Date: October 31, 1989
To : EISCAT data representatives
From : Peter Collis
Subject : Common program result tapes

Data from the following experiments have now been analysed and tapes containing results in the standard format will shortly be mailed to you. Plots of system temperature and transmitter peak power during these experiments are enclosed. Two memoranda concerning system performance are also enclosed.

(1989)

CP-3-F	19-21 September	(10 UT - 14 UT)
CP-4-A	2 -6 October	(12 UT - 16 UT)

Notes

1. CP-5-A, 30 May - 4 June
Initial comments on this experiment have already been circulated and the tapes have now been mailed. This version of the experiment was the same as run in December 1988. Both contained a small error in the Tromso : ELAN file, such that the start range for the 14 us power profile in the vertical antenna position was set to 88.4 instead of 66.4 km. This parameter (I19 in the :ELAN file) is put in position 124 in the parameter block on the raw data tapes. The analysis of the December sun was modified to use the correct start range (68.4 km) for these data but this modification was not implemented for the May/June run. Hence the values (altitudes and densities) on the result tapes for the short power profile in the vertical antenna position for this run are wrong and should not be used.

Further erroneous information has been discovered in the : DESC and Tromso : DTLAN files which has similarly been inherited from the original SP-FR-LCCP files. This affects neither the raw data nor the processed results but could cause confusion. The commented start ranges for radar controller program 5 are wrong in these files and have been corrected on 10 October 1989 (as was the 68.4 km start range mentioned above). These values are :

Channel	Old Wrong Value	Correct Value
ACF	161	184.5
PP	77.9	85.2
MULTI	92.8	100.2
EPP	71.2	78.6

2. CP-3-F, 19-21 September
This experiment was started half an hour early in Tromso, so results are available from 0930 UT from there but from 10 UT at the remote sites. As mentioned in the enclosed memorandum, the Tromso data have been re-analysed from tape due to the small error in recorded azimuth.

The transmitter had problems with high reflected power on the second day so the peak power was reduced from nominally 1.4 MW to 1.1 MW for the second half of the operation.

Following a crowbar at 0426 UT on 20 September, there were some problems with radar controller

program 3 (used for antenna positions 4 and 15). This was cured at 0812 UT on 21 September by reloading the radar controller. Tromso data seem not to have been affected, but at the remote sites the strongest signals were in gates 1 and 2, rather than the centre one (gate 3). The resultant densities from the remote sites are about a factor of 2 too low for these two antenna positions. Also, the ion temperatures are systematically 100-200 k too high though there is no obvious effect on the electron temperatures or the velocities.

3. CP-4-A, 2 - 6 October.
Operated as part of a GITCAD/SUNDIAL campaign.

As mentioned in the enclosed memorandum, data from the start of the experiment to 0911 UT on 3 October were re-analysed from tape due to the wrongly recorded azimuth.

The original version of CP-4-A, run in January 1988, was adapted for this operation to include the possibility of shifting the ranges covered by the measurements, by increments of one gate. The idea of this was to try to collect data from further north if a significant signal was detected in the last gate. This option was implemented at 1630 UT on 2 October, when the range of the first signal gate was increased from 525 to 600 km. The start range of the measurements is given by parameter 118, contained in position 123 in the parameter block on the raw data tapes (see : ELAN file). Electron densities were sufficiently high during this experiment that the signal-to-noise threshold of 0% in the data analysis was rarely approached.

The remote sites were able to receive only five of the six frequencies used in this experiment - channel 5, planned to receive F5, was attenuated with 63 dB. However, the format of the results on the tapes has been kept the same for all sites, ie. The results of averaging all the channels appear first for each post-integration, followed by the results from the six individual channels. Hence the results from channel 5 at the remotes are all zero. The raw data from channel 5 were not used to construct the averaged results at the remote sites.

The averaged results have been assigned a frequency code of 9325 (not used in the experiment) to allow them to be easily selected from the tape (applies to all sites).

For Kiruna site, the apparent velocities from channel 8, receiving F2 (frequency code 9305) were approximately zero from the start of the experiment until 15 UT on 3 October, due to a fault in the receiver causing the imaginary part of the ACF to be very small in that channel (in fact, no signal but constant offset voltage for the sine component). No obvious effect was seen the real part of the ACF. Since these data were included in the production of the average results, the averaged velocities are slightly less well estimated for the affected period, though with no systematic bias from the 'true' value.