10871 - Observations of the Galilean Satellites in Support of the New Horizons Flyby

Cycle: 15, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) IO-018	WFPC2	1	15-Feb-2007 22:04:10.0	yes
02	(2) IO-090	WFPC2	1	15-Feb-2007 22:04:17.0	yes
03	(3) IO-162	WFPC2	1	15-Feb-2007 22:04:23.0	yes
04	(4) IO-234	WFPC2	1	15-Feb-2007 22:04:28.0	yes
05	(5) IO-306	WFPC2	1	15-Feb-2007 22:04:32.0	yes
06	(3) IO-162	WFPC2	1	15-Feb-2007 22:04:37.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
07	(1) IO-018	WFPC2	1	15-Feb-2007 22:04:42.0	yes
08	(6) IO-TRANSIT	WFPC2	1	15-Feb-2007 22:04:46.0	yes
09	(7) IO-ECLIPSE	ACS/SBC	1	15-Feb-2007 22:04:50.0	yes
10	(8) EUROPA-ECLIPSE	ACS/SBC	1	15-Feb-2007 22:04:53.0	yes
11	(9) GANYMEDE-ECLIPSE (10) GANYMEDE	ACS/SBC	1	15-Feb-2007 22:04:55.0	yes
21	(9) GANYMEDE-ECLIPSE (10) GANYMEDE	WFPC2	1	15-Feb-2007 22:04:58.0	yes

12 Total Orbits Used

ABSTRACT

On February 28 2007 the New Horizons (NH) spacecraft will fly by Jupiter on its way to Pluto, and will conduct an extensive series of observations of the Jupiter system, including the Galilean satellites. We propose HST observations to support and complement the New Horizons observations in four ways: 1) Determine the distribution and variability of Io's plumes in the two weeks before NH closest approach, to look for correlations with Io-derived dust streams that may be detected by New Horizons, to understand the origin of the dust streams; 2) Imaging of SO2 and S2 gas absorption in Io's plumes in Jupiter transit, which cannot be done by NH; 3) Color imaging of Io's surface to determine the effects of the plumes and volcanos seen by New Horizons on the surface- New Horizons cannot image the sunlit surface in color due to saturation; 4) Imaging of far-UV auroral emissions from the atmospheres of Io, Europa, and Ganymede in Jupiter eclipse, near-simultaneously with disk-integrated NH UV spectra, to locate the source of the UV emissions seen by NH and use the response of the satellite atmospheres to the eclipse to constrain production mechanisms.

OBSERVING DESCRIPTION

1) To image Io's plumes and surface changes, we will obtain a series of ACS/HRC images of Io in the mid-ultraviolet (for the plume observations) and the visible (for the surface

reflectance observations). The high throughput of ACS and the brightness of Io mean that each filter requires a small fraction of one HST orbit for adequate S/N, so we plan to image Io in eight filters, including F220W and F250W for plume imaging at wavelengths where Io?s surface is extremely dark (albedo=0.02 at 250 nm), and six broadband filters from F330W to F850LP to characterize the reflectance spectrum of surface changes (though the mid-UV filters may also be useful for this purpose). Comparison of the plume brightness in F220W and F250W (and for bright enough plumes, F330W) will constrain plume particle sizes.
From 2 weeks to 1 week before the New Horizons encounter, before New Horizons has adequate spatial resolution, we will obtain a global inventory of the plumes and surface by imaging Io on five orbits, at five longitudes roughly 72 degrees apart: this will detect all plumes higher than 89 km over Io?s entire surface, and all plumes higher than 33 km over 70% of the surface, to extend the time base of the New Horizons observations. To tie these UV plumes observations to the visible-wavelength plume observations by New Horizons itself, we will repeat two of these longitudes, the ones that put the long-lived large plume Pele and the intermittent large plume Tvashtar on Io?s limb, simultaneously with the New Horizons observations in the period between 5 days and 1 day before encounter.

2) The major sulfur species in the plumes will be detected by imaging Io during Jupiter transit in the F220W (SO2) and F250W (S2) filters. We will also obtain images at longer wavelengths, in the F344N filter (where there are no gas absorptions), and the F435W and F550 M filters, to check for any dust absorption and characterize its wavelength dependence. The same exposure times used in the reflected sunlight sequence (or shorter) will be adequate to obtain a reliable S/N within each exposure, as Jupiter is as bright as Io longward of 310 nm, and much brighter than Io shortward of 310 nm.

4) We will obtain one eclipse ingress visit for each satellite, one orbit each, with a total of 3 HST orbits. The ACS SBC F125LP filter bandpass includes SII 125.6 nm, OI 130.4 n, OI] 135.6 nm, SI 147.9, SI 181.4, and SI] 190.0 nm emissions from Io; and OI 130.4 nm, and OI] 135.6 nm emissions from Europa and Ganymede. A typical integrated FUV brightness from Io in eclipse is ~2 kR, with much brighter features at the limb, sub-Jupiter, and downstream wake. A typical integrated FUV brightness at Europa and Ganymede is ~75 R, with brighter features at the limb and polar ovals, respectively.

Visit

Proposal 10871, Visit 01, scheduling Fri Feb 16 03:05:00 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: BETWEEN 14-FEB-2007:00:00:00 AND 21-FEB-2007:00:00:00

Comments: Io surface and plumes, longitude 018

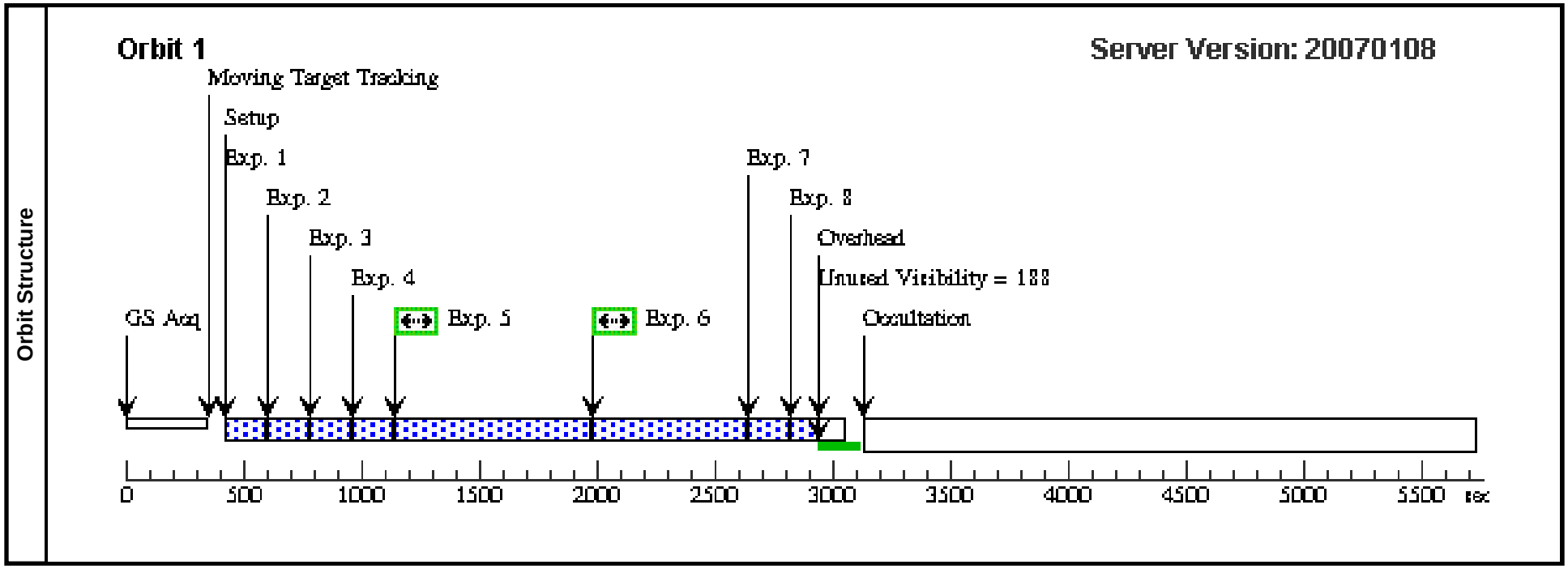
Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(1)	IO-018	STD=JUPITER	STD=IO		CML OF IO FROM EARTH BETWEEN 12.0 30.0, SEP OF IO JUPITER FROM EARTH GT 1.0"

