

From about 2309 to 2321 I saw some black arcs, and flickering aurora according to Maarten.

23:23 Electron densities around 100 and 150 km are enhanced, but that at 150 km disappeared 1-min after.

March 5

00:23 1332 kW

00:52 1274 kW

**01:00 stopexperiment**

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**Summary:**

**Moderate Tx power (about 1250 - 1320 kW).**

**Tx is very stable.**

**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.