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 Software Reload		ACTIVITY ID:	19NNJUPRTS01-
		START TIME:	99-031/02:59:37.400

Activity ID: Orbit 19 Target N Inst N OAPEL JUPRTS SeqNo 01 -

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

Time System	CDS	Load ID		Calendar Date	01/31/99	Week 57

Start	JEE-CDS 00001545:00:0	99-031/02:59:37.400	JEE-001/02:02:10.000
End	JEE-CDS 00001543:00:0	99-031/03:01:38.734	JEE-001/02:00:08.666
Duration	00000002:00:0	000/00:02:01.334	000/00:02:01.334

Top Label	19NNJUPRTS01-
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 E19 reload OAPELS are:
19NNJUPRTS01, 19NNJUPRTS02, 19NNHOTMAP01, 19NNHOTMAP02, 19NNHOTMAP03, 19NNHEXICE02, 19NNHEXICE03, 19NNAURORA01, 19NNAURORA02, 19NNAURORA03, 19NNIOFLUX01

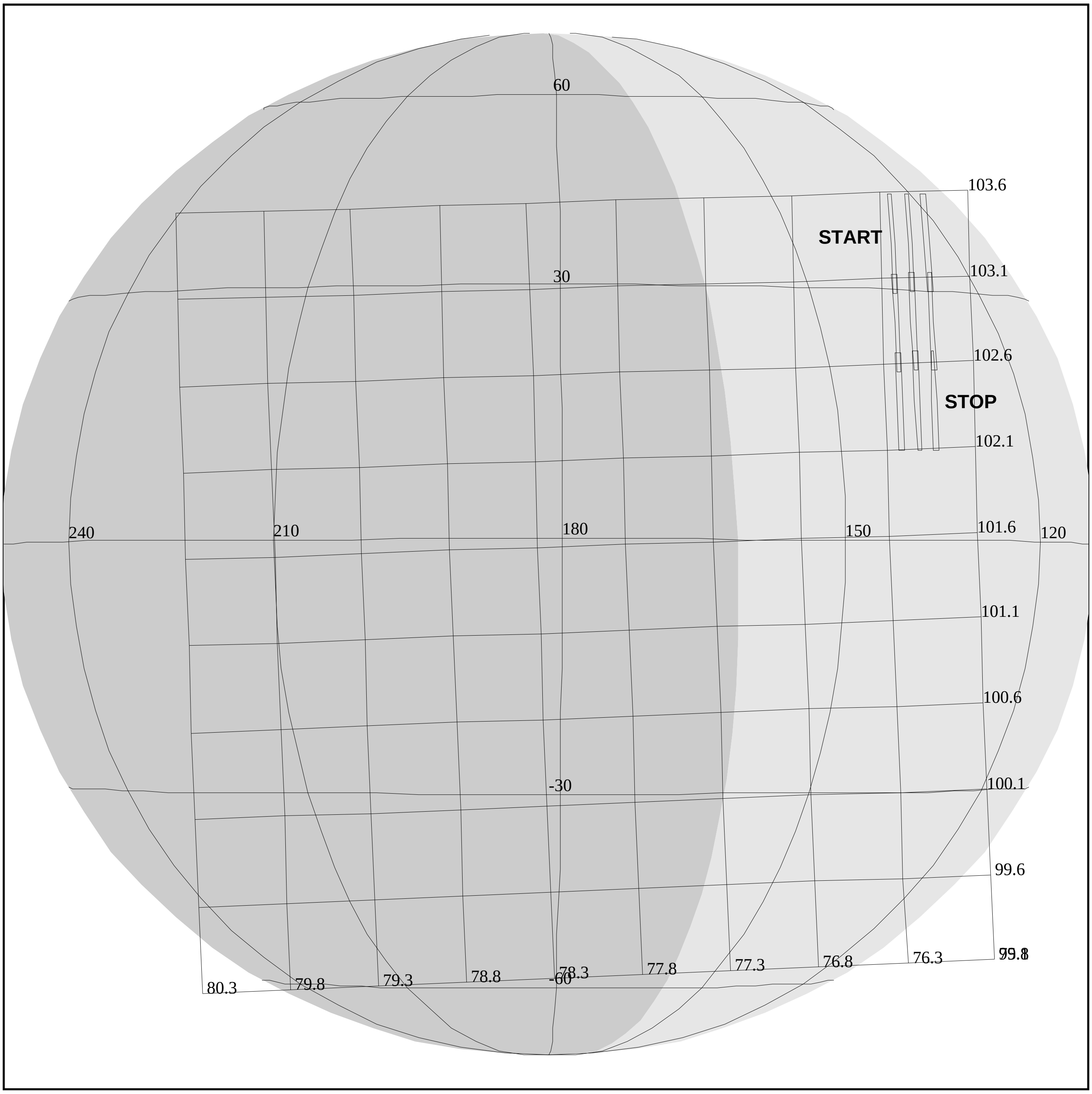
19JNJUPNTB01, 19JNJUPNTB02, 19JNJUPNTB03 did not have reloads.,

