Cluster Master Science Plan

for Orbits 34 – 110

Plan proposed by

The Cluster Science Operations Working Group

and prepared by

Götz Paschmann and Norbert Sckopke
Max-Planck-Institut für extraterrestrische Physik
D-85740 Garching, Germany

Tel: +49-89-3299-3868
-3870
Fax: -3569

E-mail: mpe::gep|nos or gep|nos@mpe-garching.mpg.de

Document Status Sheet			
1. Document Title: **Cluster Master Science Plan**			
2. Document Reference Number: **CL–MPE–TN–0009**			
3. Issue	4. Revision	5. Date	6. Reason for Change
Draft		94 Jun 13	Initial draft (no document code)
1	0	94 Nov 10	Pre Toulouse SWT meeting
2	Draft	95 June 8	Increased data capacity
3	0	96 March 20	Plan for 1st half year after commissioning
3	1	96 March 21	Minor corrections
3	2	96 April 25	Input for JSOC (Major Revisions; cf. Sect. 1.2)

Contents

1 Introduction

1.1 Extent

This third issue of the Cluster Master Science Plan (MSP) contains the plan for the first half year of operations beyond the commissioning phase (orbits 34 – 110). It contains all instrument modes including those for the so-called Special Orbits. Wide-band data transmissions are not included.

1.2 Major Revisions Since the Last Version

- The plan is based on a new model launch date (7 May, 1996).
  Compared to previous MSP versions (which were based on an assumed November, 1995, launch), orbits have slightly shifted in local time. For example, orbit # 34, the start orbit of regular operations beyond the commissioning phase, now has a local time of apogee near 17:40. In order to approximately preserve the local time of the previously defined acquisitions, all orbit numbers had to be decreased by two, including the tags for "special orbits". Acquisitions for the old orbits 34+35 have been removed and their equivalent has been added as the new orbits 109+110.
- All BM3 dumps have been removed from the MSP.
  These dumps are to be scheduled by JSOC+ESOC according to rules specified in Sect. 4.2.
- The FGM mode scheduled for NM telemetry is M1 throughout (cf. Sect. 3.2).
- CIS modes and mode-switching conditions have changed (Sect. 3.2).

1.3 Organization and Format

The plan starts with orbit # 34 which is the first orbit following commissioning and which has its apogee near 17:40 LT.

The plan is presented in two ways:

- in tabular form (Table 5);
- as a time line in form of a 'Bryant plot' which allows to check the adherence to the rules, but at the same time illustrates the placing of the acqusitions relative to the key plasma regions (Figures 1-3).

1.4 Strategy

In designing the MSP we observed the following guide lines:

- 4 hours minimum acquisition times;
- BM1 intervals of either 1.5 or 4 hours, with few exceptions;
- regular insertion of orbits with 100% (or near 100%) NM coverage;
- a maximum of 3 separate acquisitions per orbit.

1.5 Baseline and Special Orbits

The present MSP contains 11 orbits designated as Special Orbits. Special Orbits are distinguished from the remaining (66) Baseline Orbits by allowing for non-standard instrument operations designed to address special scientific questions (see Sect. 3.1).

1.6 Spacecraft Constellation

For the interval covered by this MSP, the spacecraft separation will be set to 600 km $\pm 20\%$ at the nominal location of the northern cusp. Just before or after the end of the present MSP (at a local time of apogee at or slightly past dawn), the separation will be increased to somewhere in the range 2000 to 5000 km over the apogee region.

2 Constraints For Data Acquisition

2.1 General Rules

With the Solid State Recorders (SSR's) we have gained approximately a factor 2 in data storage. However, the actual gain is different for NM and BM telemetry. This is due to the fact that data can be dumped to the ground in parallel with NM data recording, while this is not possible for BM recording.

From the different constraints on NM and BM, the following rules emerge:

Rule 1 (NM only): If one were to exclusively operate in NM all the time, data coverage could be as high as 100%. This is 2.4 times the NM coverage possible with tape recorders for which 24 hrs was the maximum per orbit.

Rule 2 (BM only): If one chose to run exclusively in BM, 6 hrs of data could be obtained every orbit if spaced exactly 57 hrs (the orbital period) apart. This is 1.5 times the coverage possible with tape recorders where the maximum was 4 hrs per orbit. The present MSP contains two acquisitions with 5 and 6 hrs duration, respectively.

If one mixes NM and BM acquisitions, there cannot be a strict rule because what is possible in this case depends on the exact timeline of the various acquisitions. It is always safe, however, to assume that every hour of BM is equivalent to 6 hrs of NM. With 6 hrs being the maximum BM coverage per orbit which can be maintained continuously (Rule 2), the following rule emerges:

Rule 3 (Mixed NM and BM use): in any 57-hour period sliding along the time line there must not be more than 36 'hour-units' of coverage.

It is evident from these rules that the sytem best supports repetitive patterns and penalizes irregular patterns. By the same token one is not free to arbitrarily switch the acquisitions for a certain orbit from the northern to the southern hemisphere.

2.2 Perigee Operations

The present MSP includes data acquisitions at perigee. Such operations are subject to two constraints

- For apogees near noon, perigee operations will be restricted because of eclipses. Minor adjustments of the MSP might be required once the orbits are precisely known.
- Excessive backgrounds from penetrating radiation and/or electronics life-time issues could prevent operation of some instruments at or near perigee. If commissioning shows that such restrictions apply, perigee operations will have to be reconsidered.

3 Instrument Modes

3.1 General Rules

To simplify operations and data analysis, only a small subset of instrument modes will be employed in the MSP.

As a rule, modes are identical on the 4 spacecraft, but in a few specific cases that are scientifically justified (WEC, RAPID, PEACE), modes can deviate among the 4 spacecraft.

Note that default instrument modes have also been assigned for the Special Orbits. Deviations from these modes are to be defined later except for the first six which must be defined now. This is to be negotiated under the leadership of the PEACE and WEC teams and directly communicated to JSOC.

3.2 Mode Selection

ASPOC: ASPOC can run in constant-current or in constant-voltage mode. For the plan it is assumed that only the constant-current modes are used. Note that ASPOC is not affected by TM-mode switching as it uses only the HK TM.

From perigee plus 2 hours to 3 hours beyond the (nominal) magnetopause crossing, ASPOC is operated in IION_LOBE mode. Outside this region it is operated in IION_SW mode.

CIS: CIS modes differ in the type and resolution of the distribution functions that are transmitted. The moments transmision is not affected by the mode selection.

CIS modes are region oriented, with the switching to take place at certain distances from the nominal boundaries. Of the 14 existing modes only four are regularly scheduled: MAG-2 well inside the magnetopause, MAG-5 in the vicinity of the magnetopause, SW-2 in the vicinity of the bow shock, and SW-3 well beyond the bow shock.

EDI: For the MSP it has been assumed that EDI switches regularly between electron-drift measurements (Mode 5) and ambient particle measurements (Mode 13), simultaneously on all 4 s/c.

EDI uses reference to one of many tables of parameters to fully specify a mode. For example, it is the table number that defines the energy and angle range, as well as the particle species, for the ambient mode. Many instances of apparent EDI mode changes in the MSP therefore are placeholders for changes in the parameter table number, and do not change the science mode number.

FGM: For the MSP acquisitions, FGM distinguishes only two modes: Mode M1 for NM acquisitions (EVT bit disabled) and Mode M7 for BM1 acquisitions.

Previous versions of the MSP used the M1 mode only for short NM acquisitions, and another mode, M3 (EVT bit enabled), for long NM acquisitions. However, since M3 involves the FGM burst memory, and since the scheduling of this memory is to be subject to direct FGM-team - JSOC planning, the MSP now employs M1 for *all* NM acquisitions. M3 operations are to be scheduled via PIOR's; therefore, their positioning is not visible to the reader of the MSP.

PEACE: PEACE uses different modes on the 4 s/c, distinguished only in the the energy window of the 3D distributions to be transmitted. There are different modes for NM and BM telemetry. On-board computed moments are transmitted regardless of mode selection.

RAPID: In addition to the modes referred to as 'HIGH' and 'LOW' where both electrons and ions are measured, there is a mode called 'NLOW' where three s/c are operated in 'LOW' mode, while for the 4th the ion measurements are switched to neutral particle measurements.

The HIGH mode is to be used around perigee and the magnetopause; the LOW mode in magnetosheath and bow shock; the NLOW mode, finally, in the magnetosphere and in the solar wind. The designations 'HIGH' and 'LOW' refer to changes in counts accumulation times. The accumulation time in LOW mode is larger than in HIGH mode.

WEC: There are standard WEC modes for NM and BM1 telemetry, referred to as NBR-basic and HBR-basic, respectively. In these modes, EFW is operated in electric field (i.e., current) mode on all 4 probe-pairs.

Every 12th acquisition interval, WEC is switched to a configuration (referred to as NBR-B/L-# and HBR-B/L-# in the MSP) where two probe pairs are run in density mode on all four s/c, and the other WEC instruments use different modes on one s/c as compared to the other three s/c: on 3 s/c WHISPER has higher time-resolution for density measurements, while on the 4th s/c STAFF analysis has more electric-field coverage. The mode designation is NBR_L_S (HBR_L_S), for the operation on 3 s/c, and NBR_B_M (HBR_B_M) for the operation on the remaining s/c.

Table 1: Instrument Modes

Instrument	Mode-ID	Short Description
ASPOC	IION_SW	in the solar wind } constant
	IION_LOBE	everywhere else } beam current
CIS	MAG-2	Magnetosphere 2

	MAG-5	MAG-2 Sheath/Tail
	SW-2	Solar Wind / 3D backstreaming ions
	SW-3	Solar Wind / SW tracking
EDI	EDI-05	Windshield Wiper
	EDI-13	Ambient Particles
FGM	M1	for NM1 periods
	M7	for BM1 periods
PEACE	STD-NM1-#	for s/c # (NM-TM)
	STD-BM1-#	for s/c # (BM-TM)
RAPID	HIGH	Ion mode on all 4 s/c (CM14.0M1)
	LOW	Ion mode on all 4 s/c (CM24.0M2)
	NLOW-#	Ion mode on s/c 1, 3, 4 (CM24.0M2), Neutral Mode on s/c 2 (CM25.0m2)
WEC	NBR-b	NBR-basic on all 4 s/c (NM TM)
	HBR-b	HBR-basic on all 4 s/c (BM1 TM)
	NBR-B/L-#	NBR_B_M on s/c 1; NBR_L_S on s/c 2, 3, 4
	HBR-B/L-#	HBR_B_M on s/c 1; HBR_L_S on s/c 2, 3, 4

Note: The # symbol indicates that modes that are not identical on the 4 s/c.

3.3 In-Flight Calibration

As a rule, instrument calibrations are scheduled as part of the start-up procedure at the beginning of an acquisition period, if scheduled at all. Such standard cases are not dealt with in the MSP.

Only those special in-flight calibrations are included in the MSP that are to be scheduled either within or at the end of an acquisition interval. Examples are some STAFF, WHISPER and ASPOC calibrations.

Because of the 6-minute resolution chosen for the MSP tables (see Section 4), placement of such calibrations could only be done to that accuracy.

3.4 Perigee Rules

Apart from possible general restrictions (see Sect. 2.2), there are several specific constraints for some instruments:

> ASPOC must be switched off for the 4 hours centered at perigee. The actual switch-off period to be specified by JSOC is L-dependent, a constraint not provided for in the MSP. Periods are shorter than 4 hours, and in order to prevent ASPOC from

being switched on briefly for acquisitions starting 2 hours before a perigee passage, the plan explicitly states "ASPOC off" at such times.

RAPID is to be set to STANDBY1 for the one hour centered at perigee, if acquisitions are scheduled in this area.

STAFF is to be switched into backup compression for the 6 hours centered at perigee, if acquisitions are scheduled in this area.

The instrument-specific perigee constraints are not indicated in the MSP, but must be dealt with by appropriate perigee rules.

4 Master Plan Tables

4.1 General

The detailed MSP is generated in two steps: First the acquisition pattern is defined. Second, a computer code converts the mode-selection rules for each instrument (cf. Sect. 3.2) into separate files which are then merged and time-sorted. This way the amount of manual interaction could be minimized. In addition, a reformatted version of the acquisition plan is prepared for ESOC as input for the DRAT planning tool (see also Sect. 7.2).

The detailed MSP for the first half-year period is provided in Table 5 (following the Appendix). An ASCII file copy of this table, named `msp_034to110.apr96`, is available in the directory `pub/csds/task_for/sowg` of the ANONYMOUS FTP account on the ESTEC server, `ftp.estec.esa.nl` alias `131.176.1.105`.

Orbits are numbered and start with orbit # 34 which has an apogee at 17:41 LT, reflecting the situation after commissioning.

Local time progresses in reverse order, reflecting the precession of the orbit.

An orbit is defined to start at perigee.

For each orbit, there are up to three acquisitions, labelled a,b,c.

For each such acquisition interval, the table contains a number of lines, one for each time where either a telemetry or instrument mode change occurs.

Times refer to events such as perigee, apogee and crossings of magnetospheric boundaries (see Table 2).

The format of a table entry is defined in Table 4a in the Appendix.

4.2 Acquisition and Dump Intervals

Each acquisition interval refers to one contiguous stretch of operations and specifies the length (in hours) and the mode of operations, where 'N' stands for nominal (NM) and 'B' for burst mode (BM1) operations; 'd' represents 6 minutes of BM3 dump.

Example (34a) of Table 5:
0.5N+1.5B+25N = 0.5 hrs of NM followed by 1.5 hrs of BM1 followed by 25 hrs of NM operation.

Previous versions of the MSP had a 6-minute-long BM3 dump positioned at the end of many acquisition periods. These dumps have all been removed from the current plan and have been replaced by 0.5 hrs of NM operation, for the following reason:

It was always understood that JSOC+ESOC were free to re-position such dumps so as to satisfy operational constraints. They also were asked to insert more dumps in regions where there were too few. For simplification, the issue of placing BM3 dumps is now taken out of the MSP and is transferred to JSOC+ESOC who are to '... experiment with the BM3 dumps and then review the situation' (SOWG meeting, March, 1996) – with the following understanding:

- There should be at least one BM3 dump per orbit (each in exchange for about 30 minutes of NM acquisition);
- BM3 dumps should not be inserted into long (> 36 hours) NM acquisitions if that entailed the "36-hour rule" (Rule 3 in Sect. 2.1).

4.3 Start Times

All times in Table 5 are given relative to some reference event time (Table 2). A resolution of 6 minutes (= 0.1 hrs) has been chosen.

Where referenced to some boundary crossing, the start times are to be generated by JSOC from the actual Cluster orbit plus models of the boundaries. The current plan (Table 5) makes use of a preliminary JSOC table which is based on the predicted orbit for an assumed launch date (7 May, 1996). As boundary locations are strongly affected by the conditions of the solar wind (notably its dynamic pressure) and/or the tilt of the Earth's dipole, these reference times must be re-computed when the operational orbit has been reached and expected average solar wind conditions have been chosen. Optimum choice of boundary related start times is particularly important for data acquisition involving BM telemetry.

Not relevant for the present plan which covers only the dayside half, a special situations will arise for BM coverage of plasma sheet boundaries in the Earth's magnetotail. As the plasma sheet moves up and down in response to the daily variation of the Earth's dipole tilt angle, spatial coverage in a given time is considerably enhanced when the plasma sheet is moving upward, i.e., against the spacecraft orbital motion. It is suggested that once the orbits are known sufficiently well, the plan is to be checked with regard to this effect and adjusted if feasible. If, on the other hand, it is desirable to maximize the dwell time in the plasmasheet to wait for, e.g., a substorm onset to occur, then periods of downward moving plasma sheet are preferable. It is suggested that such periods, too, are identified once the orbits are known well enough.

Table 2: Reference times

name	Explanation
peri	T_perigee of current orbit (= start of orbit)
nper	" " next " (= end of current orbit)
apo	T_apogee " current "
T_ns	UT of model neutral sheet crossing (1 per tail orbit)
T_mp1,2	" " " magnetopause crossings (2 " noon ")
T_bs1,2	" " " bow shock crossings (2 " noon ")

T_ns:	UT at which the mean tailward component of B changes sign
T_mp1, T_bs1	refer to the outbound crossings of these boundaries
T_mp2, T_bs2	" " " inbound crossings

5 Master Plan Plots

Figures are placed between the text and the MSP Table. Figure 1 summarizes the suggested acquisition pattern for the first half-year of routine operations. For better readability, Figures 2 and 3 repeat the information, but cover only 3 months each.

The format is as follows:
Each nearly-vertical line represents one orbit, and time runs from left to right. At the abscissa value where orbit # n ends at the top of the diagram, orbit # n+1 starts near the bottom; therefore, the orbit lines are slightly tilted to the right. Along an orbit line, time runs (at a greatly expanded scale) upwards from one perigee to the next. It actually starts two hours before perigee so as to allow visualizing contiguous operations centered at perigee.

The symbols employed are explained in the legend. The thin dotted lines represent orbit portions with no data acquisitions.

