Date: September 18, 1991
To: EISCAT data representatives
From: Peter Collis
Subject: VHF Common programme result tapes

Data from the following VHF experiments have now been analysed and tapes containing results in the standard format will be mailed to you when copies have been made. Plots of system temperature and transmitter peak power during the CP-7 experiments, and of transmitter peak power only for CP-6, are enclosed.

(1990)

CP-6-B-V 12/13 June (0800 - 0600 UT)
CP-6-B-V 30 Jul - 1 Aug (1800 - 0400 UT)
CP-6-B-V 27/28 Aug (0800 - 0800 UT)
CP-6-B-V 20/21 Sept (1005 - 0120 UT)
CP-7-B-V 25/27 Sept (1000 - 1130 UT)
CP-6-B-V 20/21 Nov (1000 - 1600 UT)

(1991)

CP-6-B-V 12/14 Feb (1543 - 0800 UT)
CP-6-B-V 20/21 Feb (1003 - 1200 UT)
CP-6-B-V 17/20 Mar (1545 - 1840 UT)
CP-7-D-V 02/03 May (1330 - 1309 UT)
CP-7-D-V 12/15 May (1000 - 0645 UT)
CP-6-B-V 04/05 June (1000 - 1600 UT)
CP-6-B-V 10/11 July (1000 - 1600 UT)
CP-6-B-V 12 Aug (0800 - 2054 UT)

Notes

1 Correlator program error in CP-3-E/F (Tromsø)

This error was reported to SAC in April this year. See enclosed note by M.T.Rietveld.

2. CP-7 Results.

2.1. Post-integration of CP-7 data.

A special integration strategy has been adopted for these Common Programme Seven data sets. Every individual spectrum in each 10-sec pre-integration period has been inspected and rejected or accepted depending on whether or not it exhibits a clear satellite signature. The number of spectra added in each range gate are recorded and used to normalize the data at the end of each five minute post-integration period. It should be noted that this procedure may also reject some interesting, non-satellite, spectra but this is believed to be acceptable in the context of a quick-look analysis. Peak power was estimated from the high voltage values.

In the case of CP-7-D-V, the two receiver channels are also added by the post-integration s oftware.In this case,the two channels are screened individually before the corresponding range cells are added together.An appropriate background contribution is added to those range gates which are not common to both channels so that the post-integrated data can be analysed as a single data set.

2.2 Analysis of CP-7 data.

These results are from standard long-pulse analysis of the cleaned, post-integrated data. The ion-composition was assumed to be 100% O+ for all gates except the lowest (centred at 285 km altitude), where 98% O+ was assumed. Note that the instrument code (KINST) is wrongly written as 72 (for Tromsø UHF) on this tape but the experiments were run on the VHF radar (KINST=74). This is indicated by the frequency code of 2240 attached to the results.

2.3. CP-7-B-V, 25/27 Sept, 1990.

A few gaps occurred during this experiment, mainly related to crowbars. The most significant of these were 0600-0820 (26th), 1320-1400 (26th), 2240-2340 (26th) and 0350-0450 (27th).

2.4. CP-7-D-V,2/3 May,1991.

No major problems. A short data gap after 17 UT (2nd) followed a crowbar; several crowbars between 07 and 09 UT (3rd) caused brief losses of transmitted power.

2.5. CP-7-D-V,12/15 May,1991.

This experiment was mainly for engineering purposes (klystron aging) but the opportunity was taken to gather ionospheric data also. There were transmitter problems after 0012 UT on 13 May and the run was stopped at 0221 UT. It was restarted at 13 UT (13th). A second gap occurred between 1850 and 2250 UT (13th) due to the need to replace a tube in the switch deck. Further short gaps, caused by crowbars, were 1650-1704 UT (12th) and 1526-1545 UT (13th). Results between 13 and 14 UT (14th) are crroneous due to unrecorded changes to the system (including antenna pointing) in this interval and should be disregarded.

3. CP-6 Results.

3.1. The CP-6 data have been analysed using the same procedures as for the UP-1 results already distributed. Reference should be made to my note of 19 June 1990 for a description of the method and of the result tape format.

3.2. CP-6-B-V, 12/13 June,1990.

Following a crowbar at 1002 UT the transmitter was switched off until 1125 UT to allow a fan to be repaired.

3.3.CP-6-B-V,30 July-1 August, 1990.
Two gaps following crowbars occurred in this experiment - 0618 to 0700 UT and 0944 to 1000 UT.

3.4. CP-6-B-V, 27/28 August, 1990.

Although this experiment started at 08 UT, the matched filter was switched to the wrong position until 1135 UT.when good data start.

3.5. CP-6-B-V, 20/21 September, 1990.

Many gaps of duration ~few minutes to ~20 minutes exist in this data set due to breaks in transmission. The occurrence of the breaks seemed to correlate with the scanning cycle of the simultaneously-run UHF experiment (CP-3-F). The run was abandoned at 0125 UT on 21 September because of these problems.

3.6. CP-6-B-V, 20/21 November, 1990.

No reported problems in experiment operation. The gap between 1820 and 2115 UT is due to a tape reading error, though we know from an earlier preliminary analysis that no useful spectra were observed in this interval.

3.7. CP-6-B-V, 12/14 February, 1991.

Difficulties with transmitter occurred between 1903 and 1943 UT on 12th February and a computer problem caused no data to be recorded between 02 and 04 UT on the 14th.

3.8. CP-6-B-V, 20/21 February, 1991.

No reported problems apart from a gap in transmission 1245 to 1315 UT.

3.9. CP-6-B-V, 17/20 March, 1991.

This experiment ran smoothly for about 2 days until 1550 UT on 19th March when a computer stop caused a gap of one hour. A crowbar at 2154 UT on the 19th caused a delay in resuming transmission until 04 UT on 20th March. An ADC error caused further loss of data between 14 and 15 UT on 20th March.

3.10. CP-6-B-V, 4/5 June, 1991.

No reported problems.

3.11. CP-6-B-V, 10/11 July, 1991.

A data gap between 1220 and 1300 UT on 11th July was caused by a power failure.

3.12. CP-6-B-V, 12 August, 1991.

Following the experiment start at 08 UT, good data became available at 0955 UT when the receiver, which needed to be set manually, was correctly tuned. Almost no data exist between 1100 and 1235 UT due to crowbars and a further gap between 1525 and 1710 UT was caused by computer

problems. This run was discontinued at 21 UT to allow work on the UHF transmitter.