Comments: CML range chosen to keep Io acceptably far from Jupiter

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) IO-018	WFPC2, IMAGE, PC1	F336W	ATD-GAIN=15			23.0 Secs	
								[==>]	***[1]***
2		(1) IO-018	WFPC2, IMAGE, PC1	F410M	ATD-GAIN=15			10.0 Secs	
								[==>]	***[1]***
3		(1) IO-018	WFPC2, IMAGE, PC1	F569W	ATD-GAIN=15			0.3 Secs	
								[==>]	***[1]***
4		(1) IO-018	WFPC2, IMAGE, PC1	F791W	ATD-GAIN=15			0.2 Secs	
								[==>]	***[1]***
5		(1) IO-018	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7;			600.0 Secs	
					CR-SPLIT=NO			*[==>]*	***[1]***
6		(1) IO-018	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7;			500.0 Secs	
					CR-SPLIT=NO			*[==>]*	***[1]***
7		(1) IO-018	WFPC2, IMAGE, PC1	F336W	ATD-GAIN=15			23.0 Secs	
								[==>]	***[1]***
8		(1) IO-018	WFPC2, IMAGE, PC1	F410M	ATD-GAIN=15			10.0 Secs	
								[==>]	***[1]***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Server Version: 20070108
Moving Target Tracking
Setup
Exp. 1
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Exp. 8
Overhead
Unused Vitibility = 188
GS Acq
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10871, Visit 02, scheduling Fri Feb 16 03:05:01 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: BETWEEN 14-FEB-2007:00:00:00 AND 21-FEB-2007:00:00:00

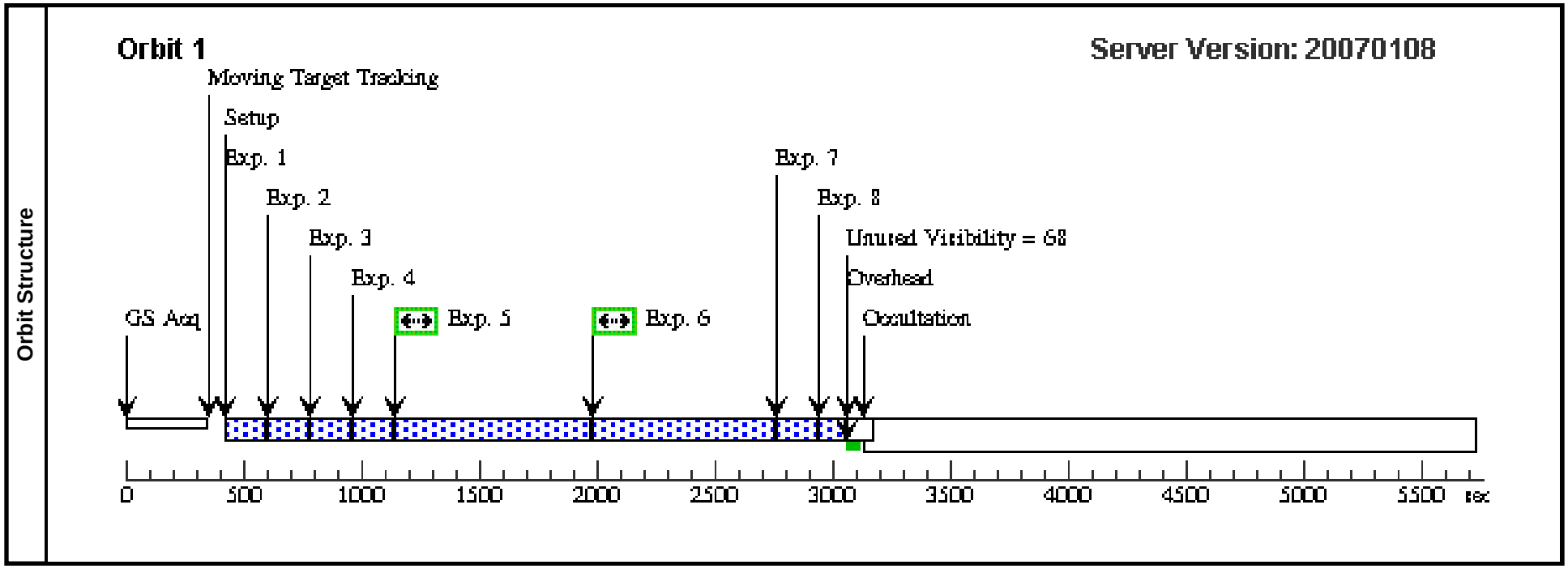
Comments: Io surface and plumes, longitude 090

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(2)	IO-090	STD=JUPITER	STD=IO		CML OF IO FROM EARTH BETWEEN 80.0 100.0

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) IO-090	WFPC2, IMAGE, PC1	F336W	ATD-GAIN=15			23.0 Secs	
								[==>]	***[1]***
2		(2) IO-090	WFPC2, IMAGE, PC1	F410M	ATD-GAIN=15			10.0 Secs	
								[==>]	***[1]***
3		(2) IO-090	WFPC2, IMAGE, PC1	F569W	ATD-GAIN=15			0.3 Secs	
								[==>]	***[1]***
4		(2) IO-090	WFPC2, IMAGE, PC1	F791W	ATD-GAIN=15			0.2 Secs	
								[==>]	***[1]***
5		(2) IO-090	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7; CR-SPLIT=NO			600.0 Secs	
								[==>]	***[1]***
6		(2) IO-090	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7; CR-SPLIT=NO			600.0 Secs	
								[==>]	***[1]***
7		(2) IO-090	WFPC2, IMAGE, PC1	F336W	ATD-GAIN=15			23.0 Secs	
								[==>]	***[1]***
8		(2) IO-090	WFPC2, IMAGE, PC1	F410M	ATD-GAIN=15			10.0 Secs	
								[==>]	***[1]***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Server Version: 20070108
Moving Target Tracking
Setup
Exp. 1
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Exp. 8
Unused Visibility = 68
Overhead
GS Acq
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10871, Visit 03, scheduling Fri Feb 16 03:05:01 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: BETWEEN 14-FEB-2007:00:00:00 AND 21-FEB-2007:00:00:00

Comments: Io surface and plumes, longitude 162

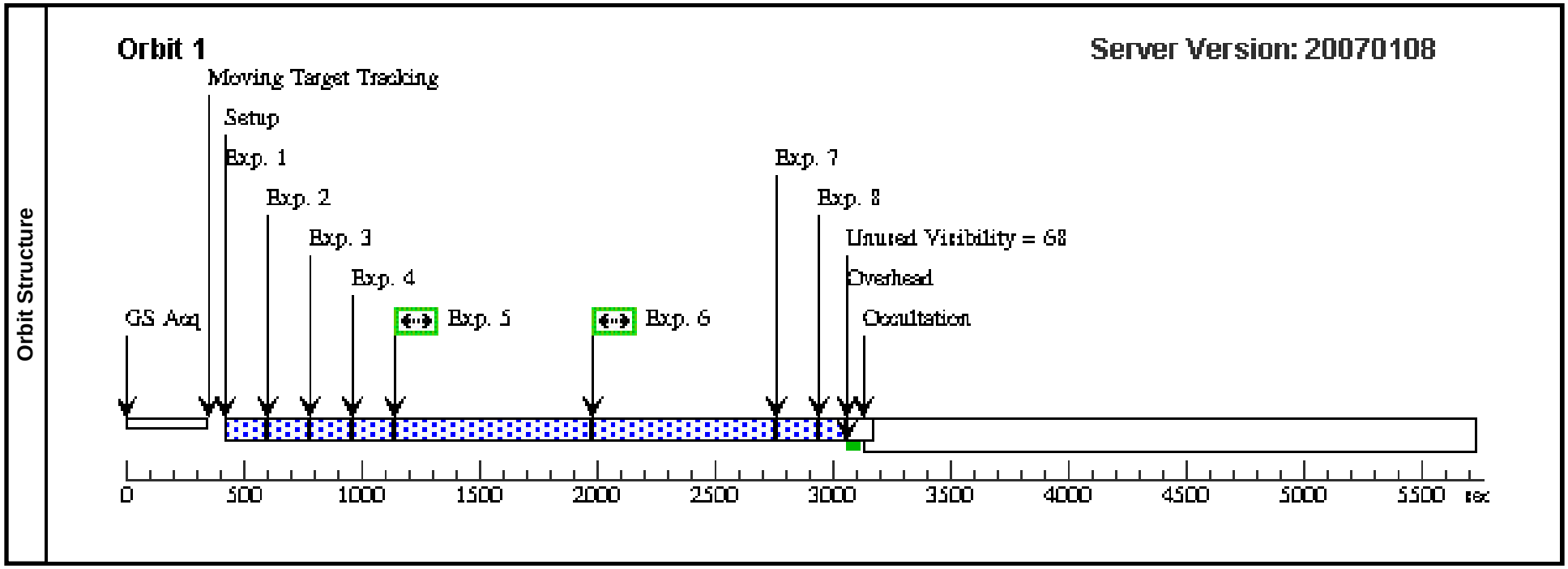
Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(3)	IO-162	STD=JUPITER	STD=IO		CML OF IO FROM EARTH BETWEEN 150.0 168.0, SEP OF IO JUPITER FROM EARTH GT 3.0"