6 Summary

Figure 4 shows the coverage (in hrs) for the orbits covered by the present MSP. NM and BM1 acquisitions are distinguished by the light and dark shading, respectively. The dashed horizontal line indicates the average UT coverage.

The total length of NM and BM acquistions is 1940 hrs and 129 hrs, respectively. Noting that the entire period (77 orbits) extends over 4389 hrs, the total UT coverage is 47.1%. This number will go down by about 0.5% when the BM3 dumps (Sect. 4.2) are inserted.

Table 3 summarizes how many times BM1 telemetry coverage has been scheduled for a given scientific target region and how many hours of BM1 coverage are being invested for each target.

Table 3: BM Coverage of Regions

Region	BM Acquisitions number	BM Acquisitions total hrs	Remarks
Perigee & Auroral Zone	7	10.5	
Cusp/Magnetopause	8	34	incl. one 6-hr interval
Magnetopause (flanks)	6	24	
Outer M.Sphere (flanks)	1	1.5	
Magnetosheath (center)	1	1.5	M.Sh also in M.Pause and B.Shock acquisitions
Bow Shock (& Foreshock)	13	53	incl. one 5-hr interval
Solar Wind (near apogee)	3	4.5	SW also in BS intervals
Neutral Sheet / Central PS			} not covered
PS Boundary Layer			} by this MSP

7 Appendix

7.1 Format of Table-5 Records

In Table 5 (as well as in the corresponding ASCII file, cf. Sect. 4.1), each record is 132 bytes long and is formatted as follows:

Table 4a: MSP Record Items and Format

Offset bytes	Length bytes	Item #	Item name	Remarks
0	1	1	flag	! for comment line
				$ for special orbit
1	4	2	orbit #	
5	1	3	orbit segment	a,b,c (max = 3 per orbit)
6	1	4	connection across perigee	+ connected to next acquisition
				- " " previous "
				: " at both ends
8	5	5	LT(apogee)	
15	16	6	Acqu. Pattern	cf. Sect. 4.2
32	6	7	Acq.Ref	Reference Event, cf. Table 2
40	6	8	T/Mmo	duration and type of T/M mode,
				ic for "instrument command" lines
48	6	9	relT	delay vs. Acq.Ref (Sect. 4.3)
57	9	10	ASPOC modes	
68	6	11	CIS "	
76	6	12	EDI "	
84	6	13	FGM "	
91	11	14	PEACE "	
103	7	15	RAPID "	
112	12	16	WEC "	
125	7	17	orphase	orbit phase (based on prelim. (JSOC) 'Events' catalogue)

The start of an acquisition is defined by items 2 and 3 not being blank; its end by the start of the next acquisition or the EOF. Items 4 – 6 are given only in the acquisition start records.

For records with a blank Acq.Ref field (item 7), the reference event last defined applies.

Similarly, blank instrument mode fields indicate that the previously defined state continues.

7.2 Format of the DRAT Input File Records

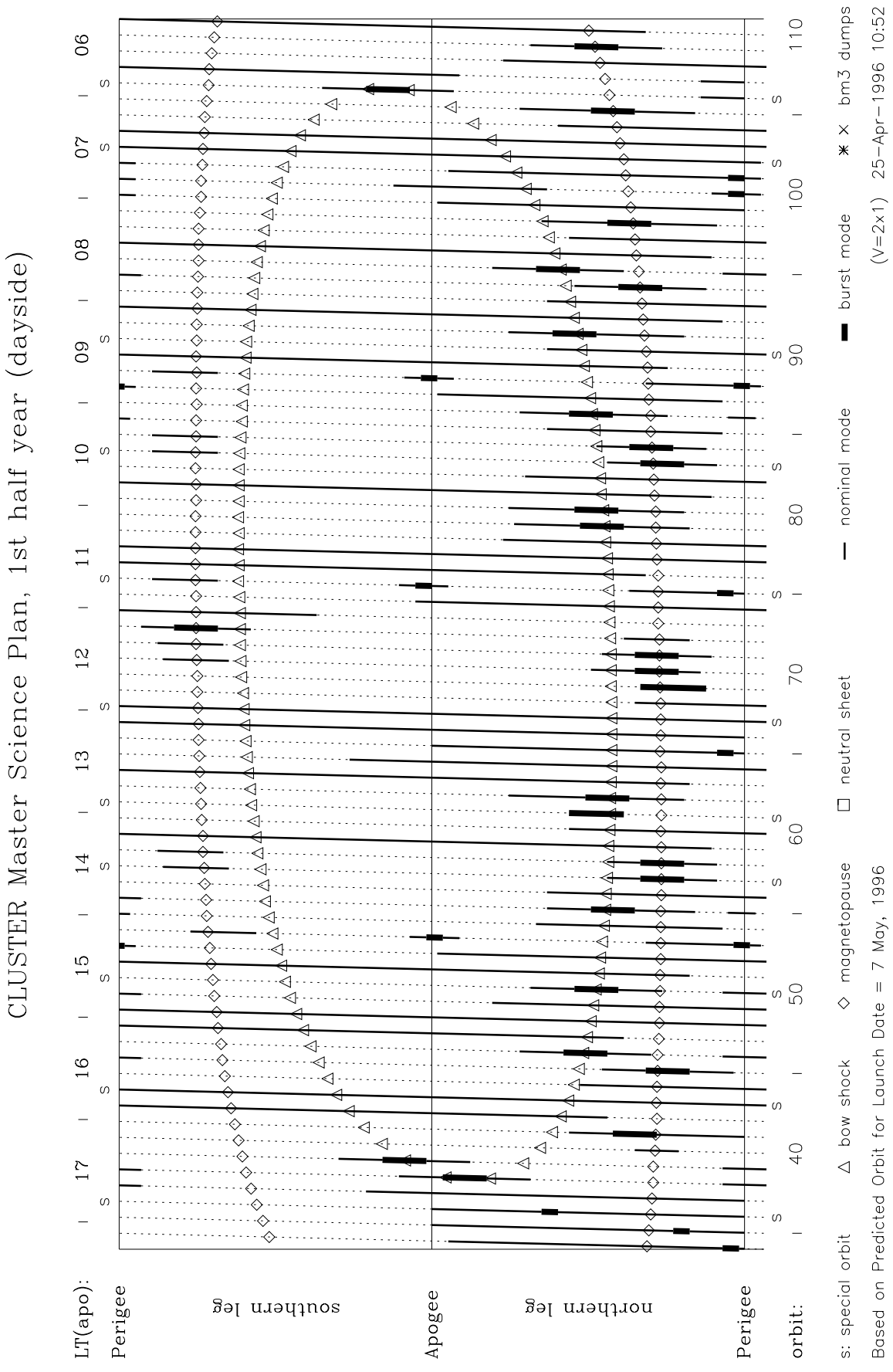
The Acquisitions-Only table that has been reformatted (following ESOC specifications) for the needs of the ESOC planning tool 'DRAT', is not included here but may be found as an ASCII file named `msp_drat_034to110.apr96` in the directory `pub/csds/task_for/sowg` of the ANONYMOUS FTP account on the ESTEC server, `ftp.estec.esa.nl` alias `131.176.1.105`. The records are formatted as follows:

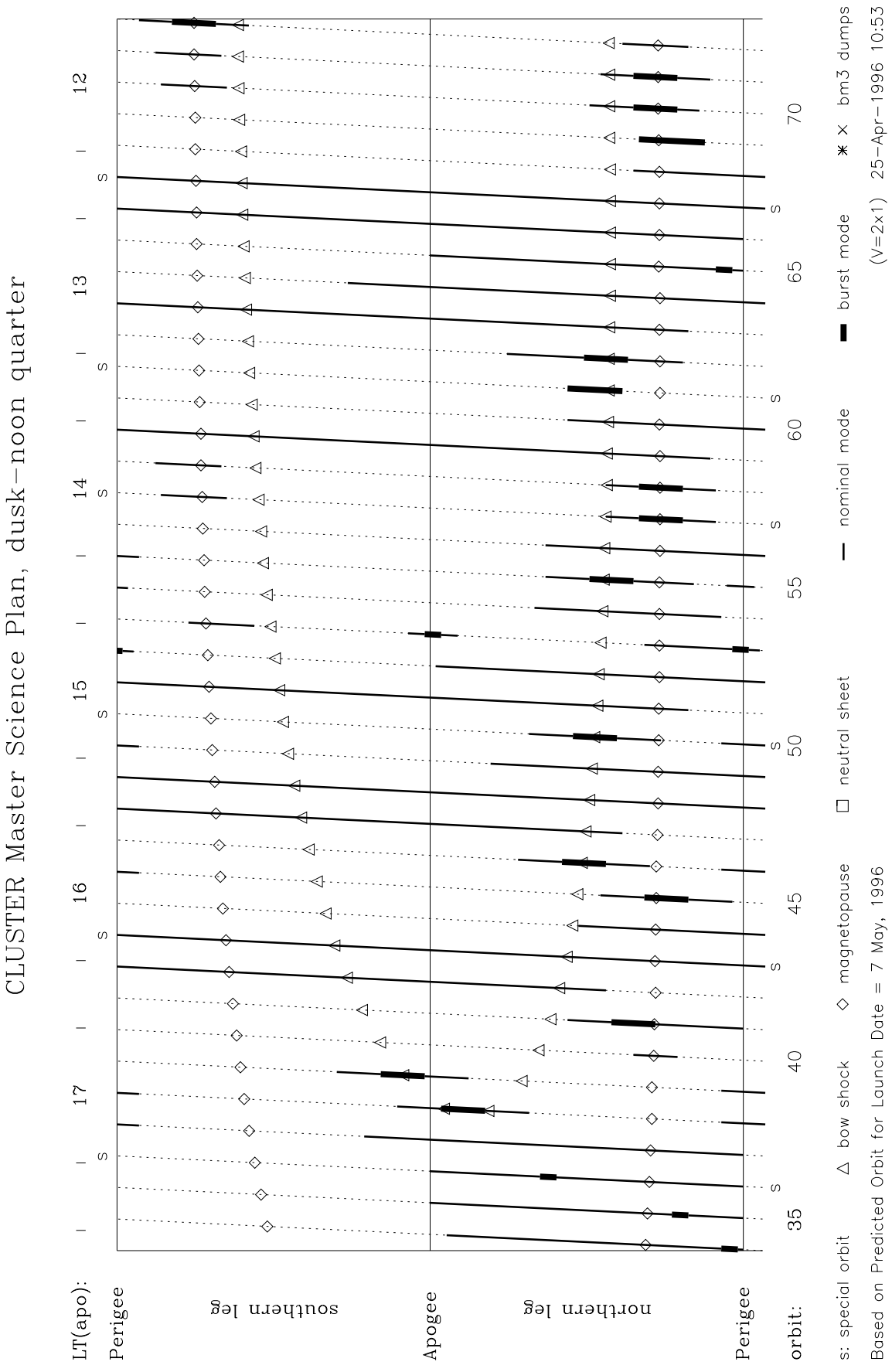
Table 4b: DRAT Input Record Items and Format

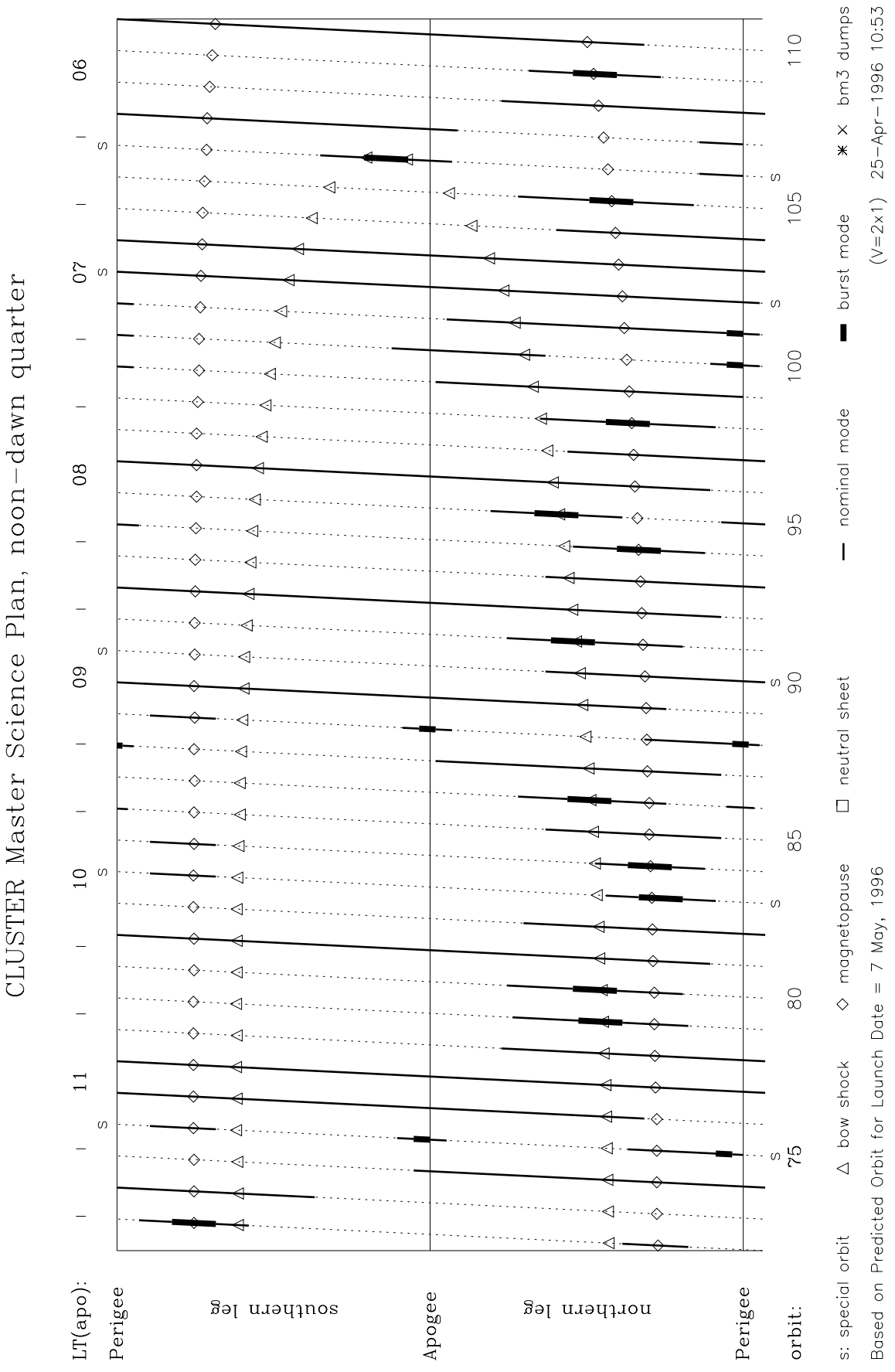
Offset bytes	Length bytes	Item #	Item name	Remarks	
0	3	1	flag	---	signifies an orbit boundary
4	4	2	orbit # / end mark	orb #	Format (I4.4)
				' End'	Format (A4)
9	1	3	orbit segment	a,b,c	(max = 3 per orbit)
18	18	4	Acqu. Pattern		(cf. Sect. 4.2)
37	5	5	Acq.Ref		Reference Event (cf. Table 2)
45	7	6	T/Mmo		duration and type of T/M mode (dec.point @ offset=47, pos=48)
53	6	7	relT		delay vs. Acq.Ref (Sect. 4.3) (dec.point @ offset=57, pos=58)

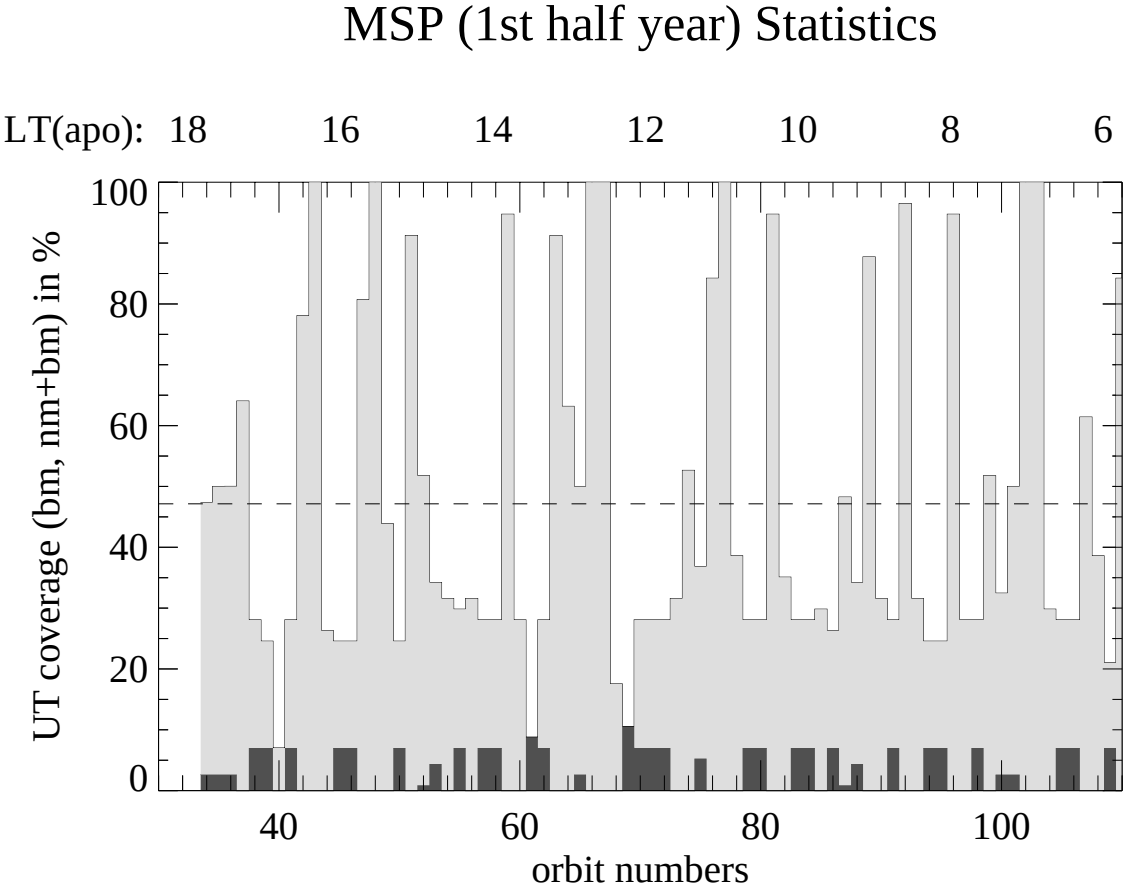
Records contain either items 1+2 or one or all of the others. Items 3 – 5 and 7 appear only in the acquisition start records.