Design Detail

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

```
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 01/15/99 09:46:13 rev 6/95



165LA:TT= 0 TMC= 1 C= -35.00 XC= 29.50 BS= 0/9002 TC= 3
A= 728 pD= 0 SR=17.450 RA50=252.23 DEC50=-22.32 cone= 76.19 clock=103.37
165DA:TT= 0 TMC= 1 C= -35.00 XC= 29.50 BS= 0/9558 TC= 3
A= 728 pD= 1810 SR= 8.000 RA50=253.81 DEC50=-22.48 cone= 77.66 clock=103.42
117DA:#SB= 1 OR= 0.030 RR=12.000 BM=F RC= 1 BS= 0/9558
1:#s= 3 Cs= -5.00 XCs= 0.00 Cr= 5.00 XCr= -8.00 sD= 518 rD= 30

19JNJUPRTS01

TARGET G3.1 lisac: 1/15/1999 14: 8:10

FILE:P.19JNJUPRTS01

CENTRAL BODY:JUPITER III

MINI:m.target

S/C EPH:/DATA/NAVIO/E19-T-981116.NS

PERIAPSIS:

START:JEE 99-032/05:01:47.400 -CDS 1594:00:0

OBSERVATION:19JNJUPRTS01

THINNING:NIM 7

BODY PLOT TIME:TARGET-TIME D= 1810 S= 1.000

DESCRIP:PREPOSITION_FOR_JUPRTS01

Jupiter Realtime Observation	ACTIVITY ID: 19JNJUPRTS01* START TIME: 99-031/03:02:39.400

Activity ID: Orbit 19 Target J Inst N OAPEL JUPRTS SeqNo 01 *

Title	Jupiter Realtime Observation			Instrument	NIMS
Requestor	NIMS-AWG/K. BAINES	Team	NIMS	Working Group	AWG

Time System	CDS	Load ID		Calendar Date	01/31/99	Week	57

Start	JEE-CDS 00001542:00:0	99-031/03:02:39.400	JEE-001/01:59:08.000
End	JEE-CDS 00001528:00:0	99-031/03:16:48.734	JEE-001/01:44:58.666
Duration	00000014:00:0	000/00:14:09.334	000/00:14:09.334

Top Label	19JNJUPRTS01*
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 Mbits

Data Returned

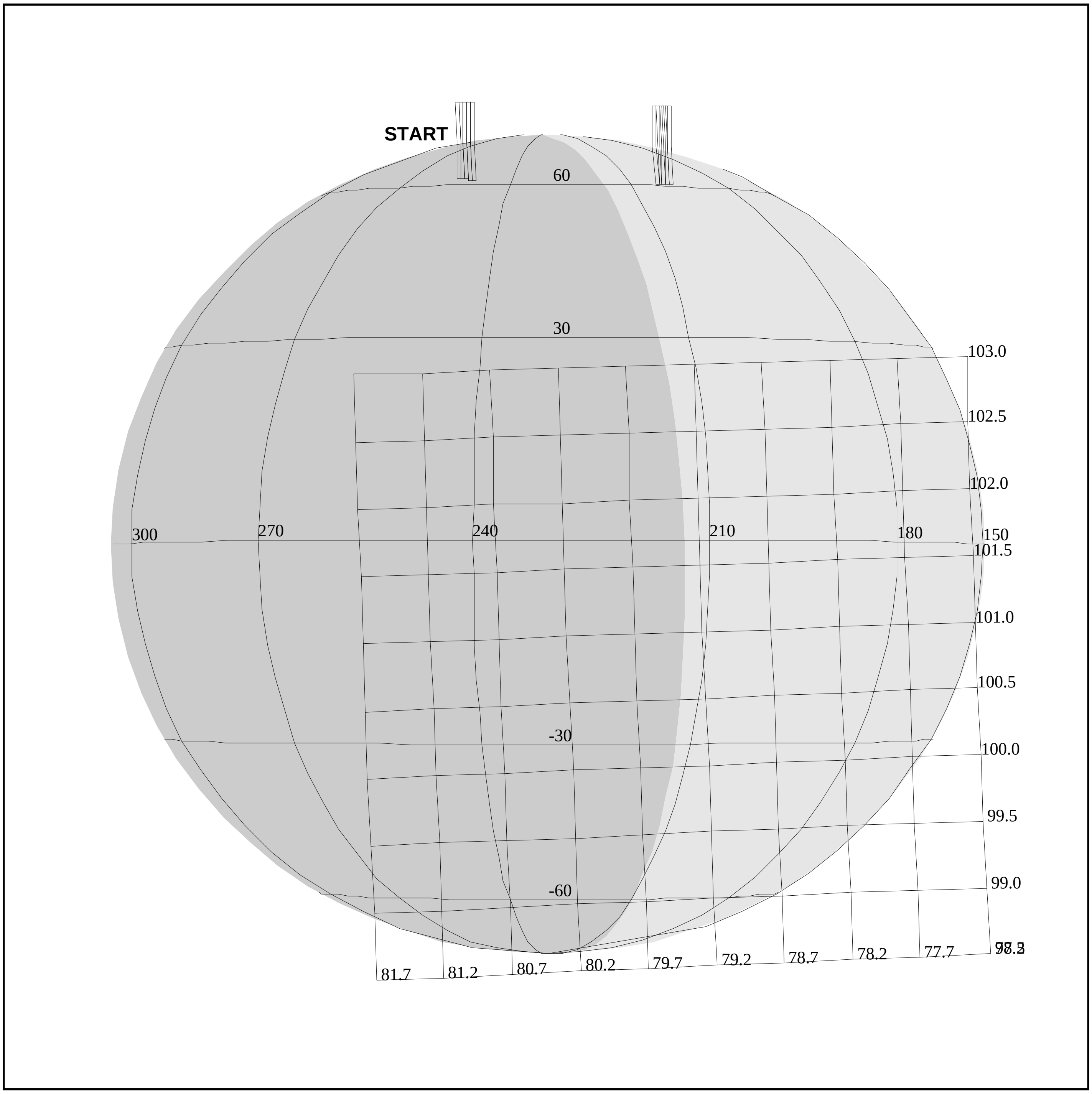
Design Detail

Long map. Three scans, each three RIMS long.
Target to 35 degrees North latitude for the first scan. No scan overlap;
Nyquist sampling not necessary - lit surface only.
Not longitudinal dependent. No overlap in FOV.
NIMS R/T only returns every seventh FOV.

Mirror Blocked (1B,1B) (11011,11011)
4 nimsels per Rim.

Long Map (LM), Gain 2, Grating Start 0, RT, JLM408

Galileo Activity Plan Form 01/15/99 09:46:13 rev 6/95



165DH:TT= 0 TMC= 1 C= 10.00 XC= 52.00 BS= 0/4290 TC= 3
A= 728 pD= 0 SR=17.450 RA50=257.46 DEC50=-21.57 cone= 80.91 clock=104.74
117DH:#SB= 1 OR= 0.030 RR=12.000 BM=F RC= 1 BS= 0/4290
1:#s= 2 Cs= 0.00 XCs= 0.00 Cr= -22.00 XCr= -1.00 sD= 910 rD= 364

19JNJUPRTS02

TARGET G3.1 lisac: 1/15/1999 14: 8:10

FILE:P.19JNJUPRTS02

CENTRAL BODY:JUPITER

MINI:m.target

S/C EPH:/DATA/NAVIO/E19-T-981116.NS

PERIAPSIS:

START:JEE 99-032/05:01:47.400 -CDS 1510:00:0

OBSERVATION:19JNJUPRTS02

THINNING:NIM 7

BODY PLOT TIME:TARGET-TIME D= 0 S= 0.800

DESCRIP:Jupiter_Realtime_Observation

Jupiter Realtime Observation		ACTIVITY ID:	19JNJUPRTS02*
		START TIME:	99-031/03:30:58.067

Activity ID: Orbit 19 Target J Inst N OAPEL JUPRTS SeqNo 02 *

Title	Jupiter Realtime Observation			Instrument	NIMS
Requestor	NIMS-AWG/K. BAINES	Team	NIMS	Working Group	AWG

Time System	CDS	Load ID		Calendar Date	01/31/99	Week	57

Start	JEE-CDS 00001514:00:0	99-031/03:30:58.067	JEE-001/01:30:49.333
End	JEE-CDS 00001500:00:0	99-031/03:45:07.400	JEE-001/01:16:40.000
Duration	00000014:00:0	000/00:14:09.333	000/00:14:09.333

Top Label	19JNJUPRTS02*
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.
Look at northern auroral region.

FREE_RTS=0.16 Mbits

Data Returned

Design Detail

Long map. One scan, two 5 RIM segments at North polar region
Longitude - not dependent. No overlap in FOV.
90 degrees phase angle
Search for Aurora.

First 5 Rims on Nightside Northern Aurora
Slew for 2 Rims
Second 5 Rims on Dayside Northern Aurora

Mirror Blocked (19,13) (11001,10011)
8 nimsels per Rim.

Long Map (LM), Gain 2, Grating Start 0, RT, JLM204

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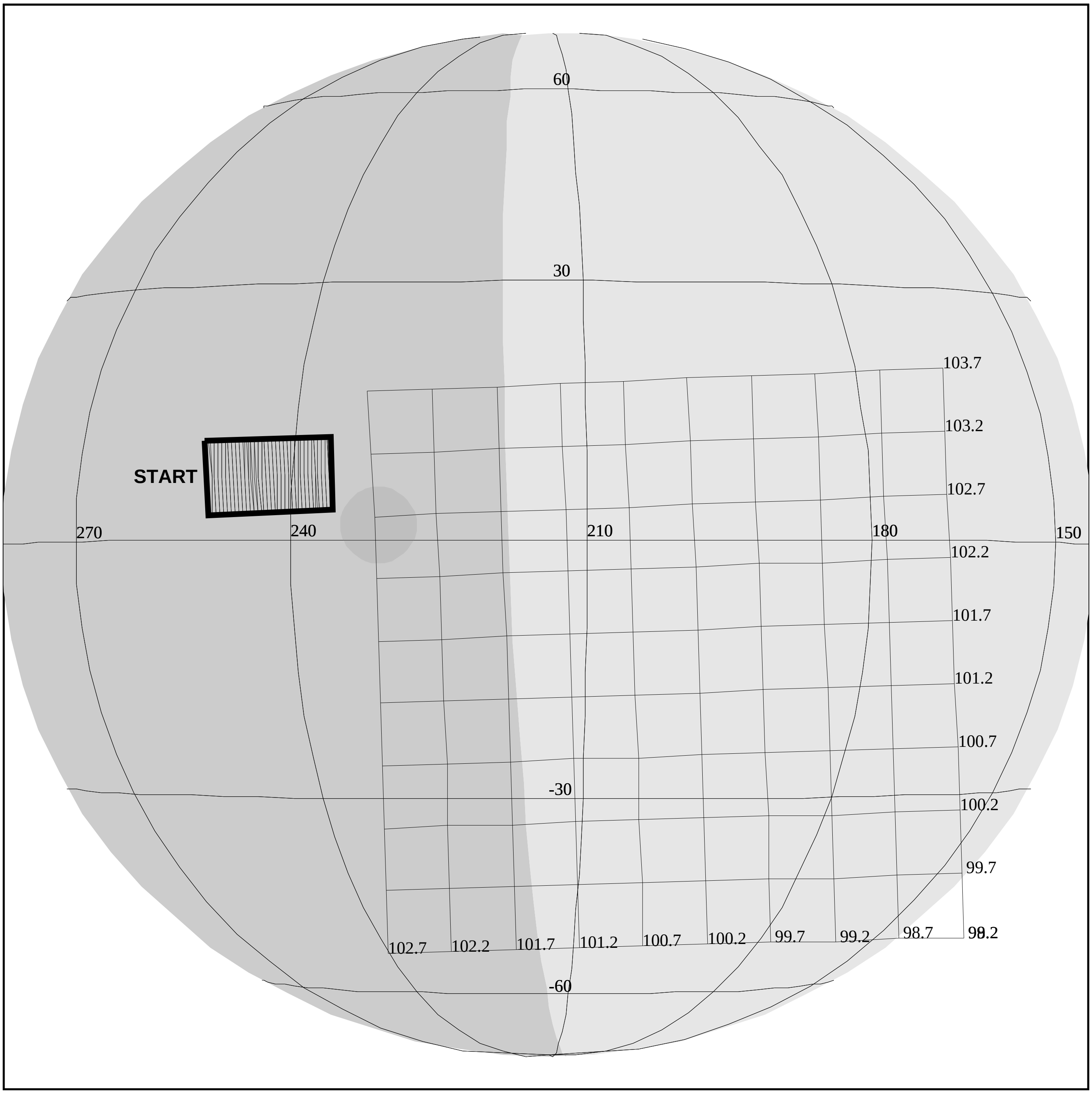


165DB:TT= 0 TMC= 1 C= 0.00 XC= 0.00 BS= 0/2762 TC= 1(7 250)
A= 364 pD= 1810 SR=17.450 RA50=282.46 DEC50=-23.74 cone=103.99 clock=103.08
117DB:#SB= 1 OR= 0.030 RR=12.000 BM=F RC= 1 BS= 0/2762
1:#s= 1 Cs= -18.00 XCs= 0.00 Cr= 0.00 XCr= 0.00 sD= 1810 rD= 2

19JNHOTMAP01

TARGET G3.1 lisac: 1/15/1999 14: 8:10

FILE:P.19JNHOTMAP01

CENTRAL BODY:JUPITER

MINI:m.target

S/C EPH:/DATA/NAVIO/E19-T-981116.NS

PERIAPSIS:

START:JEE 99-032/05:01:47.400 -CDS 914:00:0

OBSERVATION:19JNHOTMAP01

THINNING:NIM 2

BODY PLOT TIME:TARGET-TIME D= 1810 S= 1.000

DESCRIP:JUPITER_HOTMAP_1

NIMS Jupiter HotMap	ACTIVITY ID: 19JNHOTMAP01- START TIME: 99-031/13:33:35.400

Activity ID: Orbit 19 Target J Inst N OAPEL HOTMAP SeqNo 01 -

Title	NIMS Jupiter HotMap			Instrument	NIMS
Requestor	NIMS-AWG/K. BAINES	Team	NIMS	Working Group	AWG

Time System	CDS	Load ID		Calendar Date	01/31/99	Week	57

Start	JEE-CDS 00000918:00:0	99-031/13:33:35.400	JEE-000/15:28:12.000
End	JEE-CDS 00000904:00:0	99-031/13:47:44.734	JEE-000/15:14:02.666
Duration	00000014:00:0	000/00:14:09.334	000/00:14:09.334

Top Label 19JNHOTMAP01-
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

Long mapping of hotspot region at high spatial resolution.
Observation uses special wavelength table JHT253A.

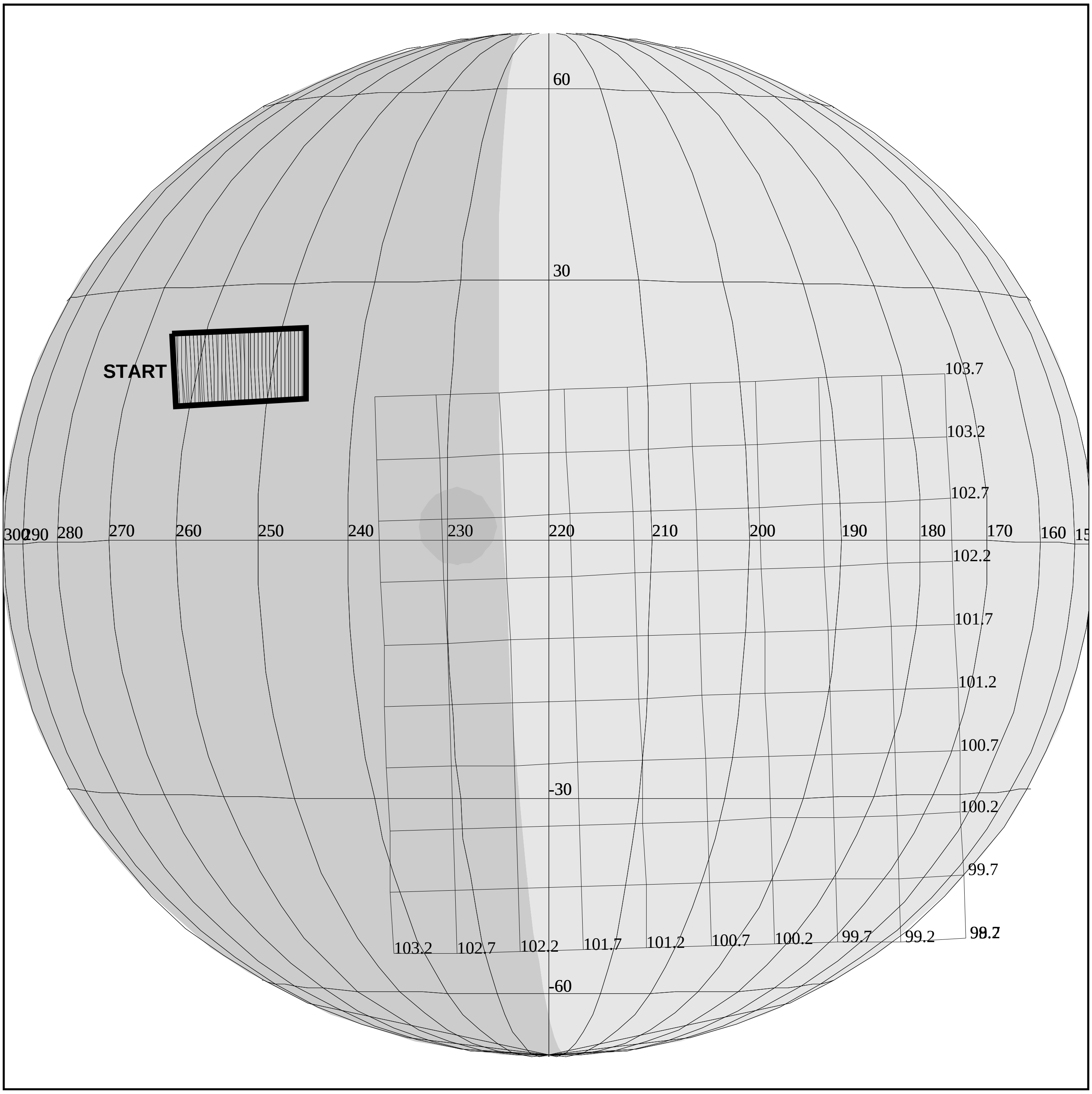
Nightside Observation

Data Returned

Design Detail

TICS=143, FMT= LPU, Long Map,
Nyquist-sampled observation 5 X 1 (50 mrad X 10 mrad) area centered near
7 degrees North latitude, longitude range is from 235 degrees to 250 degrees,
at about 391 km IFOV spatial resolution. Four RIMs available for targeting.

Long Map (LM), Gain 4, Grating Start 0, LPU, JHT253A, JHT100A



165DM:TT= 0 TMC= 1 C= 13.50 XC= 0.00 BS= 0/4764 TC= 1(20 250)
A= 182 pD= 2720 SR=17.450 RA50=283.21 DEC50=-22.80 cone=104.75 clock=104.00
117DM:#SB= 1 OR= 0.030 RR=12.000 BM=F RC= 1 BS= 0/4764
1:#s= 1 Cs= -27.00 XCs= 0.00 Cr= 0.00 XCr= 0.00 sD= 2720 rD= 40

19JNJUPNTB01

TARGET G3.1 lisac: 1/15/1999 14: 8:10

FILE:P.19JNJUPNTB01

CENTRAL BODY:JUPITER

MINI:m.target

S/C EPH:/DATA/NAVIO/E19-T-981116.NS

PERIAPSIS:

START:JEE 99-032/05:01:47.400 -CDS 903:00:0

OBSERVATION:19JNJUPNTB01

THINNING:NIM 2

BODY PLOT TIME:TARGET-TIME D= 2720 S= 1.000

DESCRIP:JUPITER_NORTH_TEMPORAL_BELT_01

Jupiter NTB Observation		ACTIVITY ID:	19JNJUPNTB01-
		START TIME:	99-031/13:47:44.734

Activity ID: Orbit 19 Target J Inst N OAPEL JUPNTB SeqNo 01 -

Title	Jupiter NTB Observation			Instrument	NIMS
Requestor	NIMS-AWG/K. BAINES	Team	NIMS	Working Group	AWG

Time System CDS Load ID Calendar Date 01/31/99 Week 57

Start	JEE-CDS 00000904:00:0	99-031/13:47:44.734	JEE-000/15:14:02.666
End	JEE-CDS 00000892:00:0	99-031/13:59:52.734	JEE-000/15:01:54.666
Duration	00000012:00:0	000/00:12:08.000	000/00:12:08.000

Top Label 19JNJUPNTB01-
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

Long mapping of Northern Temperate Belt at high spatial resolution.
Observation uses special wavelength table JHT253A.

Nightside Observation

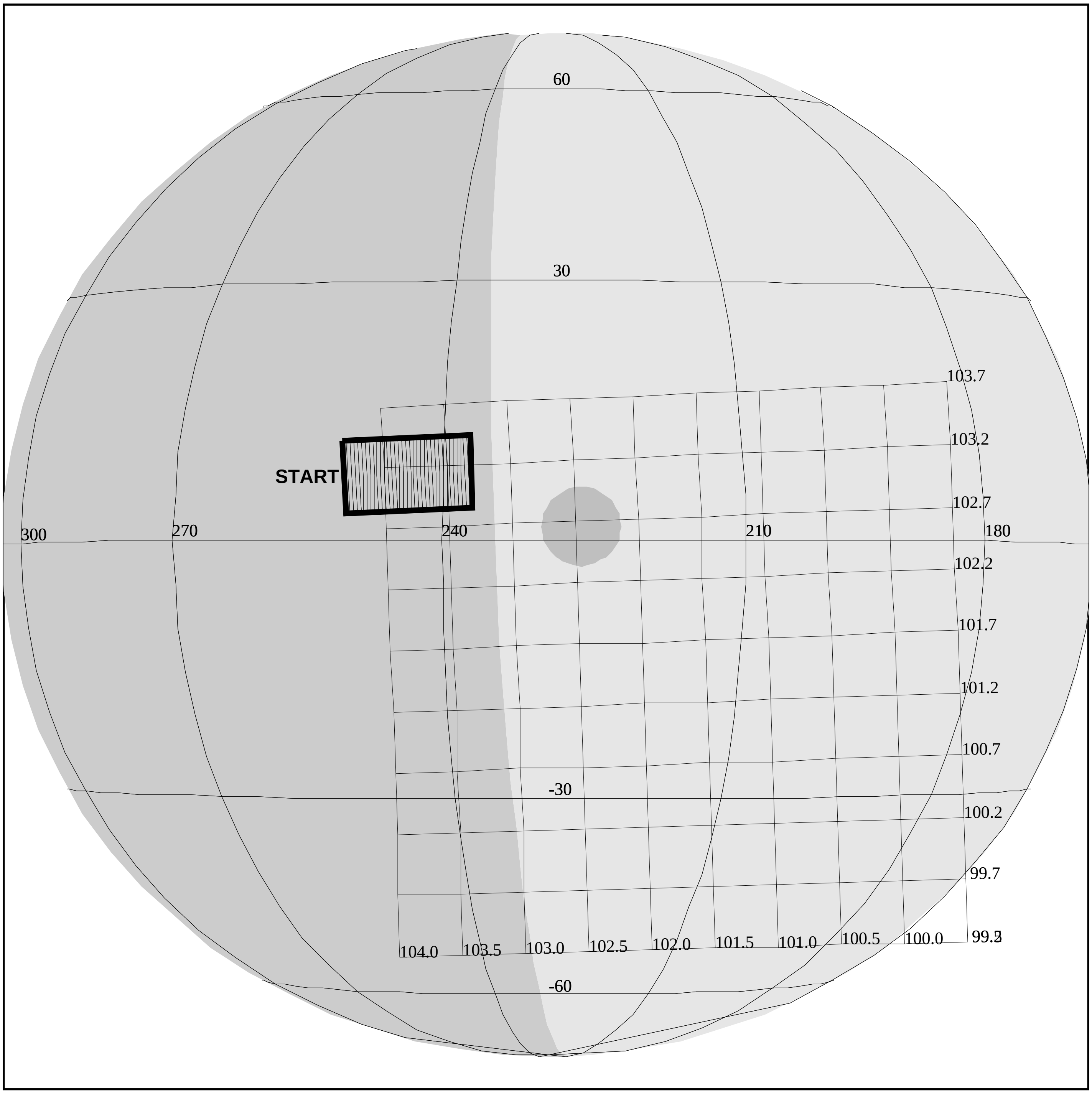
Data Returned

Design Detail

TICS=145, FMT= LPU, Long Map,
Nyquist-sampled observation 5 X 1 (50 mrad X 10 mrad) area centered near 19 degrees North latitude, longitude range is from 239 degrees to 263 degrees, at about 391 km IFOV spatial resolution. Four RIMs available for targeting.

Long Map (LM), Gain 4, Grating Start 0, LPU, JHT253A, JHT100A

Galileo Activity Plan Form 01/15/99 09:46:14 rev 6/95



165DD:TT= 0 TMC= 1 C= 0.00 XC= 0.00 BS= 0/7858 TC= 1(7 250)
A= 364 pD= 1810 SR=17.450 RA50=282.77 DEC50=-23.69 cone=104.28 clock=103.11