Comments: CML range chosen to keep Io acceptably far from Jupiter

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) IO-162	WFPC2, IMAGE, PC1	F336W	ATD-GAIN=15			23.0 Secs	
								[==>]	***[1]***
2		(3) IO-162	WFPC2, IMAGE, PC1	F410M	ATD-GAIN=15			10.0 Secs	
								[==>]	***[1]***
3		(3) IO-162	WFPC2, IMAGE, PC1	F569W	ATD-GAIN=15			0.3 Secs	
								[==>]	***[1]***
4		(3) IO-162	WFPC2, IMAGE, PC1	F791W	ATD-GAIN=15			0.2 Secs	
								[==>]	***[1]***
5		(3) IO-162	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7;			600.0 Secs	
					CR-SPLIT=NO			*[==>]*	***[1]***
6		(3) IO-162	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7;			600.0 Secs	
					CR-SPLIT=NO			*[==>]*	***[1]***
7		(3) IO-162	WFPC2, IMAGE, PC1	F336W	ATD-GAIN=15			23.0 Secs	
								[==>]	***[1]***
8		(3) IO-162	WFPC2, IMAGE, PC1	F410M	ATD-GAIN=15			10.0 Secs	
								[==>]	***[1]***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Server Version: 20070108
Moving Target Tracking
Setup
Exp. 1
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
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Exp. 8
Unused Visibility = 68
Overhead
GS Acq
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10871, Visit 04, scheduling Fri Feb 16 03:05:02 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: BETWEEN 14-FEB-2007:00:00:00 AND 21-FEB-2007:00:00:00

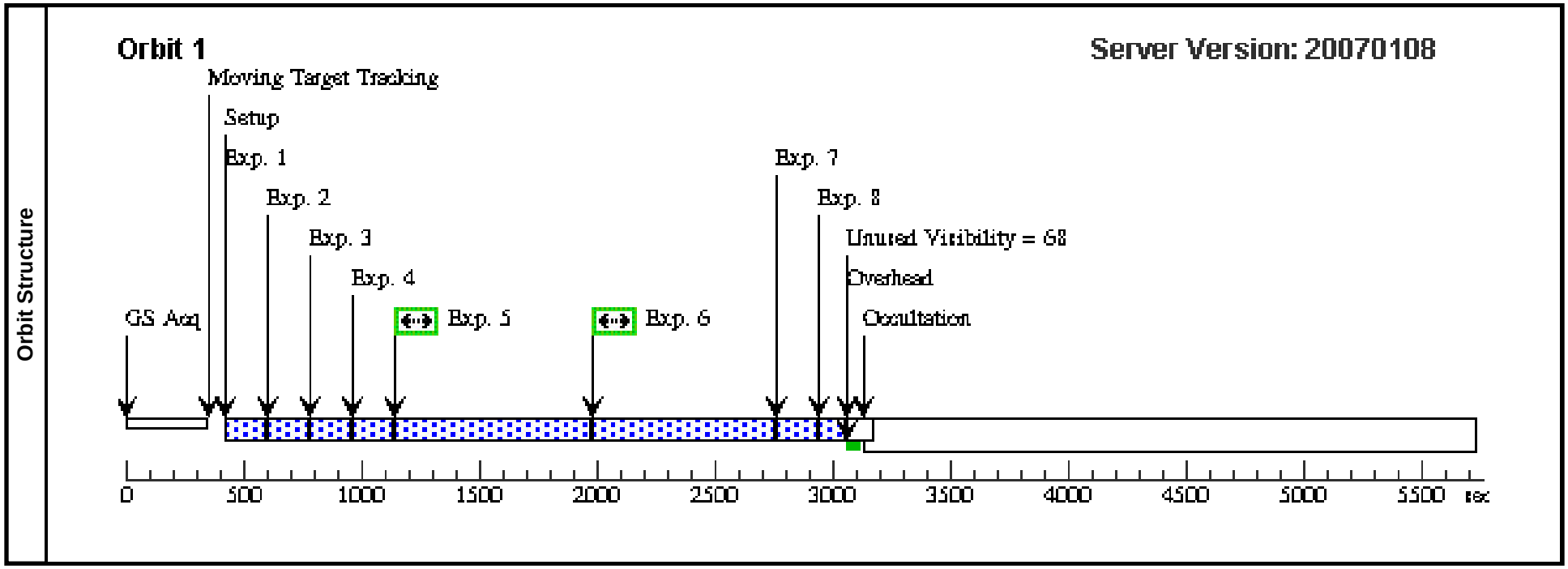
Comments: Io surface and plumes, longitude 234

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(4)	IO-234	STD=JUPITER	STD=IO		CML OF IO FROM EARTH BETWEEN 224.0 244.0

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(4) IO-234	WFPC2, IMAGE, PC1	F336W	ATD-GAIN=15			23.0 Secs	
								[==>]	***[1]***
2		(4) IO-234	WFPC2, IMAGE, PC1	F410M	ATD-GAIN=15			10.0 Secs	
								[==>]	***[1]***
3		(4) IO-234	WFPC2, IMAGE, PC1	F569W	ATD-GAIN=15			0.3 Secs	
								[==>]	***[1]***
4		(4) IO-234	WFPC2, IMAGE, PC1	F791W	ATD-GAIN=15			0.2 Secs	
								[==>]	***[1]***
5		(4) IO-234	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7; CR-SPLIT=NO			600.0 Secs	
								[==>]	***[1]***
6		(4) IO-234	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7; CR-SPLIT=NO			600.0 Secs	
								[==>]	***[1]***
7		(4) IO-234	WFPC2, IMAGE, PC1	F336W	ATD-GAIN=15			23.0 Secs	
								[==>]	***[1]***
8		(4) IO-234	WFPC2, IMAGE, PC1	F410M	ATD-GAIN=15			10.0 Secs	
								[==>]	***[1]***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Server Version: 20070108
Moving Target Tracking
Setup
Exp. 1
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
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Exp. 8
Unused Visibility = 68
Overhead
GS Acq
Occultation
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500
1000
1500
2000
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5500
sec

Visit

Proposal 10871, Visit 05, scheduling Fri Feb 16 03:05:03 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: BETWEEN 14-FEB-2007:00:00:00 AND 21-FEB-2007:00:00:00

