Chapter 5 - Detailed Observation Designs

Contents

Introduction to Chapter 5

Detailed Observation Designs

Each NIMS Detailed Observation Design consists of an OAPEL form and a Pointer plot. The OAPEL form is a brief description of the design of the observation. The Pointer plot is a plot of the target body with the NIMS footprint incorporated in the mosaic design superimposed on the target body. The size and orientation of the target body is plotted as it appears at the time of the first NIMS footprint plotted. For long observations, the target body may rotate or move relative to the spacecraft during the observation. Some observations, such as calibrations, do not have Pointer plots.

The Pointer plots and OAPEL forms in this chapter have been updated to report the actual data returned.

The Pointer plots have the spatial extent of the actual data returned outlined with a thick line. When no data were returned for a particular observation, its Pointer plot has a single slash across the plot with the text "NO DATA RETURNED" printed in the upper left corner of the plot.

The text of the OAPEL forms have been modified to reflect the actual NIMS instrument parameters for playback. An extra line containing one or some of the following statements has been added to the Observation Objective section of the OAPEL form to report the data retun status:

```
"Data Returned"     == Data from this observation returned
"No Data Returned"  == NO Data from this observation returned
"Processor Halted"  == The NIMS Processor had halted at this time.
```

More information regarding NIMS data return can be found in Chapter 7 of this guide.

NIMS Real-Time Software Reload		ACTIVITY ID:	12NNJUPRTS01-
		START TIME:	97-349/17:45:09.067

Activity ID: Orbit 12 Target N Inst N OAPEL JUPRTS SeqNo 01 -

Title	NIMS Real-Time Software Reload			Instrument	NIMS
Requestor	NIMS-AWG/M. SEGURA	Team	NIMS	Working Group	AWG

Time System	CDS	Load ID		Calendar Date	12/15/97	Week	50

Start	JEE-CDS 00000761:00:0	97-349/17:45:09.067	JEE-000/12:49:27.333
End	JEE-CDS 00000751:00:0	97-349/17:55:15.734	JEE-000/12:39:20.666
Duration	00000010:00:0	000/00:10:06.667	000/00:10:06.667

Top Label	12NNJUPRTS01-
Bottom Label	

Plot Key	NIMS	Type	SCI		
CDS Bytes	0	Report Options	BOTH	Scan Platform	No
CDS Source	OAP	Spin State	DUAL	DMS	No

Observation Objective

NIMS real-time software reload

Each NIMS GEM observation will have an instrument reload before the start of each observation. Each reload has its own OAPEL form, but only this first form is included in the NIMSGUIDE.

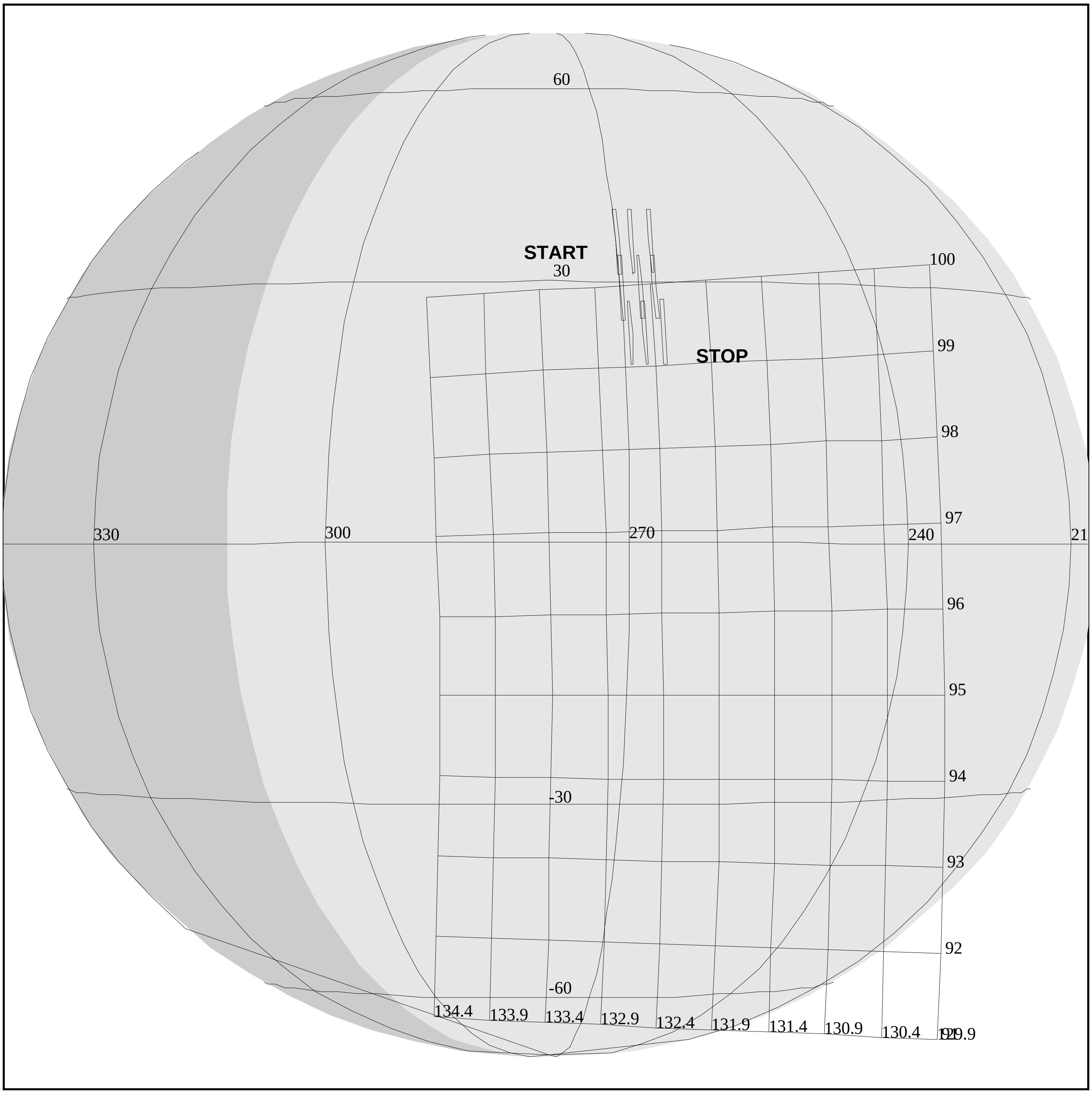
The NIMS E12 reload OAPELS are:
12NNJUPRTS01, 12NNJUPRTS02, 12NNJUPRTS03, 12NNGLOBAL01
12NNDLINEA01, 12NNCPWYLL01, 12NNICEBRG01

Design Detail

Use a standard set of commands to halt the instrument, load the software and reinitialize the instrument.

6CKSUM - Check Sum NIMS RAM 1000 - 14BC
37PL - Halt NIMS Processor
37MRL - Memory Reallocate
6MCOPY - Copy flight software from CDS to NIMS 1000
6MCOPY - Copy flight software from CDS to NIMS 1598
37IRT - Instrument Reset
37MN - Memory Normal
37IST - Chopper Reference.

Galileo Activity Plan Form 12/08/97 15:43:18 rev 6/95



165DA:TT= 0 TMC= 1 C= 0.00 XC= 0.00 BS= 0/9099 TC= 1(35 270)
A= 182 pD= 1638 SR=17.450 RA50=270.19 DEC50=-22.58 cone=132.69 clock=100.53
117DA:#SB= 1 OR= 0.030 RR=12.000 BM=F RC= 1 BS= 0/9099
1:#s= 3 Cs= -4.90 XCs= 0.00 Cr= 6.90 XCr= -7.00 sD= 498 rD= 36

12JNJUPRTS01

TARGET G3.2 lisac:10/24/1997 15:11:39

FILE:P.12JNJUPRTS01

CENTRAL BODY:JUPITER

MINI:m.target

S/C EPH:/DATA/NAVIO/971016-tour.NS

PERIAPSIS:

START:JEE 97-350/06:34:36.400 -CDS 749:00:0

OBSERVATION:12JNJUPRTS01

THINNING:NIM 7

BODY PLOT TIME:TARGET-TIME D= 1638 S= 1.000

DESCRIP:Jupiter_Realtime_Observation

Jupiter Realtime Observation		ACTIVITY ID:	12JNJUPRTS01*
		START TIME:	97-349/17:55:15.734

Activity ID: Orbit 12 Target J Inst N OAPEL JUPRTS SeqNo 01 *

Title	Jupiter Realtime Observation			Instrument	NIMS
Requestor	NIMS-AWG/M. SEGURA	Team	NIMS	Working Group	AWG

Time System	CDS	Load ID		Calendar Date	12/15/97	Week	50

Start	JEE-CDS 00000751:00:0	97-349/17:55:15.734	JEE-000/12:39:20.666
End	JEE-CDS 00000736:00:0	97-349/18:10:25.734	JEE-000/12:24:10.666
Duration	00000015:00:0	000/00:15:10.000	000/00:15:10.000

Top Label	12JNJUPRTS01*
Bottom Label	

Plot Key	NIMS	Type	SCI		
CDS Bytes	0	Report Options	BOTH	Scan Platform	Yes
CDS Source	OAP	Spin State	DUAL	DMS	No

Observation Objective

Search for Jupiter atmospheric composition and thermal variations over time.