Records with a "!" at offset=0, pos=1, are comments.


CLUSTER Master Science Plan, 1st half year (dayside)
LT(apo):
Perigee
southern leg
Apogee
northern leg
Perigee
orbit:
s: special orbit
△ bow shock
◇ magnetopause
□ neutral sheet
— nominal mode
▮ burst mode
∗ × bm3 dumps
Based on Predicted Orbit for Launch Date = 7 May, 1996
(V=2x1) 25-Apr-1996 10:52


CLUSTER Master Science Plan, dusk–noon quarter
LT(apo):
12
13
14
15
16
17
Perigee
southern leg
Apogee
northern leg
Perigee
orbit:
35
40
45
50
55
60
65
70
s: special orbit
△ bow shock
◇ magnetopause
□ neutral sheet
— nominal mode
burst mode
∗ × bm3 dumps
(V=2x1) 25–Apr–1996 10:53
Based on Predicted Orbit for Launch Date = 7 May, 1996


CLUSTER Master Science Plan, noon–dawn quarter
LT(apo):
06
07
08
09
10
11
Perigee
southern leg
Apogee
northern leg
Perigee
orbit:
75
80
85
90
95
100
105
110
s: special orbit
△ bow shock
◇ magnetopause
□ neutral sheet
— nominal mode
▮ burst mode
∗ × bm3 dumps
Based on Predicted Orbit for Launch Date = 7 May, 1996
(V=2x1) 25–Apr–1996 10:53


MSP (1st half year) Statistics
LT(apo): 18 16 14 12 10 8 6
UT coverage (bm, nm+bm) in %
100
80
60
40
20
0
40
60
80
100
orbit numbers

```
!
! MSP_034to110.apr96                                  General perigee restrictions                                  25 Apr 1996
!                                                     (see CL-MPE-TN-0009, Sect. 3.4) apply always.
!
! Event list produced from JSOC Planning Database using
! make_msp_evnt.sql at 1996-04-22T12:15:14Z
!
! based on ESOC orbit files
! LTOF_960403OAS1__________0002.CR   LTOF_960403OAS3__________0002.CR
! LTOF_960403OAS2__________0002.CR   LTOF_960403OAS4__________0002.CR
! and ESOC event files
! LTEF_960422OAS1__________0002.CR   LTEF_960422OAS3__________0002.CR
! LTEF_960422OAS2__________0002.CR   LTEF_960422OAS4__________0002.CR
!
!!launch= 7 May, 1996
!
!  abs     LT  Acqu. Pattern    Acq.Ref  T/Mmo    relT   ------------------------  Instrument Modes  ------------------------ orphase
! Orb#    Apo                                          ASPOC....  CIS...  EDI...  FGM... PEACE...... RAPID..  WEC.........
!-------------------------------------------------------------------------------------------------------------------------------
!
   34a  17:41  0.5N+1.5B+25N    peri     0.5N1     0.0             MAG-2   EDI-05  M1     STD-NM1-#            NBR-B/L-#    0.00000
                                         1.5B1     0.5                             M7     STD-BM1-#   HIGH     HBR-B/L-#    0.00877
                                            ic     0.7                     EDI-13                                           0.01228
                                        25.0N1     2.0   IION_LOBE                 M1     STD-NM1-#   NLOW-#   NBR-B/L-#    0.03509
                                            ic     2.5                     EDI-05                                           0.04386
                               T_mp1        ic    -3.0                                                     HIGH             0.10337
                                            ic    -2.0             MAG-5                                                   0.12091
                               peri         ic     8.5                     EDI-13                                           0.14912
                               T_mp1        ic    +1.0                                                     LOW              0.17354
                                            ic    +3.0   IION_SW                                                           0.20863
                               peri         ic    14.5                     EDI-05                                           0.25439
                                            ic    20.5                     EDI-13                                           0.35965
                                            ic    26.9   CAL_MODE                                                          0.47222
!                                                                                                  acquisition end:  0.47368
!
   35a  17:32  5N+1.5B+22N      peri     5.0N1     0.0             MAG-2   EDI-05  M1     STD-NM1-#            NBR-basic    0.00000
                                            ic    +0.5                                                     HIGH             0.00877
```

					ic	+2.0	IION_LOBE					NLOW-#		0.03509
					ic	2.5			EDI-13					0.04386
					1.5B1	5.0				M7	STD-BM1-#		HBR-basic	0.08772
					ic	5.1							STA:CAL-H	0.08947
					ic	5.7			EDI-05					0.10000
				T_mp1	ic	-3.0						HIGH		0.10037
				peri	22.0N1	6.5				M1	STD-NM1-#		NBR-basic	0.11404
				T_mp1	ic	-2.0		MAG-5						0.11791
					ic	+1.0						LOW		0.17054
				peri	ic	10.0			EDI-13					0.17544
				T_mp1	ic	+3.0	IION_SW							0.20563
				peri	ic	16.0			EDI-05					0.28070
					ic	22.0			EDI-13					0.38596
					ic	28.4	CAL_MODE							0.49854
!													acquisition end:	0.50000
!														
$	36a	17:23	17N+1.5B+10N	peri	17.0N1	0.0		MAG-2	EDI-05	M1	STD-NM1-#		NBR-basic	0.00000
					ic	+0.5						HIGH		0.00877
					ic	+2.0	IION_LOBE					NLOW-#		0.03509
				T_mp1	ic	-3.0						HIGH		0.09737
				peri	ic	6.0			EDI-13					0.10526
				T_mp1	ic	-2.0		MAG-5						0.11491
					ic	+1.0						LOW		0.16754
					ic	+3.0	IION_SW							0.20263
				peri	ic	12.0			EDI-05					0.21053
					1.5B1	17.0				M7	STD-BM1-#		HBR-basic	0.29825
					ic	17.7			EDI-13					0.31053
					10.0N1	18.5				M1	STD-NM1-#		NBR-basic	0.32456
					ic	23.2			EDI-05					0.40702
					ic	28.4	CAL_MODE							0.49854
!													acquisition end:	0.50000
!														
	37a	17:14	34.5N	peri	34.5N1	0.0		MAG-2	EDI-05	M1	STD-NM1-#		NBR-basic	0.00000
					ic	+0.5						HIGH		0.00877
					ic	+2.0	IION_LOBE					NLOW-#		0.03509
					ic	2.9			EDI-13					0.05088
				T_mp1	ic	-3.0						HIGH		0.09537

```
                                  ic   -2.0             MAG-5                                                 0.11291
                          peri    ic    8.7                     EDI-05                                        0.15263
                          T_mp1   ic   +1.0                                                 LOW               0.16554
                                  ic   +3.0   IION_SW                                                         0.20063
                          peri    ic   14.5                     EDI-13                                        0.25439
                                  ic   20.3                     EDI-05                                        0.35614
                                  ic   26.1                     EDI-13                                        0.45789
                                  ic   31.9                     EDI-05                                        0.55965
                                  ic   34.4   CAL_MODE                                                        0.60380
!                                                                                          acquisition end:   0.60526
!
  37b+        2N          nper   2.0N1 -2.0   off       MAG-2   EDI-05  M1   STD-NM1-#    HIGH   NBR-basic    0.96491
!                                                                                          acquisition end:   1.00000
!
  38a- 17:05  2N          peri   2.0N1  0.0             MAG-2   EDI-05  M1   STD-NM1-#           NBR-basic    0.00000
                                  ic   +0.5                                                 HIGH              0.00877
!                                                                                          acquisition end:   0.03509
!
  38b         4N+4B+4N    apo    4.0N1 -9.0   IION_SW   SW-2    EDI-05  M1   STD-NM1-#    LOW    NBR-basic    0.34211
                                  ic   -7.0                     EDI-13                                        0.37719
                                 4.0B1 -5.0                             M7   STD-BM1-#           HBR-basic    0.41228
                          T_bs1   ic   +1.0                                                 NLOW-#            0.42454
                          apo     ic   -3.0                     EDI-05                                        0.44737
                          T_bs2   ic   -1.0                                                 LOW               0.46046
                          apo    4.0N1 -1.0                             M1   STD-NM1-#           NBR-basic    0.48246
                                  ic    1.0                     EDI-13                                        0.51754
                                  ic    2.9   CAL_MODE                                                        0.55117
!                                                                                          acquisition end:   0.55263
!
  38c+        2N          nper   2.0N1 -2.0   off       MAG-2   EDI-05  M1   STD-NM1-#    HIGH   NBR-basic    0.96491
!                                                                                          acquisition end:   1.00000
!
  39a- 16:56  2N          peri   2.0N1  0.0             MAG-2   EDI-05  M1   STD-NM1-#           NBR-basic    0.00000
                                  ic   +0.5                                                 HIGH              0.00877
!                                                                                          acquisition end:   0.03509
!
  39b         4N+4B+4N    T_bs2  4.0N1 -6.0   IION_SW   SW-3    EDI-05  M1   STD-NM1-#    NLOW-# NBR-B/L-#    0.43774
```

```
                                        ic    -4.0                EDI-13                                                  0.47282
                                        ic    -3.0          SW-2                                                          0.49037
                                    4.0B1     -2.0                      M7    STD-BM1-#           HBR-B/L-#             0.50791
                                        ic    -1.0                                            LOW                       0.52546
                                        ic     0.0                EDI-05                                                  0.54300
                                    4.0N1      2.0                      M1    STD-NM1-#           NBR-B/L-#             0.57809
                                        ic     4.0                EDI-13                                                  0.61318
                                        ic     5.9   CAL_MODE                                                           0.64680
!                                                                                                 acquisition end:      0.64826
!
   40a  16:46  4N              T_mp1    4.0N1    -2.0   IION_LOBE  MAG-5  EDI-05  M1    STD-NM1-#  HIGH     NBR-basic  0.10791
                                        ic     0.0                EDI-13                                                  0.14300
                                        ic    +1.0                                            LOW                       0.16054
!                                                                                                 acquisition end:      0.17809
!
   41a  16:37  8N+4B+4N        T_mp1    8.0N1    -8.0          MAG-2  EDI-05  M1    STD-NM1-#           NBR-basic  0.00165
                               peri       ic    +0.5                                            HIGH                      0.00877
                                        ic    +2.0   IION_LOBE                                    NLOW-#                    0.03509
                               T_mp1      ic    -4.0                EDI-13                                                  0.07182
                                        ic    -3.0                                            HIGH                      0.08937
                                        ic    -2.0          MAG-5                                                         0.10691
                                    4.0B1      0.0                      M7    STD-BM1-#           HBR-basic  0.14200
                                        ic    +1.0                                            LOW                       0.15954
                                        ic     2.0                EDI-05                                                  0.17709
                                        ic    +3.0   IION_SW                                                            0.19463
                                    4.0N1      4.0                      M1    STD-NM1-#           NBR-basic  0.21218
                                        ic     4.7          SW-2                                                          0.22500
                                        ic     6.0                EDI-13                                                  0.24726
                                        ic     7.9   CAL_MODE                                                           0.28089
!                                                                                                 acquisition end:      0.28235
!
   42a+ 16:28  44.5N           nper    44.5N1   -44.5   IION_SW    SW-2   EDI-05  M1    STD-NM1-#  LOW      NBR-basic  0.21930
                                        ic    -41.3                EDI-13                                                  0.27544
                               T_bs1      ic    +1.0                                            NLOW-#                    0.31154
                                        ic    +3.0          SW-3                                                          0.34663
                               nper       ic    -34.9                EDI-05                                                  0.38772
                                        ic    -28.5                EDI-13                                                  0.50000
```

```
                              T_bs2       ic    -3.0             SW-2                                              0.58037
                              nper        ic   -22.1                    EDI-05                                     0.61228
                              T_bs2       ic    -1.0                                              LOW              0.61546
                              nper        ic   -15.7                    EDI-13                                     0.72456
                              T_mp2       ic    -5.4             MAG-5                                             0.72700
                                          ic    -3.0  IION_LOBE                                                    0.76837
                                          ic    -1.0                                              HIGH             0.80346
                              nper        ic    -9.3                    EDI-05                                     0.83684
                              T_mp2       ic    +2.0             MAG-2                                             0.85609
                                          ic    +3.0                                              NLOW-#           0.87363
                              nper        ic    -2.9                    EDI-13                                     0.94912
                                          ic    -2.0                                              HIGH             0.96491
!                                                                                                 acquisition end: 1.00000
!
$  43a: 16:19  57N            peri    57.0N1     0.0             MAG-2  EDI-05  M1    STD-NM1-#          NBR-basic 0.00000
                                          ic    +0.5                                              HIGH             0.00877
                                          ic    +2.0  IION_LOBE                                   NLOW-#           0.03509
                                          ic     2.8                    EDI-13                                     0.05000
                                          ic     5.0                                                    STAWHI:CAL 0.08772
                              T_mp1       ic    -3.0                                              HIGH             0.08837
                                          ic    -2.0             MAG-5                                             0.10591
                              peri        ic     8.6                    EDI-05                                     0.15000
                              T_mp1       ic    +1.0                                              LOW              0.15854
                                          ic    +3.0  IION_SW                                                      0.19363
                                          ic     4.0             SW-2                                              0.21150
                              peri        ic    14.3                    EDI-13                                     0.25000
                              T_bs1       ic    +1.0                                              NLOW-#           0.29954
                                          ic    +3.0             SW-3                                              0.33463
                              peri        ic    19.9                    EDI-05                                     0.35000
                                          ic    25.6                    EDI-13                                     0.45000
                                          ic    31.3                    EDI-05                                     0.55000
                              T_bs2       ic    -3.0             SW-2                                              0.60037
                                          ic    -1.0                                              LOW              0.63546
                              peri        ic    37.0                    EDI-13                                     0.65000
                              T_mp2       ic    -4.9             MAG-5                                             0.73950
                              peri        ic    42.8                    EDI-05                                     0.75000
                              T_mp2       ic    -3.0  IION_LOBE                                                    0.77337
```

```
                                    ic    -1.0                                    HIGH                  0.80846
                          peri      ic    48.4                  EDI-13                                  0.85000
                          T_mp2     ic    +2.0            MAG-2                                         0.86109
                                    ic    +3.0                                    NLOW-#                0.87863
                          peri      ic    54.1                  EDI-05                                  0.95000
                          nper      ic    -2.0                                    HIGH                  0.96491
                          peri      ic    56.9  CAL_MODE                                                0.99854
!                                                                                      acquisition end: 1.00000
!
   44a- 16:10  15N        peri   15.0N1    0.0            MAG-2  EDI-05  M1   STD-NM1-#          NBR-basic  0.00000
                             ic    +0.5                                    HIGH                  0.00877
                             ic    +2.0  IION_LOBE                          NLOW-#                0.03509
                             ic     2.5                  EDI-13                                  0.04386
                          T_mp1      ic    -3.0                                    HIGH                  0.08737
                             ic    -2.0            MAG-5                                         0.10491
                          peri       ic     7.5                  EDI-05                                  0.13158
                          T_mp1      ic    +1.0                                    LOW                   0.15754
                             ic    +3.0  IION_SW                                                         0.19263
                             ic     3.8            SW-2                                          0.20650
                          peri       ic    12.5                  EDI-13                                  0.21930
                             ic    14.9  CAL_MODE                                                        0.26170
!                                                                                      acquisition end: 0.26316
!
   45a  16:01  4N+4B+4N   T_mp1    4.0N1    -7.0            MAG-2  EDI-05  M1   STD-NM1-#  HIGH    NBR-basic  0.01619
                          peri       ic    +2.0  IION_LOBE                          NLOW-#                0.03509
                          T_mp1      ic    -5.0                  EDI-13                                  0.05128
                                  4.0B1    -3.0                                 M7   STD-BM1-#  HIGH    HBR-basic  0.08637
                             ic    -2.0            MAG-5                                         0.10391
                             ic    -1.0                  EDI-05                                  0.12146
                                  4.0N1     1.0                                 M1   STD-NM1-#  LOW     NBR-basic  0.15654
                             ic    +3.0  IION_SW           EDI-13                                  0.19163
                             ic     3.6            SW-2                                          0.20200
!                                                                                      acquisition end: 0.22672
!
   45b         2N         nper     2.0N1    -2.0  off       MAG-2  EDI-05  M1   STD-NM1-#  HIGH    NBR-basic  0.96491
!                                                                                      acquisition end: 1.00000
!
```