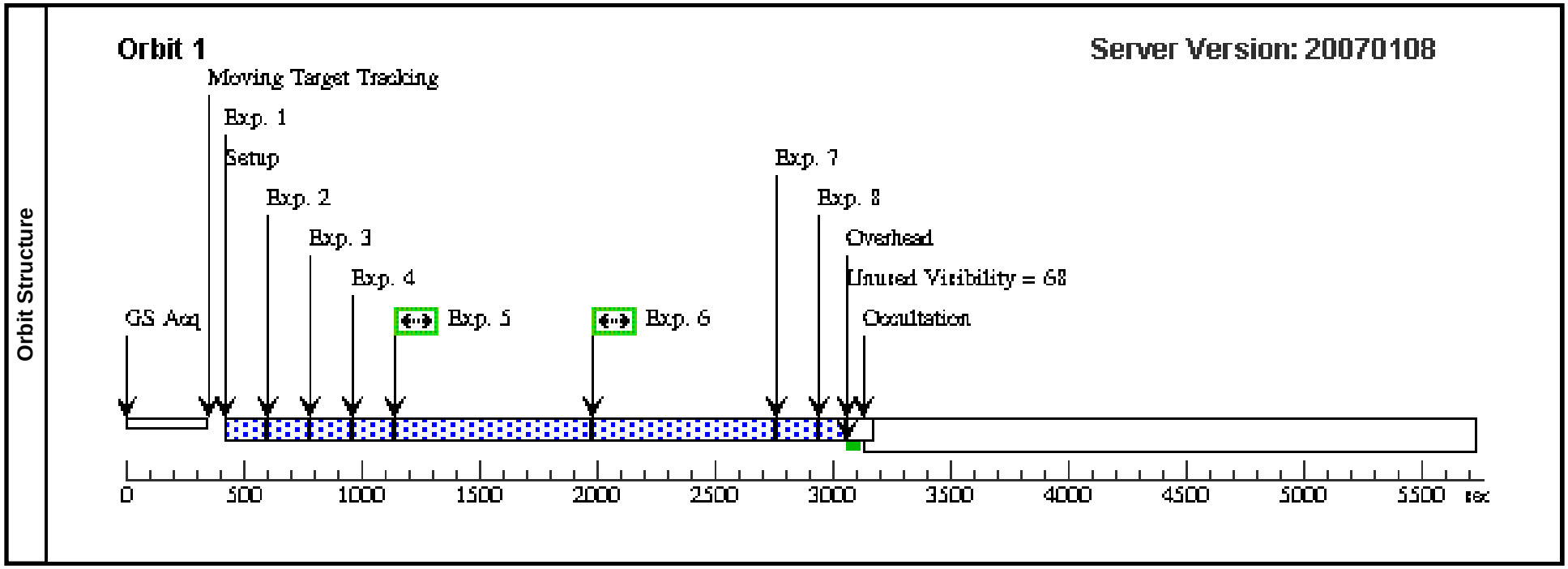
Comments: Io surface and plumes, longitude 306

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(5)	IO-306	STD=JUPITER	STD=IO		CML OF IO FROM EARTH BETWEEN 296.0 316.0

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(5) IO-306	WFPC2, IMAGE, PC1	F336W	ATD-GAIN=15			23.0 Secs	
								[==>]	***[1]***
2		(5) IO-306	WFPC2, IMAGE, PC1	F410M	ATD-GAIN=15			10.0 Secs	
								[==>]	***[1]***
3		(5) IO-306	WFPC2, IMAGE, PC1	F569W	ATD-GAIN=15			3.0 Secs	
								[==>]	***[1]***
4		(5) IO-306	WFPC2, IMAGE, PC1	F791W	ATD-GAIN=15			0.2 Secs	
								[==>]	***[1]***
5		(5) IO-306	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7;			600.0 Secs	
					CR-SPLIT=NO			*[==>]*	***[1]***
6		(5) IO-306	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7;			600.0 Secs	
					CR-SPLIT=NO			*[==>]*	***[1]***
7		(5) IO-306	WFPC2, IMAGE, PC1	F336W	ATD-GAIN=15			23.0 Secs	
								[==>]	***[1]***
8		(5) IO-306	WFPC2, IMAGE, PC1	F410M	ATD-GAIN=15			10.0 Secs	
								[==>]	***[1]***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Server Version: 20070108
Moving Target Tracking
Exp. 1
Setup
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
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Exp. 8
Overhead
Unused Visibility = 68
GS Acq
Occultation
0
500
1000
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2000
2500
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4000
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5500
sec

Visit

Proposal 10871, Visit 06, scheduling Fri Feb 16 03:05:04 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: BETWEEN 21-FEB-2007:00:00:00 AND 01-MAR-2007:00:00:00

Comments: Io surface and plumes, longitude 162, repeat visit during the New Horizons observations

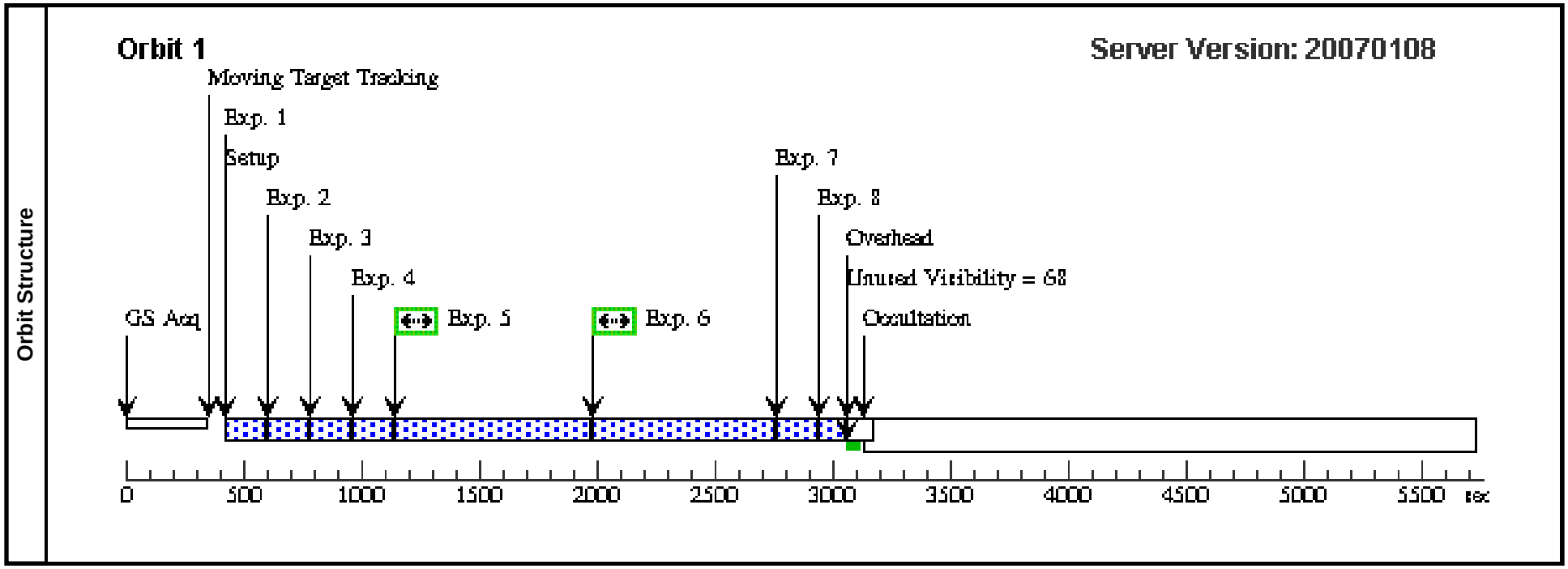
Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(3)	IO-162	STD=JUPITER	STD=IO		CML OF IO FROM EARTH BETWEEN 150.0 168.0, SEP OF IO JUPITER FROM EARTH GT 3.0"

Comments: CML range chosen to keep Io acceptably far from Jupiter

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) IO-162	WFPC2, IMAGE, PC1	F336W	ATD-GAIN=15			23.0 Secs	
								[==>]	***[1]***
2		(3) IO-162	WFPC2, IMAGE, PC1	F410M	ATD-GAIN=15			10.0 Secs	
								[==>]	***[1]***
3		(3) IO-162	WFPC2, IMAGE, PC1	F569W	ATD-GAIN=15			0.3 Secs	
								[==>]	***[1]***
4		(3) IO-162	WFPC2, IMAGE, PC1	F791W	ATD-GAIN=15			0.2 Secs	
								[==>]	***[1]***
5		(3) IO-162	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7;			600.0 Secs	
					CR-SPLIT=NO			*[==>]*	***[1]***
6		(3) IO-162	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7;			600.0 Secs	
					CR-SPLIT=NO			*[==>]*	***[1]***
7		(3) IO-162	WFPC2, IMAGE, PC1	F336W	ATD-GAIN=15			23.0 Secs	
								[==>]	***[1]***
8		(3) IO-162	WFPC2, IMAGE, PC1	F410M	ATD-GAIN=15			10.0 Secs	
								[==>]	***[1]***