FREE_RTS=0.16

Data Returned

Design Detail

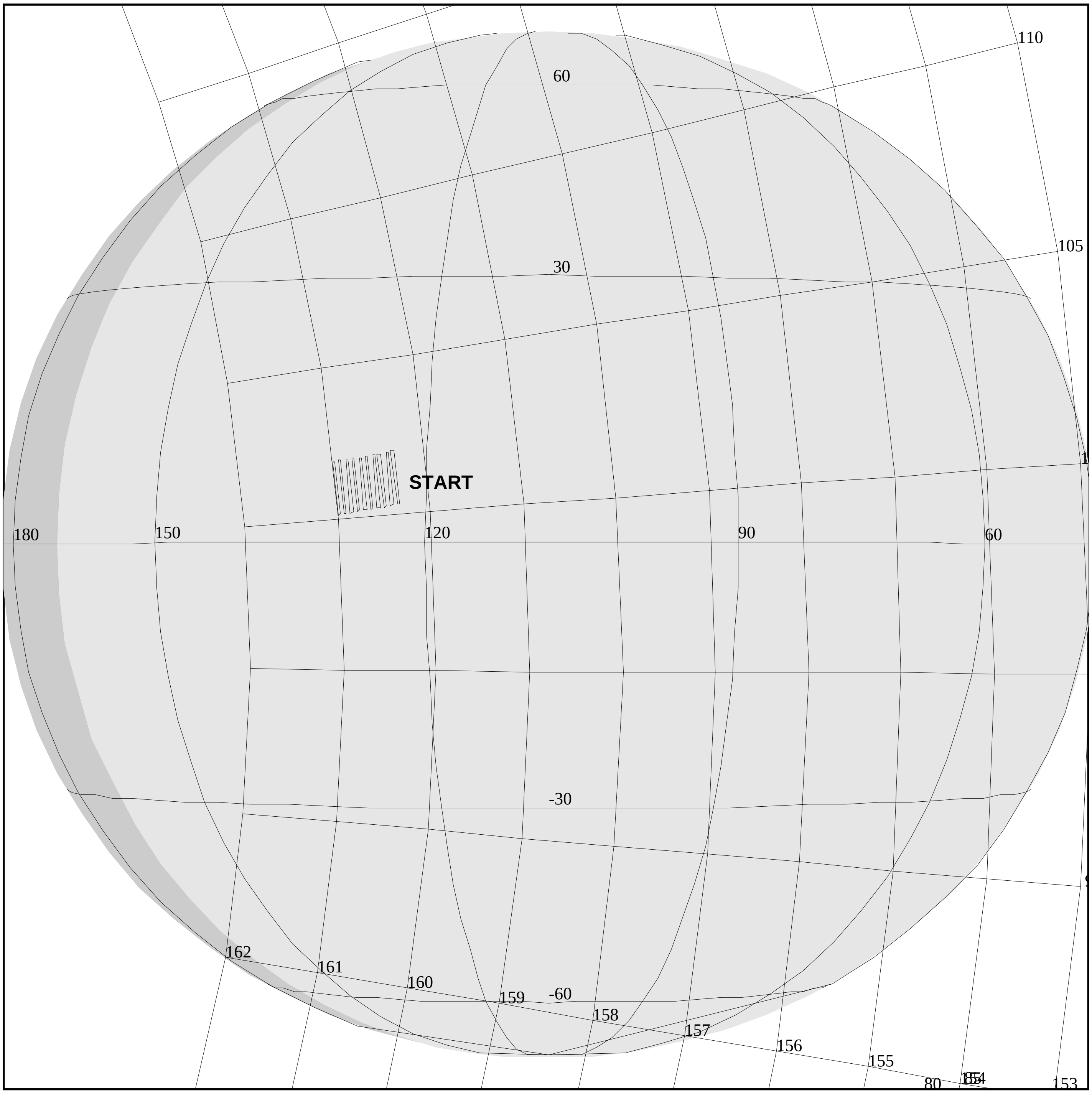
Long map. Three scans each 3 RIMS long.
NIMS selected in RealTime for 10 Rims.
Target to 35 degrees north latitude for Scan one. No scan overlap,
First scan at +35 degrees latitude (3 Rims, 3 FOVs).
Second scan at +29 degrees latitude (3 Rims, 3 FOVs).
Third scan at +23 degrees latitude (4 Rims, 4 FOVs).
Nyquist sampling not necessary - lit surface only.
West Longitudes 245-255.
NIMS R/T only returns every seventh FOV.

A NIMS software reload from CDS is performed just before the start of this observation.

Mirror Blocked (1B,1B) (11011,11011)

Long Map (LM), Gain 2, Grating Start 0, R/T, RT408

Galileo Activity Plan Form   12/08/97 15:43:19   rev 6/95



165DB:TT=   0 TMC= 1 C=   0.00 XC=   0.00 BS= 0/3345 TC= 1(7   123   )
A= 728 pD= 1812 SR=17.450 RA50=299.98 DEC50=-21.03 cone=160.35 clock=101.18
117DB:#SB= 1 OR= 0.040 RR=12.000 BM=F RC= 1 BS= 0/3345
1:#s= 1 Cs=   24.00 XCs=   0.00 Cr=   0.00 XCr=   0.00 sD= 1820 rD=   2

12JNJUPRTS02

DESIGN G3.2 lisac:10/27/1997 15:50: 5

FILE:P.12JNJUPRTS02

CENTRAL BODY:JUPITER III

MINI:m.12JNJUPRTS02

S/C EPH:/DATA/NAVIO/971016-tour.NS

PERIAPSIS:

START:JEE 97-350/06:34:36.400   -CDS 396:00:0

OBSERVATION:12JNJUPRTS02

THINNING:NIM   7

BODY PLOT TIME:TARGET-TIME D= 1812 S= 1.000

DESCRIP:Jupiter_Realtime_Observation

Jupiter Realtime Observation		ACTIVITY ID:	12JNJUPRTS02*
		START TIME:	97-349/23:49:09.067

Activity ID: Orbit 12 Target J Inst N OAPEL JUPRTS SeqNo 02 *

Title	Jupiter Realtime Observation			Instrument	NIMS
Requestor	NIMS-AWG/M. SEGURA	Team	NIMS	Working Group	AWG

Time System	CDS	Load ID		Calendar Date	12/15/97	Week	50

Start	JEE-CDS 00000401:00:0	97-349/23:49:09.067	JEE-000/06:45:27.333
End	JEE-CDS 00000376:00:0	97-350/00:14:25.734	JEE-000/06:20:10.666
Duration	00000025:00:0	000/00:25:16.667	000/00:25:16.667

Top Label	12JNJUPRTS02*
Bottom Label	

Plot Key	NIMS	Type	SCI		
CDS Bytes	0	Report Options	BOTH	Scan Platform	Yes
CDS Source	OAP	Spin State	DUAL	DMS	No

Observation Objective

Search for Jupiter atmospheric composition and thermal variations over time.