117DD:#SB= 1 OR= 0.030 RR=12.000 BM=F RC= 1 BS= 0/7858
1:#s= 1 Cs= -18.00 XCs= 0.00 Cr= 0.00 XCr= 0.00 sD= 1810 rD= 2

19JNHOTMAP02

TARGET G3.1 lisac: 1/15/1999 14: 8:10

FILE:P.19JNHOTMAP02

CENTRAL BODY:JUPITER

MINI:m.target

S/C EPH:/DATA/NAVIO/E19-T-981116.NS

PERIAPSIS:

START:JEE 99-032/05:01:47.400 -CDS 886:00:0

OBSERVATION:19JNHOTMAP02

THINNING:NIM 2

BODY PLOT TIME:TARGET-TIME D= 1810 S= 1.000

DESCRIP:JUPITER_HOTMAP_2

NIMS Jupiter HotMap		ACTIVITY ID:	19JNHOTMAP02-
		START TIME:	99-031/14:02:54.734

Activity ID: Orbit 19 Target J Inst N OAPEL HOTMAP SeqNo 02 -

Title	NIMS Jupiter HotMap			Instrument	NIMS
Requestor	NIMS-AWG/K. BAINES	Team	NIMS	Working Group	AWG

Time System CDS Load ID Calendar Date 01/31/99 Week 57

Start	JEE-CDS 00000889:00:0	99-031/14:02:54.734	JEE-000/14:58:52.666
End	JEE-CDS 00000856:00:0	99-031/14:36:16.734	JEE-000/14:25:30.666
Duration	00000033:00:0	000/00:33:22.000	000/00:33:22.000

Top Label 19JNHOTMAP02-
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

Long mapping of hotspot region at high spatial resolution.
Observation uses special wavelength table JHT253A.

Nightside Observation

Data Returned

Design Detail

TICS=143, FMT= LPU, Long Map,
Nyquist-sampled observation 5 X 1 (50 mrad X 10 mrad) area centered near 7 degrees North latitude, longitude range is from 237 degrees to 250 degrees, at about 303 km IFOV spatial resolution. Four RIMs available for targeting.

Long Map (LM), Gain 4, Grating Start 0, LPU, JHT253A, JHT100A

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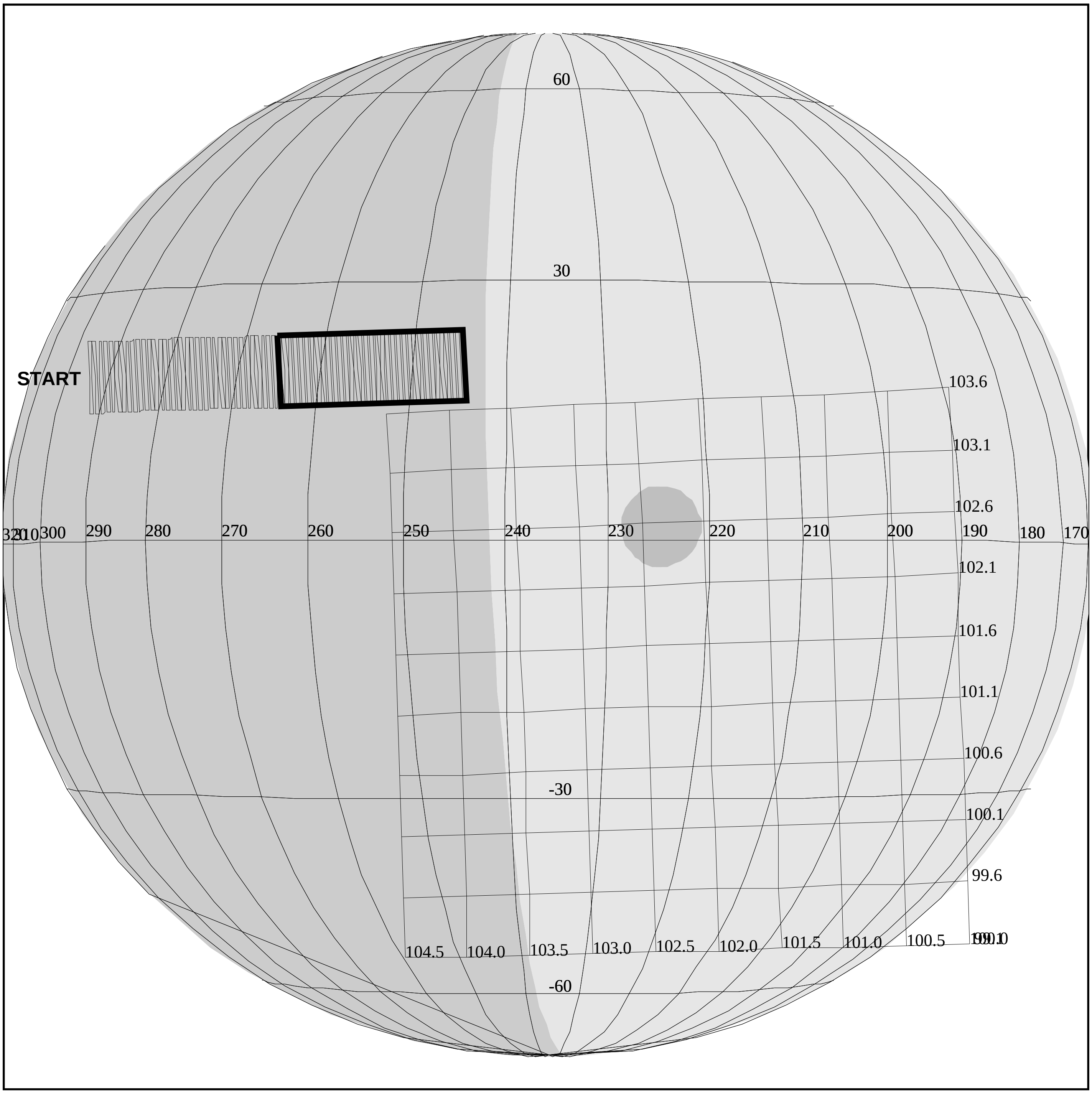


165DN:TT= 0 TMC= 1 C= 45.00 XC= 0.00 BS= 0/9860 TC= 1(20 250)
A= 182 pD= 3630 SR=17.450 RA50=285.45 DEC50=-22.60 cone=106.82 clock=104.05
117DN:#SB= 1 OR= 0.030 RR=12.000 BM=F RC= 1 BS= 0/9860
1:#s= 1 Cs= -36.00 XCs= 0.00 Cr= 0.00 XCr= 0.00 sD= 3630 rD= 40

19JNJUPNTB02

TARGET G3.1 lisac: 1/15/1999 14: 8:10

FILE:P.19JNJUPNTB02

CENTRAL BODY:JUPITER

MINI:m.target

S/C EPH:/DATA/NAVIO/E19-T-981116.NS

PERIAPSIS:

START:JEE 99-032/05:01:47.400 -CDS 875:00:0

OBSERVATION:19JNJUPNTB02

THINNING:NIM 2

BODY PLOT TIME:START-TIME D= 3630 S= 1.000

DESCRIP:JUPITER_NORTH_TEMPORAL_BELT_01

Jupiter NTB Observation		ACTIVITY ID:	19JNJUPNTB02-
		START TIME:	99-031/14:36:16.734

Activity ID: Orbit 19 Target J Inst N OAPEL JUPNTB SeqNo 02 -

Title	Jupiter NTB Observation			Instrument	NIMS
Requestor	NIMS-SWG/M. SEGURA	Team	NIMS	Working Group	SWG

Time System	CDS	Load ID		Calendar Date	01/31/99 Week 57

Start	JEE-CDS 00000856:00:0	99-031/14:36:16.734	JEE-000/14:25:30.666
End	JEE-CDS 00000842:00:0	99-031/14:50:26.067	JEE-000/14:11:21.333
Duration	00000014:00:0	000/00:14:09.333	000/00:14:09.333

Top Label	19JNNJUPNTB02-
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

Long mapping of Northern Temperate Belt at high spatial resolution.
Observation uses special wavelength table JHT253A.

Nightside Observation

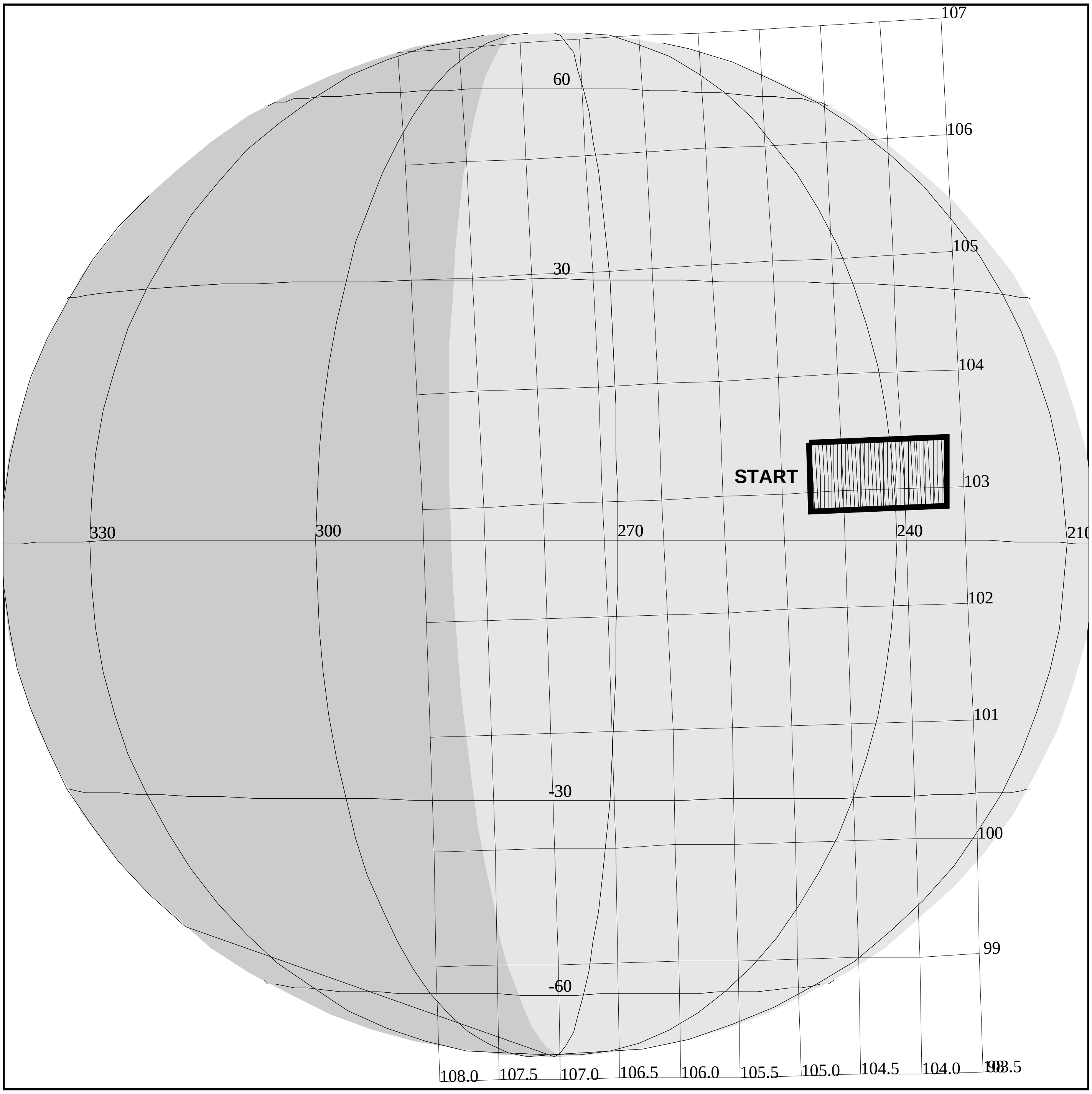
Data Returned

Design Detail

TICS=283, FMT= LPU, Long Map,
Nyquist-sampled observation 5 X 1 (50 mrad X 10 mrad) area centered near 19 degrees North latitude, longitude range is from 257 degrees to 294 degrees, at about 303 km IFOV spatial resolution. Four RIMs available for targeting.

Long Map (LM), Gain 4, Grating Start 0, LPU, JHT253A, JHT100A

Galileo Activity Plan Form 01/15/99 09:46:14 rev 6/95



165DE:TT= 0 TMC= 1 C= 0.00 XC= 0.00 BS= 0/3146 TC= 1(7 250)
A= 364 pD= 1810 SR=17.450 RA50=283.26 DEC50=-23.64 cone=104.73 clock=103.13
117DE:#SB= 1 OR= 0.030 RR=12.000 BM=F RC= 1 BS= 0/3146
1:#s= 1 Cs= -18.00 XCs= 0.00 Cr= 0.00 XCr= 0.00 sD= 1810 rD= 2

19JNHOTMAP03

TARGET G3.1 lisac: 1/15/1999 14: 8:10