Orbit Structure
Orbit 1
Server Version: 20070108
Moving Target Tracking
Exp. 1
Setup
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
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Exp. 8
Overhead
Unused Visibility = 68
GS Acq
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10871, Visit 07, scheduling Fri Feb 16 03:05:04 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: BETWEEN 21-FEB-2007:00:00:00 AND 01-MAR-2007:00:00:00

Comments: Io surface and plumes, longitude 018, repeat visit during the New Horizons observations

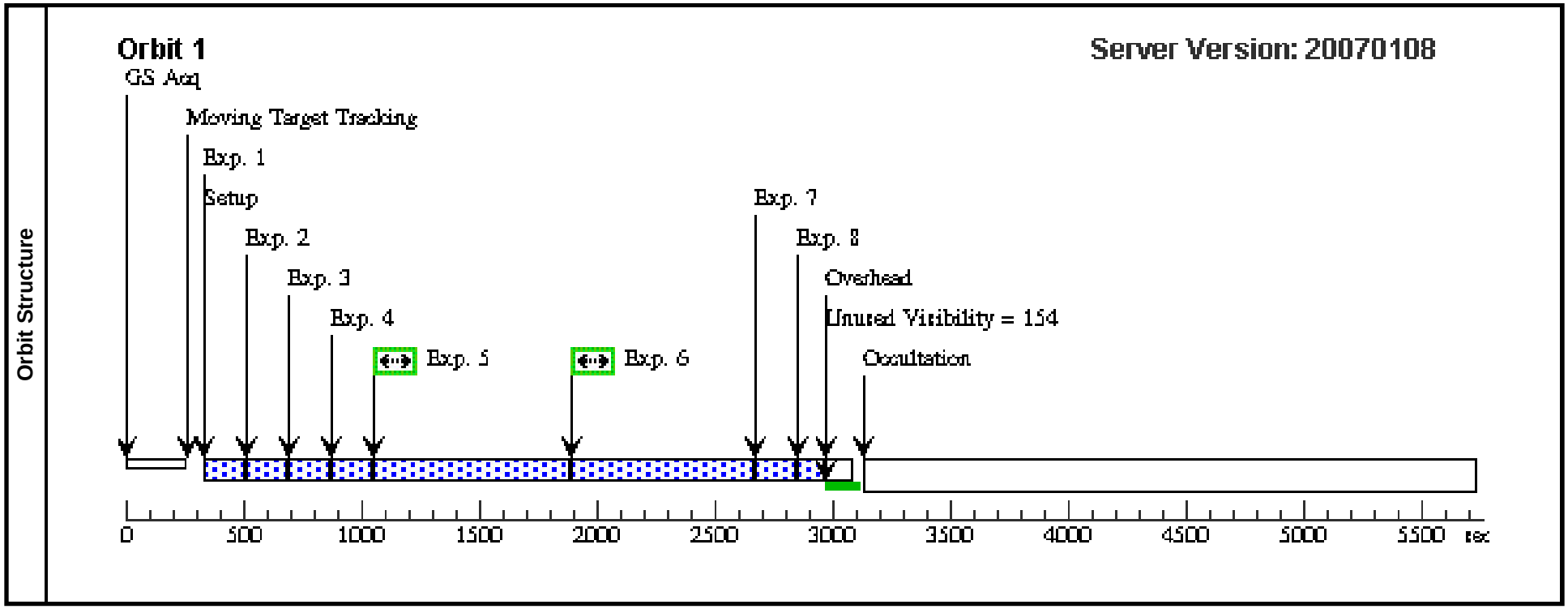
Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(1)	IO-018	STD=JUPITER	STD=IO		CML OF IO FROM EARTH BETWEEN 12.0 30.0, SEP OF IO JUPITER FROM EARTH GT 1.0"

Comments: CML range chosen to keep Io acceptably far from Jupiter

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) IO-018	WFPC2, IMAGE, PC1	F336W	ATD-GAIN=15	GS ACQ SCENARIO SINGLE		23.0 Secs	
								[==>]	***[1]***
2		(1) IO-018	WFPC2, IMAGE, PC1	F410M	ATD-GAIN=15			10.0 Secs	
								[==>]	***[1]***
3		(1) IO-018	WFPC2, IMAGE, PC1	F569W	ATD-GAIN=15			0.3 Secs	
								[==>]	***[1]***
4		(1) IO-018	WFPC2, IMAGE, PC1	F791W	ATD-GAIN=15			0.2 Secs	
								[==>]	***[1]***
5		(1) IO-018	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7;			600.0 Secs	
					CR-SPLIT=NO			*[==>]*	***[1]***
6		(1) IO-018	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7;			600.0 Secs	
					CR-SPLIT=NO			*[==>]*	***[1]***
7		(1) IO-018	WFPC2, IMAGE, PC1	F336W	ATD-GAIN=15			23.0 Secs	
								[==>]	***[1]***
8		(1) IO-018	WFPC2, IMAGE, PC1	F410M	ATD-GAIN=15			10.0 Secs	
								[==>]	***[1]***


Orbit Structure
Orbit 1
Server Version: 20070108
GS Acq
Moving Target Tracking
Exp. 1
Setup
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Exp. 8
Overhead
Unused Visibility = 154
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10871, Visit 08, scheduling Fri Feb 16 03:05:05 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: BETWEEN 21-FEB-2007:00:00:00 AND 01-MAR-2007:00:00:00

Comments: Io plumes in Jupiter transit

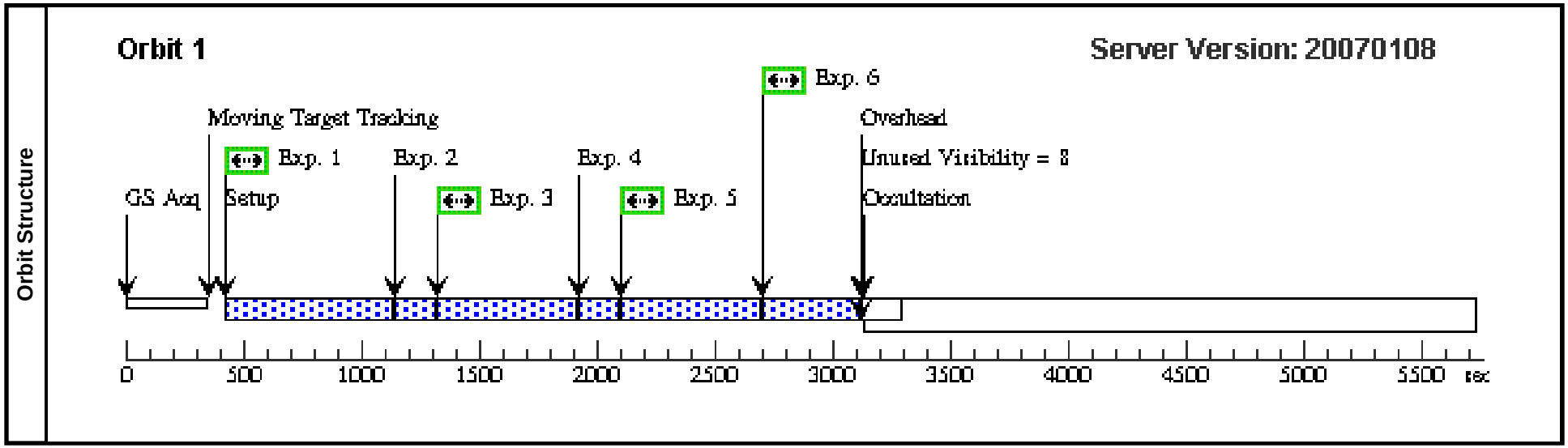
Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(6)	IO-TRANSIT	STD=JUPITER	STD=IO		CML OF IO FROM EARTH BETWEEN 171.4 183.0, SEP OF IO JUPITER FROM EARTH GT - 14.0"