	46a	15:51	2N	peri	2.0N1	0.0		MAG-2	EDI-05	M1	STD-NM1-#		NBR-basic	0.00000
					ic	+0.5						HIGH		0.00877
!													acquisition end:	0.03509
!														
	46b		4N+4B+4N	T_bs1	4.0N1	-6.0	IION_LOBE	MAG-5	EDI-05	M1	STD-NM1-#	HIGH	NBR-basic	0.15274
				T_mp1	ic	+1.0						LOW		0.15654
				T_bs1	ic	-4.0			EDI-13					0.18782
				T_mp1	ic	+3.0	IION_SW							0.19163
					ic	3.4		SW-2						0.19850
				T_bs1	4.0B1	-2.0				M7	STD-BM1-#		HBR-basic	0.22291
					ic	0.0			EDI-05					0.25800
					ic	+1.0						NLOW-#		0.27554
					4.0N1	2.0				M1	STD-NM1-#		NBR-basic	0.29309
					ic	+3.0		SW-3						0.31063
					ic	4.0			EDI-13					0.32818
					ic	5.9	CAL_MODE							0.36180
!													acquisition end:	0.36326
!														
	47a+	15:42	46N	nper	46.0N1	-46.0	IION_SW	MAG-5	EDI-05	M1	STD-NM1-#	LOW	NBR-basic	0.19298
				T_mp1	ic	3.3		SW-2						0.19450
				nper	ic	-43.1			EDI-13					0.24386
				T_bs1	ic	+1.0						NLOW-#		0.26954
					ic	+3.0		SW-3						0.30463
				nper	ic	-37.3			EDI-05					0.34561
					ic	-31.5			EDI-13					0.44737
					ic	-25.7			EDI-05					0.54912
					ic	-19.9			EDI-13					0.65088
				T_bs2	ic	-3.0		SW-2						0.65337
					ic	-1.0						LOW		0.68846
				nper	ic	-14.1			EDI-05					0.75263
				T_mp2	ic	-3.9		MAG-5						0.77400
					ic	-3.0	IION_LOBE							0.78937
					ic	-1.0						HIGH		0.82446
				nper	ic	-8.3			EDI-13					0.85439
				T_mp2	ic	+2.0		MAG-2						0.87709
					ic	+3.0						NLOW-#		0.89463
				nper	ic	-2.5			EDI-05					0.95614

```
                                        ic    -2.0                                                  HIGH                  0.96491
!                                                                                                        acquisition end: 1.00000
!
   48a: 15:33  57N              peri    57.0N1     0.0             MAG-2   EDI-05  M1     STD-NM1-#          NBR-basic    0.00000
                                        ic    +0.5                                                  HIGH                  0.00877
                                        ic    +2.0   IION_LOBE                                      NLOW-#                0.03509
                                        ic     2.8                    EDI-13                                              0.05000
                                T_mp1   ic    -3.0   CAL_MODE                                       HIGH                  0.08337
                                        ic    -2.0             MAG-5                                                     0.10091
                                peri    ic     8.6                    EDI-05                                              0.15000
                                T_mp1   ic    +1.0                                                  LOW                   0.15354
                                        ic    +3.0   IION_SW                                                             0.18863
                                        ic     3.1             SW-2                                                      0.19100
                                peri    ic    14.3                    EDI-13                                              0.25000
                                T_bs1   ic    +1.0                                                  NLOW-#                0.26354
                                        ic    +3.0             SW-3                                                      0.29863
                                peri    ic    19.9                    EDI-05                                              0.35000
                                        ic    25.6                    EDI-13                                              0.45000
                                        ic    31.3                    EDI-05                                              0.55000
                                        ic    37.0                    EDI-13                                              0.65000
                                T_bs2   ic    -3.0             SW-2                                                      0.66437
                                        ic    -1.0                                                  LOW                   0.69946
                                peri    ic    42.8                    EDI-05                                              0.75000
                                T_mp2   ic    -3.6             MAG-5                                                     0.78050
                                        ic    -3.0   IION_LOBE                                                           0.79137
                                        ic    -1.0                                                  HIGH                  0.82646
                                peri    ic    48.4                    EDI-13                                              0.85000
                                T_mp2   ic    +2.0             MAG-2                                                     0.87909
                                        ic    +3.0                                                  NLOW-#                0.89663
                                peri    ic    54.1                    EDI-05                                              0.95000
                                nper    ic    -2.0                                                  HIGH                  0.96491
!                                                                                                        acquisition end: 1.00000
!
   49a- 15:24  23N              peri    23.0N1     0.0             MAG-2   EDI-05  M1     STD-NM1-#          NBR-B/L-#    0.00000
                                        ic    +0.5                                                  HIGH                  0.00877
                                        ic    +2.0   IION_LOBE                                      NLOW-#                0.03509
                                        ic     2.9                    EDI-13                                              0.05088
```

```
                      T_mp1      ic    -3.0                                                HIGH                  0.08337
                                 ic    -2.0             MAG-5                                                    0.10091
                      peri       ic     8.7                     EDI-05                                           0.15263
                      T_mp1      ic    +1.0                                                LOW                   0.15354
                                 ic    +3.0  IION_SW                                                             0.18863
                                 ic     3.0             SW-2                                                     0.18900
                      peri       ic    14.5                     EDI-13                                           0.25439
                      T_bs1      ic    +1.0                                                NLOW-#                0.25954
                                 ic    +3.0             SW-3                                                     0.29463
                      peri       ic    20.3                     EDI-05                                           0.35614
                                 ic    22.9  CAL_MODE                                                            0.40205
!                                                                                              acquisition end:  0.40351
!
  49b+        2N      nper     2.0N1   -2.0  off        MAG-2   EDI-05  M1   STD-NM1-#     HIGH    NBR-basic     0.96491
!                                                                                              acquisition end:  1.00000
!
$ 50a- 15:15  2N      peri     2.0N1    0.0             MAG-2   EDI-05  M1   STD-NM1-#             NBR-basic     0.00000
                                 ic    +0.5                                                HIGH                  0.00877
!                                                                                              acquisition end:  0.03509
!
  50b         4N+4B+4N T_bs1   4.0N1   -6.0  IION_LOBE  MAG-5   EDI-05  M1   STD-NM1-#     HIGH    NBR-basic     0.13274
                      T_mp1      ic    +1.0                                                LOW                   0.15254
                      T_bs1      ic    -4.0                     EDI-13                                           0.16782
                      T_mp1      ic     2.9             SW-2                                                     0.18650
                                 ic    +3.0  IION_SW                                                             0.18763
                      T_bs1    4.0B1   -2.0                             M7   STD-BM1-#             HBR-basic     0.20291
                                 ic     0.0                     EDI-05                                           0.23800
                                 ic    +1.0                                                NLOW-#                0.25554
                               4.0N1    2.0                             M1   STD-NM1-#             NBR-basic     0.27309
                                 ic    +3.0             SW-3                                                     0.29063
                                 ic     4.0                     EDI-13                                           0.30818
                                 ic     5.9  CAL_MODE                                                            0.34180
!                                                                                              acquisition end:  0.34326
!
  51a+ 15:05  52N     nper    52.0N1  -52.0  IION_LOBE  MAG-2   EDI-05  M1   STD-NM1-#     HIGH    NBR-basic     0.08772
                      T_mp1      ic    -2.0             MAG-5                                                    0.09991
                      nper       ic   -49.1                     EDI-13                                           0.13860
```

```
                          T_mp1    ic    +1.0                                              LOW            0.15254
                                   ic     2.8            SW-2                                             0.18400
                                   ic    +3.0  IION_SW                                                    0.18763
                          nper     ic   -43.3                    EDI-05                                   0.24035
                          T_bs1    ic    +1.0                                              NLOW-#         0.25054
                                   ic    +3.0            SW-3                                             0.28563
                          nper     ic   -37.5                    EDI-13                                   0.34211
                                   ic   -31.7                    EDI-05                                   0.44386
                                   ic   -25.9                    EDI-13                                   0.54561
                                   ic   -20.1                    EDI-05                                   0.64737
                          T_bs2    ic    -3.0            SW-2                                             0.68837
                                   ic    -1.0                                              LOW            0.72346
                          nper     ic   -14.3                    EDI-13                                   0.74912
                          T_mp2    ic    -3.2            MAG-5                                            0.79700
                                   ic    -3.0  IION_LOBE                                                  0.80037
                                   ic    -1.0                                              HIGH           0.83546
                          nper     ic    -8.5                    EDI-05                                   0.85088
                          T_mp2    ic    +2.0            MAG-2                                            0.88809
                                   ic    +3.0                                              NLOW-#         0.90563
                          nper     ic    -2.7                    EDI-13                                   0.95263
                                   ic    -2.0                                              HIGH           0.96491
!                                                                                      acquisition end: 1.00000
!
  52a- 14:56  28N         peri  28.0N1    0.0            MAG-2   EDI-05  M1   STD-NM1-#        NBR-basic  0.00000
                                   ic    +0.5                                              HIGH           0.00877
                                   ic    +2.0  IION_LOBE                                   NLOW-#         0.03509
                                   ic     2.8                    EDI-13                                   0.04912
                          T_mp1    ic    -3.0                                              HIGH           0.08137
                                   ic    -2.0            MAG-5                                            0.09891
                          peri     ic     8.4                    EDI-05                                   0.14737
                          T_mp1    ic    +1.0                                              LOW            0.15154
                                   ic     2.8            SW-2                                             0.18250
                                   ic    +3.0  IION_SW                                                    0.18663
                          peri     ic    14.0                    EDI-13                                   0.24561
                          T_bs1    ic    +1.0                                              NLOW-#         0.24854
                                   ic    +3.0            SW-3                                             0.28363
                          peri     ic    19.6                    EDI-05                                   0.34386
```

				ic	25.2			EDI-13					0.44211
				ic	27.9	CAL_MODE							0.48977
!												acquisition end:	0.49123
!													
	52b+		1N+0.5B	nper	1.0N1	-1.5	off	MAG-2	EDI-05	M1	STD-NM1-#	HIGH NBR-basic	0.97368
					0.5B1	-0.5				M7	STD-BM1-#	HBR-basic	0.99123
!												acquisition end:	1.00000
!													
	53a-	14:47	1B+8N	peri	1.0B1	0.0		MAG-2	EDI-05	M7	STD-BM1-#	HBR-basic	0.00000
					ic	+0.5						HIGH	0.00877
					8.0N1	1.0				M1	STD-NM1-#	NBR-basic	0.01754
					ic	+2.0	IION_LOBE					NLOW-#	0.03509
				T_mp1	ic	-3.0						HIGH	0.08137
				peri	ic	5.0			EDI-13				0.08772
				T_mp1	ic	-2.0		MAG-5					0.09891
					ic	+1.0						LOW	0.15154
				peri	ic	8.9	CAL_MODE						0.15643
!												acquisition end:	0.15789
!													
	53b		1.5N+1.5B+1.5N	apo	1.5N1	-2.5	IION_SW	SW-3	EDI-05	M1	STD-NM1-#	NLOW-# NBR-basic	0.45614
					ic	-1.7			EDI-13				0.46930
					1.5B1	-1.0				M7	STD-BM1-#	HBR-basic	0.48246
					ic	-0.3			EDI-05				0.49561
					1.5N1	0.5				M1	STD-NM1-#	NBR-basic	0.50877
					ic	1.2			EDI-13				0.52193
!												acquisition end:	0.53509
!													
	53c		6N	T_mp2	6.0N1	-4.5	IION_SW	SW-2	EDI-05	M1	STD-NM1-#	LOW NBR-basic	0.77905
					ic	-3.0	IION_LOBE						0.80537
					ic	-2.9		MAG-5					0.80650
					ic	-1.5			EDI-13				0.83168
					ic	-1.0						HIGH	0.84046
!												acquisition end:	0.88432
!													
	54a	14:38	17N	peri	17.0N1	+2.0		MAG-2	EDI-05	M1	STD-NM1-#	NLOW-# NBR-basic	0.03509
				T_mp1	ic	-3.0						HIGH	0.08137
				peri	ic	4.8			EDI-13				0.08509

```
                                 T_mp1        ic    -2.0            MAG-5                                                         0.09891
                                              ic    +1.0                                                     LOW                  0.15154
                                              ic     2.6            SW-2                                                          0.17950
                                 peri         ic    10.6                   EDI-05                                                 0.18509
                                 T_mp1        ic    +3.0  IION_SW                                                                 0.18663
                                 T_bs1        ic    +1.0                                                     NLOW-#               0.24254
                                              ic    +3.0            SW-3                                                          0.27763
                                 peri         ic    16.3                   EDI-13                                                 0.28509
                                              ic    18.9  CAL_MODE                                                                0.33187
!                                                                                                                acquisition end: 0.33333
!
   54b+        1N                nper      1.0N1    -1.0  off       MAG-2  EDI-05  M1   STD-NM1-#    HIGH     NBR-B/L-#    0.98246
!                                                                                                                acquisition end: 1.00000
!
   55a- 14:29  1.5N              peri      1.5N1     0.0            MAG-2  EDI-05  M1   STD-NM1-#             NBR-B/L-#    0.00000
                                              ic    +0.5                                                     HIGH                 0.00877
!                                                                                                                acquisition end: 0.02632
!
   55b         5.5N+4B+4N        T_bs1     5.5N1    -8.0  IION_LOBE MAG-2  EDI-05  M1   STD-NM1-#    HIGH     NBR-basic    0.08265
                                 T_mp1        ic    -2.0            MAG-5                                                         0.09891
                                 T_bs1        ic    -5.3                   EDI-13                                                 0.13089
                                 T_mp1        ic    +1.0                                                     LOW                  0.15154
                                              ic     2.5            SW-2                                                          0.17850
                                 T_bs1     4.0B1    -2.5                           M7   STD-BM1-#             HBR-basic    0.17914
                                 T_mp1        ic    +3.0  IION_SW                                                                 0.18663
                                 T_bs1        ic    -0.5                   EDI-05                                                 0.21423
                                              ic    +1.0                                                     NLOW-#               0.24054
                                           4.0N1     1.5                           M1   STD-NM1-#             NBR-basic    0.24932
                                              ic    +3.0            SW-3                                                          0.27563
                                              ic     3.5                   EDI-13                                                 0.28440
!                                                                                                                acquisition end: 0.31949
!
   55c+        2N                nper      2.0N1    -2.0  off       MAG-2  EDI-05  M1   STD-NM1-#    HIGH     NBR-basic    0.96491
!                                                                                                                acquisition end: 1.00000
!
   56a- 14:19  18N               peri     18.0N1     0.0            MAG-2  EDI-05  M1   STD-NM1-#             NBR-basic    0.00000
                                              ic    +0.5                                                     HIGH                 0.00877
```