FREE_RTS=0.16

Data Returned

Design Detail

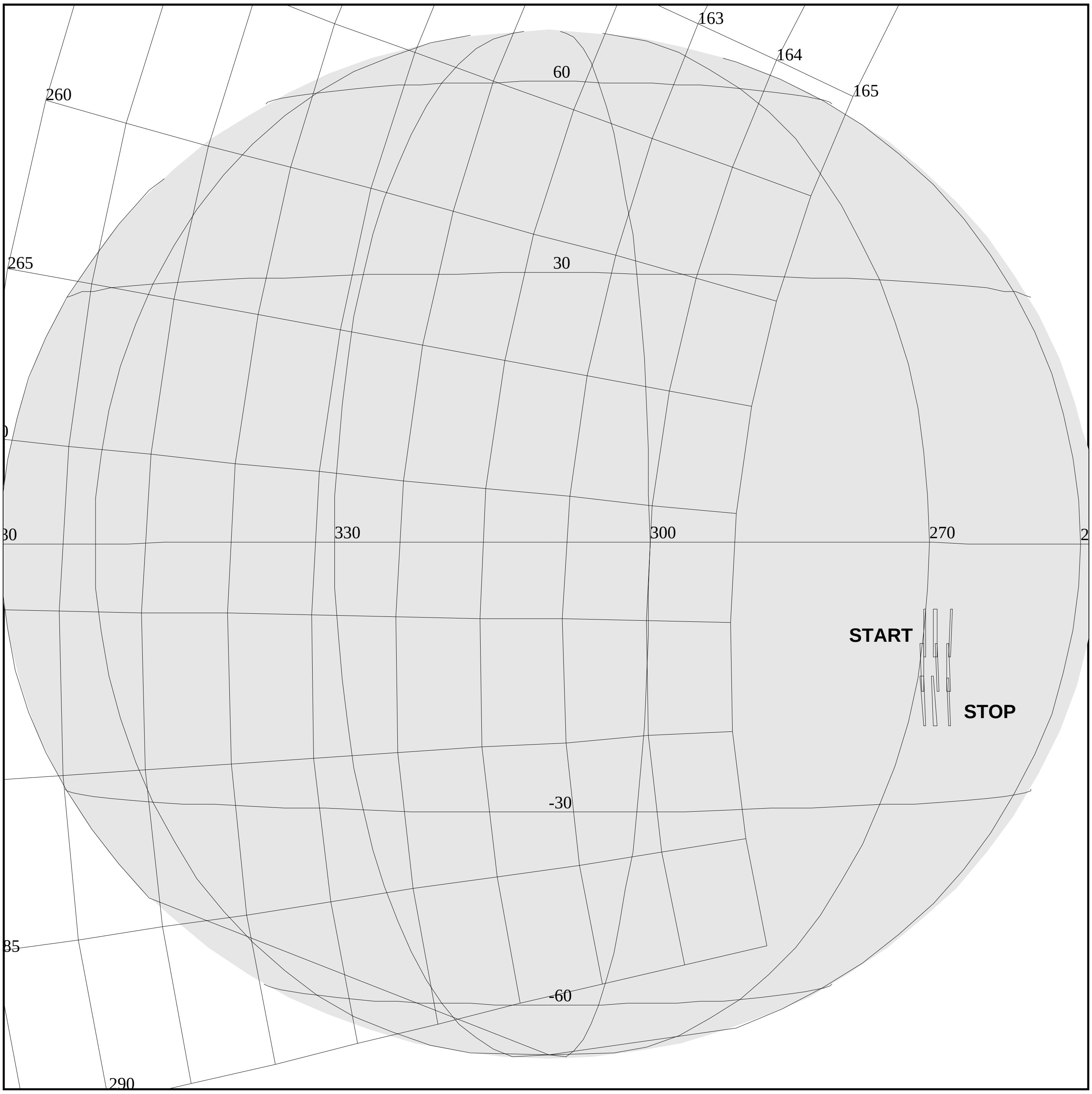
Long map. One scan 20 RIMS long.
NIMS selected in RealTime for 20 Rims.
Target to 7 degrees north latitude for Scan one.
First scan at +7 degrees latitude (20 Rims, 20 FOVs).
Equator - Nyquist sampling not necessary.
West Longitudes 123-163.
NIMS R/T only returns every seventh FOV.

A NIMS software reload from CDS is performed just before the start of this observation.

Mirror Blocked (1B,1B) (11011,11011)

Long Map (LM), Gain 2, Grating Start 0, R/T, RT408

Galileo Activity Plan Form   12/08/97 15:43:19   rev 6/95



165DC:TT= 0 TMC= 1 C= 0.00 XC= 0.00 BS= 0/4689 TC= 1(-10 270)
A= 728 pD= 1812 SR=17.450 RA50=332.60 DEC50=-12.46 cone=167.30 clock=275.44
117DC:#SB= 1 OR= 0.030 RR=12.000 BM=F RC= 1 BS= 0/4689
1:#s= 3 Cs= 5.00 XCs= 0.00 Cr= -7.80 XCr= 7.00 sD= 506 rD= 36

12JNJUPRTS03

DESIGN G3.2 lisac:10/27/1997 16: 2:16

FILE:P.12JNJUPRTS03

CENTRAL BODY:JUPITER III

MINI:m.12JNJUPRTS03

S/C EPH:/DATA/NAVIO/971016-tour.NS

PERIAPSIS:

START:JEE 97-350/06:34:36.400 -CDS 04:00:0

OBSERVATION:12JNJUPRTS03

THINNING:NIM 7

BODY PLOT TIME:TARGET-TIME D= 1812 S= 1.000

DESCRIP:Jupiter_Realtime_Observation

Jupiter Realtime Observation	ACTIVITY ID: 12JNJUPRTS03* START TIME: 97-350/06:22:28.400

Activity ID: Orbit 12 Target J Inst N OAPEL JUPRTS SeqNo 03 *

Title	Jupiter Realtime Observation			Instrument	NIMS
Requestor	NIMS-AWG/M. SEGURA	Team	NIMS	Working Group	AWG

Time System CDS Load ID Calendar Date 12/16/97 Week 51

Start	JEE-CDS 00000012:00:0	97-350/06:22:28.400	JEE-000/00:12:08.000
End	JEE+CDS 00000003:00:0	97-350/06:37:38.400	JEE+000/00:03:02.000
Duration	00000015:00:0	000/00:15:10.000	000/00:15:10.000

Top Label 12JNJUPRTS03*
Bottom Label

Plot Key	NIMS	Type	SCI		
CDS Bytes	0	Report Options	BOTH	Scan Platform	Yes
CDS Source	OAP	Spin State	DUAL	DMS	No

Observation Objective

Search for Jupiter atmospheric composition and thermal variations over time.

FREE_RTS=0.16

Data Returned

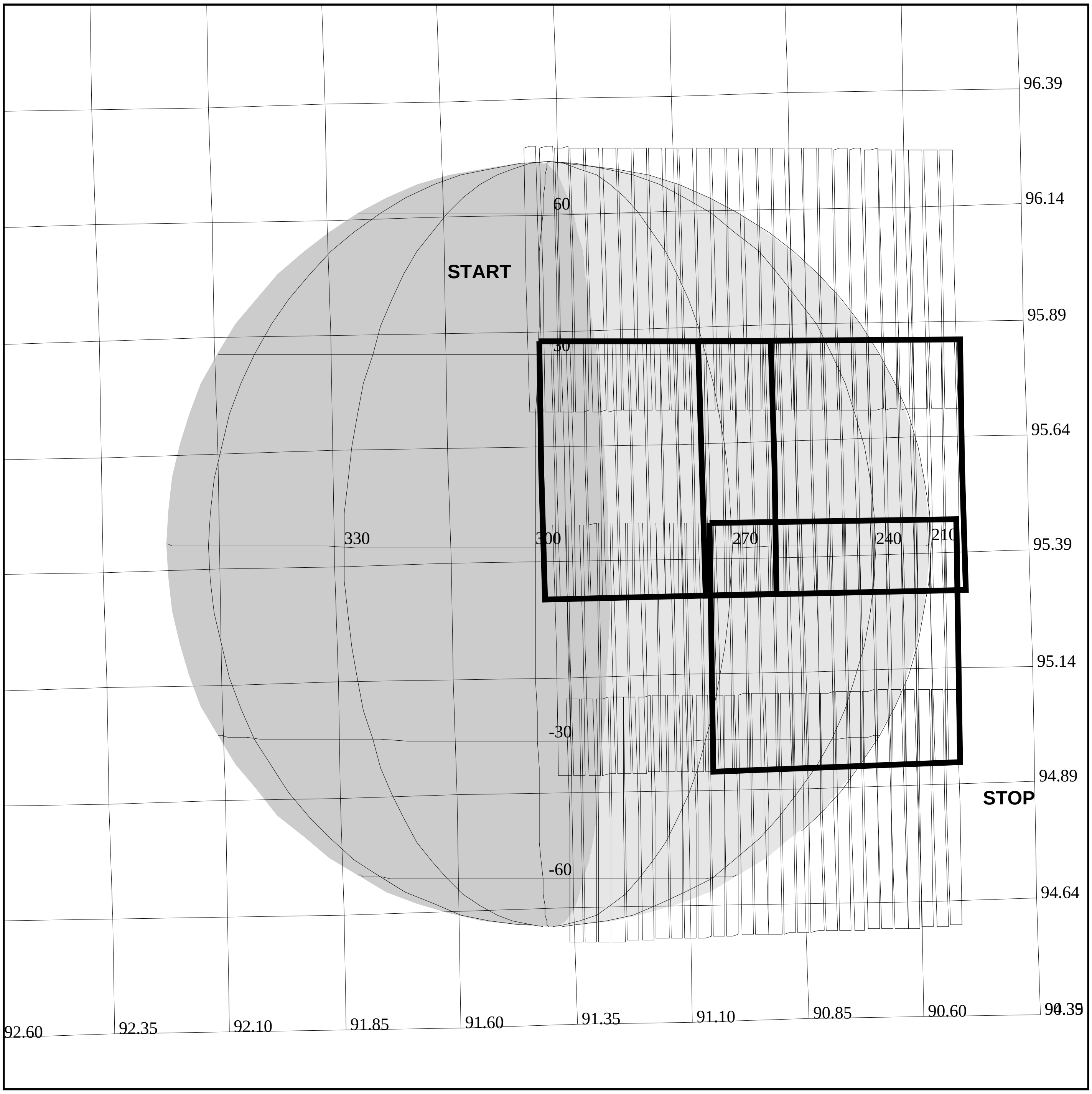
Design Detail

Long map. Three scans each 3 RIMS long.
NIMS selected in RealTime for 10 Rims.
Target to 10 degrees south latitude for Scan one. No scan overlap,
First scan at -10 degrees latitude (3 Rims, 3 FOVs).
Second scan at -14 degrees latitude (3 Rims, 3 FOVs).
Third scan at -17 degrees latitude (4 Rims, 4 FOVs).
Nyquist sampling not necessary - lit surface only.
West Longitudes 309-315.
NIMS R/T only returns every seventh FOV.

A NIMS software reload from CDS is performed just before the start of this observation.

Mirror Blocked (1B,1B) (11011,11011)

Long Map (LM), Gain 2, Grating Start 0, R/T, RT408



165DD:TT= 0 TMC= 1 C= 0.50 XC= 10.00 BS= 0/0695 TC= 3
A= 728 pD= 0 SR=17.450 RA50=225.78 DEC50=-19.20 cone= 91.41 clock= 96.00
117DD:#SB= 1 OR= 0.030 RR=12.000 BM=F RC= 1 BS= 0/0695
1:#s= 4 Cs= -14.30 XCs= 0.00 Cr= 16.00 XCr= -7.00 sD= 1440 rD= 20

12ENGLOBAL01

TARGET G3.2 lisac:10/24/1997 15:11:39

FILE:P.12ENGLOBAL01

TARGET BODY : EUROPA

MINI:m.target

S/C EPH:/DATA/NAVIO/971016-tour.NS

PERIAPSIS: **THINNING:NIM 2**

START:EEE 97-350/12:03:13.066 -CDS 296:00:0 **BODY PLOT TIME:TARGET-TIME D= 0 S= 0.700**

OBSERVATION:12ENGLOBAL01 **DESCRIP:Europa_Global**

Europa Global	ACTIVITY ID: 12ENGLOBAL01- START TIME: 97-350/06:58:52.400

Activity ID: Orbit 12 Target E Inst N OAPEL GLOBAL SeqNo 01 -

Title	Europa Global			Instrument	NIMS
Requestor	NIMS-SWG/M. SEGURA	Team	NIMS	Working Group	SWG

Time System CDS Load ID Calendar Date 12/16/97 Week 51

Start	EEE-CDS 00000301:00:0	97-350/06:58:52.400	EEE-000/05:04:20.666
End	EEE-CDS 00000262:00:0	97-350/07:38:18.400	EEE-000/04:24:54.666
Duration	00000039:00:0	000/00:39:26.000	000/00:39:26.000

Top Label 12ENGLOBAL01-
Bottom Label

Plot Key	NIMS	Type	SCI		
CDS Bytes	150	Report Options	BOTH	Scan Platform	Yes
CDS Source	OAP	Spin State	DUAL	DMS	Yes

Observation Objective

Europa global mosaic covering West longitudes 210-300.
Covering Asterius Linea lost in the Prime Mission.
Resolution =

TICS= 1585, FMT= MPW, MBTG=5.107, PPR_RA= 0.299

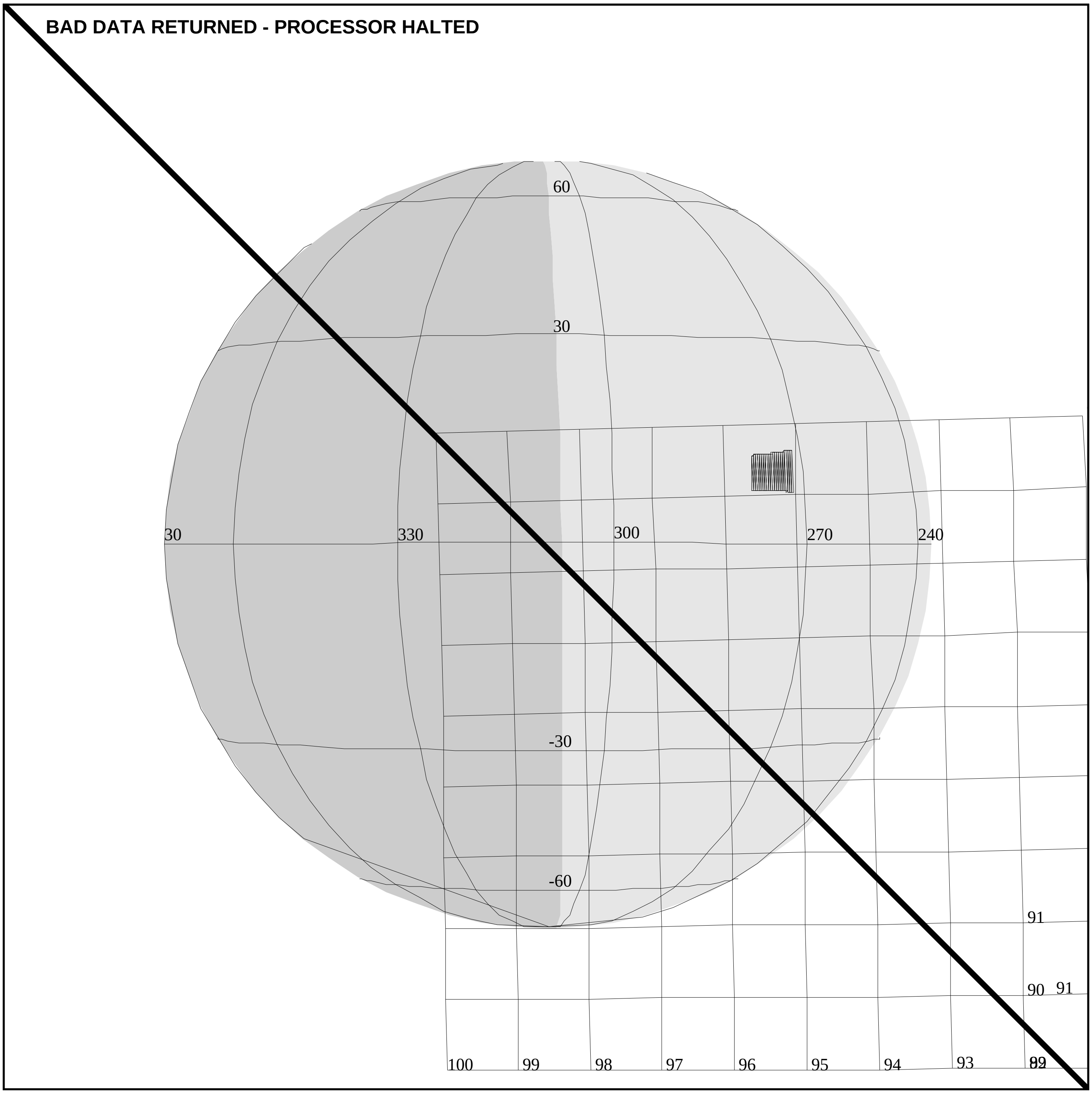
Data Returned

Design Detail

NIMS mode = LM. Record mode = MPW Gain State = 2. Grating Position = 0
Entire lit hemisphere of Europa covered in a single scan, scanning from terminator to limb. Europa is half-lit in this observation.
West Longitudes 210 to 300 degrees.
First scan at +44 degrees latitude (8 Rims). Not Returned
Second scan at +12 degrees latitude (8 Rims). A and B
Third scan at -15 degrees latitude (8 Rims). C
Fourth scan at -45 degrees latitude (8 Rims). Not Returned

A NIMS software reload from CDS is performed just before the start of this observation.

Long Map (LM), Gain 2, Grating Start 0, MPW, E12ELM442, E12ELM228
Long Map (LM), Gain 2, Grating Start 0, MPW, E12ELM442, E12ELM168



165DE:TT= 0 TMC= 1 C= 0.00 XC= 0.00 BS= 0/6377 TC= 1(10 272)
A= 182 pD= 1266 SR=17.450 RA50=229.87 DEC50=-19.00 cone= 95.05 clock= 97.33
117DE:#SB= 1 OR= 0.030 RR=12.000 BM=F RC= 1 BS= 0/6377
1:#s= 1 Cs= 12.50 XCs= 0.00 Cr= 0.00 XCr= 0.00 sD= 1274 rD= 20

12ENDLINEA01

DESIGN G3.2 lisac:10/27/1997 14: 0:20

FILE:P.12ENDLINEA01

TARGET BODY : EUROPA

MINI:m.12ENDLINEA01

S/C EPH:/DATA/NAVIO/971016-tour.NS

PERIAPSIS:

START:EEE 97-350/12:03:13.066 -CDS 45:00:0

OBSERVATION:12ENDLINEA01

THINNING:NIM 1

BODY PLOT TIME:TARGET-TIME D= 1266 S= 0.700

DESCRIP:Europa_Global

Surface Comp. and Minos Linea	ACTIVITY ID: 12ENDLINEA01- START TIME: 97-350/11:15:41.733

Activity ID: Orbit 12 Target E Inst N OAPEL DLINEA SeqNo 01 -

Title	Surface Comp. and Minos Linea			Instrument	NIMS
Requestor	NIMS-SWG/M. SEGURA	Team	NIMS	Working Group	SWG

Time System	CDS	Load ID		Calendar Date	12/16/97	Week	51

Start	EEE-CDS 00000047:00:0	97-350/11:15:41.733	EEE-000/00:47:31.333
End	EEE-CDS 00000038:00:0	97-350/11:24:47.733	EEE-000/00:38:25.333
Duration	00000009:00:0	000/00:09:06.000	000/00:09:06.000

Top Label	12ENDLINEA01-
Bottom Label	

Plot Key	NIMS	Type	SCI		
CDS Bytes	0	Report Options	BOTH	Scan Platform	Yes
CDS Source	OAP	Spin State	DUAL	DMS	Yes

Observation Objective

Observation will focus on a dark linea region (Minos Linea).
latitude +10 degrees and West longitude 272-280 degrees coverage.

TICS= 442, FMT= MPW, MBTG= 1.52, PPR_RA= 0.083

Processor Halted, Bad Data Returned

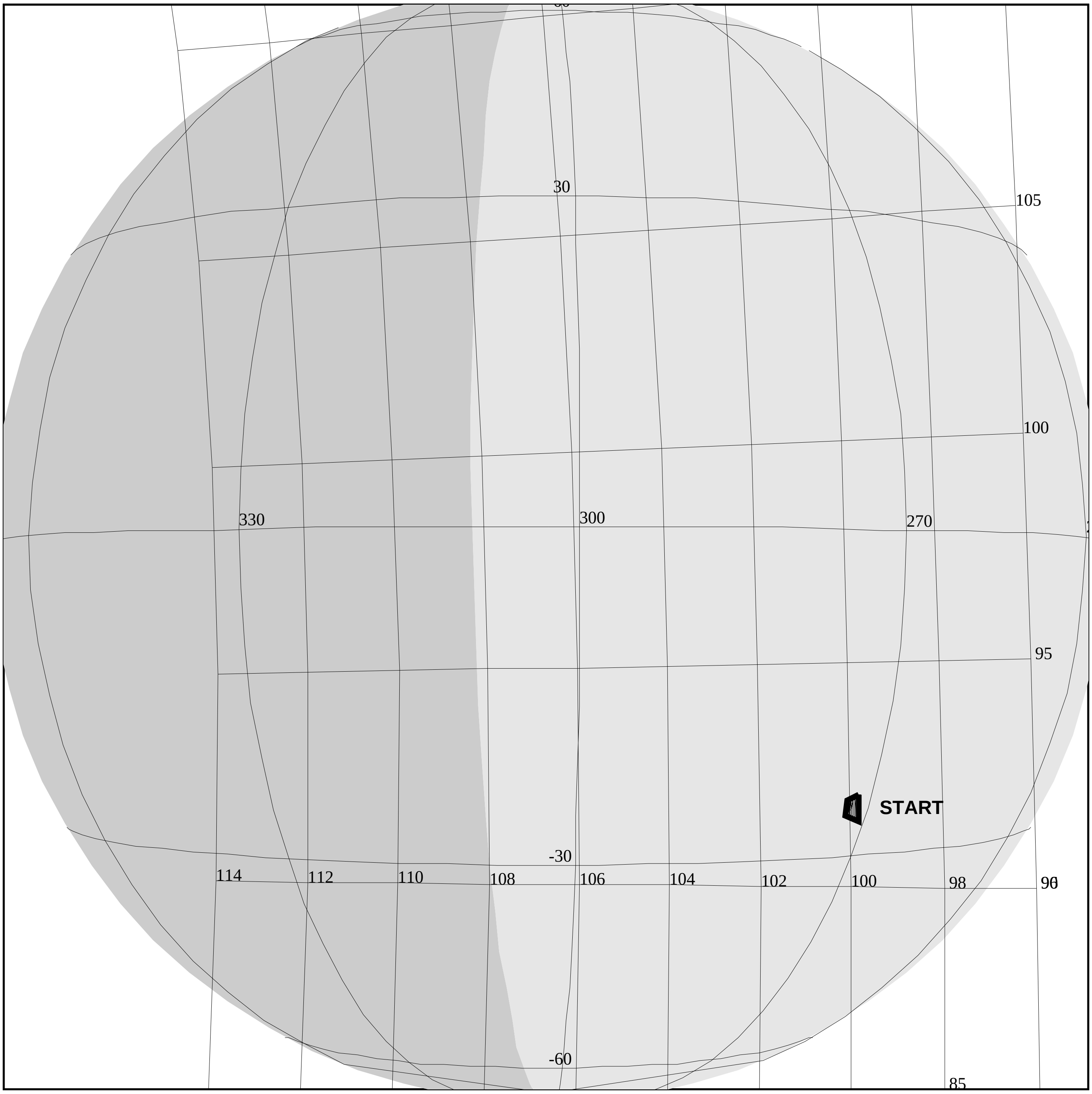
Design Detail

NIMS mode = LM. Record mode = MPW Gain State = 3. Grating Position = 0
Single scan at +10 degrees latitude (7 Rims).
West Longitudes 272 to 280 degrees.

A NIMS software reload from CDS is performed just before the start of this observation.

Long Map (LM), Gain 3, Grating Start 0, MPW, E12ELM442, E12ELM360

Galileo Activity Plan Form 12/08/97 15:43:20 rev 6/95



165DF:TT= 0 TMC= 1 C= 0.00 XC= 0.00 BS= 0/1109 TC= 1(-25 271)
A= 182 pD= 2176 SR=17.450 RA50=233.23 DEC50=-25.61 cone= 99.80 clock= 91.75
117DF:#SB= 1 OR= 0.030 RR=12.000 BM=F RC= 1 BS= 0/1109
1:#s= 1 Cs= 21.70 XCs= 0.00 Cr= 0.00 XCr= 0.00 sD= 2176 rD= 2

12ENCPWYLL01

DESIGN G3.2 lisac:10/27/1997 16: 3:54

FILE:P.12ENCPWYLL01

TARGET BODY : EUROPA

MINI:m.12ENCPWYLL01

S/C EPH:/DATA/NAVIO/971016-tour.NS

PERIAPSIS:

THINNING:NIM 1

START:EEE 97-350/12:03:13.066 -CDS 19:00:0

BODY PLOT TIME:TARGET-TIME D= 2176 S= 1.000

OBSERVATION:12ENCPWYLL01

DESCRIP:Europa_Surf.comp._and_Mineos_Lin

Europa Surf. Comp. and Mineos Linea ACTIVITY ID: 12ENCPWYLL01-
START TIME: 97-350/11:41:59.066

Activity ID: Orbit 12 Target E Inst N OAPEL CPWYLL SeqNo 01 -

Title	Europa Surf. Comp. and Mineos Linea	Instrument	NIMS
Requestor	NIMS-SWG/M. SEGURA Team NIMS	Working Group	SWG

Time System CDS Load ID Calendar Date 12/16/97 Week 51

Start	EEE-CDS 00000021:00:0	97-350/11:41:59.066	EEE-000/00:21:14.000
End	EEE-CDS 00000007:00:0	97-350/11:56:08.400	EEE-000/00:07:04.666
Duration	00000014:00:0	000/00:14:09.334	000/00:14:09.334

Top Label 12ENCPWYLL01-
Bottom Label

Plot Key	NIMS	Type	SCI		
CDS Bytes	150	Report Options	BOTH	Scan Platform	Yes
CDS Source	OAP	Spin State	DUAL	DMS	Yes

Observation Objective

Europa surface composition observation covering the Pwyll impact crater region.
Latitude = -25 degrees, West Longitude = 271 degrees

TICS= 389, FMT= MPW MBTG= 2.309, PPR_RA= 0.073

Data Returned

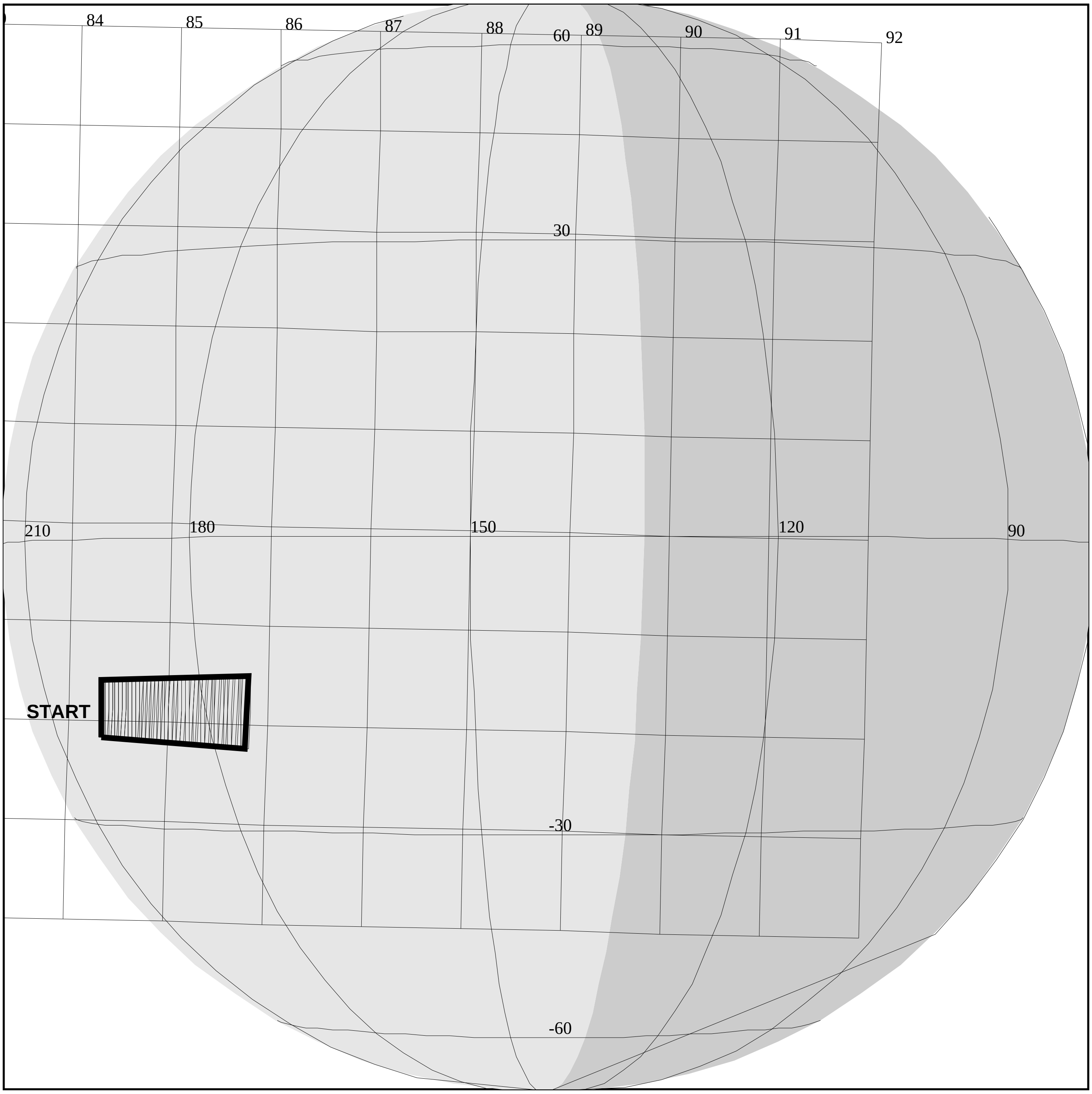
Design Detail

NIMS mode = LM. Record mode = MPW. Gain State = 2 Grating Position = 0
Single scan at -25 degrees latitude (7 Rims).
West Longitudes 271 to 273 degrees.

A NIMS software reload from CDS is performed just before the start of this observation.

Long Map (LM), Gain 2, Grating Start 0, MPW, E12ELM442, E12ELM360

Galileo Activity Plan Form 12/08/97 15:43:20 rev 6/95



165DG:TT= 0 TMC= 1 C= 0.00 XC= 0.00 BS= 0/2575 TC= 1(-17 197)
A= 728 pD= 2176 SR=17.450 RA50= 50.38 DEC50= 19.62 cone= 84.32 clock=276.87
117DG:#SB= 1 OR= 0.030 RR=12.000 BM=F RC= 1 BS= 0/2575
1:#s= 1 Cs= 19.90 XCs= 0.00 Cr= 0.00 XCr= 0.00 sD= 2002 rD= 2

12ENICEBRG01

TARGET G3.2 lisac:10/24/1997 15:11:39

FILE:P.12ENICEBRG01

TARGET BODY : EUROPA

MINI:m.target

S/C EPH:/DATA/NAVIO/971016-tour.NS

PERIAPSIS:

THINNING:NIM 2

START:EEE 97-350/12:03:13.066 +CDS 44:00:0

BODY PLOT TIME:TARGET-TIME D= 2176 S= 1.000

OBSERVATION:12ENICEBRG01

DESCRIP:Europa_Surface_Composition

Europa Surface Composition		ACTIVITY ID:	12ENICEBRG01-
		START TIME:	97-350/12:42:39.066

Activity ID: Orbit 12 Target E Inst N OAPEL ICEBRG SeqNo 01 -

Title	Europa Surface Composition			Instrument	NIMS
Requestor	NIMS-SWG/M. SEGURA	Team	NIMS	Working Group	SWG

Time System	CDS	Load ID		Calendar Date	12/16/97	Week	51

Start	EEE+CDS 00000039:00:0	97-350/12:42:39.066	EEE+000/00:39:26.000
End	EEE+CDS 00000056:00:0	97-350/12:59:50.399	EEE+000/00:56:37.333
Duration	00000017:00:0	000/00:17:11.333	000/00:17:11.333

Top Label	12ENICEBRG01-
Bottom Label	

Plot Key	NIMS	Type	SCI		
CDS Bytes	150	Report Options	BOTH	Scan Platform	Yes
CDS Source	OAP	Spin State	DUAL	DMS	Yes

Observation Objective

Europa Surface composition observation on wedge (ice rift) terrain.
Latitude = -17 degrees and West Longitude = 173-197 degrees coverage.

TICS= 741, FMT= MPW MBTG= 3.064, PPR_RA= 0.140

Data Returned

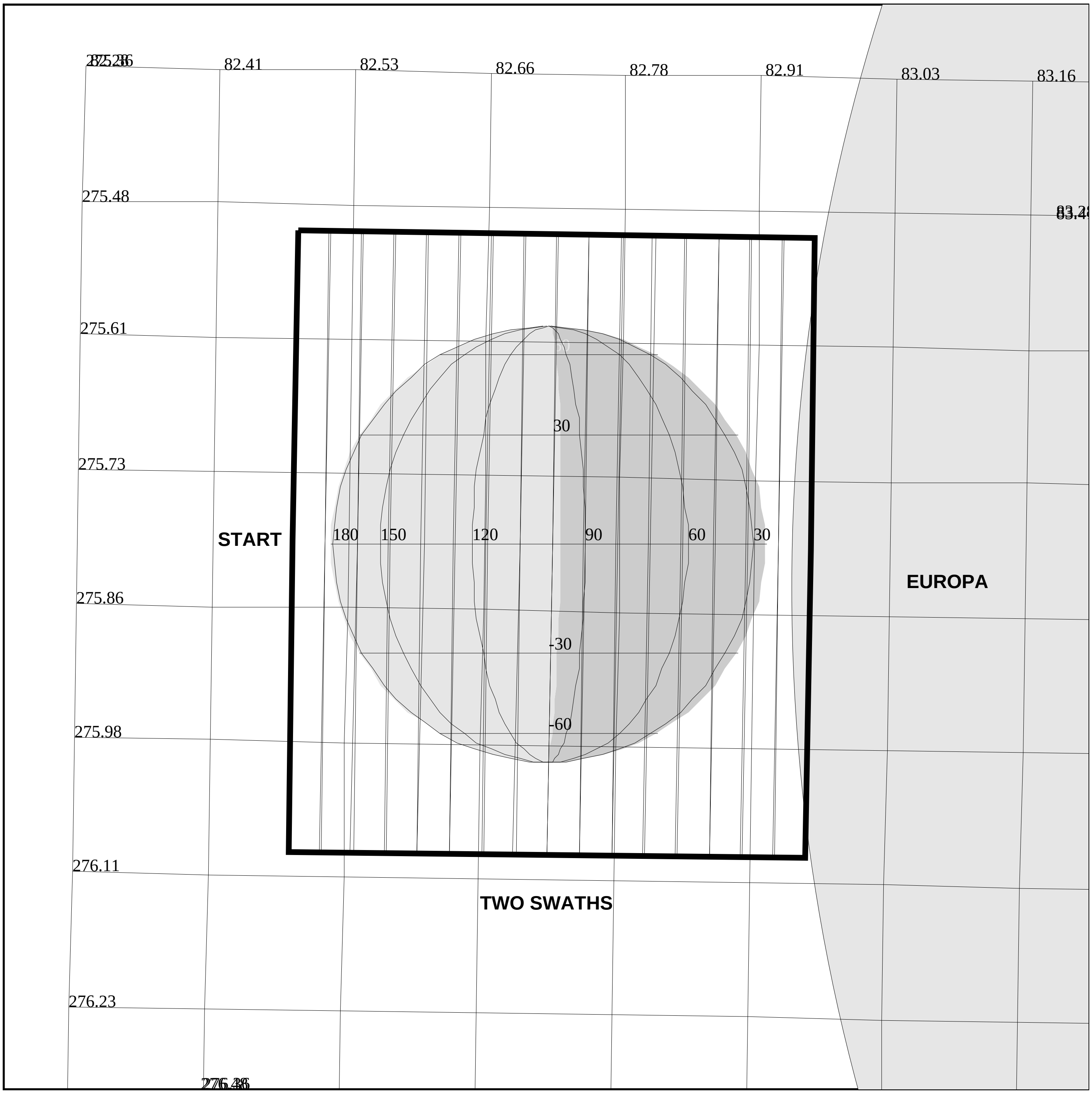
Design Detail

NIMS mode = LM. Record mode = MPW. Gain state = 2. Grating position = 0
Single scan at -17 degrees latitude (11 Rims).
West Longitudes 173 to 197 degrees.

A NIMS software reload from CDS is performed just before the start of this observation.

Long Map (LM), Gain 2, Grating Start 0, MPW, E12ELM442, E12ELM360

Galileo Activity Plan Form   12/08/97 15:43:20   rev 6/95



165DH:TT= 0 TMC= 1 C= -4.00 XC= 0.00 BS= 0/8227 TC= 3
A= 728 pD= 1636 SR=17.450 RA50= 51.94 DEC50= 21.15 cone= 82.49 clock=275.79
117DH:#SB= 1 OR= 0.030 RR=12.000 BM=F RC= 1 BS= 0/8227
1:#s= 2 Cs= 8.00 XCs= 0.00 Cr= -8.00 XCr= 0.00 sD= 808 rD= 20

12INHRSPEC01

TARGET G3.2 lisac:10/24/1997 15:11:39

FILE:P.12INHRSPEC01

TARGET BODY : IO

MINI:m.target

S/C EPH:/DATA/NAVIO/971016-tour.NS

PERIAPSIS:

START:IEE 97-350/19:10:55.000 -CDS 293:00:0

OBSERVATION:12INHRSPEC01

THINNING:NIM 2

BODY PLOT TIME:TARGET-TIME D= 1636 S= 0.400

DESCRIP:12INHRSPEC01

Io Monitoring at High Spectral Resolutio ACTIVITY ID: 12INHRSPEC01-
START TIME: 97-350/14:09:36.334

Activity ID: Orbit 12 Target I Inst N OAPEL HRSPEC SeqNo 01 -

Title	Io Monitoring at High Spectral Resolutio			Instrument	NIMS
Requestor	NIMS-SWG/M. SEGURA	Team	NIMS	Working Group	SWG

Time System CDS Load ID Calendar Date 12/16/97 Week 51

Start	IEE-CDS 00000298:00:0	97-350/14:09:36.334	IEE-000/05:01:18.666
End	IEE-CDS 00000284:00:0	97-350/14:23:45.667	IEE-000/04:47:09.333
Duration	00000014:00:0	000/00:14:09.333	000/00:14:09.333

Top Label 12INNHRSPE01-
Bottom Label

Plot Key	NIMS	Type	SCI		
CDS Bytes	150	Report Options	BOTH	Scan Platform	Yes
CDS Source	OAP	Spin State	DUAL	DMS	Yes

Observation Objective

Monitoring Io’s Volcanic activity at Io closest approach during this orbit. This observation is important because some of the longitudes covered will not be available again during the E and C orbits of GEM, except during C21. This is an important context observation for C21.

TICS= 450, FMT= MPW MBTG= 2.333, PPR_RA=0.09

Data Returned

Design Detail

Global mosaic in Long Map, 408 wavelengths (MPW).
NIMS resolution is about 250 km/pixel.
Central longitude is 100 degrees West.
Observation will cover from about 10 degrees West to 190 West.
Cost about 450 tics, 2.5 Mbits.

Entire disk of Io covered in a single scan, scanning from dayside to nightside. Io is half-lit in this observation.
Two identical equatorial scans (4.5 Rims each).

A NIMS software reload from CDS is performed just before the start of this observation.

Both full-disk scans returned.

Long Map (LM), Gain 3, Grating Start 0, MPW, E12ILM442, E12ILM360

Chopper off		ACTIVITY ID:	12NNCHOPOF01-
		START TIME:	97-350/14:23:45.667

Activity ID: Orbit 12 Target N Inst N OAPEL CHOPOF SeqNo 01 -

Title	Chopper off			Instrument	NIMS
Requestor	NIMS-SWG/M. SEGURA	Team	NIMS	Working Group	SWG

Time System	CDS	Load ID		Calendar Date 12/16/97	Week 51

Start	IEE-CDS 00000284:00:0	97-350/14:23:45.667	IEE-000/04:47:09.333
End	IEE-CDS 00000274:00:0	97-350/14:33:52.334	IEE-000/04:37:02.666
Duration	00000010:00:0	000/00:10:06.667	000/00:10:06.667

Top Label	12NNCHOPOF01-
Bottom Label	

Plot Key	NIMS	Type	SCI		
CDS Bytes	50	Report Options	BOTH	Scan Platform	No
CDS Source	OAP	Spin State	ALL	DMS	No

Observation Objective

NIMS chopper turned off after encounter period.

Design Detail

Use two NIMS 37IST commands, the first to set chopper 63Hz the second to turn off the chopper:

37IST,1,0,0,OFF,0,0,0
37IST,1,1,0,OFF,0,0,0

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NIMS Real-Time Software Reload		ACTIVITY ID:	12NNRELOAD01-
		START TIME:	97-351/17:29:37.732

Activity ID: Orbit 12 Target N Inst N OAPEL RELOAD SeqNo 01 -

Title	NIMS Real-Time Software Reload			Instrument	NIMS
Requestor	NIMS-SWG/M. SEGURA	Team	NIMS	Working Group	SWG

Time System	CDS	Load ID		Calendar Date	12/17/97 Week 51

Start	EEE+CDS 00001747:00:0	97-351/17:29:37.732	EEE+001/05:26:24.666
End	EEE+CDS 00001757:00:0	97-351/17:39:44.399	EEE+001/05:36:31.333
Duration	00000010:00:0	000/00:10:06.667	000/00:10:06.667

Top Label   12NNHRSPEC01-
Bottom Label

Plot Key	NIMS	Type	SCI		
CDS Bytes	0	Report Options	BOTH	Scan Platform	No
CDS Source	OAP	Spin State	DUAL	DMS	No

Observation Objective

NIMS real-time software reload to insure that NIMS is in a known state after encounter.

Design Detail

Use a standard set of commands to halt the instrument, load the software and reinitialize the instrument.

6CKSUM - Check Sum NIMS RAM 1000 - 14BC
37PL - Halt NIMS Processor
37MRL - Memory Reallocate
6MCOPY - Copy flight software from CDS to NIMS 1000
6MCOPY - Copy flight software from CDS to NIMS 1598
37IRT - Instrument Reset
37MN - Memory Normal
37IST - Chopper Reference.

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Chopper off			ACTIVITY ID:	12NNCHOPOF02-	
			START TIME:	97-351/17:39:44.399	

Activity ID: Orbit 12 Target N Inst N OAPEL CHOPOF SeqNo 02 -

Title	Chopper off			Instrument	NIMS
Requestor	NIMS-SWG/M. SEGURA	Team	NIMS	Working Group	SWG

Time System	CDS	Load ID		Calendar Date	12/17/97	Week 51

Start	EEE+CDS 00001757:00:0	97-351/17:39:44.399	EEE+001/05:36:31.333
End	EEE+CDS 00001767:00:0	97-351/17:49:51.066	EEE+001/05:46:38.000
Duration	00000010:00:0	000/00:10:06.667	000/00:10:06.667

Top Label	12NNCHOPOF02-
Bottom Label	

Plot Key	NIMS	Type	SCI		
CDS Bytes	50	Report Options	BOTH	Scan Platform	No
CDS Source	OAP	Spin State	ALL	DMS	No

Observation Objective

Turn off NIMS chopper after instrument reload.

Design Detail

Use two NIMS 37IST commands, the first to set chopper 63Hz the second to turn off the chopper:

```
37IST,1,0,0,OFF,0,0,0
37IST,1,1,0,OFF,0,0,0
```

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NIMS RCT Real-Time Calibration	ACTIVITY ID: 12NNRCTRLT01- START TIME: 98-028/10:00:00.000

```
Activity ID: Orbit 12  Target N  Inst N  OAPEL RCTRLT  SeqNo 01 -

Title         NIMS RCT Real-Time Calibration          Instrument      NIMS
Requestor     NIMS-AWG/M. SEGURA        Team   NIMS  Working Group    AWG
```

```
Time System  CDS       Load ID         Calendar Date  01/28/98  Week   4

Start        RTA+CDS 00000000:00:0 98-028/10:00:00.000   RTA+000/00:00:00.000
End          RTA+CDS 00000793:00:0 98-028/23:21:48.666   RTA+000/13:21:48.666
Duration             00000793:00:0     000/13:21:48.666       000/13:21:48.666
```

```
Top Label    12NNRCTRLT01-
Bottom Label

Plot Key     NIMS      Type            SCI
CDS Bytes        450   Report Options  BOTH         Scan Platform      No
CDS Source   OAP       Spin State      DUAL         DMS                No
```

Observation Objective

This observation is a NIMS radiometric calibration using the RCT target.
The data will be used to calibrate the NIMS thermal detectors.
The calibration data will be returned using Real-Time Telemetry.
An OPCAL is also performed.

This calibration was deleted from the load due to spacecraft
safety issues.

No Data Returned

Design Detail

```
 1)  Turn on RCT Heaters for 12 hours.
 2)  Set Engineering Variable Map to return NIMS Temps more frequently.
 3)  Set NIMS to Long Map Mode, Gain state 1, Chopper Reference,
     Mirror Blocking (11011,11011), ETB=RCT252.
 4)  Pause playback before using scan platform.
 5)  Slew to Dark (cone = 119.7), return 1 grating cycle  (12 mf) in R/T
 6)  Slew to RCT  (cone = 0.0),   return 2 grating cycles (12 mf) in R/T
 7)  Slew to Dark (cone = 119.7), return 1 grating cycle  (12 mf) in R/T
 8)  Slew to Safe (cone = 153.0)
 9)  Long Map, gain state 4, ETB=OPCAL48.
10)  Use 37IST to turn on OPCAL Lamp (two times).
11)  Select NIMS Real Time 1 Rim OPCAL, 1 Rim Dark, 1 Rim OPCAL
12)  Set NIMS to Safe Mode and turn off Chopper.
13)  Resume Playback after using scan platform.
Long Map (LM), Gain 1, Grating Start 0, R/T, RCT252
Long Map (LM), Gain 4, Grating Start 0, R/T, OPCAL48
```

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NIMS Real-Time PCT Calibration		ACTIVITY ID:	12NNPCTRLT01-
		START TIME:	98-035/00:00:00.000

Activity ID: Orbit 12 Target N Inst N OAPEL PCTRLT SeqNo 01 -

Title	NIMS Real-Time PCT Calibration			Instrument	NIMS
Requestor	NIMS-SWG/M. SEGURA	Team	NIMS	Working Group	SWG

Time System	CDS	Load ID		Calendar Date 02/04/98	Week 5

Start	PCT+CDS 0:00:0	98-035/00:00:00.000	PCT+000/00:00:00.000
End	PCT+CDS 00000465:00:0	98-035/07:50:10.000	PCT+000/07:50:10.000
Duration	00000465:00:0	000/07:50:10.000	000/07:50:10.000

Top Label 12NNPCTRLT01-
Bottom Label

Plot Key	NIMS	Type	SCI		
CDS Bytes	275	Report Options	BOTH	Scan Platform	Yes
CDS Source	OAP	Spin State	DUAL	DMS	No

Observation Objective

This observation is a NIMS photometric calibration usint the PCT target. The data will be used to calibrate the NIMS visible detectors. The calibration data will be returned using Real-Time Telemetry. At this time the off sun angle is about 1.5 degrees.

This calibration was deleted from the load due to spacecraft safety issues.

No Data Returned

Design Detail

1) Turn off PCT heaters 6 hours before calibration.
2) Scan Platform is at Safe/Unstow (cone = 153.00, clock = 0.00)
3) Chopper on, Gain State 4,
4) Set NIMS to Long Map Mode, ETB = PCT252, Mirror Blocking (1B, 1B) (11011, 11011)
5) Select 2 RIMs of Dark in Real-Time (Return 2 LM grating cycle)
6) Slew to PCT (cone 54.88, clock = 244.07)
7) Select 10 RIMS of PCT in Real-Time (Return 10 LM grating cycles)
8) Slew to Safe (cone = 153.00, clock = 0.00)
9) NIMS to Safe Mode, Reset Mirror Blocking (00,00) (00000, 00000)
10) Chopper Off.

Long Map (LM), Gain 4, Grating Start 0, RT, PCT252

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