Comments: CML range chosen so Pele is transiting Jupiter and close to the limb

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(6) IO-TRANSIT	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7; CR-SPLIT=NO			500.0 Secs *[==>]*	 ***[1]***
2		(6) IO-TRANSIT	WFPC2, IMAGE, PC1	F336W	ATD-GAIN=15			23.0 Secs *[==>]*	 ***[1]***
3		(6) IO-TRANSIT	WFPC2, IMAGE, PC1	F343N	ATD-GAIN=15			400.0 Secs *[==>]*	 ***[1]***
4		(6) IO-TRANSIT	WFPC2, IMAGE, PC1	F410M	ATD-GAIN=15			10.0 Secs *[==>]*	 ***[1]***
5		(6) IO-TRANSIT	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7; CR-SPLIT=NO			400.0 Secs *[==>]*	 ***[1]***
6		(6) IO-TRANSIT	WFPC2, IMAGE, PC1	F255W	ATD-GAIN=7; CR-SPLIT=NO			400.0 Secs *[==>]*	 ***[1]***


Orbit Structure
Orbit 1
Server Version: 20070108
Exp. 6
Moving Target Tracking
Overhead
Exp. 1
Exp. 2
Exp. 4
Unused Visibility = 8
GS Acq
Setup
Exp. 3
Exp. 5
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10871, Visit 09, scheduling Fri Feb 16 03:05:05 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: BETWEEN 27-FEB-2007:14:06:00 AND 27-FEB-2007:16:06:00; BETWEEN 01-MAR-2007:08:34:00 AND 01-MAR-2007:10:34:00; BETWEEN 25-FEB-2007:19:38:00 AND 25-FEB-2007:21:38:00; BETWEEN 03-MAR-2007:03:02:00 AND 03-MAR-2007:05:02:00

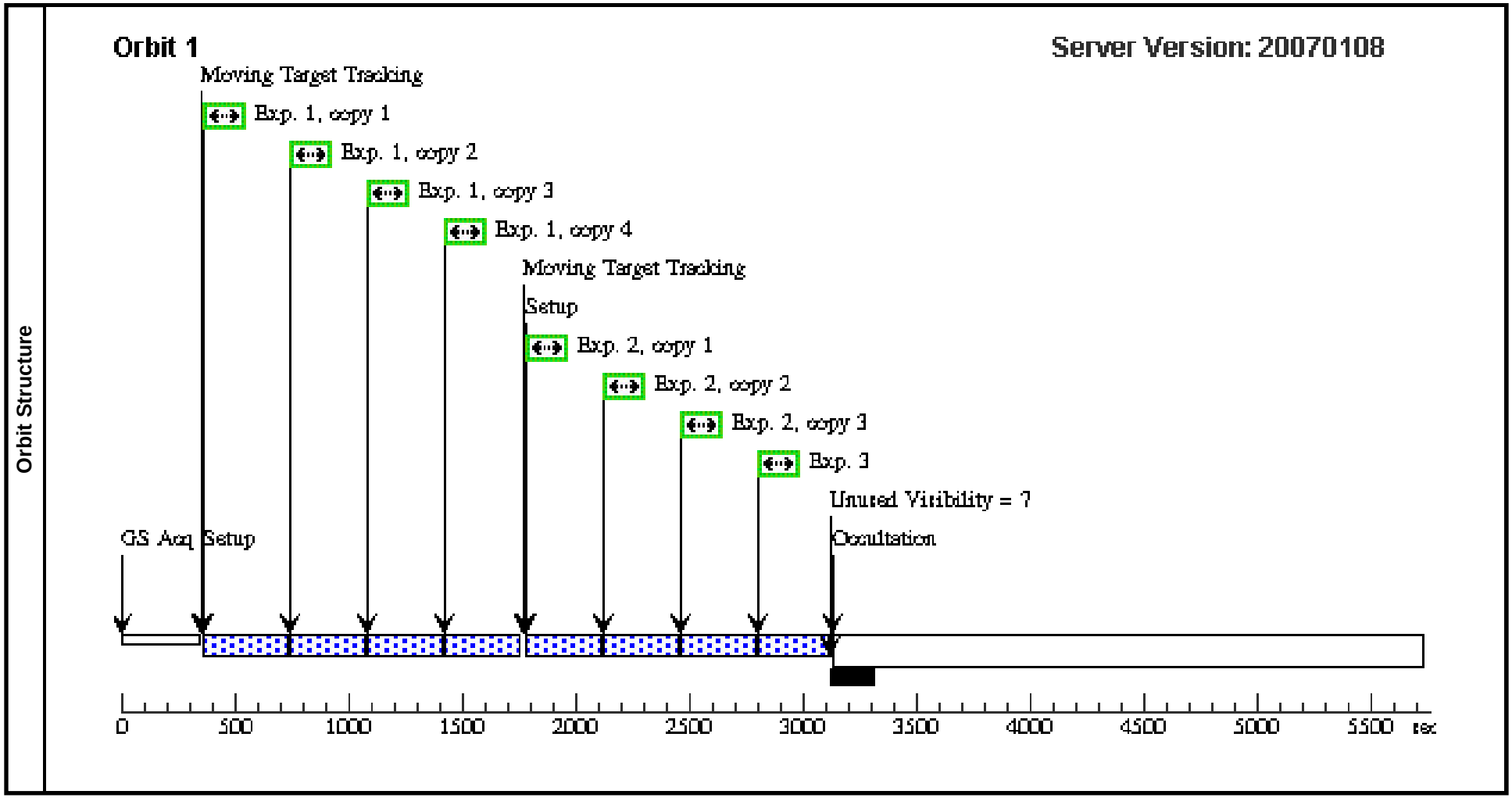
Comments: The 4 "Between" time ranges are listed in order of preference (choose one). The crucial constraint is the observing start time relative to the umbral ingress time listed, which is at the exact midpoint of the 2 hour long "between" ranges. Include as many iterations of 300 sec exposures as possible within the time available after umbral ingress (i.e., a series of 5 iterations for a 25 minute period in eclipse is acceptable if the full set of 8 planned here is not available). Of the 4 prioritized "between" time ranges choose the next one down if less than 20 minutes of time after ingress is available within the HST orbit. If none of these times are available then choose an eclipse event before closest approach (i.e., which perhaps would coincide with the NH Observatory Phase ALICE campaign). The exposure sequence should be anchored to match the start of an exposure as close in time as possible to the umbral ingress time provided. Any time in the HST orbit available before the ingress event should also be filled with sub-exposures using the F125LP mode and the same exposure time. Contact CoI Retherford for further clarification.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(7)	IO-ECLIPSE	STD=JUPITER	STD=IO		ECL U OF IO BY JUPITER, SEP OF IO JUPITER FROM EARTH GT - 13.0"

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(7) IO-ECLIPSE	ACS/SBC, ACCUM, SBC	F125LP		POS TARG 11.4,13.5		300.0 Secs X 4	
								[==>(Copy 1)] *[==>(Copy 2)]* *[==>(Copy 3)]* *[==>(Copy 4)]*	***[1]***
Comments: Modify number of iterations not exposure time to fill out an orbit sequence, and truncate the last sub-exposure time to fit the sequence.									
2		(7) IO-ECLIPSE	ACS/SBC, ACCUM, SBC	F125LP		POS TARG 11.4,13.5; NEW ALIGNMENT		300.0 Secs X 3	
								[==>(Copy 1)] *[==>(Copy 2)]* *[==>(Copy 3)]*	***[1]***
Comments: Modify number of iterations not exposure time to fill out an orbit sequence, and truncate the last sub-exposure time to fit the sequence.									
3		(7) IO-ECLIPSE	ACS/SBC, ACCUM, SBC	F125LP		POS TARG 11.4,13.5		285.0 Secs	
								[==>]	***[1]***
Comments: Modify number of iterations not exposure time to fill out an orbit sequence, and truncate the last sub-exposure time to fit the sequence.									