FILE:P.19JNHOTMAP03

CENTRAL BODY:JUPITER

MINI:m.target

S/C EPH:/DATA/NAVIO/E19-T-981116.NS

PERIAPSIS:

START:JEE 99-032/05:01:47.400 -CDS 802:00:0

OBSERVATION:19JNHOTMAP03

THINNING:NIM 2

BODY PLOT TIME:TARGET-TIME D= 1810 S= 1.000

DESCRIP:JUPITER_HOTMAP_3

NIMS Jupiter HotMap	ACTIVITY ID: 19JNHOTMAP03- START TIME: 99-031/15:26:50.067

Activity ID: Orbit 19 Target J Inst N OAPEL HOTMAP SeqNo 03 -

Title	NIMS Jupiter HotMap			Instrument	NIMS
Requestor	NIMS-AWG/K. BAINES	Team	NIMS	Working Group	SWG

Time System CDS Load ID Calendar Date 01/31/99 Week 57

Start	JEE-CDS 00000806:00:0	99-031/15:26:50.067	JEE-000/13:34:57.333
End	JEE-CDS 00000792:00:0	99-031/15:40:59.400	JEE-000/13:20:48.000
Duration	00000014:00:0	000/00:14:09.333	000/00:14:09.333

Top Label 19JNHOTMAP03-
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

Long mapping of hotspot region at high spatial resolution.
Observation uses special wavelength table JSB253C.

Dayside Observation

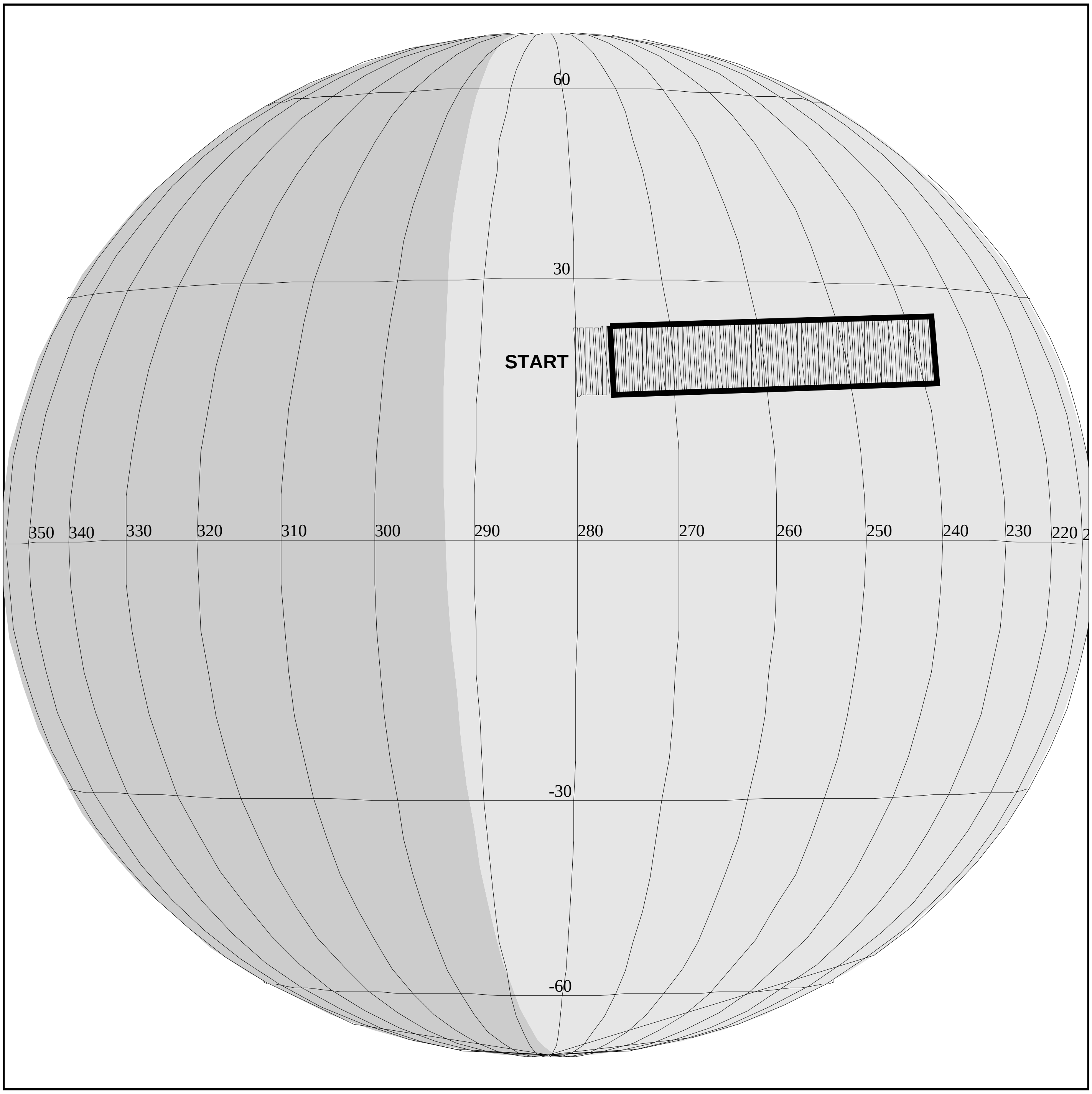
Data Returned

Design Detail

TICS=143, FMT= LPU, Long Map,
Nyquist-sampled observation 5 X 1 (50 mrad X 10 mrad) area centered near
7 degrees North latitude, longitude range is from 233 degrees to 250 degrees,
at about 391 km IFOV spatial resolution. Four RIMs available for targeting.

Long Map (LM), Gain 2, Grating Start 0, LPU, JSB253C, JSB253C

Galileo Activity Plan Form 01/15/99 09:46:14 rev 6/95



165DO:TT=   0 TMC= 1 C=   0.00 XC=   0.00 BS= 0/5148 TC= 1(20   280   )
A= 182 pD= 3630 SR=17.450 RA50=285.86 DEC50=-22.37 cone=107.22 clock=104.26
117DO:#SB= 1 OR= 0.030 RR=12.000 BM=F RC= 1 BS= 0/5148
1:#s= 1 Cs= -36.00 XCs=   0.00 Cr=   0.00 XCr=   0.00 sD= 3630 rD=   40

19JNJUPNTB03

TARGET G3.1 lisac: 1/15/1999 14: 8:10

FILE:P.19JNJUPNTB03

CENTRAL BODY:JUPITER

MINI:m.target

S/C EPH:/DATA/NAVIO/E19-T-981116.NS

PERIAPSIS:

START:JEE 99-032/05:01:47.400   -CDS 791:00:0

OBSERVATION:19JNJUPNTB03

THINNING:NIM   2

BODY PLOT TIME:START-TIME D= 3630 S= 1.000

DESCRIP:JUPITER_NORTH_TEMPORAL_BELT_03

Jupiter NTB Observation	ACTIVITY ID: 19JNJUPNTB03- START TIME: 99-031/15:40:59.400

Activity ID: Orbit 19 Target J Inst N OAPEL JUPNTB SeqNo 03 -

Title	Jupiter NTB Observation			Instrument	NIMS
Requestor	NIMS-AWG/K. BAINES	Team	NIMS	Working Group	AWG

Time System CDS Load ID Calendar Date 01/31/99 Week 57

Start	JEE-CDS 00000792:00:0	99-031/15:40:59.400	JEE-000/13:20:48.000
End	JEE-CDS 00000778:00:0	99-031/15:55:08.734	JEE-000/13:06:38.666
Duration	00000014:00:0	000/00:14:09.334	000/00:14:09.334

Top Label 19JNJUPNTB03-
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

Long mapping of Northern Temperate Belt at high spatial resolution. Observation uses special wavelength table JSB253C.

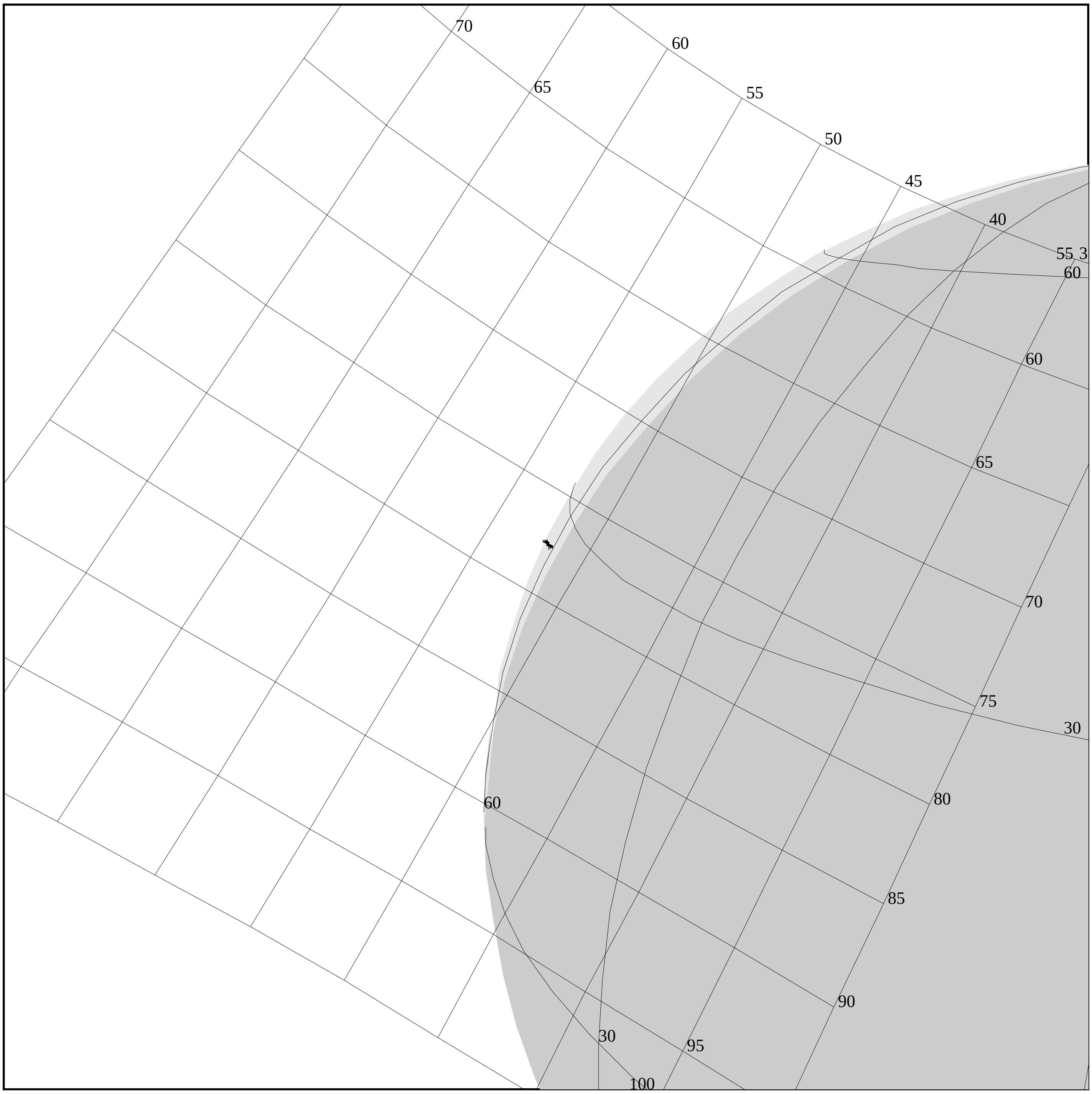
Dayside Observation

Data Returned

Design Detail

TICS=283, FMT= LPU, Long Map,
Nyquist-sampled observation 5 X 1 (50 mrad X 10 mrad) area centered near 21 degrees North latitude, longitude range is from 280 degrees to 250 degrees, at about 391 km IFOV spatial resolution. Four RIMs available for targetting.

Long Map (LM), Gain 2, Grating Start 0, LPU, JSB253C, JSB253C



165DF:TT= 0 TMC= 2 C= 0.00 XC= 0.00 BS= 0/0718 TC= 1(26.17 63.61)
A= 546 pD= 1992 SR= 8.000 RA50=172.65 DEC50=-16.80 cone= 77.54 clock= 51.95

19ENHEXICE02

TARGET G3.1 lisac: 1/15/1999 14: 8:10

FILE:P.19ENHEXICE02

TARGET BODY : EUROPA

MINI:m.target

S/C EPH:/DATA/NAVIO/E19-T-981116.NS

PERIAPSIS: **THINNING:NIM 2**

START:EEE 99-032/02:20:00.733 +CDS 04:00:0 **BODY PLOT TIME:TARGET-TIME D= 1992 S= 1.000**

OBSERVATION:19ENHEXICE02 **DESCRIP:Europa_Hexagonal_Ice_Obs_2**

```
Europa Hexagonal Ice Obs. part 2        ACTIVITY ID:   19ENHEXICE02-
                                         START TIME:   99-032/02:23:02.733
```

```
Activity ID: Orbit 19  Target E  Inst N  OAPEL HEXICE  SeqNo 02 -

Title        Europa Hexagonal Ice Obs. part 2       Instrument       NIMS
Requestor    NIMS-SWG/A. OCAMPO        Team   NIMS  Working Group    SWG
```

```
Time System  CDS       Load ID         Calendar Date  02/01/99  Week  57

Start        EEE+CDS 00000003:00:0 99-032/02:23:02.733   EEE+000/00:03:02.000
End          EEE+CDS 00000017:05:0 99-032/02:37:15.399   EEE+000/00:17:14.666
Duration            00000014:05:0     000/00:14:12.666       000/00:14:12.666
```

```
Top Label    19ENHEXICE02-
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

To detect hexagonal ice on Europa’s surface.
Map out the ice phase function.

Data Returned

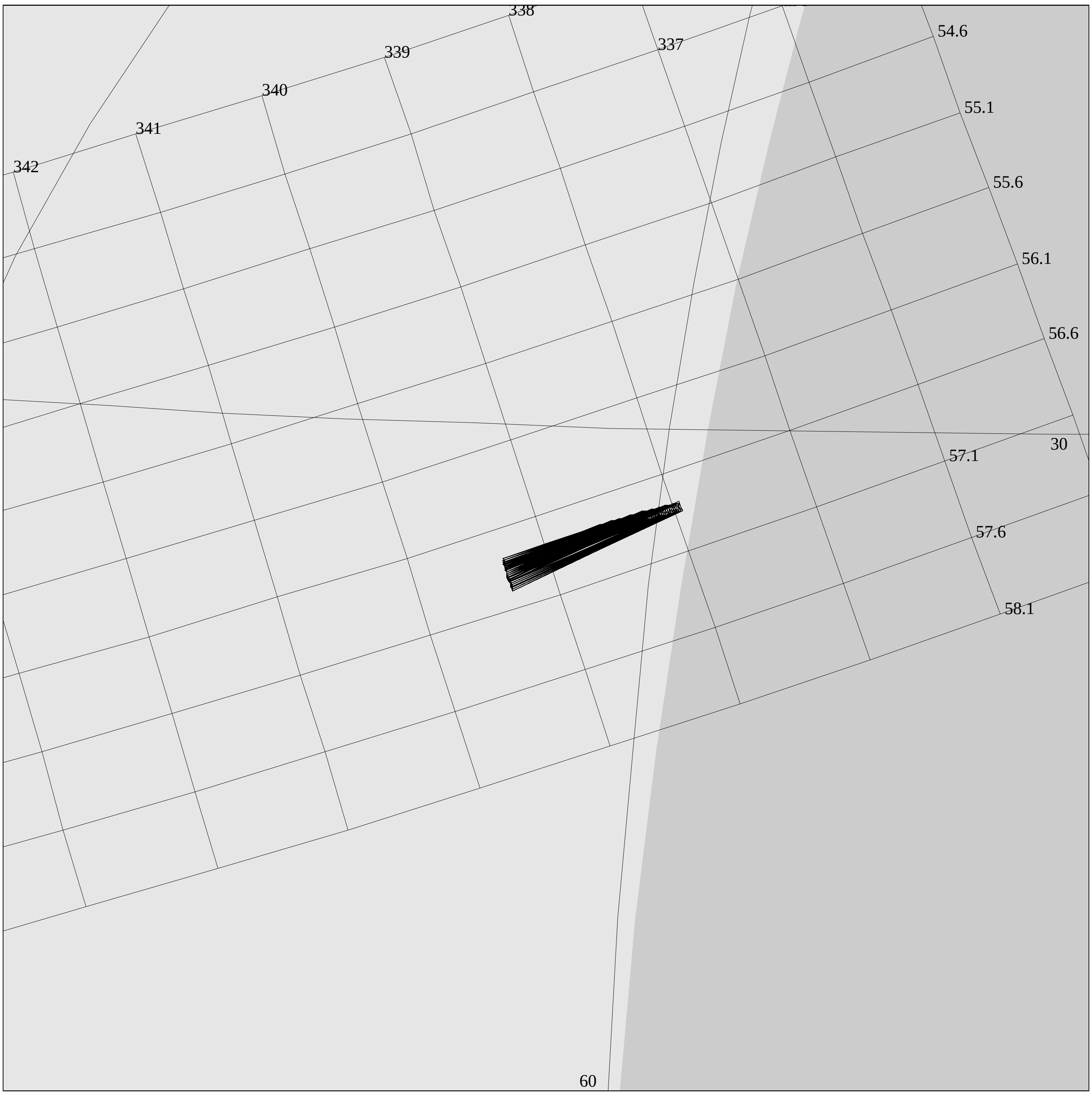
Design Detail

NIMS mode = XM, TICS= 586, FMT= MPW,
Gain state = 4, Grating position = 0

Target only, stare at same lat/lon position while phase angle varies
from 159 to 119 degrees.

Fixed Map (XM), Gain 4, Grating Start 0, MPW, EXM17A, EXM15A

Galileo Activity Plan Form   01/15/99 09:46:14   rev 6/95



165DG:TT= 0 TMC= 1 C= 0.00 XC= 0.00 BS= 0/4358 TC= 1(26.17 63.61)
A= 728 pD= 4164 SR=17.450 RA50=111.90 DEC50= 17.78 cone= 56.81 clock=338.97

19ENHEXICE03

TARGET G3.1 lisac: 1/15/1999 14: 8:10

FILE:P.19ENHEXICE03

TARGET BODY : EUROPA

MINI:m.target

S/C EPH:/DATA/NAVIO/E19-T-981116.NS

PERIAPSIS:

START:EEE 99-032/02:20:00.733 +CDS 24:00:0

OBSERVATION:19ENHEXICE03

THINNING:NIM 2

BODY PLOT TIME:TARGET-TIME D= 4164 S= 3.000

DESCRIP:Europa_Hexagonal_Ice_Obs_3

Europa Hexagonal Ice Obs. part 3	ACTIVITY ID: 19ENHEXICE03- START TIME: 99-032/02:42:15.399

Activity ID: Orbit 19 Target E Inst N OAPEL HEXICE SeqNo 03 -

Title	Europa Hexagonal Ice Obs. part 3			Instrument	NIMS
Requestor	NIMS-SWG/A. OCAMPO	Team	NIMS	Working Group	SWG

Time System	CDS	Load ID		Calendar Date	02/01/99	Week	57

Start	EEE+CDS 00000022:00:0	99-032/02:42:15.399	EEE+000/00:22:14.666
End	EEE+CDS 00000048:85:0	99-032/03:09:29.399	EEE+000/00:49:28.666
Duration	00000026:85:0	000/00:27:14.000	000/00:27:14.000

Top Label   19ENHEXICE03-
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

To detect hexagonal ice on Europa’s surface.
Map out the ice phase function.

Data Returned

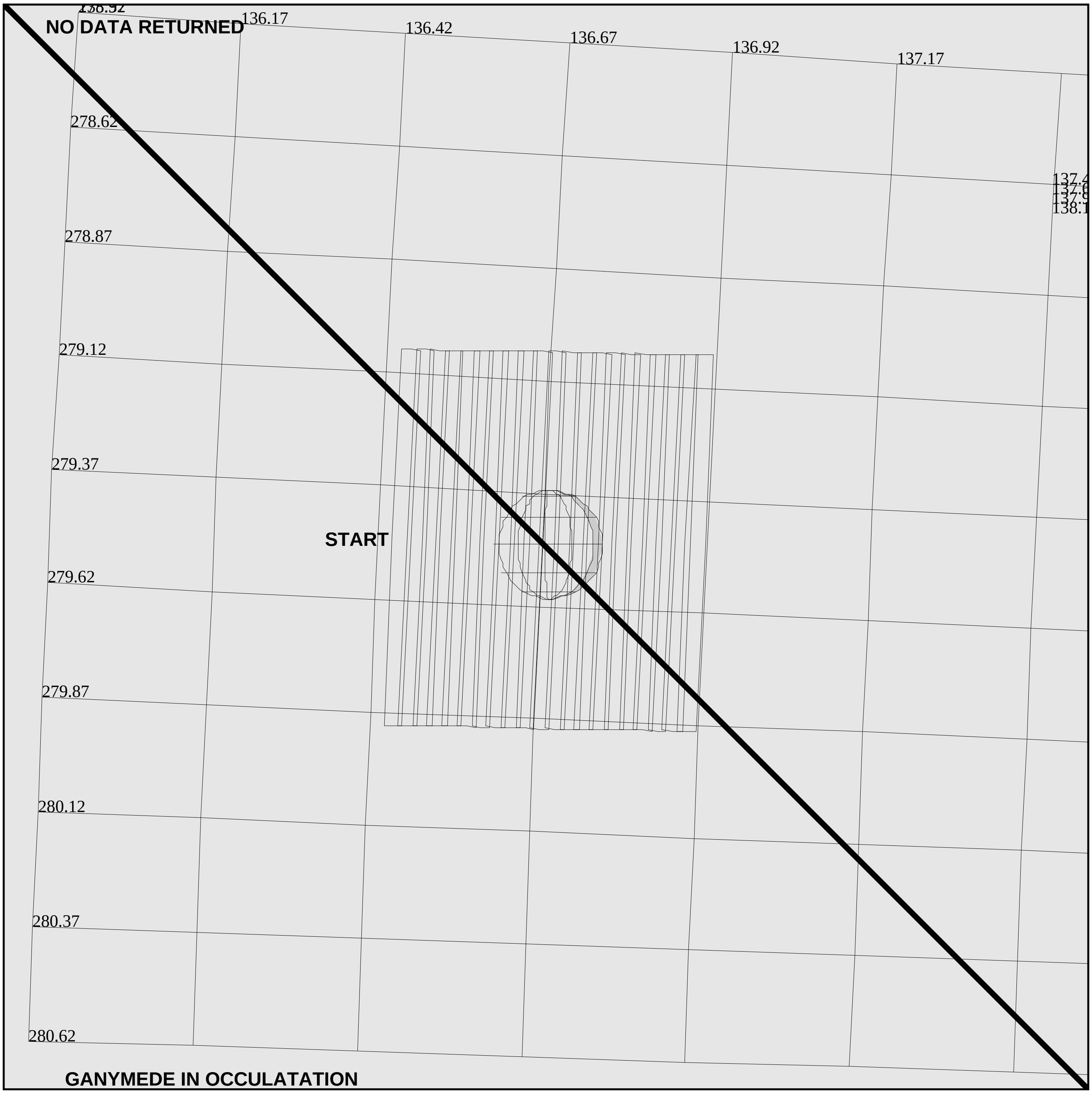
Design Detail

NIMS mode = XM, TICS= 1228, FMT= MPW,
Gain state = 4, Grating position = 0

Target only, stare at same lat/lon position while phase angle varies from 106 to 95 degrees.

Fixed Map (XM), Gain 4, Grating Start 0, MPW, EXM17A, EXM15A

Galileo Activity Plan Form   01/15/99 09:46:15   rev 6/95



165DI:TT= 0 TMC= 1 C= -4.00 XC= 0.00 BS= 0/1888 TC= 3
A= 182 pD= 0 SR= 8.000 RA50= 37.82 DEC50= 16.87 cone=136.45 clock=279.48
117DI:#SB= 1 OR= 0.010 RR=12.000 BM=F RC= 1 BS= 0/1888
1:#s= 1 Cs= 3.50 XCs= 0.00 Cr= 0.00 XCr= 0.00 sD= 1092 rD= 2

19GNAURORA01

TARGET G3.1 lisac: 1/15/1999 14: 8:10

FILE:P.19GNAURORA01

TARGET BODY : GANYMEDE

MINI:m.target

S/C EPH:/DATA/NAVIO/E19-T-981116.NS

PERIAPSIS:

START:GEE 99-032/12:45:53.333 +CDS 820:00:0

OBSERVATION:19GNAURORA01

THINNING:NIM 2

BODY PLOT TIME:TARGET-TIME D= 0 S= 0.100

DESCRIP:GANYMEDE_AURORA_OBS_01

Ganymede Aurora Observation	ACTIVITY ID: 19GNAURORA01- START TIME: 99-033/02:31:57.999

Activity ID: Orbit 19 Target G Inst N OAPEL AURORA SeqNo 01 -

Title	Ganymede Aurora Observation			Instrument	NIMS
Requestor	NIMS-SWG/M. SEGURA	Team	NIMS	Working Group	SWG

Time System	CDS	Load ID		Calendar Date	02/02/99	Week	57

Start	GEE+CDS 00000817:00:0	99-033/02:31:57.999	GEE+000/13:46:04.666
End	GEE+CDS 00000824:16:0	99-033/02:39:13.333	GEE+000/13:53:20.000
Duration	00000007:16:0	000/00:07:15.334	000/00:07:15.334

Top Label 19GNAURORA01-
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

To obtain evidence of Ganymede Aurora. Observation is first in series of 3 while Ganymede is in eclipse.

No Data Returned, S/C Safed

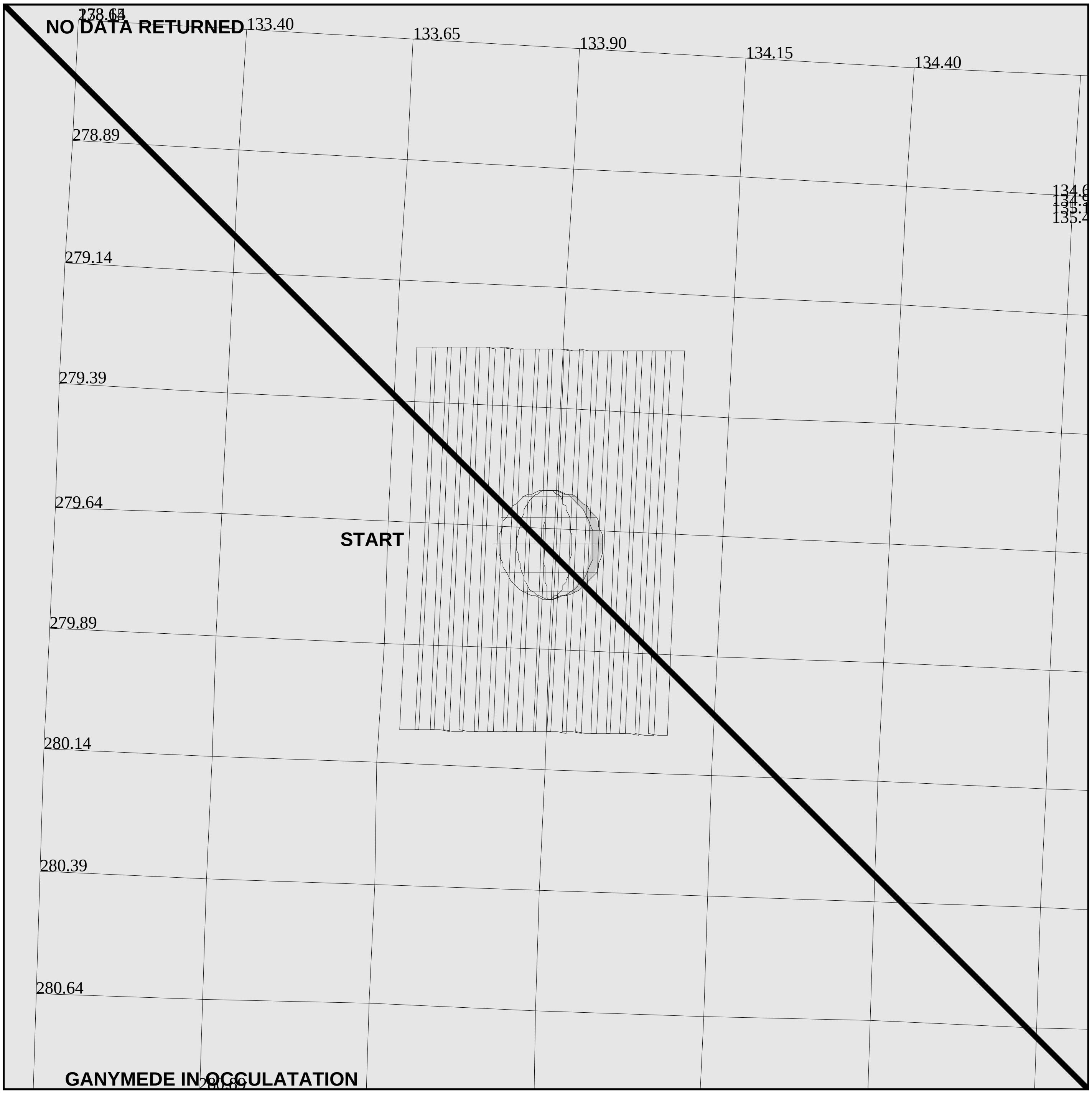
Design Detail

One Nyquist LM scan with pointing uncertainty factored in.

Observe Ganymede full-disk while in solar occultation.

SPACECRAFT SAFED
NO DATA RETURNED

Long Map (LM), Gain 4, Grating Start 0, LPU, GLM247L, GLM228L



165DJ:TT= 0 TMC= 1 C= -3.50 XC= 0.00 BS= 0/3718 TC= 3
A= 158 pD= 0 SR= 8.000 RA50= 40.55 DEC50= 17.76 cone=133.69 clock=279.67
117DJ:#SB= 1 OR= 0.010 RR=12.000 BM=F RC= 1 BS= 0/3718
1:#s= 1 Cs= 2.95 XCs= 0.00 Cr= 0.00 XCr= 0.00 sD= 900 rD= 2

19GNAURORA02

TARGET G3.1 lisac: 1/15/1999 14: 8:10

FILE:P.19GNAURORA02

TARGET BODY : GANYMEDE

MINI:m.target

S/C EPH:/DATA/NAVIO/E19-T-981116.NS

PERIAPSIS:

START:GEE 99-032/12:45:53.333 +CDS 885:00:0

OBSERVATION:19GNAURORA02

THINNING:NIM 2

BODY PLOT TIME:TARGET-TIME D= 0 S= 0.100

DESCRIP:GANYMEDE_AURORA_OBS_02

Ganymede Aurora Observation		ACTIVITY ID:	19GNAURORA02-
		START TIME:	99-033/03:39:42.666

Activity ID: Orbit 19 Target G Inst N OAPEL AURORA SeqNo 02 -

Title	Ganymede Aurora Observation			Instrument	NIMS
Requestor	NIMS-SWG/M. SEGURA	Team	NIMS	Working Group	SWG

Time System	CDS	Load ID		Calendar Date	02/02/99	Week	57

Start	GEE+CDS 00000884:00:0	99-033/03:39:42.666	GEE+000/14:53:49.333
End	GEE+CDS 00000891:16:0	99-033/03:46:57.999	GEE+000/15:01:04.666
Duration	00000007:16:0	000/00:07:15.333	000/00:07:15.333

Top Label	19GNAURORA02-
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

To obtain evidence of Ganymede Aurora. Observation is second in series of 3 while Ganymede is in eclipse.

No Data Returned, S/C Safed

Design Detail

One Nyquist LM scan with pointing uncertainty factored in.

Observe Ganymede full-disk while in solar occultation.

SPACECRAFT SAFED
NO DATA RETURNED

Long Map (LM), Gain 4, Grating Start 0, LPU, GLM247L, GLM228L

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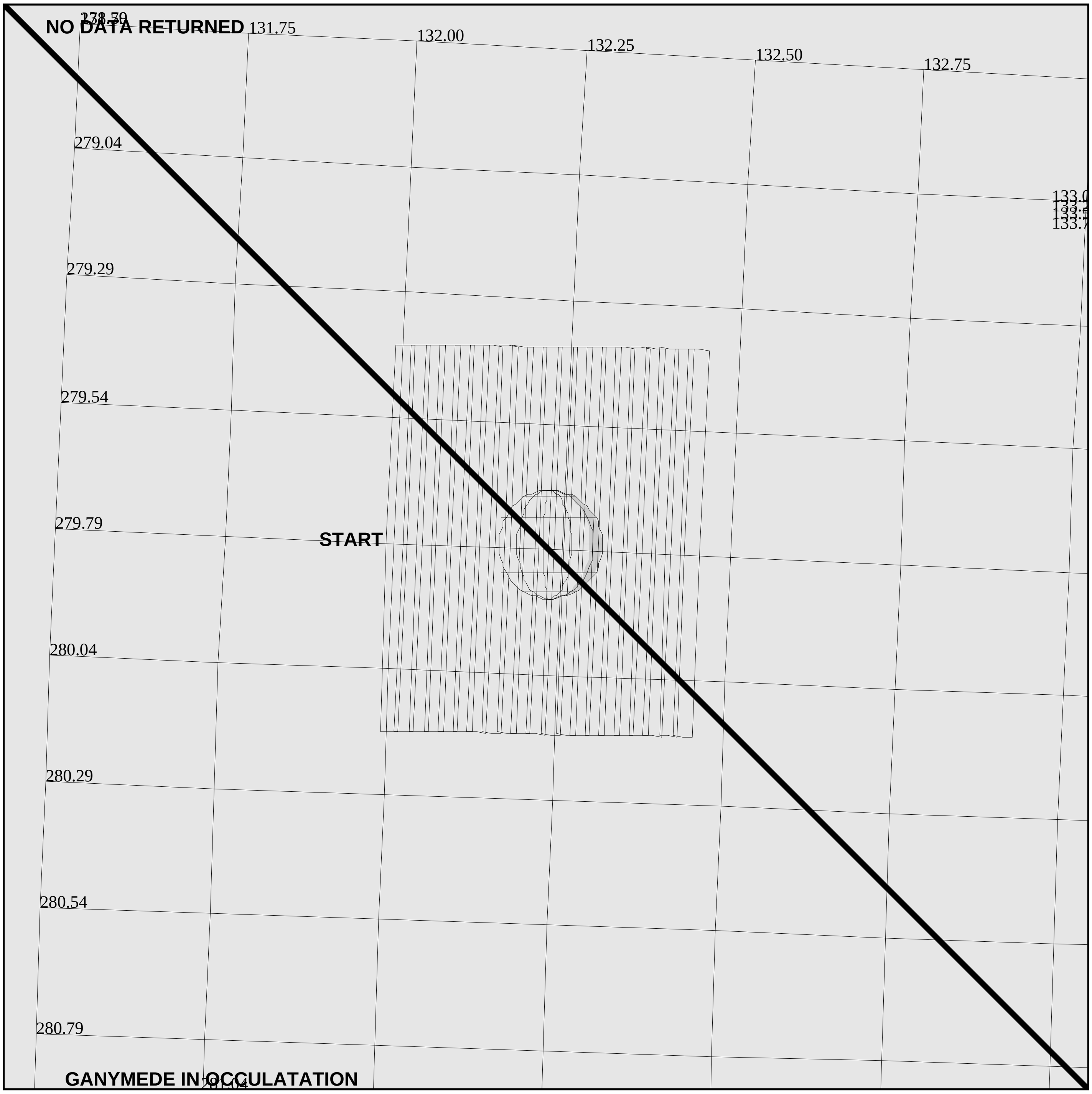


165DK:TT= 0 TMC= 1 C= -4.00 XC= 0.00 BS= 0/0998 TC= 3
A= 182 pD= 0 SR= 8.000 RA50= 42.25 DEC50= 18.29 cone=132.00 clock=279.78
117DK:#SB= 1 OR= 0.010 RR=12.000 BM=F RC= 1 BS= 0/0998
1:#s= 1 Cs= 3.50 XCs= 0.00 Cr= 0.00 XCr= 0.00 sD= 1082 rD= 2

19GNAURORA03

TARGET G3.1 lisac: 1/15/1999 14: 8:10

FILE:P.19GNAURORA03

TARGET BODY : GANYMEDE

MINI:m.target

S/C EPH:/DATA/NAVIO/E19-T-981116.NS

PERIAPSIS:

START:GEE 99-032/12:45:53.333 +CDS 925:00:0

OBSERVATION:19GNAURORA03

THINNING:NIM 2

BODY PLOT TIME:TARGET-TIME D= 0 S= 0.100

DESCRIP:GANYMEDE_AURORA_OBS_03

Ganymede Aurora Observation	ACTIVITY ID:	19GNAURORA03-
	START TIME:	99-033/04:20:09.333

Activity ID: Orbit 19 Target G Inst N OAPEL AURORA SeqNo 03 -

Title	Ganymede Aurora Observation			Instrument	NIMS
Requestor	NIMS-SWG/M. SEGURA	Team	NIMS	Working Group	SWG

Time System	CDS	Load ID		Calendar Date	02/02/99	Week	57

Start	GEE+CDS 00000924:00:0	99-033/04:20:09.333	GEE+000/15:34:16.000
End	GEE+CDS 00000931:16:0	99-033/04:27:24.666	GEE+000/15:41:31.333
Duration	00000007:16:0	000/00:07:15.333	000/00:07:15.333

Top Label	19GNAURORA03-
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

To obtain evidence of Ganymede Aurora. Observation is third in series of 3 while Ganymede is in eclipse.

No Data Returned, S/C Safed

Design Detail

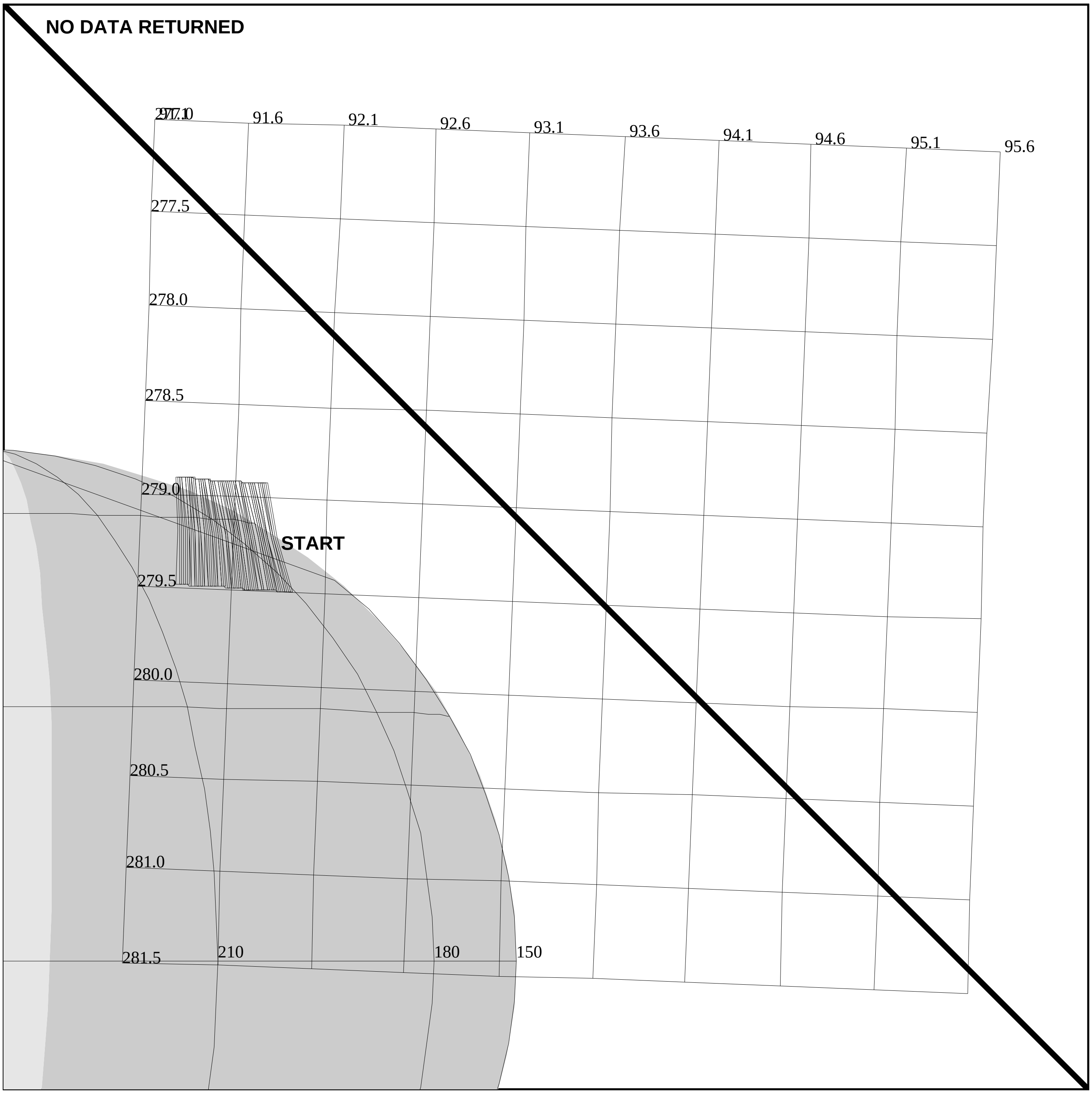
One Nyquist LM scan with pointing uncertainty factored in.

Observe Ganymede full-disk while in solar occultation.

SPACECRAFT SAFED
NO DATA RETURNED

Long Map (LM), Gain 4, Grating Start 0, LPU, GLM247L, GLM228L

Galileo Activity Plan Form   01/15/99 09:46:15   rev 6/95



165AV:TT= 0 TMC= 1 C= 0.00 XC= 0.00 BS= 0/2696 TC=15(27.6 83.25)
A= 354 pD= 5450 SR=17.450 RA50= 83.25 DEC50= 27.60 cone= 93.30 clock=279.19
117AV:#SB= 1 OR= 0.020 RR=12.000 BM=F RC= 1 BS= 0/2696
1:#s= 1 Cs= -35.50 XCs= 0.00 Cr= 0.00 XCr= 0.00 sD= 5370 rD= 2

19JNIOFLUX01

TARGET G3.1 lisac: 1/15/1999 14: 8:10

FILE:P.19JUAURORA_N

CENTRAL BODY:JUPITER

MINI:m.target

S/C EPH:/DATA/NAVIO/E19-T-981116.NS

PERIAPSIS: **THINNING:NIM 2**

START:JEE 99-032/05:01:47.400 +CDS 1723:00:0 **BODY PLOT TIME:99-033/10:34:00.000 D= 5450 S= 1.000**

OBSERVATION:19JUAURORA_N **DESCRIP:UVS_EUROPA_SURFACE_OBS**

Jupiter Io Flux Observation	ACTIVITY ID: 19JNIOFLUX01- START TIME: 99-033/10:02:55.400

Activity ID: Orbit 19 Target J Inst N OAPEL IOFLUX SeqNo 01 -

Title	Jupiter Io Flux Observation			Instrument	NIMS
Requestor	NIMS-AWG/K. BAINES	Team	NIMS	Working Group	AWG

Time System	CDS	Load ID		Calendar Date	02/02/99	Week	57

Start	JEE+CDS 00001722:00:0	99-033/10:02:55.400	JEE+001/05:01:08.000
End	JEE+CDS 00001736:00:0	99-033/10:17:04.733	JEE+001/05:15:17.333
Duration	00000014:00:0	000/00:14:09.333	000/00:14:09.333

Top Label	19JNIOFLUX01-
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

To observe the Io footprint/flux tube.

No Data Returned, S/C Safed

Design Detail

One LM scan, Nyquist sampling, 10 RIMs MPW recording. This is a collaborative UVS/NIMS observation. Timing of record is based on best knowledge of Io footprint geometric position as of 1/5/99.

SPACECRAFT SAFED
NO DATA RETURNED

Long Map (LM), Gain 4, Grating Start 0, MPW, JLM442, JLM360

Galileo Activity Plan Form 01/15/99 09:46:15 rev 6/95

NIMS Chopper Off	ACTIVITY ID: 19NNCHOPOF01- START TIME: 99-033/10:36:17.400

Activity ID: Orbit 19 Target N Inst N OAPEL CHOPOF SeqNo 01 -

Title	NIMS Chopper Off			Instrument	NIMS
Requestor	NIMS-SWG/E. BARBINIS	Team	NIMS	Working Group	SWG

Time System CDS Load ID Calendar Date 02/02/99 Week 57

Start	JEE+CDS 00001755:00:0	99-033/10:36:17.400	JEE+001/05:34:30.000
End	JEE+CDS 00001765:00:0	99-033/10:46:24.066	JEE+001/05:44:36.666
Duration	00000010:00:0	000/00:10:06.666	000/00:10:06.666

Top Label 19NNCHOPOF01-
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 Chopper Off

Commands Not Executed, S/C Safed

Design Detail

SPACECRAFT SAFED
COMMANDS NOT EXECUTED

Galileo Activity Plan Form 01/15/99 09:46:15 rev 6/95

NIMS Real-Time PCT Calibration — ACTIVITY ID: 19NNPCTRLT01- — START TIME: 99-071/17:00:00.000

Activity ID: Orbit 19 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 03/12/99	Week 63

Start	PCT+CDS 0:00:0	99-071/17:00:00.000	PCT+000/00:00:00.000
End	PCT+CDS 00000465:00:0	99-072/00:50:10.000	PCT+000/07:50:10.000
Duration	00000465:00:0	000/07:50:10.000	000/07:50:10.000

Top Label 19NNPCTRLT01-
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 an 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 x.x degrees.

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

Galileo Activity Plan Form   01/15/99 09:46:15   rev 6/95

NIMS RCT Real Time Calibration	ACTIVITY ID: 19NNRCTRLT01- START TIME: 99-075/12:00:00.000

Activity ID: Orbit 19 Target N Inst N OAPEL RCTRLT SeqNo 01 -

Title	NIMS RCT Real Time Calibration			Instrument	NIMS
Requestor	NIMS-AWG/K. BAINES	Team	NIMS	Working Group	AWG

Time System CDS Load ID Calendar Date 03/16/99 Week 63

Start	RTA+CDS 0:00:0	99-075/12:00:00.000	RTA+000/00:00:00.000
End	RTA+CDS 00000787:00:0	99-076/01:15:44.666	RTA+000/13:15:44.666
Duration	00000787:00:0	000/13:15:44.666	000/13:15:44.666

Top Label 19NNRCTRLT01-
Bottom Label

Plot Key	NIMS	Type	SCI		
CDS Bytes	450	Report Options	BOTH	Scan Platform	Yes
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

The NIMS OPCAL has been included in the RCT calibration for GEM.
Perform NIMS Optical Calibration to calibrate the NIMS grating.

This is a GEM Library Sequence
The Dark cone angle must be selected using Pointer.

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

Galileo Activity Plan Form 01/15/99 09:46:15 rev 6/95