					ic	+2.0	IION_LOBE					NLOW-#		0.03509
					ic	3.0			EDI-13					0.05263
				T_mp1	ic	-3.0						HIGH		0.08037
					ic	-2.0		MAG-5						0.09791
					ic	+1.0						LOW		0.15054
				peri	ic	9.0			EDI-05					0.15789
				T_mp1	ic	2.5		SW-2						0.17750
					ic	+3.0	IION_SW							0.18563
				T_bs1	ic	+1.0						NLOW-#		0.23954
				peri	ic	15.0			EDI-13					0.26316
				T_bs1	ic	+3.0		SW-3						0.27463
				peri	ic	17.9	CAL_MODE							0.31433
!													acquisition end:	0.31579
!														
$	57a	14:10	3N+4B+3N	T_mp1	3.0N1	-5.0	IION_LOBE	MAG-2	EDI-05	M1	STD-NM1-#	NLOW-#	NBR-basic	0.04528
					ic	-3.5			EDI-13					0.07160
					ic	-3.0						HIGH		0.08037
					4.0B1	-2.0		MAG-5		M7	STD-BM1-#		HBR-basic	0.09791
					ic	0.0			EDI-05					0.13300
					ic	+1.0						LOW		0.15054
					3.0N1	2.0				M1	STD-NM1-#		NBR-basic	0.16809
					ic	2.5		SW-2						0.17650
					ic	+3.0	IION_SW							0.18563
					ic	3.5			EDI-13					0.19440
!													acquisition end:	0.22072
!														
	57b		6N	T_mp2	6.0N1	-2.0	IION_LOBE	MAG-5	EDI-05	M1	STD-NM1-#	LOW	NBR-basic	0.82891
					ic	-1.0						HIGH		0.84646
					ic	1.0			EDI-13					0.88154
					ic	+2.0		MAG-2						0.89909
					ic	+3.0						NLOW-#		0.91663
!													acquisition end:	0.93418
!														
	58a	14:01	3N+4B+3N	T_mp1	3.0N1	-5.0	IION_LOBE	MAG-2	EDI-05	M1	STD-NM1-#	NLOW-#	NBR-basic	0.04528
					ic	-3.5			EDI-13					0.07160
					ic	-3.0						HIGH		0.08037
					4.0B1	-2.0		MAG-5		M7	STD-BM1-#		HBR-basic	0.09791

```
                                  ic     0.0                       EDI-05                              0.13300
                                  ic    +1.0                                            LOW            0.15054
                               3.0N1     2.0                              M1  STD-NM1-#       NBR-basic 0.16809
                                  ic     2.4             SW-2                                          0.17550
                                  ic    +3.0  IION_SW                                                  0.18563
                                  ic     3.5                       EDI-13                              0.19440
!                                                                                   acquisition end: 0.22072
!
 58b        6N          T_mp2  6.0N1    -2.0  IION_LOBE  MAG-5    EDI-05  M1  STD-NM1-# LOW    NBR-basic 0.83091
                                  ic    -1.0                                            HIGH           0.84846
                                  ic     1.0                       EDI-13                              0.88354
                                  ic    +2.0             MAG-2                                         0.90109
                                  ic    +3.0                                            NLOW-#         0.91863
!                                                                                   acquisition end: 0.93618
!
 59a+ 13:51 54N         nper  54.0N1   -54.0  IION_LOBE  MAG-2    EDI-05  M1  STD-NM1-# NLOW-# NBR-basic 0.05263
                        T_mp1     ic    -3.0                                            HIGH           0.08037
                                  ic    -2.0             MAG-5                                         0.09791
                        nper      ic   -51.0                       EDI-13                              0.10526
                        T_mp1     ic    +1.0                                            LOW            0.15054
                                  ic     2.4             SW-2                                          0.17550
                                  ic    +3.0  IION_SW                                                  0.18563
                        nper      ic   -45.0                       EDI-05                              0.21053
                        T_bs1     ic    +1.0                                            NLOW-#         0.23554
                                  ic    +3.0             SW-3                                          0.27063
                        nper      ic   -39.0                       EDI-13                              0.31579
                                  ic   -33.0                       EDI-05                              0.42105
                                  ic   -27.0                       EDI-13                              0.52632
                                  ic   -21.0                       EDI-05                              0.63158
                        T_bs2     ic    -3.0             SW-2                                          0.72937
                        nper      ic   -15.0                       EDI-13                              0.73684
                        T_bs2     ic    -1.0                                            LOW            0.76446
                        T_mp2     ic    -3.0  IION_LOBE                                                0.81337
                                  ic    -2.4             MAG-5                                         0.82400
                        nper      ic    -9.0                       EDI-05                              0.84211
                        T_mp2     ic    -1.0                                            HIGH           0.84846
                                  ic    +2.0             MAG-2                                         0.90109
```

```
                                    ic    +3.0                                    NLOW-#                0.91863
                          nper      ic    -3.0                  EDI-13                                  0.94737
                                    ic    -2.0                                    HIGH                  0.96491
!                                                                                      acquisition end: 1.00000
!
   60a- 13:42  16N         peri   16.0N1    0.0          MAG-2  EDI-05  M1    STD-NM1-#          NBR-basic   0.00000
                                    ic    +0.5                                    HIGH                  0.00877
                                    ic    +2.0   IION_LOBE                        NLOW-#                0.03509
                                    ic     2.7                  EDI-13                                  0.04649
                          T_mp1     ic    -3.0                                    HIGH                  0.08137
                                    ic    -2.0          MAG-5                                           0.09891
                          peri      ic     8.0                  EDI-05                                  0.13947
                          T_mp1     ic    +1.0                                    LOW                   0.15154
                                    ic     2.3          SW-2                                            0.17500
                                    ic    +3.0   IION_SW                                                 0.18663
                          peri      ic    13.3                  EDI-13                                  0.23246
                          T_bs1     ic    +1.0                                    NLOW-#                0.23354
                                    ic    +3.0          SW-3                                            0.26863
                          peri      ic    15.9   CAL_MODE                                                0.27924
!                                                                                      acquisition end: 0.28070
!
$  61a  13:33  5B          T_bs1    5.0B1   -1.5   IION_SW  SW-2  EDI-05  M7    STD-BM1-#  LOW       HBR-basic   0.18868
                                    ic     1.0                  EDI-13                  NLOW-#                0.23254
                                    ic    +3.0          SW-3                                            0.26763
!                                                                                      acquisition end: 0.27640
!
   62a  13:24  5N+4B+7N    T_bs1    5.0N1   -7.0   IION_LOBE MAG-2  EDI-05  M1    STD-NM1-#  HIGH      NBR-basic   0.09219
                          T_mp1     ic    -2.0          MAG-5                                           0.09791
                          T_bs1     ic    -4.5                  EDI-13                                  0.13605
                          T_mp1     ic    +1.0                                    LOW                   0.15054
                                    ic     2.3          SW-2                                            0.17400
                          T_bs1    4.0B1   -2.0                                  M7    STD-BM1-#          HBR-basic   0.17991
                          T_mp1     ic    +3.0   IION_SW                                                 0.18563
                          T_bs1     ic     0.0                  EDI-05                                  0.21500
                                    ic    +1.0                                    NLOW-#                0.23254
                                   7.0N1    2.0                                  M1    STD-NM1-#          NBR-basic   0.25009
                                    ic    +3.0          SW-3                                            0.26763
```

```
                             ic     5.5                   EDI-13                                             0.31149
!                                                                                        acquisition end: 0.37289
!
  63a+ 13:14  52N     nper   52.0N1  -52.0  IION_LOBE  MAG-2  EDI-05  M1  STD-NM1-#  HIGH   NBR-B/L-#   0.08772
                      T_mp1      ic   -2.0             MAG-5                                            0.09891
                      nper       ic  -49.1                    EDI-13                                    0.13860
                      T_mp1      ic   +1.0                                           LOW                0.15154
                                 ic    2.3             SW-2                                             0.17400
                                 ic   +3.0  IION_SW                                                     0.18663
                      T_bs1      ic   +1.0                                           NLOW-#             0.23154
                      nper       ic  -43.3                    EDI-05                                    0.24035
                      T_bs1      ic   +3.0             SW-3                                             0.26663
                      nper       ic  -37.5                    EDI-13                                    0.34211
                                 ic  -31.7                    EDI-05                                    0.44386
                                 ic  -25.9                    EDI-13                                    0.54561
                                 ic  -20.1                    EDI-05                                    0.64737
                      T_bs2      ic   -3.0             SW-2                                             0.74137
                      nper       ic  -14.3                    EDI-13                                    0.74912
                      T_bs2      ic   -1.0                                           LOW                0.77646
                      T_mp2      ic   -3.0  IION_LOBE                                                   0.81837
                                 ic   -2.2             MAG-5                                            0.83250
                      nper       ic   -8.5                    EDI-05                                    0.85088
                      T_mp2      ic   -1.0                                           HIGH               0.85346
                                 ic   +2.0             MAG-2                                            0.90609
                                 ic   +3.0                                           NLOW-#             0.92363
                      nper       ic   -2.7                    EDI-13                                    0.95263
                                 ic   -2.0                                           HIGH               0.96491
!                                                                                        acquisition end: 1.00000
!
  64a- 13:05  36N     peri   36.0N1    0.0             MAG-2  EDI-05  M1  STD-NM1-#         NBR-basic   0.00000
                                 ic   +0.5                                           HIGH               0.00877
                                 ic   +2.0  IION_LOBE                                NLOW-#             0.03509
                                 ic    3.0                    EDI-13                                    0.05263
                      T_mp1      ic   -3.0                                           HIGH               0.08037
                                 ic   -2.0             MAG-5                                            0.09791
                                 ic   +1.0                                           LOW                0.15054
                      peri       ic    9.0                    EDI-05                                    0.15789
```

```
                                T_mp1       ic     2.3              SW-2                                                    0.17300
                                            ic    +3.0   IION_SW                                                           0.18563
                                T_bs1       ic    +1.0                                                 NLOW-#             0.23054
                                peri        ic    15.0                     EDI-13                                         0.26316
                                T_bs1       ic    +3.0              SW-3                                                  0.26563
                                peri        ic    21.0                     EDI-05                                         0.36842
                                            ic    27.0                     EDI-13                                         0.47368
                                            ic    33.0                     EDI-05                                         0.57895
                                            ic    35.9   CAL_MODE                                                        0.63012
!                                                                                                 acquisition end:      0.63158
!
   65a  12:56  1N+1.5B+26N      peri     1.0N1     0.0              MAG-2   EDI-05  M1     STD-NM1-#          NBR-basic   0.00000
                                           ic    +0.5                                                 HIGH               0.00877
                                        1.5B1     1.0                                          M7     STD-BM1-#          HBR-basic   0.01754
                                           ic     1.7                     EDI-13                                         0.02982
                                           ic    +2.0   IION_LOBE                                     NLOW-#             0.03509
                                       26.0N1     2.5                                          M1     STD-NM1-#          NBR-basic   0.04386
                                           ic     4.0                     EDI-05                                         0.07018
                                T_mp1      ic    -3.0                                                 HIGH               0.08237
                                           ic    -2.0              MAG-5                                                 0.09991
                                           ic    +1.0                                                 LOW                0.15254
                                           ic     2.2              SW-2                                                  0.17400
                                peri       ic    10.0                     EDI-13                                         0.17544
                                T_mp1      ic    +3.0   IION_SW                                                         0.18763
                                T_bs1      ic    +1.0                                                 NLOW-#             0.23054
                                           ic    +3.0              SW-3                                                  0.26563
                                peri       ic    16.0                     EDI-05                                         0.28070
                                           ic    22.0                     EDI-13                                         0.38596
                                           ic    28.4   CAL_MODE                                                        0.49854
!                                                                                                 acquisition end:      0.50000
!
   66a+ 12:46  57N              peri    57.0N1     0.0              MAG-2   EDI-05  M1     STD-NM1-#          NBR-basic   0.00000
                                           ic    +0.5                                                 HIGH               0.00877
                                           ic    +2.0   IION_LOBE                                     NLOW-#             0.03509
                                           ic     2.8                     EDI-13                                         0.05000
                                T_mp1      ic    -3.0                                                 HIGH               0.08137
                                           ic    -2.0              MAG-5                                                 0.09891
```

```
                        peri      ic     8.6                       EDI-05                                             0.15000
                        T_mp1     ic    +1.0                                                   LOW                    0.15154
                                  ic     2.3                SW-2                                                      0.17350
                                  ic    +3.0   IION_SW                                                                0.18663
                        T_bs1     ic    +1.0                                                   NLOW-#                 0.23054
                        peri      ic    14.3                       EDI-13                                             0.25000
                        T_bs1     ic    +3.0                SW-3                                                      0.26563
                        peri      ic    19.9                       EDI-05                                             0.35000
                                  ic    25.6                       EDI-13                                             0.45000
                                  ic    31.3                       EDI-05                                             0.55000
                                  ic    37.0                       EDI-13                                             0.65000
                        T_bs2     ic    -3.0                SW-2                                                      0.74737
                        peri      ic    42.8                       EDI-05                                             0.75000
                        T_bs2     ic    -1.0                                                   LOW                    0.78246
                        T_mp2     ic    -3.0   IION_LOBE                                                              0.82037
                                  ic    -2.1                MAG-5                                                     0.83650
                        peri      ic    48.4                       EDI-13                                             0.85000
                        T_mp2     ic    -1.0                                                   HIGH                   0.85546
                                  ic    +2.0                MAG-2                                                     0.90809
                                  ic    +3.0                                                   NLOW-#                 0.92563
                        peri      ic    54.1                       EDI-05                                             0.95000
                        nper      ic    -2.0                                                   HIGH                   0.96491
!                                                                                                  acquisition end: 1.00000
!
$  67a: 12:37  57N      peri   57.0N1    0.0                MAG-2  EDI-05  M1     STD-NM1-#              NBR-basic    0.00000
                                  ic    +0.5                                                   HIGH                   0.00877
                                  ic    +2.0   IION_LOBE                                       NLOW-#                 0.03509
                                  ic     2.8                       EDI-13                                             0.05000
                        T_mp1     ic    -3.0                                                   HIGH                   0.08137
                                  ic    -2.0                MAG-5                                                     0.09891
                        peri      ic     8.6                       EDI-05                                             0.15000
                        T_mp1     ic    +1.0                                                   LOW                    0.15154
                                  ic     2.3                SW-2                                                      0.17350
                                  ic    +3.0   IION_SW                                                                0.18663
                        T_bs1     ic    +1.0                                                   NLOW-#                 0.23054
                        T_mp1     ic     6.0                                                          STAWHI:CAL      0.23926
                        peri      ic    14.3                       EDI-13                                             0.25000
```

```
                          T_bs1       ic    +3.0             SW-3                                                    0.26563
                          peri        ic    19.9                    EDI-05                                          0.35000
                                      ic    25.6                    EDI-13                                          0.45000
                                      ic    31.3                    EDI-05                                          0.55000
                                      ic    37.0                    EDI-13                                          0.65000
                          T_bs2       ic    -3.0             SW-2                                                    0.74837
                          peri        ic    42.8                    EDI-05                                          0.75000
                          T_bs2       ic    -1.0                                                LOW                 0.78346
                          T_mp2       ic    -3.0   IION_LOBE                                                        0.82137
                                      ic    -2.1             MAG-5                                                  0.83750
                          peri        ic    48.4                    EDI-13                                          0.85000
                          T_mp2       ic    -1.0                                                HIGH                0.85646
                                      ic    +2.0             MAG-2                                                  0.90909
                                      ic    +3.0                                                NLOW-#              0.92663
                          peri        ic    54.1                    EDI-05                                          0.95000
                          nper        ic    -2.0                                                HIGH                0.96491
!                                                                                                 acquisition end:  1.00000
!
   68a- 12:28  10N        peri    10.0N1     0.0             MAG-2   EDI-05  M1     STD-NM1-#          NBR-basic    0.00000
                             ic    +0.5                                                HIGH                0.00877
                             ic    +2.0   IION_LOBE                                    NLOW-#              0.03509
                             ic     2.5                    EDI-13                                          0.04386
                          T_mp1       ic    -3.0                                                HIGH                0.08137
                             ic    -2.0             MAG-5                                                  0.09891
                          peri        ic     7.5                    EDI-05                                          0.13158
                          T_mp1       ic    +1.0                                                LOW                 0.15154
                             ic     2.3             SW-2                                                   0.17350
                          peri        ic     9.9   CAL_MODE                                                         0.17398
!                                                                                                 acquisition end:  0.17544
!
   69a  12:18  6B         T_mp1     6.0B1    -4.0   IION_LOBE  MAG-2   EDI-05  M7     STD-BM1-#  NLOW-#   HBR-basic    0.06482
                             ic    -3.0                                                HIGH                0.08237
                             ic    -2.0             MAG-5                                                  0.09991
                             ic    -1.0                    EDI-13                                          0.11746
                             ic    +1.0                                                LOW                 0.15254
!                                                                                                 acquisition end:  0.17009
!
```

```
   70a  12:09  2N+4B+4N        T_mp1    2.0N1   -4.0  IION_LOBE  MAG-2   EDI-05  M1    STD-NM1-#  NLOW-#   NBR-basic    0.06582
                                          ic    -3.0                      EDI-13                   HIGH                  0.08337
                                       4.0B1    -2.0              MAG-5           M7    STD-BM1-#            HBR-basic    0.10091
                                          ic     0.0                      EDI-05                                         0.13600
                                          ic    +1.0                                                LOW                   0.15354
                                       4.0N1     2.0                                M1    STD-NM1-#            NBR-basic    0.17109
                                          ic     2.2              SW-2                                                    0.17500
                                          ic    +3.0  IION_SW                                                            0.18863
                                          ic     4.0                      EDI-13                                         0.20618
                                T_bs1     ic    +1.0                                                NLOW-#                0.23154
!                                                                                                    acquisition end: 0.24126
!
   70b          6N            T_mp2    6.0N1   -3.0  IION_LOBE  SW-2    EDI-05  M1    STD-NM1-#  LOW      NBR-basic    0.82337
                                          ic    -2.0              MAG-5                                                   0.84100
                                          ic    -1.0                                                HIGH                  0.85846
                                          ic     0.0                      EDI-13                                         0.87600
                                          ic    +2.0              MAG-2                                                   0.91109
                                          ic    +3.0                                                NLOW-#                0.92863
!                                                                                                    acquisition end: 0.92863
!
   71a  12:00  3N+4B+3N        T_mp1    3.0N1   -5.0  IION_LOBE  MAG-2   EDI-05  M1    STD-NM1-#  NLOW-#   NBR-basic    0.04828
                                          ic    -3.5                      EDI-13                                         0.07460
                                          ic    -3.0                                                HIGH                  0.08337
                                       4.0B1    -2.0              MAG-5           M7    STD-BM1-#            HBR-basic    0.10091
                                          ic     0.0                      EDI-05                                         0.13600
                                          ic    +1.0                                                LOW                   0.15354
                                       3.0N1     2.0                                M1    STD-NM1-#            NBR-basic    0.17109
                                          ic     2.2              SW-2                                                    0.17500
                                          ic    +3.0  IION_SW                                                            0.18863
                                          ic     3.5                      EDI-13                                         0.19740
!                                                                                                    acquisition end: 0.22372
!
   71b          6N            T_mp2    6.0N1   -2.5  IION_LOBE  SW-2    EDI-05  M1    STD-NM1-#  LOW      NBR-basic    0.83314
                                          ic    -2.0              MAG-5                                                   0.84200
                                          ic    -1.0                                                HIGH                  0.85946
                                          ic     0.5                      EDI-13                                         0.88577
                                          ic    +2.0              MAG-2                                                   0.91209
```

```
                                        ic    +3.0                                                  NLOW-#                  0.92963
!                                                                                                         acquisition end: 0.93840
!
   72a  11:50  6N              T_mp1    6.0N1   -3.0   IION_LOBE  MAG-2   EDI-05  M1     STD-NM1-#   HIGH     NBR-basic    0.08337
                                        ic      -2.0              MAG-5                                                        0.10091
                                        ic       0.0                      EDI-13                                             0.13600
                                        ic      +1.0                                                   LOW                   0.15354
                                        ic       2.3              SW-2                                                       0.17550
!                                                                                                         acquisition end: 0.18863
!
   72b  11:37  3N+4B+3N        T_mp2    3.0N1   -5.0   IION_SW    SW-2    EDI-05  M1     STD-NM1-#   NLOW-#   NBR-basic    0.78928
                               T_bs2       ic   -1.0                                                   LOW                   0.78946
                               T_mp2       ic   -3.5                      EDI-13                                             0.81560
                                           ic   -3.0   IION_LOBE                                                             0.82437
                                      4.0B1    -2.0              MAG-5           M7     STD-BM1-#            HBR-basic    0.84191
                                        ic      -1.0                                                   HIGH                  0.85946
                                        ic       0.0                      EDI-05                                             0.87700
                                      3.0N1      2.0              MAG-2           M1     STD-NM1-#            NBR-basic    0.91209
                                        ic      +3.0                                                   NLOW-#                0.92963
                                        ic       3.5                      EDI-13                                             0.93840
!                                                                                                         acquisition end: 0.96472
!
   73a+ 11:41  18N             nper    18.0N1  -18.0   IION_SW    SW-3    EDI-05  M1     STD-NM1-#   NLOW-#   NBR-B/L-#    0.68421
                                        ic     -15.0                      EDI-13                                             0.73684
                               T_bs2       ic   -3.0              SW-2                                                       0.75437
                                           ic   -1.0                                                   LOW                   0.78946
                               T_mp2       ic   -3.0   IION_LOBE                                                             0.82437
                                           ic   -2.0              MAG-5   EDI-05                                             0.84200
                               T_mp2       ic   -1.0                                                   HIGH                  0.85946
                                           ic   +2.0              MAG-2                                                      0.91209
                                           ic   +3.0                                                   NLOW-#                0.92963
                               nper        ic   -3.0                      EDI-13                                             0.94737
                                           ic   -2.0                                                   HIGH                  0.96491
!                                                                                                         acquisition end: 1.00000
!
   74a- 11:32  30N             peri    30.0N1    0.0              MAG-2   EDI-05  M1     STD-NM1-#            NBR-basic    0.00000
                                        ic      +0.5                                                   HIGH                  0.00877
```

					ic	+2.0	IION_LOBE					NLOW-#		0.03509
					ic	3.0			EDI-13					0.05263
				T_mp1	ic	-3.0						HIGH		0.08537
					ic	-2.0		MAG-5						0.10291
					ic	+1.0						LOW		0.15554
				peri	ic	9.0			EDI-05					0.15789
				T_mp1	ic	2.3		SW-2						0.17750
					ic	+3.0	IION_SW							0.19063
				T_bs1	ic	+1.0						NLOW-#		0.23454
				peri	ic	15.0			EDI-13					0.26316
				T_bs1	ic	+3.0		SW-3						0.26963
				peri	ic	21.0			EDI-05					0.36842
					ic	27.0			EDI-13					0.47368
!													acquisition end:	0.52632
!														
$	75a	11:22	1N+1.5B+8N	peri	1.0N1	0.0		MAG-2	EDI-05	M1	STD-NM1-#		NBR-basic	0.00000
					ic	+0.5						HIGH		0.00877
					1.5B1	1.0				M7	STD-BM1-#		HBR-basic	0.01754
					ic	+2.0	IION_LOBE					NLOW-#		0.03509
					8.0N1	2.5				M1	STD-NM1-#		NBR-basic	0.04386
					ic	2.7			EDI-13					0.04737
				T_mp1	ic	-3.0						HIGH		0.08537
					ic	-2.0		MAG-5						0.10291
				peri	ic	6.3			EDI-05					0.11053
				T_mp1	ic	+1.0						LOW		0.15554
					ic	2.3		SW-2						0.17800
!													acquisition end:	0.18421
!														
	75b		1.5N+1.5B+1.5N	apo	1.5N1	-1.5	IION_SW	SW-3	EDI-05	M1	STD-NM1-#	NLOW-#	NBR-basic	0.47368
					ic	-0.7			EDI-13					0.48684
					1.5B1	0.0				M7	STD-BM1-#		HBR-basic	0.50000
					ic	0.8			EDI-05					0.51316
					1.5N1	1.5				M1	STD-NM1-#		NBR-basic	0.52632
					ic	2.3			EDI-13					0.53947
!													acquisition end:	0.55263
!														
	75c		6N	T_mp2	6.0N1	-2.0	IION_LOBE	SW-2	EDI-05	M1	STD-NM1-#	LOW	NBR-basic	0.84291

```
                                    ic    -1.9             MAG-5                                                    0.84400
                                    ic    -1.0                                                 HIGH                0.86046
                                    ic     1.0                     EDI-13                                          0.89554
                                    ic    +2.0             MAG-2                                                    0.91309
                                    ic    +3.0                                                 NLOW-#              0.93063
!                                                                                                 acquisition end: 0.94818
!
   76a+ 11:12  48N          nper    48.0N1   -48.0   IION_LOBE MAG-5   EDI-05  M1     STD-NM1-#  LOW      NBR-basic  0.15789
                            T_mp1       ic     2.3             SW-2                                                 0.17850
                                        ic    +3.0   IION_SW                                                       0.19063
                            nper        ic   -45.0                     EDI-13                                      0.21053
                            T_bs1       ic    +1.0                                                 NLOW-#         0.23654
                                        ic    +3.0             SW-3                                                0.27163
                            nper        ic   -39.0                     EDI-05                                      0.31579
                                        ic   -33.0                     EDI-13                                      0.42105
                                        ic   -27.0                     EDI-05                                      0.52632
                                        ic   -21.0                     EDI-13                                      0.63158
                                        ic   -15.0                     EDI-05                                      0.73684
                            T_bs2       ic    -3.0             SW-2                                                0.75637
                                        ic    -1.0                                                 LOW            0.79146
                            T_mp2       ic    -3.0   IION_LOBE                                                     0.82537
                            nper        ic    -9.0                     EDI-13                                      0.84211
                            T_mp2       ic    -2.0             MAG-5                                               0.84350
                                        ic    -1.0                                                 HIGH           0.86046
                                        ic    +2.0             MAG-2                                               0.91309
                                        ic    +3.0                                                 NLOW-#         0.93063
                            nper        ic    -3.0                     EDI-05                                      0.94737
                                        ic    -2.0                                                 HIGH           0.96491
!                                                                                                 acquisition end: 1.00000
!
   77a: 11:03  57N          peri    57.0N1     0.0             MAG-2   EDI-05  M1     STD-NM1-#          NBR-basic  0.00000
                                        ic    +0.5                                                 HIGH           0.00877
                                        ic    +2.0   IION_LOBE                                       NLOW-#         0.03509
                                        ic     2.8                     EDI-13                                      0.05000
                            T_mp1       ic    -3.0                                                 HIGH           0.08737
                                        ic    -2.0             MAG-5                                               0.10491
                            peri        ic     8.6                     EDI-05                                      0.15000
```

```
                          T_mp1       ic    +1.0                                          LOW                    0.15754
                                      ic     2.3              SW-2                                               0.18000
                                      ic    +3.0   IION_SW                                                       0.19263
                          T_bs1       ic    +1.0                                          NLOW-#                 0.23754
                          peri        ic    14.3                     EDI-13                                    0.25000
                          T_bs1       ic    +3.0             SW-3                                              0.27263
                          peri        ic    19.9                     EDI-05                                    0.35000
                                      ic    25.6                     EDI-13                                    0.45000
                          apo         ic     0.0   CAL_MODE                                                     0.50000
                          peri        ic    31.3                     EDI-05                                    0.55000
                                      ic    37.0                     EDI-13                                    0.65000
                                      ic    42.8                     EDI-05                                    0.75000
                          T_bs2       ic    -3.0             SW-2                                              0.75737
                                      ic    -1.0                                          LOW                    0.79246
                          T_mp2       ic    -3.0   IION_LOBE                                                     0.82537
                                      ic    -1.9             MAG-5                                             0.84400
                          peri        ic    48.4                     EDI-13                                    0.85000
                          T_mp2       ic    -1.0                                          HIGH                   0.86046
                                      ic    +2.0             MAG-2                                             0.91309
                                      ic    +3.0                                          NLOW-#                 0.93063
                          peri        ic    54.1                     EDI-05                                    0.95000
                          nper        ic    -2.0                                          HIGH                   0.96491
!                                                                                              acquisition end: 1.00000
!
  78a- 10:54  22N         peri    22.0N1     0.0             MAG-2   EDI-05  M1    STD-NM1-#          NBR-basic    0.00000
                                      ic    +0.5                                          HIGH                   0.00877
                                      ic    +2.0   IION_LOBE                              NLOW-#                 0.03509
                                      ic     2.8                     EDI-13                                    0.04825
                          T_mp1       ic    -3.0                                          HIGH                   0.08837
                                      ic    -2.0             MAG-5                                             0.10591
                          peri        ic     8.3                     EDI-05                                    0.14474
                          T_mp1       ic    +1.0                                          LOW                    0.15854
                                      ic     2.3              SW-2                                               0.18200
                                      ic    +3.0   IION_SW                                                       0.19363
                          T_bs1       ic    +1.0                                          NLOW-#                 0.24054
                          peri        ic    13.8                     EDI-13                                    0.24123
                          T_bs1       ic    +3.0             SW-3                                              0.27563
```

```
                          peri        ic    19.3                    EDI-05                                                    0.33772
!                                                                                                          acquisition end: 0.38596
!
   79a  10:44  6N+4B+6N   T_bs1    6.0N1    -8.0   IION_LOBE  MAG-2   EDI-05  M1     STD-NM1-#   NLOW-#   NBR-basic    0.08365
                          T_mp1       ic    -3.0                                                    HIGH                  0.08937
                                      ic    -2.0              MAG-5                                                       0.10691
                          T_bs1       ic    -5.0                      EDI-13                                            0.13628
                          T_mp1       ic    +1.0                                                    LOW                   0.15954
                                      ic     2.3              SW-2                                                        0.18300
                          T_bs1    4.0B1    -2.0                                        M7     STD-BM1-#            HBR-basic    0.18891
                          T_mp1       ic    +3.0   IION_SW                                                                0.19463
                          T_bs1       ic     0.0                      EDI-05                                            0.22400
                                      ic    +1.0                                                    NLOW-#                0.24154
                                   6.0N1     2.0                                        M1     STD-NM1-#            NBR-basic    0.25909
                                      ic    +3.0              SW-3                                                        0.27663
                                      ic     5.0                      EDI-13                                            0.31172
!                                                                                                          acquisition end: 0.36435
!
   80a  10:35  6N+4B+6N   T_bs1    6.0N1    -7.5   IION_LOBE  MAG-2   EDI-05  M1     STD-NM1-#   HIGH     NBR-basic    0.09442
                          T_mp1       ic    -2.0              MAG-5                                                       0.10691
                          T_bs1       ic    -4.5                      EDI-13                                            0.14705
                          T_mp1       ic    +1.0                                                    LOW                   0.15954
                                      ic     2.4              SW-2                                                        0.18400
                                      ic    +3.0   IION_SW                                                                0.19463
                          T_bs1    4.0B1    -1.5                                        M7     STD-BM1-#            HBR-basic    0.19968
                                      ic     0.5                      EDI-05                                            0.23477
                                      ic    +1.0                                                    NLOW-#                0.24354
                                   6.0N1     2.5                                        M1     STD-NM1-#            NBR-basic    0.26986
                                      ic    +3.0              SW-3                                                        0.27863
                                      ic     5.5                      EDI-13                                            0.32249
!                                                                                                          acquisition end: 0.37512
!
  81a+ 10:25  54N         nper    54.0N1   -54.0   IION_LOBE  MAG-2   EDI-05  M1     STD-NM1-#   NLOW-#   NBR-basic    0.05263
                          T_mp1       ic    -3.0                                                    HIGH                  0.09137
                          nper        ic   -51.0                      EDI-13                                            0.10526
                          T_mp1       ic    -2.0              MAG-5                                                       0.10891
                                      ic    +1.0                                                    LOW                   0.16154
```

```
                          ic     2.5              SW-2                                            0.18700
                          ic    +3.0   IION_SW                                                    0.19663
               nper       ic   -45.0                     EDI-05                                   0.21053
               T_bs1      ic    +1.0                                           NLOW-#             0.24754
                          ic    +3.0              SW-3                                            0.28263
               nper       ic   -39.0                     EDI-13                                   0.31579
                          ic   -33.0                     EDI-05                                   0.42105
                          ic   -27.0                     EDI-13                                   0.52632
                          ic   -21.0                     EDI-05                                   0.63158
                          ic   -15.0                     EDI-13                                   0.73684
               T_bs2      ic    -3.0              SW-2                                            0.75637
                          ic    -1.0                                           LOW                0.79146
               T_mp2      ic    -3.0   IION_LOBE                                                  0.82437
               nper       ic    -9.0                     EDI-05                                   0.84211
               T_mp2      ic    -1.9              MAG-5                                           0.84300
                          ic    -1.0                                           HIGH               0.85946
                          ic    +2.0              MAG-2                                           0.91209
                          ic    +3.0                                           NLOW-#             0.92963
               nper       ic    -3.0                     EDI-13                                   0.94737
                          ic    -2.0                                           HIGH               0.96491
!                                                                                 acquisition end: 1.00000
!
  82a- 10:15  20N      peri    20.0N1     0.0              MAG-2  EDI-05  M1   STD-NM1-#      NBR-B/L-#  0.00000
                          ic    +0.5                                           HIGH               0.00877
                          ic    +2.0   IION_LOBE                               NLOW-#             0.03509
                          ic     3.3                     EDI-13                                   0.05877
               T_mp1      ic    -3.0                                           HIGH               0.09237
                          ic    -2.0              MAG-5                                           0.10991
                          ic    +1.0                                           LOW                0.16254
               peri       ic    10.1                     EDI-05                                   0.17632
               T_mp1      ic     2.5              SW-2                                            0.18800
                          ic    +3.0   IION_SW                                                    0.19763
               T_bs1      ic    +1.0                                           NLOW-#             0.24854
                          ic    +3.0              SW-3                                            0.28363
               peri       ic    16.8                     EDI-13                                   0.29386
                          ic    19.9   CAL_MODE                                                   0.34942
!                                                                                 acquisition end: 0.35088
```

```
!
$  83a  10:06  3N+4B+3N        T_mp1    3.0N1   -6.0   IION_LOBE  MAG-2   EDI-05  M1     STD-NM1-#   NLOW-#   NBR-basic    0.04074
                                         ic     -4.5                      EDI-13                                           0.06705
                                       4.0B1    -3.0                                M7     STD-BM1-#   HIGH     HBR-basic    0.09337
                                         ic     -2.0              MAG-5                                                     0.11091
                                         ic     -1.0                      EDI-05                                           0.12846
                                       3.0N1     1.0                                M1     STD-NM1-#   LOW      NBR-basic    0.16354
                                         ic      2.5              SW-2    EDI-13                                           0.18986
                                         ic     +3.0   IION_SW                                                            0.19863
!                                                                                                      acquisition end: 0.21618
!
   83b         6N              T_mp2    6.0N1   -2.0   IION_LOBE  MAG-5    EDI-05  M1     STD-NM1-#    LOW     NBR-basic    0.84291
                                         ic     -1.0                                                      HIGH                0.86046
                                         ic      1.0                      EDI-13                                           0.89554
                                         ic     +2.0              MAG-2                                                     0.91309
                                         ic     +3.0                                                      NLOW-#              0.93063
!                                                                                                      acquisition end: 0.94818
!
   84a  09:56  3N+4B+3N        T_mp1    3.0N1   -5.0   IION_LOBE  MAG-2   EDI-05  M1     STD-NM1-#   NLOW-#   NBR-basic    0.06028
                                         ic     -3.5                      EDI-13                                           0.08660
                                         ic     -3.0                                                      HIGH                0.09537
                                       4.0B1    -2.0              MAG-5           M7     STD-BM1-#            HBR-basic    0.11291
                                         ic     -1.9                                                                STA:CAL-H    0.11467
                                         ic      0.0                      EDI-05                                           0.14800
                                         ic     +1.0                                                      LOW                 0.16554
                                       3.0N1     2.0                                M1     STD-NM1-#            NBR-basic    0.18309
                                         ic      2.5              SW-2                                                      0.19250
                                         ic     +3.0   IION_SW                                                            0.20063
                                         ic      3.5                      EDI-13                                           0.20940
!                                                                                                      acquisition end: 0.23572
!
   84b         6N              T_mp2    6.0N1   -2.0   IION_LOBE  MAG-5   EDI-05  M1     STD-NM1-#   LOW      NBR-basic    0.84191
                                         ic     -1.0                                                      HIGH                0.85946
                                         ic      1.0                      EDI-13                                           0.89454
                                         ic     +2.0              MAG-2                                                     0.91209
                                         ic     +3.0                                                      NLOW-#              0.92963
!                                                                                                      acquisition end: 0.94718
```

```
!
   85a  09:47  16N              peri    16.0N1    +2.0              MAG-2   EDI-05  M1     STD-NM1-#   NLOW-#   NBR-basic    0.03509
                                          ic      4.7                      EDI-13                                           0.08158
                               T_mp1        ic    -3.0                                                HIGH                 0.09737
                                            ic    -2.0              MAG-5                                                  0.11491
                                            ic    +1.0                                                LOW                  0.16754
                               peri         ic    10.0                       EDI-05                                      0.17456
                               T_mp1        ic     2.6              SW-2                                                   0.19500
                                            ic    +3.0    IION_SW                                                         0.20263
                               T_bs1        ic    +1.0                                                NLOW-#               0.25754
                               peri         ic    15.3                       EDI-13                                      0.26754
                               T_bs1        ic    +3.0              SW-3                                                   0.29263
!                                                                                                      acquisition end: 0.31579
!
   85b+        1N               nper     1.0N1    -1.0    off       MAG-2   EDI-05  M1     STD-NM1-#   HIGH     NBR-basic    0.98246
!                                                                                                      acquisition end: 1.00000
!
   86a- 09:37  1.5N             peri     1.5N1     0.0              MAG-2   EDI-05  M1     STD-NM1-#            NBR-basic    0.00000
                                            ic    +0.5                                                HIGH                 0.00877
!                                                                                                      acquisition end: 0.02632
!
   86b         5N+4B+4.5N       T_bs1    5.0N1    -7.0    IION_LOBE MAG-5   EDI-05  M1     STD-NM1-#   HIGH     NBR-basic    0.12119
                                            ic    -4.5                       EDI-13                                      0.16505
                               T_mp1        ic    +1.0                                                LOW                  0.16754
                                            ic     2.7              SW-2                                                   0.19700
                                            ic    +3.0    IION_SW                                                         0.20263
                               T_bs1    4.0B1    -2.0                                M7     STD-BM1-#            HBR-basic    0.20891
                                            ic     0.0                       EDI-05                                      0.24400
                                            ic    +1.0                                                NLOW-#               0.26154
                                        4.5N1     2.0                                M1     STD-NM1-#            NBR-basic    0.27909
                                            ic    +3.0              SW-3                                                   0.29663
                                            ic     4.3                       EDI-13                                      0.31856
!                                                                                                      acquisition end: 0.35804
!
   87a  09:28  26N              peri    26.0N1     2.0              MAG-2   EDI-05  M1     STD-NM1-#   NLOW-#   NBR-basic    0.03509
                                            ic     5.3                       EDI-13                                      0.09211
                               T_mp1        ic    -3.0                                                HIGH                 0.10037
```

```
                                        ic    -2.0             MAG-5                                                    0.11791
                                        ic    +1.0                                                  LOW                0.17054
                                        ic     2.7             SW-2                                                     0.20000
                                        ic    +3.0   IION_SW                                                           0.20563
                          peri          ic    11.8                     EDI-05                                          0.20614
                          T_bs1         ic    +1.0                                                  NLOW-#             0.26454
                                        ic    +3.0             SW-3                                                     0.29963
                          peri          ic    18.3                     EDI-13                                          0.32018
                                        ic    24.8                     EDI-05                                          0.43421
!                                                                                                  acquisition end:   0.49123
!
   87b+       1N+0.5B     nper    1.0N1   -1.5   off       MAG-2   EDI-05  M1    STD-NM1-#   HIGH    NBR-basic      0.97368
                                  0.5B1   -0.5                                  M7    STD-BM1-#         HBR-basic      0.99123
!                                                                                                  acquisition end:   1.00000
!
   88a- 09:18 1B+8N           peri    1.0B1    0.0             MAG-2   EDI-05  M7    STD-BM1-#         HBR-basic      0.00000
                                        ic    +0.5                                                  HIGH               0.00877
                                  8.0N1    1.0                                   M1    STD-NM1-#         NBR-basic      0.01754
                                        ic    +2.0   IION_LOBE                                       NLOW-#             0.03509
                                        ic     5.0                     EDI-13                                          0.08772
                          T_mp1         ic    -3.0                                                  HIGH               0.10137
                                        ic    -2.0             MAG-5                                                    0.11891
!                                                                                                  acquisition end:   0.15789
!
   88b        1.5N+1.5B+1.5N apo      1.5N1   -2.0   IION_SW   SW-3    EDI-05  M1    STD-NM1-#   NLOW-#  NBR-B/L-#      0.46491
                                        ic    -1.2                     EDI-13                                          0.47807
                                  1.5B1   -0.5                                  M7    STD-BM1-#         HBR-B/L-#      0.49123
                                        ic     0.2                     EDI-05                                          0.50439
                                  1.5N1    1.0                                   M1    STD-NM1-#         NBR-B/L-#      0.51754
                                        ic     1.7                     EDI-13                                          0.53070
!                                                                                                  acquisition end:   0.54386
!
   88c        6N          T_mp2   6.0N1   -2.0   IION_LOBE MAG-5   EDI-05  M1    STD-NM1-#   LOW     NBR-basic      0.84091
                                        ic    -1.0                                                  HIGH               0.85846
                                        ic     1.0                     EDI-13                                          0.89354
                                        ic    +2.0             MAG-2                                                    0.91109
                                        ic    +3.0                                                  NLOW-#             0.92863
```

```
!                                                                                                    acquisition end: 0.94618
!
   89a+ 09:08  50N             nper    50.0N1   -50.0   IION_LOBE  MAG-5   EDI-05  M1     STD-NM1-#   HIGH     NBR-basic    0.12281
                               T_mp1       ic    +1.0                                                LOW                   0.17254
                               nper        ic   -46.8                   EDI-13                                             0.17807
                               T_mp1       ic     2.9              SW-2                                                    0.20600
                                           ic    +3.0   IION_SW                                                           0.20763
                               T_bs1       ic    +1.0                                                NLOW-#                0.27454
                               nper        ic   -40.5                   EDI-05                                             0.28860
                               T_bs1       ic    +3.0              SW-3                                                    0.30963
                               nper        ic   -34.3                   EDI-13                                             0.39912
                                           ic   -27.9                   EDI-05                                             0.50965
                                           ic   -21.6                   EDI-13                                             0.62018
                                           ic   -15.3                   EDI-05                                             0.73070
                               T_bs2       ic    -3.0              SW-2                                                    0.74537
                                           ic    -1.0                                                LOW                   0.78046
                               T_mp2       ic    -3.0   IION_LOBE                                                         0.82437
                                           ic    -2.3              MAG-5                                                   0.83750
                               nper        ic    -9.0                   EDI-13                                             0.84123
                               T_mp2       ic    -1.0                                                HIGH                  0.85946
                                           ic    +2.0              MAG-2                                                   0.91209
                                           ic    +3.0                                                NLOW-#                0.92963
                               nper        ic    -2.8                   EDI-05                                             0.95175
                                           ic    -2.0                                                HIGH                  0.96491
!                                                                                                    acquisition end: 1.00000
!
$  90a- 08:59  18N             peri    18.0N1    0.0              MAG-2   EDI-05  M1     STD-NM1-#            NBR-basic    0.00000
                                           ic    +0.5                                                HIGH                  0.00877
                                           ic    +2.0   IION_LOBE                                     NLOW-#                0.03509
                                           ic     3.0                   EDI-13                                             0.05263
                               T_mp1       ic    -3.0                                                HIGH                  0.10437
                                           ic    -2.0              MAG-5                                                   0.12191
                               peri        ic     9.0                   EDI-05                                             0.15789
                               T_mp1       ic    +1.0                                                LOW                   0.17454
                                           ic     3.0              SW-2                                                    0.20900
                                           ic    +3.0   IION_SW                                                           0.20963
                               peri        ic    15.0                   EDI-13                                             0.26316
```

				T_bs1	ic	+1.0						NLOW-#		0.27854
					ic	+3.0		SW-3						0.31363
!													acquisition end:	0.31579
!														
	91a	08:49	8N+4B+4N	T_bs1	8.0N1	-9.5	IION_LOBE	MAG-2	EDI-05	M1	STD-NM1-#	NLOW-#	NBR-basic	0.10033
				T_mp1	ic	-3.0						HIGH		0.10737
					ic	-2.0		MAG-5						0.12491
				T_bs1	ic	-5.5			EDI-13					0.17051
				T_mp1	ic	+1.0						LOW		0.17754
					ic	+3.0	IION_SW							0.21263
					ic	3.0		SW-2						0.21350
				T_bs1	4.0B1	-1.5				M7	STD-BM1-#		HBR-basic	0.24068
					ic	0.5			EDI-05					0.27577
					ic	+1.0						NLOW-#		0.28454
					4.0N1	2.5				M1	STD-NM1-#		NBR-basic	0.31086
					ic	+3.0		SW-3						0.31963
					ic	4.5			EDI-13					0.34595
!													acquisition end:	0.38104
!														
	92a+	08:40	55N	nper	55.0N1	-55.0	IION_LOBE	MAG-2	EDI-05	M1	STD-NM1-#	NLOW-#	NBR-basic	0.03509
				nper	ic	-52.0			EDI-13					0.08860
				T_mp1	ic	-3.0						HIGH		0.10937
					ic	-2.0		MAG-5						0.12691
					ic	+1.0						LOW		0.17954
				nper	ic	-45.9			EDI-05					0.19561
				T_mp1	ic	+3.0	IION_SW							0.21463
					ic	3.2		SW-2						0.21750
				T_bs1	ic	+1.0						NLOW-#		0.29054
				nper	ic	-39.8			EDI-13					0.30263
				T_bs1	ic	+3.0		SW-3						0.32563
				nper	ic	-33.7			EDI-05					0.40965
					ic	-27.5			EDI-13					0.51667
					ic	-21.5			EDI-05					0.62368
					ic	-15.4			EDI-13					0.73070
				T_bs2	ic	-3.0		SW-2						0.73737
					ic	-1.0						LOW		0.77246
				T_mp2	ic	-3.0	IION_LOBE							0.82237

				ic	-2.4		MAG-5						0.83250
			nper	ic	-9.3			EDI-05					0.83772
			T_mp2	ic	-1.0						HIGH		0.85746
				ic	+2.0		MAG-2						0.91009
				ic	+3.0						NLOW-#		0.92763
			nper	ic	-3.2			EDI-13					0.94474
				ic	-2.0						HIGH		0.96491
!												acquisition end:	1.00000
!													
93a-	08:30	18N	peri	18.0N1	0.0		MAG-2	EDI-05	M1	STD-NM1-#		NBR-basic	0.00000
				ic	+0.5						HIGH		0.00877
				ic	+2.0	IION_LOBE					NLOW-#		0.03509
				ic	3.0			EDI-13					0.05263
			T_mp1	ic	-3.0						HIGH		0.11137
				ic	-2.0		MAG-5						0.12891
			peri	ic	9.0			EDI-05					0.15789
			T_mp1	ic	+1.0						LOW		0.18154
				ic	+3.0	IION_SW							0.21663
				ic	3.3		SW-2						0.22150
			peri	ic	15.0			EDI-13					0.26316
			T_bs1	ic	+1.0						NLOW-#		0.29654
			peri	ic	17.9	CAL_MODE							0.31433
!												acquisition end:	0.31579
!													
94a	08:20	4N+4B+4N	T_mp1	4.0N1	-6.0	IION_LOBE	MAG-2	EDI-05	M1	STD-NM1-#	NLOW-#	NBR-basic	0.06174
				ic	-4.0			EDI-13					0.09682
				ic	-3.0						HIGH		0.11437
				4.0B1	-2.0		MAG-5		M7	STD-BM1-#		HBR-basic	0.13191
				ic	0.0			EDI-05					0.16700
				ic	+1.0						LOW		0.18454
				4.0N1	2.0				M1	STD-NM1-#		NBR-basic	0.20209
				ic	+3.0	IION_SW							0.21963
				ic	3.4		SW-2						0.22650
				ic	4.0			EDI-13					0.23718
!												acquisition end:	0.27226
!													
94b+		2N	nper	2.0N1	-2.0	off	MAG-2	EDI-05	M1	STD-NM1-#	HIGH	NBR-basic	0.96491

```
!                                                                                                                    acquisition end: 1.00000
!
   95a- 08:10  2N              peri      2.0N1     0.0              MAG-2   EDI-05  M1      STD-NM1-#            NBR-basic     0.00000
                                           ic     +0.5                                                 HIGH                    0.00877
!                                                                                                                    acquisition end: 0.03509
!
   95b         4N+4B+4N        T_bs1     4.0N1    -6.0   IION_LOBE MAG-5   EDI-05  M1      STD-NM1-#    LOW     NBR-basic     0.18874
                               T_mp1        ic    +3.0   IION_SW                                                                  0.22163
                               T_bs1        ic    -4.0                     EDI-13                                              0.22382
                               T_mp1        ic     3.6              SW-2                                                        0.23150
                               T_bs1     4.0B1    -2.0                                      M7      STD-BM1-#            HBR-basic     0.25891
                                            ic     0.0                     EDI-05                                              0.29400
                                            ic    +1.0                                                 NLOW-#                  0.31154
                                         4.0N1     2.0                                      M1      STD-NM1-#            NBR-basic     0.32909
                                            ic    +3.0              SW-3                                                        0.34663
                                            ic     4.0                     EDI-13                                              0.36418
!                                                                                                                    acquisition end: 0.39926
!
   96a+ 08:01  54N             nper     54.0N1   -54.0   IION_LOBE MAG-2   EDI-05  M1      STD-NM1-#    NLOW-#  NBR-B/L-#     0.05263
                                            ic   -51.0                     EDI-13                                              0.10526
                               T_mp1        ic    -3.0                                                 HIGH                    0.12037
                                            ic    -2.0              MAG-5                                                       0.13791
                                            ic    +1.0                                                 LOW                     0.19054
                               nper         ic   -45.0                     EDI-05                                              0.21053
                               T_mp1        ic    +3.0   IION_SW                                                                  0.22563
                                            ic     3.7              SW-2                                                        0.23850
                               nper         ic   -39.0                     EDI-13                                              0.31579
                               T_bs1        ic    +1.0                                                 NLOW-#                  0.32154
                                            ic    +3.0              SW-3                                                        0.35663
                               nper         ic   -33.0                     EDI-05                                              0.42105
                                            ic   -27.0                     EDI-13                                              0.52632
                                            ic   -21.0                     EDI-05                                              0.63158
                               T_bs2        ic    -3.0              SW-2                                                        0.72237
                               nper         ic   -15.0                     EDI-13                                              0.73684
                               T_bs2        ic    -1.0                                                 LOW                     0.75746
                               T_mp2        ic    -3.0   IION_LOBE                                                                0.82037
                                            ic    -2.8              MAG-5                                                       0.82400
```

```
                         nper      ic    -9.0                     EDI-05                                                 0.84211
                         T_mp2     ic    -1.0                                                   HIGH                     0.85546
                                   ic    +2.0              MAG-2                                                         0.90809
                                   ic    +3.0                                                   NLOW-#                   0.92563
                         nper      ic    -3.0                     EDI-13                                                 0.94737
                                   ic    -2.0                                                   HIGH                     0.96491
!                                                                                                    acquisition end: 1.00000
!
 97a- 07:51  16N         peri    16.0N1   0.0              MAG-2  EDI-05  M1   STD-NM1-#                 NBR-basic       0.00000
                                   ic    +0.5                                                   HIGH                     0.00877
                                   ic    +2.0  IION_LOBE                                        NLOW-#                   0.03509
                                   ic     2.7                     EDI-13                                                 0.04649
                         T_mp1     ic    -3.0                                                   HIGH                     0.12237
                         peri      ic     8.0                     EDI-05                                                 0.13947
                         T_mp1     ic    -2.0              MAG-5                                                         0.13991
                                   ic    +1.0                                                   LOW                      0.19254
                                   ic    +3.0  IION_SW                                                                   0.22763
                         peri      ic    13.3                     EDI-13                                                 0.23246
                         T_mp1     ic     3.9              SW-2                                                          0.24400
!                                                                                                    acquisition end: 0.28070
!
 98a  07:41  6N+4B+6N    T_mp1    6.0N1  -7.7  IION_LOBE   MAG-2  EDI-05  M1   STD-NM1-#  NLOW-#     NBR-basic       0.04291
                                   ic    -4.7                     EDI-13                                                 0.09554
                                   ic    -3.0                                                   HIGH                     0.12537
                                   ic    -2.0              MAG-5                                                         0.14291
                                  4.0B1  -1.7                             M7   STD-BM1-#                 HBR-basic       0.14818
                                   ic     0.3                     EDI-05                                                 0.18326
                                   ic    +1.0                                                   LOW                      0.19554
                                  6.0N1   2.3                             M1   STD-NM1-#                 NBR-basic       0.21835
                                   ic    +3.0  IION_SW                                                                   0.23063
                                   ic     4.1              SW-2                                                          0.25050
                                   ic     5.3                     EDI-13                                                 0.27098
                                   ic     8.2  CAL_MODE                                                                  0.32215
!                                                                                                    acquisition end: 0.32361
!
 99a  07:32  28N         peri    28.0N1   0.0              MAG-2  EDI-05  M1   STD-NM1-#                 NBR-basic       0.00000
                                   ic    +0.5                                                   HIGH                     0.00877
```

```
                                  ic   +2.0  IION_LOBE                                                NLOW-#               0.03509
                                  ic    2.8                         EDI-13                                                 0.04912
                        T_mp1     ic   -3.0                                                           HIGH                 0.12937
                                  ic   -2.0               MAG-5                                                            0.14691
                        peri      ic    8.4                         EDI-05                                                 0.14737
                        T_mp1     ic   +1.0                                                           LOW                  0.19954
                                  ic   +3.0  IION_SW                                                                       0.23463
                        peri      ic   14.0                         EDI-13                                                 0.24561
                        T_mp1     ic    4.4               SW-2                                                             0.25900
                        peri      ic   19.6                         EDI-05                                                 0.34386
                        T_bs1     ic   +1.0                                                           NLOW-#               0.35354
                                  ic   +3.0               SW-3                                                             0.38863
                        peri      ic   25.2                         EDI-13                                                 0.44211
                                  ic   27.9  CAL_MODE                                                                      0.48977
!                                                                                                          acquisition end: 0.49123
!
  99b+       1.5N       nper   1.5N1   -1.5  off          MAG-2    EDI-05  M1    STD-NM1-#   HIGH      NBR-basic      0.97368
!                                                                                                          acquisition end: 1.00000
!
 100a- 07:22 1.5B+1.5N  peri   1.5B1    0.0               MAG-2    EDI-05  M7    STD-BM1-#             HBR-basic      0.00000
                                  ic   +0.5                                                           HIGH                 0.00877
                                  ic    0.7                         EDI-13                                                 0.01228
                               1.5N1    1.5                                 M1    STD-NM1-#             NBR-basic      0.02632
                                  ic    2.0  IION_LOBE              EDI-05                            NLOW-#               0.03509
                                  ic    2.9  CAL_MODE                                                                      0.05117
!                                                                                                          acquisition end: 0.05263
!
 100b        14N        T_bs1  14.0N1  -2.0  IION_SW      SW-2     EDI-05  M1    STD-NM1-#   LOW       NBR-basic      0.31491
                                  ic   +1.0                                                           NLOW-#               0.36754
                                  ic    1.5                         EDI-13                                                 0.37632
                                  ic   +3.0               SW-3                                                             0.40263
                                  ic    8.5                         EDI-05                                                 0.49912
!                                                                                                          acquisition end: 0.56053
!
 100c+       1.5N       nper   1.5N1   -1.5  off          MAG-2    EDI-05  M1    STD-NM1-#   HIGH      NBR-basic      0.97368
!                                                                                                          acquisition end: 1.00000
!
```

```
  101a- 07:12  1.5B+25.5N       peri     1.5B1     0.0             MAG-2   EDI-05  M7     STD-BM1-#           HBR-basic    0.00000
                                          ic      +0.5                                                HIGH                 0.00877
                                          ic       0.7                        EDI-13                                       0.01228
                                       25.5N1      1.5                                   M1     STD-NM1-#           NBR-basic    0.02632
                                          ic      +2.0   IION_LOBE                                    NLOW-#               0.03509
                                          ic       2.5                        EDI-05                                       0.04386
                                T_mp1     ic      -3.0                                                HIGH                 0.13737
                                peri      ic       8.5                        EDI-13                                       0.14912
                                T_mp1     ic      -2.0             MAG-5                                                  0.15491
                                          ic      +1.0                                                LOW                  0.20754
                                          ic      +3.0   IION_SW                                                         0.24263
                                peri      ic      14.5                        EDI-05                                       0.25439
                                T_mp1     ic       5.0             SW-2                                                   0.27750
                                peri      ic      20.5                        EDI-13                                       0.35965
                                T_bs1     ic      +1.0                                                NLOW-#               0.38254
                                          ic      +3.0             SW-3                                                   0.41763
!                                                                                                      acquisition end: 0.47368
!
  101b+        1.5N             nper     1.5N1    -1.5   off      MAG-2   EDI-05  M1     STD-NM1-#   HIGH    NBR-basic    0.97368
!                                                                                                      acquisition end: 1.00000
!
$ 102a: 07:03  57N              peri    57.0N1     0.0             MAG-2   EDI-05  M1     STD-NM1-#           NBR-basic    0.00000
                                          ic      +0.5                                                HIGH                 0.00877
                                          ic      +2.0   IION_LOBE                                    NLOW-#               0.03509
                                          ic       2.8                        EDI-13                                       0.05000
                                T_mp1     ic      -3.0                                                HIGH                 0.14037
                                peri      ic       8.6                        EDI-05                                       0.15000
                                T_mp1     ic      -2.0             MAG-5                                                  0.15791
                                          ic      +1.0                                                LOW                  0.21054
                                          ic      +3.0   IION_SW                                                         0.24563
                                peri      ic      14.3                        EDI-13                                       0.25000
                                T_mp1     ic       5.4             SW-2                                                   0.28800
                                peri      ic      19.9                        EDI-05                                       0.35000
                                T_bs1     ic      +1.0                                                NLOW-#               0.40054
                                          ic      +3.0             SW-3                                                   0.43563
                                peri      ic      25.6                        EDI-13                                       0.45000
                                          ic      31.3                        EDI-05                                       0.55000
```

```
                        ic    37.0                      EDI-13                                 0.65000
              T_bs2     ic    -3.0                SW-2                                         0.67337
                        ic    -1.0                                               LOW           0.70846
              peri      ic    42.8                      EDI-05                                 0.75000
              T_mp2     ic    -4.0                MAG-5                                        0.79600
                        ic    -3.0   IION_LOBE                                                 0.81337
                        ic    -1.0                                               HIGH          0.84846
              peri      ic    48.4                      EDI-13                                 0.85000
              T_mp2     ic    +2.0                MAG-2                                        0.90109
                        ic    +3.0                                               NLOW-#        0.91863
              peri      ic    54.1                      EDI-05                                 0.95000
              nper      ic    -2.0                                               HIGH          0.96491
!                                                                          acquisition end: 1.00000
!
 103a: 06:53  57N     peri  57.0N1   0.0                MAG-2   EDI-05  M1  STD-NM1-#      NBR-basic  0.00000
                        ic    +0.5                                               HIGH          0.00877
                        ic    +2.0   IION_LOBE                                   NLOW-#        0.03509
                        ic     2.8                      EDI-13                                 0.05000
                        ic     4.0   CAL_MODE                                                  0.07018
              T_mp1     ic    -3.0                                               HIGH          0.14637
              peri      ic     8.6                      EDI-05                                 0.15000
              T_mp1     ic    -2.0                MAG-5                                        0.16391
                        ic    +1.0                                               LOW           0.21654
              peri      ic    14.3                      EDI-13                                 0.25000
              T_mp1     ic    +3.0   IION_SW                                                   0.25163
                        ic     5.9                SW-2                                         0.30250
              peri      ic    19.9                      EDI-05                                 0.35000
              T_bs1     ic    +1.0                                               NLOW-#        0.42354
              peri      ic    25.6                      EDI-13                                 0.45000
              T_bs1     ic    +3.0                SW-3                                         0.45863
              peri      ic    31.3                      EDI-05                                 0.55000
                        ic    37.0                      EDI-13                                 0.65000
              T_bs2     ic    -3.0                SW-2                                         0.65837
                        ic    -1.0                                               LOW           0.69346
              peri      ic    42.8                      EDI-05                                 0.75000
              T_mp2     ic    -4.4                MAG-5                                        0.78750
                        ic    -3.0   IION_LOBE                                                 0.81137
```

```
                                             ic    -1.0                                                    HIGH                           0.84646
                                   peri      ic    48.4                          EDI-13                                                   0.85000
                                   T_mp2     ic    +2.0                 MAG-2                                                             0.89909
                                             ic    +3.0                                                    NLOW-#                         0.91663
                                   peri      ic    54.1                          EDI-05                                                   0.95000
                                   nper      ic    -2.0                                                    HIGH                           0.96491
!                                                                                                               acquisition end: 1.00000
!
  104a- 06:43  17N                 peri   17.0N1    0.0                 MAG-2    EDI-05  M1    STD-NM1-#            NBR-basic        0.00000
                                             ic    +0.5                                                    HIGH                           0.00877
                                             ic    +2.0   IION_LOBE                                        NLOW-#                         0.03509
                                             ic     2.8                          EDI-13                                                   0.05000
                                             ic     8.0   CAL_MODE                                                                        0.14035
                                             ic     8.6                          EDI-05                                                   0.15000
                                   T_mp1     ic    -3.0                                                    HIGH                           0.15137
                                             ic    -2.0                 MAG-5                                                             0.16891
                                             ic    +1.0                                                    LOW                            0.22154
                                   peri      ic    14.3                          EDI-13                                                   0.25000
                                   T_mp1     ic    +3.0   IION_SW                                                                         0.25663
!                                                                                                               acquisition end: 0.29825
!
  105a  06:33  5.5N+4B+6.5N        T_mp1   5.5N1   -7.5   IION_LOBE     MAG-2    EDI-05  M1    STD-NM1-#   NLOW-#   NBR-B/L-#        0.07842
                                             ic    -4.8                          EDI-13                                                   0.12667
                                             ic    -3.0                                                    HIGH                           0.15737
                                           4.0B1   -2.0                 MAG-5            M7    STD-BM1-#            HBR-B/L-#        0.17491
                                             ic     0.0                          EDI-05                                                   0.21000
                                             ic    +1.0                                                    LOW                            0.22754
                                           6.5N1    2.0                                  M1    STD-NM1-#            NBR-B/L-#        0.24509
                                             ic    +3.0   IION_SW                                                                         0.26263
                                             ic     5.3                          EDI-13                                                   0.30211
                                             ic     7.4                 SW-2                                                              0.34000
!                                                                                                               acquisition end: 0.35912
!
$ 106a  06:24  4N                  peri    4.0N1    0.0                 MAG-2    EDI-05  M1    STD-NM1-#            NBR-basic        0.00000
                                             ic    +0.5                                                    HIGH                           0.00877
                                             ic    +2.0   IION_LOBE              EDI-13                    NLOW-#                         0.03509
!                                                                                                               acquisition end: 0.07018
```

```
!
    106b      4N+4B+4N  T_bs1   4.0N1   -4.0   IION_SW   SW-2   EDI-05   M1   STD-NM1-#   LOW      NBR-basic   0.46682
                          ic      -2.0                          EDI-13                                           0.50191
                        4.0B1      0.0                          M7       STD-BM1-#          HBR-basic   0.53700
                          ic      +1.0                                                NLOW-#                   0.55454
                          ic       2.0                          EDI-05                                          0.57209
                  T_bs2   ic      -1.0                                                LOW                      0.58446
                  T_bs1 4.0N1      4.0                          M1       STD-NM1-#          NBR-basic   0.60718
                          ic       6.0                          EDI-13                                          0.64226
                                                                                              acquisition end:  0.67735
!
!
    107a  06:14  4N    peri    4.0N1      0.0          MAG-2    EDI-05   M1   STD-NM1-#          NBR-basic   0.00000
                          ic      +0.5                                                HIGH                     0.00877
                          ic      +2.0   IION_LOBE             EDI-13                 NLOW-#                   0.03509
                                                                                              acquisition end:  0.07018
!
!
    107b+       31N   nper   31.0N1     -31.0   IION_SW   MAG-5    EDI-05   M1   STD-NM1-#   LOW      NBR-basic   0.45614
                          ic      -27.9                          EDI-13                                          0.51053
                          ic      -21.7                          EDI-05                                          0.61930
                          ic      -15.5                          EDI-13                                          0.72807
                  T_mp2   ic       -3.0   IION_LOBE                                                             0.80337
                  nper    ic       -9.3                          EDI-05                                          0.83684
                  T_mp2   ic       -1.0                                                HIGH                     0.83846
                          ic       +2.0                MAG-2                                                       0.89109
                          ic       +3.0                                                NLOW-#                   0.90863
                  nper    ic       -3.1                          EDI-13                                          0.94561
                          ic       -2.0                                                HIGH                     0.96491
                                                                                              acquisition end:  1.00000
!
!
    108a- 06:04  22N   peri   22.0N1      0.0          MAG-2    EDI-05   M1   STD-NM1-#          NBR-basic   0.00000
                          ic      +0.5                                                HIGH                     0.00877
                          ic      +2.0   IION_LOBE                                    NLOW-#                   0.03509
                          ic       2.8                          EDI-13                                          0.04825
                          ic       8.3                          EDI-05                                          0.14474
                  T_mp1   ic       -3.0                                                HIGH                     0.17837
                          ic       -2.0          MAG-5                                                         0.19591
                  peri    ic      13.8                          EDI-13                                          0.24123
```

			T_mp1	ic	+1.0						LOW		0.24854
				ic	+3.0	IION_SW							0.28363
			peri	ic	19.3			EDI-05					0.33772
!												acquisition end:	0.38596
!													
109a	05:55	4N+4B+4N	T_mp1	4.0N1	-6.0	IION_LOBE	MAG-2	EDI-05	M1	STD-NM1-#	NLOW-#	NBR-basic	0.13374
				ic	-4.0			EDI-13					0.16882
				ic	-3.0						HIGH		0.18637
				4.0B1	-2.0		MAG-5		M7	STD-BM1-#		HBR-basic	0.20391
				ic	0.0			EDI-05					0.23900
				ic	+1.0						LOW		0.25654
				4.0N1	2.0				M1	STD-NM1-#		NBR-basic	0.27409
				ic	+3.0	IION_SW							0.29163
				ic	4.0			EDI-13					0.30918
!												acquisition end:	0.34426
!													
110a	05:45	48N	nper	48.0N1	-48.0	IION_LOBE	MAG-2	EDI-05	M1	STD-NM1-#	NLOW-#	NBR-basic	0.15789
			T_mp1	ic	-3.0						HIGH		0.19637
			nper	ic	-45.0			EDI-13					0.21053
			T_mp1	ic	-2.0		MAG-5						0.21391
				ic	+1.0						LOW		0.26654
				ic	+3.0	IION_SW							0.30163
			nper	ic	-39.0			EDI-05					0.31579
				ic	-33.0			EDI-13					0.42105
				ic	-27.0			EDI-05					0.52632
				ic	-21.0			EDI-13					0.63158
				ic	-15.0			EDI-05					0.73684
			T_mp2	ic	-3.0	IION_LOBE							0.79037
				ic	-1.0						HIGH		0.82546
			nper	ic	-9.0			EDI-13					0.84211
			T_mp2	ic	+2.0		MAG-2						0.87809
				ic	+3.0						NLOW-#		0.89563
			nper	ic	-3.0			EDI-05					0.94737
				ic	-2.0						HIGH		0.96491
!												acquisition end:	1.00000