Orbit Structure
Orbit 1
Server Version: 20070108
Moving Target Tracking
Exp. 1, copy 1
Exp. 1, copy 2
Exp. 1, copy 3
Exp. 1, copy 4
Moving Target Tracking
Setup
Exp. 2, copy 1
Exp. 2, copy 2
Exp. 2, copy 3
Exp. 3
Unused Visibility = 7
GS Acq
Setup
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10871, Visit 10, scheduling Fri Feb 16 03:05:05 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: BETWEEN 27-FEB-2007:10:32:00 AND 27-FEB-2007:12:32:00; BETWEEN 02-MAR-2007:23:50:00 AND 03-MAR-2007:01:50:00; BETWEEN 23-FEB-2007:21:15:00 AND 23-FEB-2007:23:15:00

Comments: The 3 "Between" time ranges are listed in order of preference (choose one). The crucial constraint is the observing start time relative to the umbral ingress time listed, which is at the exact midpoint of the 2 hour long "between" ranges. Include as many iterations of 600 sec exposures as possible within the time available after umbral ingress (i.e., a series of 3 iterations for a 30 minute period in eclipse is acceptable if the full set of 4 planned here is not available). Of the 3 prioritized "between" time ranges choose the next one down if less than 30 minutes of time after ingress is available within the HST orbit. If none of these times are available then choose an eclipse event before closest approach (i.e., which perhaps would coincide with the NH Observatory Phase ALICE campaign). The 3rd event listed is not viewable with NH owing to occultation by Jupiter, but other sunlit ALICE data at this time will add value. The exposure sequence should be anchored to match the start of an exposure as close in time as possible to the umbral ingress time provided. Any time in the HST orbit available before the ingress event should also be filled with sub-exposures using the F125LP mode and the same exposure time. Contact CoI Retherford for further clarification.

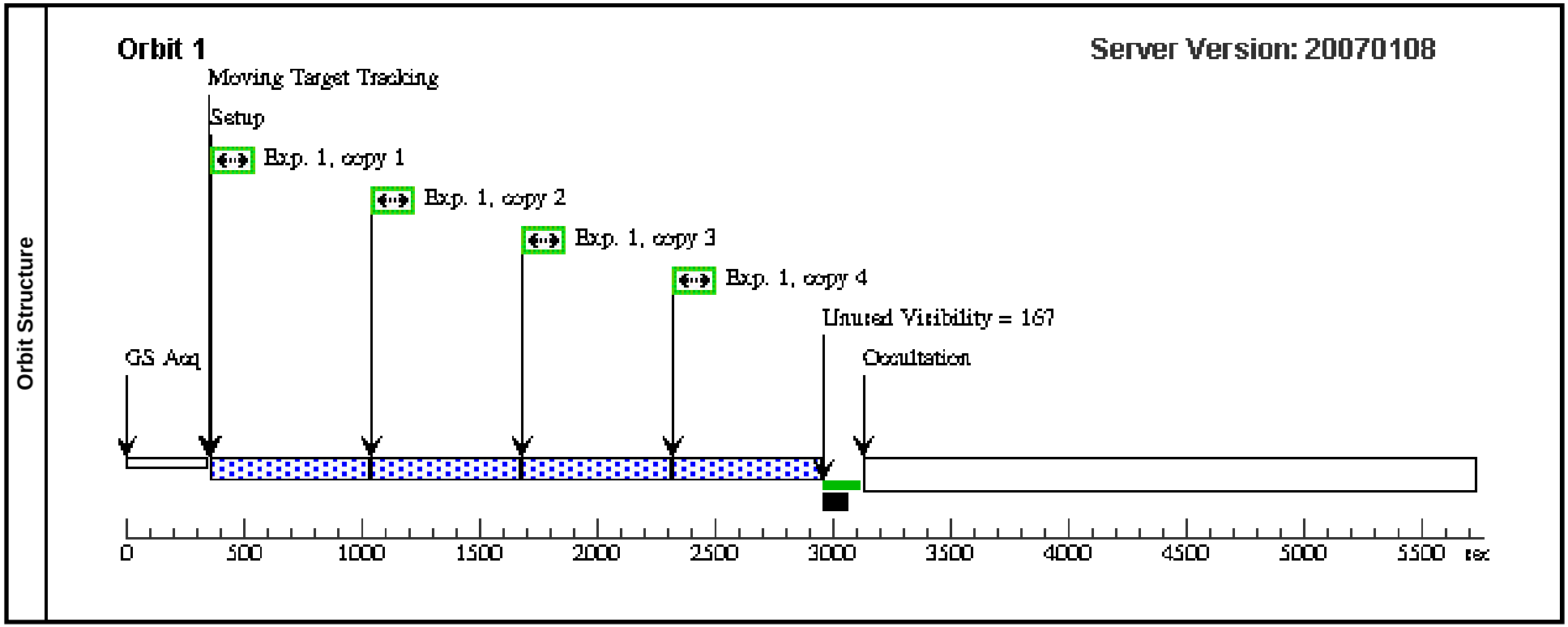
Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(8)	EUROPA-ECLIPSE	STD=JUPITER	STD=EUROPA		ECL U OF EUROPA BY JUPITER, SEP OF EUROPA JUPITER FROM EARTH GT 10.0"

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(8) EUROPA-ECLIPSE	ACS/SBC, ACCUM, SBC	F125LP		POS TARG 11.4,13.5		600.0 Secs X 4	
								[==>(Copy 1)] *[==>(Copy 2)]* *[==>(Copy 3)]* *[==>(Copy 4)]*	***[1]***

Comments: Modify number of iterations not exposure time to fill out an orbit sequence, and truncate the last sub-exposure time to fit the sequence.


Orbit Structure
Orbit 1
Server Version: 20070108
Moving Target Tracking
Setup
Exp. 1, copy 1
Exp. 1, copy 2
Exp. 1, copy 3
Exp. 1, copy 4
Unused Visibility = 167
GS Acq
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10871, Visit 11, scheduling Fri Feb 16 03:05:06 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/SBC

Special Requirements: ORIENT 271.0D TO 279.0 D; BETWEEN 04-MAR-2007:13:28:00 AND 04-MAR-2007:15:28:00; BETWEEN 25-FEB-2007:09:31:00 AND 25-FEB-2007:11:31:00

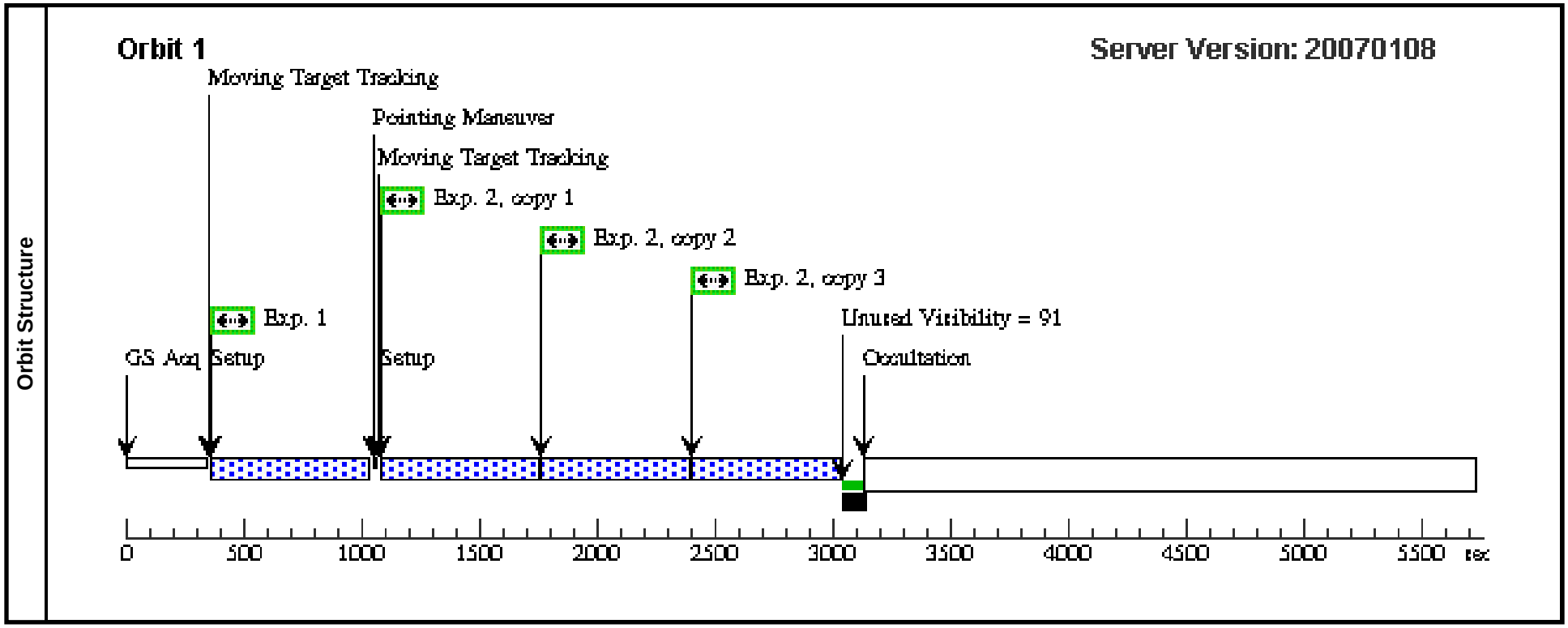
Comments: The 2 "Between" time ranges are listed in order of preference (choose one). The crucial constraint is the observing start time relative to the umbral ingress time listed, which is at the exact midpoint of the 2 hour long "between" ranges. Include as many iterations of 600 sec exposures as possible within the time available after umbral ingress (i.e., a series of 3 iterations for a 30 minute period in eclipse is acceptable if the full set of 4 planned here is not available). Of the 2 prioritized "between" time ranges choose the next one down if less than 30 minutes of time after ingress is available within the HST orbit. If none of these times are available then choose an eclipse event before closest approach (i.e., which perhaps would coincide with the NH Observatory Phase ALICE campaign). The 1st event listed is preferred because it nearly coincides with a stellar occultation observed by NH ALICE, and provides dayside context to the nightside view for NH during that eclipse event. The exposure sequence should be anchored to match the start of an exposure as close in time as possible to the umbral ingress time provided. Any time in the HST orbit available before the ingress event should also be filled with sub-exposures using the F125LP mode and the same exposure time. Contact CoI Retherford for further clarification.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(9)	GANYMEDE-ECLIPSE	STD=JUPITER	STD=GANYMEDE		ECL U OF GANYMEDE BY JUPITER
(10)	GANYMEDE	STD=JUPITER	STD=GANYMEDE		

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(10) GANYMEDE	ACS/SBC, ACCUM, SBC	F125LP		POS TARG 9.7,-5.3		600.0 Secs	
								[==>]	***[1]***
Comments: Modify number of iterations not exposure time to fill out an orbit sequence, and truncate the last sub-exposure time to fit the sequence.									
2		(9) GANYMEDE-ECLIPSE	ACS/SBC, ACCUM, SBC	F125LP		POS TARG 9.7,-5.3		600.0 Secs X 3	
								[==>(Copy 1)] *[==>(Copy 2)]* *[==>(Copy 3)]*	***[1]***
Comments: Modify number of iterations not exposure time to fill out an orbit sequence, and truncate the last sub-exposure time to fit the sequence.									


Orbit Structure
Orbit 1
Server Version: 20070108
Moving Target Tracking
Pointing Maneuver
Moving Target Tracking
Exp. 2, copy 1
Exp. 2, copy 2
Exp. 2, copy 3
Exp. 1
Unused Visibility = 91
GS Acq
Setup
Setup
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10871, Visit 21 Fri Feb 16 03:05:06 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: WFPC2

Special Requirements: BETWEEN 04-MAR-2007:13:28:00 AND 04-MAR-2007:15:28:00; BETWEEN 25-FEB-2007:09:31:00 AND 25-FEB-2007:11:31:00

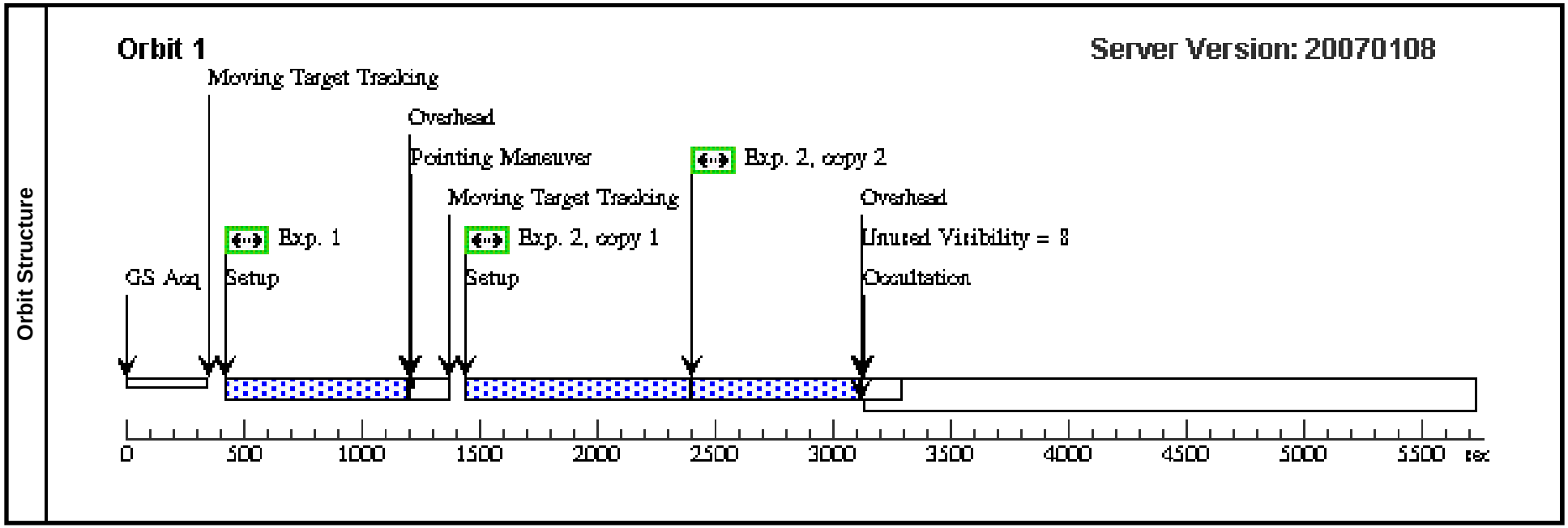
Comments: Alternate visit to replace visit 11 in case ACS/SBC is not ready in time. This is a place holder only and will need to be updated by the observers if it will actually be exeuted.

Solar System Targets

#	Name	Level 1	Level 2	Level 3	Window
(9)	GANYMEDE-ECLIPSE	STD=JUPITER	STD=GANYMEDE		ECL U OF GANYMEDE BY JUPITER
(10)	GANYMEDE	STD=JUPITER	STD=GANYMEDE		

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(10) GANYMEDE	WFPC2, IMAGE, F160BN15	F160BN15	ATD-GAIN=15; CR-SPLIT=NO	POS TARG 9.7,-5.3		600.0 Secs *[==>]*	***[1]***
Comments: Modify number of iterations not exposure time to fill out an orbit sequence, and truncate the last sub-exposure time to fit the sequence.									
2		(9) GANYMEDE-ECLIPSE	WFPC2, IMAGE, F160BN15	F160BN15	ATD-GAIN=15; CR-SPLIT=NO	POS TARG 9.7,-5.3		700.0 Secs X 2 *[==>(Copy 1)]* *[==>(Copy 2)]*	***[1]***
Comments: Modify number of iterations not exposure time to fill out an orbit sequence, and truncate the last sub-exposure time to fit the sequence.									


Orbit Structure
Orbit 1
Server Version: 20070108
Moving Target Tracking
Overhead
Pointing Maneuver
Exp. 2, copy 2
Moving Target Tracking
Overhead
Exp. 1
Exp. 2, copy 1
Unused Visibility = 8
GS Acq
Setup
Setup
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec