10908 - Gotcha! Using Swift GRBs to Pinpoint the Highest Redshift Galaxies

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) GALAXY-HIGHZ-1	NIC3	4	21-May-2007 20:48:56.0	yes
02	(1) GALAXY-HIGHZ-1	ACS/WFC	2	21-May-2007 20:49:11.0	yes
03	(2) GALAXY-HIGHZ-2	NIC3	4	21-May-2007 20:49:38.0	yes
04	(2) GALAXY-HIGHZ-2	ACS/WFC	2	21-May-2007 20:49:51.0	yes
05	(3) GALAXY-HIGHZ-3	NIC3	3	21-May-2007 20:50:13.0	yes
06	(3) GALAXY-HIGHZ-3	NIC3	3	21-May-2007 20:50:24.0	yes
07	(4) GALAXY-HIGHZ-4	NIC3	3	21-May-2007 20:50:36.0	yes
08	(4) GALAXY-HIGHZ-4	NIC3	3	21-May-2007 20:50:48.0	yes
09	(5) GRB061222A	NIC3	3	21-May-2007 20:51:11.0	yes
10	(5) GRB061222A	NIC3	3	21-May-2007 20:51:23.0	yes

30 Total Orbits Used

ABSTRACT

While there is convincing evidence that the Universe was reionized between redshifts of 6.5 and 15, the role of galaxies in this process is still not understood. Several star-forming galaxies at z~6 have been identified in recent deep, narrow-field surveys, but the expensive observations along with cosmic variance and contamination make it difficult to assess their contribution to reionization, or to significantly increase the sample. It has now been demonstrated that gamma-ray bursts (GRBs) exist at z>6, and we have already obtained HST and Spitzer observations of the host galaxy of GRB050904 at z=6.295 using our Cycle 14 program. GRBs have the advantage of being an uncontaminated signpost for star-formation, and their afterglows are sufficiently bright even at z>6 to allow photometric selection (via the Ly-alpha drop out technique) with 2-5 meter telescopes. Spectroscopic confirmation, including detailed information on the host ISM, is also likely (as demonstrated in the case of GRB050904). Using our approved TOO programs at an extensive range of facilities (2-5 m telescopes up to Keck/Magellan/Gemini), we can rapidly find afterglows at z>6 and easily distinguish them from dusty low redshift bursts. This approach is highly efficient compared to current techniques, especially at z>7. Our large allocation on Keck/Magellan/Gemini will also be used to obtain spectroscopy of the afterglows and host galaxies. Here we request to continue

our program of imaging GRB-selected z>6 galaxies with NICMOS (z>6), ACS (z~6), and Spitzer/IRAC to characterize their properties (SFR, age, morphology, extinction), and begin to address their role in reionization. These observations are requested as >2 month TOOs, allowing flexibility of scheduling and at the same time taking a unique and timely advantage of the exquisite performance of three of NASA's premier missions.

OBSERVING DESCRIPTION

Target Sample:

We will trigger on long-duration gamma-ray bursts detected with the Swift satellite, or by other satellites, for which we have indication from the afterglow emission that the redshift is z>6. The purpose of the study is to image the host galaxy and therefore the observations will be delayed by several weeks (nominally t>2 months, but this will be assessed on a case-by-case basis) to ensure that the afterglow fades away below the detection level of HST.

There are two cases:

1. Redshift z~6-7: We will use 2 orbits with ACS+F850LP and 4 orbits with NICMOS/NIC3+F160W.

2. Redshift z>7: We will use only NICMOS/NIC3+F160W for six orbits.

The templates supplied with the phase-II are for case (1), but will be modified when targets for this program become available (along with coordinates and the requested time delay before observations are made).

Visit

Proposal 10908, Visit 01, implementation Mon May 21 19:51:27 GMT 2007

Diagnostic Status: Warning

Scientific Instruments: NIC3

Special Requirements: PCS MODE FINE; GROUP 01,02 WITHIN 1.0D; ON HOLD

Comments: This is the 4-orbit NIC3 F160W observations of a z~6 galaxy (paired with visit 02 which is ACS)

On Hold Comments: Target of opportunity

Diagnostics

(Exposure 1 (Pattern 1-1) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2-2) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 3 (Pattern 3-3) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 4 (Pattern 4-4) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=NIC-SPIRAL-DITH	Coordinate Frame=POS-TARG		(1), (2), (3), (4)
	Purpose=DITHER	Pattern Orientation=23		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=5.06	Center Pattern=true		
	Line Spacing=			

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	GALAXY-HIGHZ-1	RA: 00 00 0.0000 (.0000000d) Dec: +00 00 0.00 (.00000d) Equinox: J2000 Plate Id: (?)		V=35.0	Reference Frame: GSC1

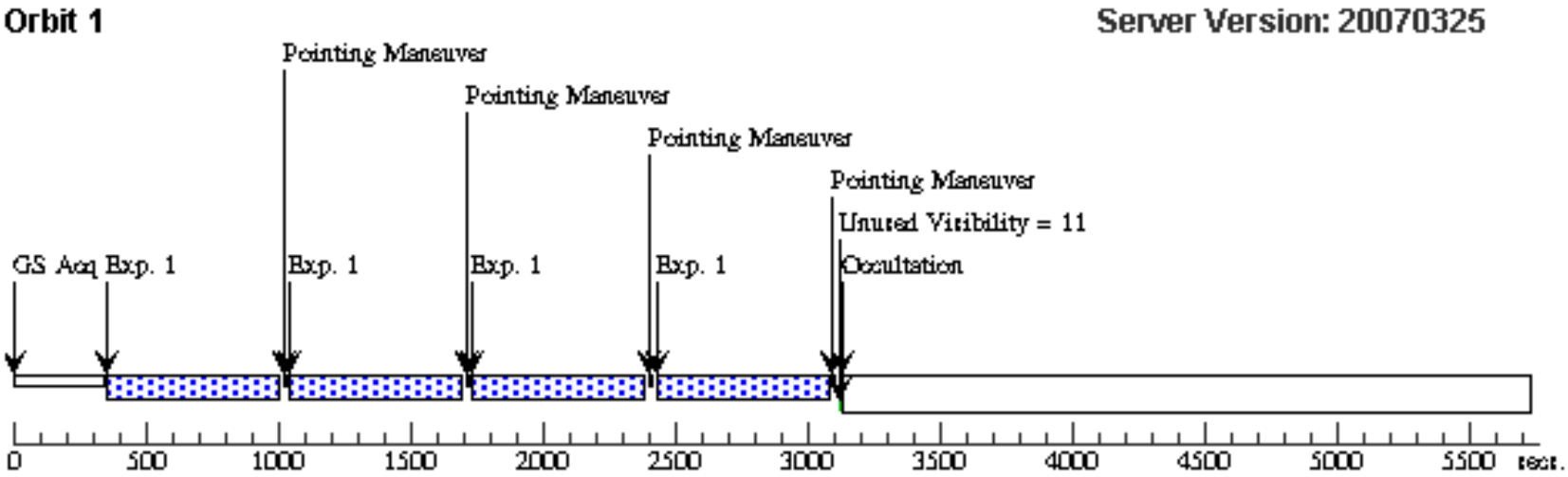
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) GALAXY-HIGHZ-1	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0145,0.0223; GS ACQ SCENARIO BASE1TNS	Pattern 1-1 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(1) GALAXY-HIGHZ-1	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.026,0.075	Pattern 2-2 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***
3		(1) GALAXY-HIGHZ-1	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0335,0.062	Pattern 3-3 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[3]***

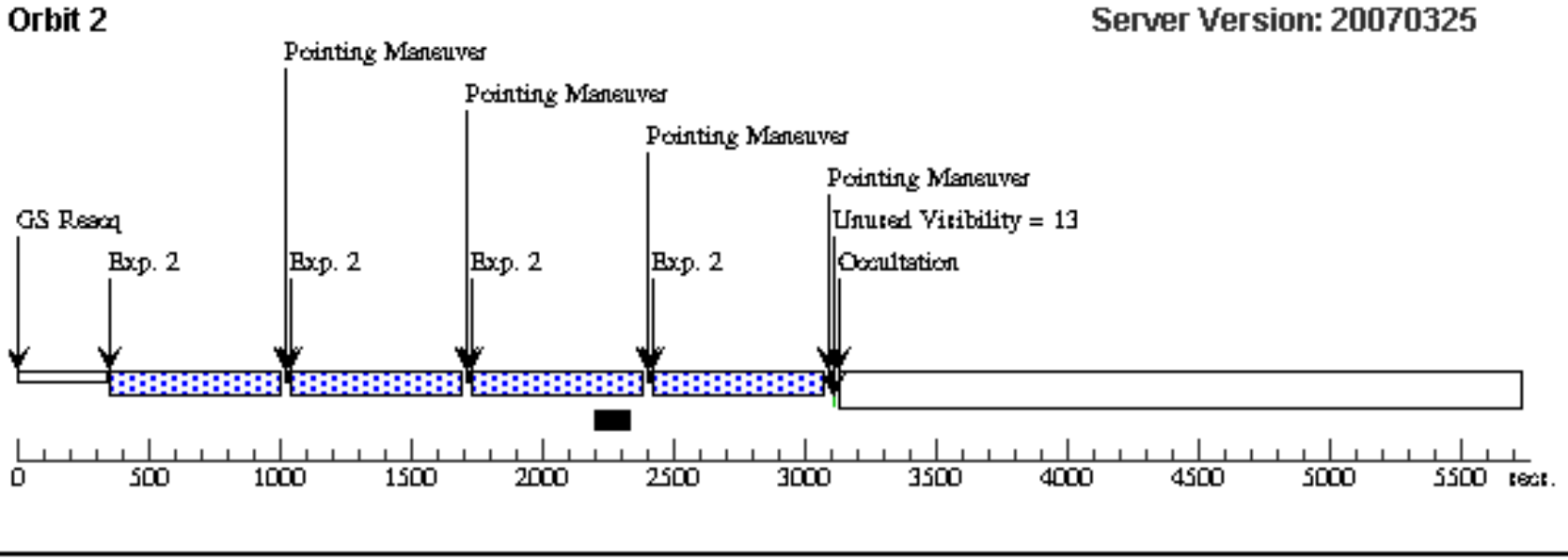
Exposures (continued)

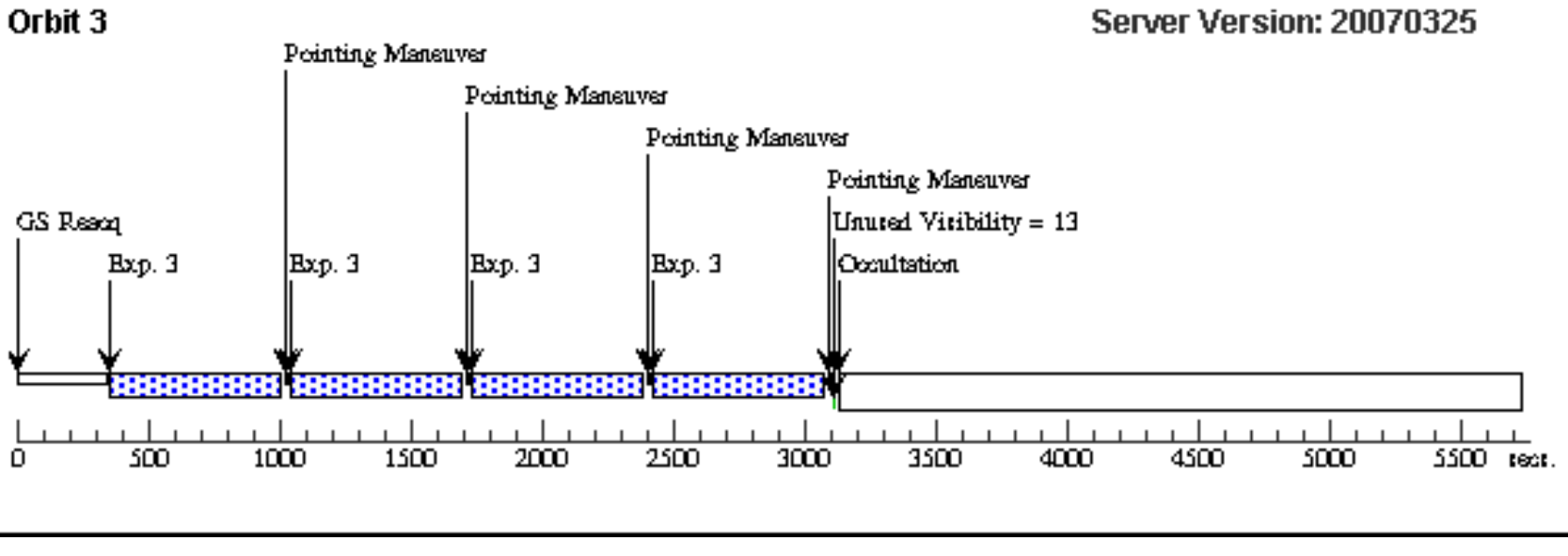
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
4		(1) GALAXY-HIGH Z-1	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS 64	POS TARG 0.12,0.0 5	Pattern 4-4 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[4]***

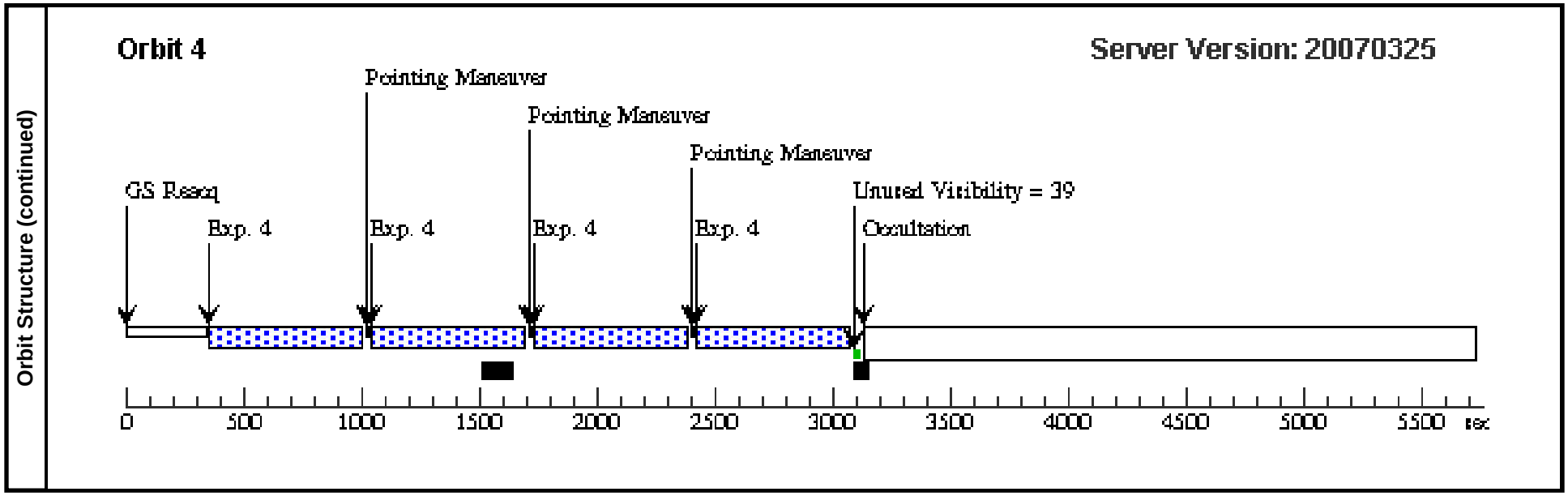
Orbit Structure



Orbit Structure (continued)






Orbit Structure (continued)
Orbit 4
Server Version: 20070325
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Unused Visibility = 39
Exp. 4
Exp. 4
Exp. 4
Exp. 4
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10908, Visit 02, withdrawn Mon May 21 19:51:30 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: PCS MODE FINE; GROUP 02,01 WITHIN 1.0D

Comments: This is the 2-orbit ACS F850LP observations of a z~6 galaxy (paired with visit 01 which is NIC3)

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(2)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=0.164 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.17 Angle Between Sides= Center Pattern=false			(1)
(3)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.304 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=137.22 Angle Between Sides= Center Pattern=false	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.164 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.17 Angle Between Sides= Center Pattern=false	(2)

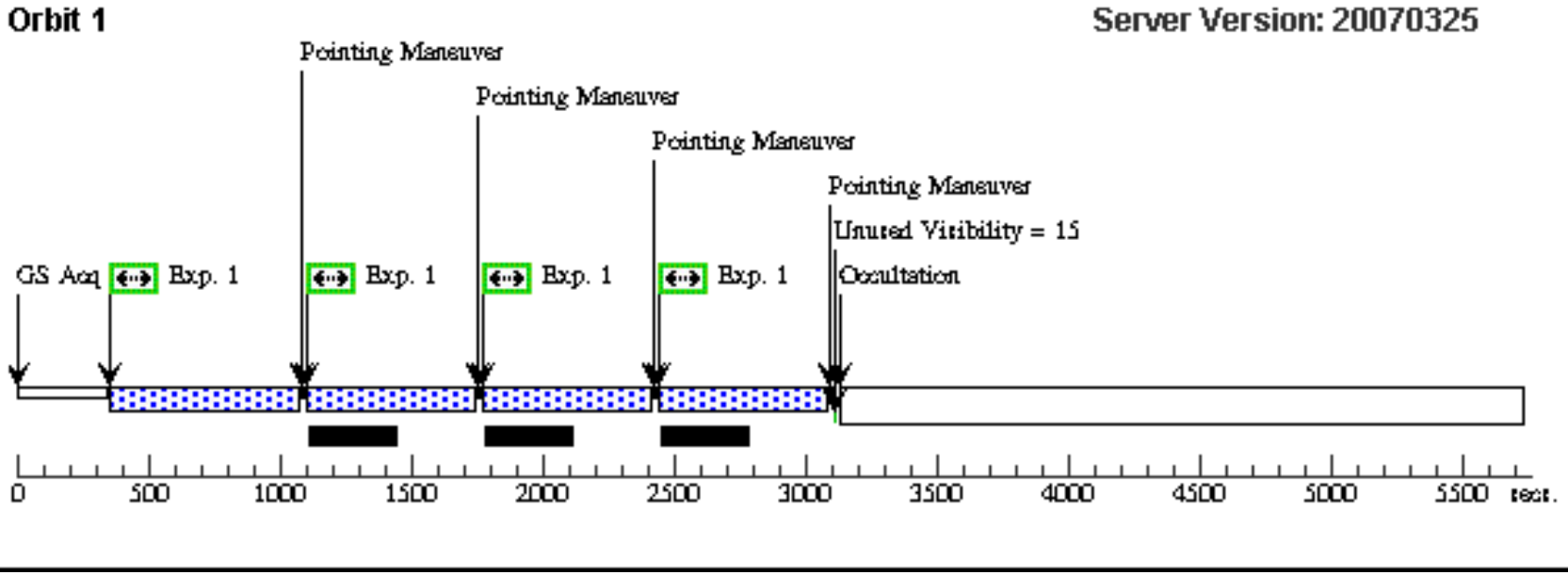
Fixed Targets

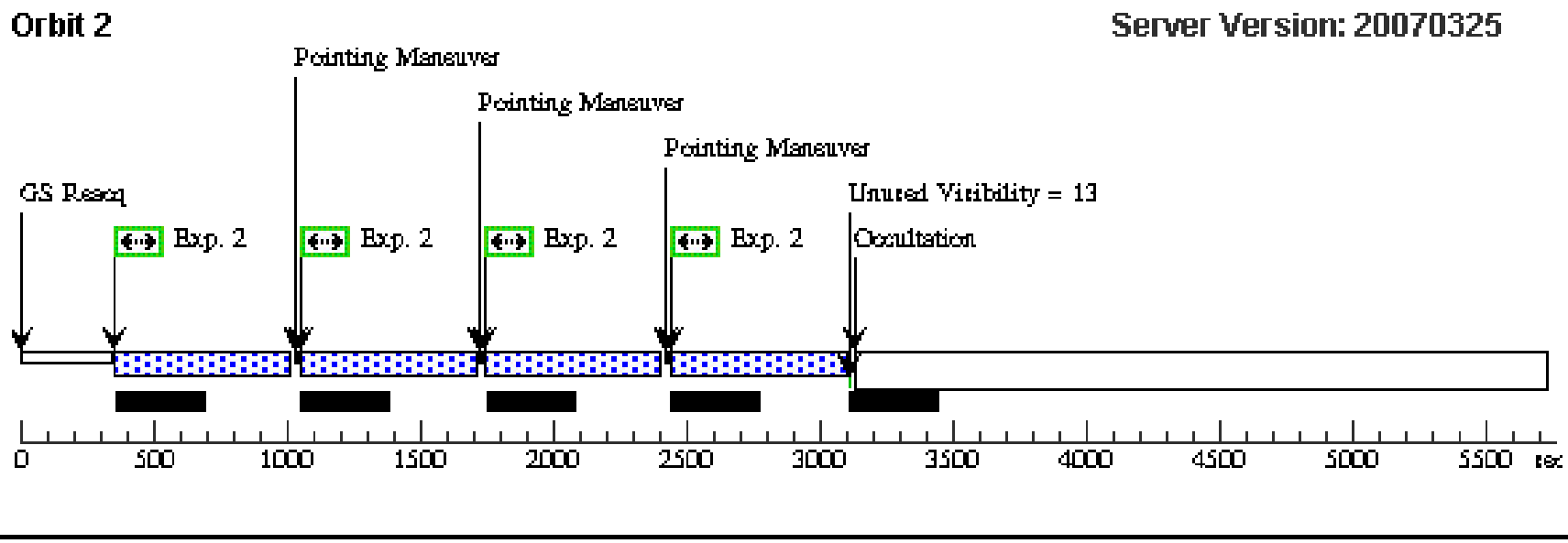
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	GALAXY-HIGHZ-1	RA: 00 00 0.0000 (.0000000d) Dec: +00 00 0.00 (.00000d) Equinox: J2000 Plate Id: (?)		V=35.0	Reference Frame: GSC1

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) GALAXY-HIGHZ-1	ACS/WFC, ACCUM, WFC1	F850LP	CR-SPLIT=NO		Pattern 1-1 (2)	514.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(1) GALAXY-HIGHZ-1	ACS/WFC, ACCUM, WFC1	F850LP	CR-SPLIT=NO	POS TARG 0.279,0.0773	Pattern 2-2 (3)	540.0 Secs	
								[==>(Pattern 1,1)] *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[2]***

Orbit Structure





Visit

Proposal 10908, Visit 03, implementation Mon May 21 19:51:31 GMT 2007

Diagnostic Status: Warning

Scientific Instruments: NIC3

Special Requirements: PCS MODE FINE; GROUP 03,04 WITHIN 1.0D; ON HOLD

Comments: This is the 4-orbit NIC3 F160W observations of a z~6 galaxy (paired with visit 04 which is ACS)

On Hold Comments: Target of opportunity

Diagnostics

(Exposure 1 (Pattern 1-1) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2-2) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 3 (Pattern 3-3) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 4 (Pattern 4-4) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=NIC-SPIRAL-DITH	Coordinate Frame=POS-TARG		(1), (2), (3), (4)
	Purpose=DITHER	Pattern Orientation=23		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=5.06	Center Pattern=true		
	Line Spacing=			

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	GALAXY-HIGHZ-2	RA: 00 00 0.0000 (.0000000d) Dec: +00 00 0.00 (.00000d) Equinox: J2000 Plate Id: (?)		V=35.0	Reference Frame: GSC1

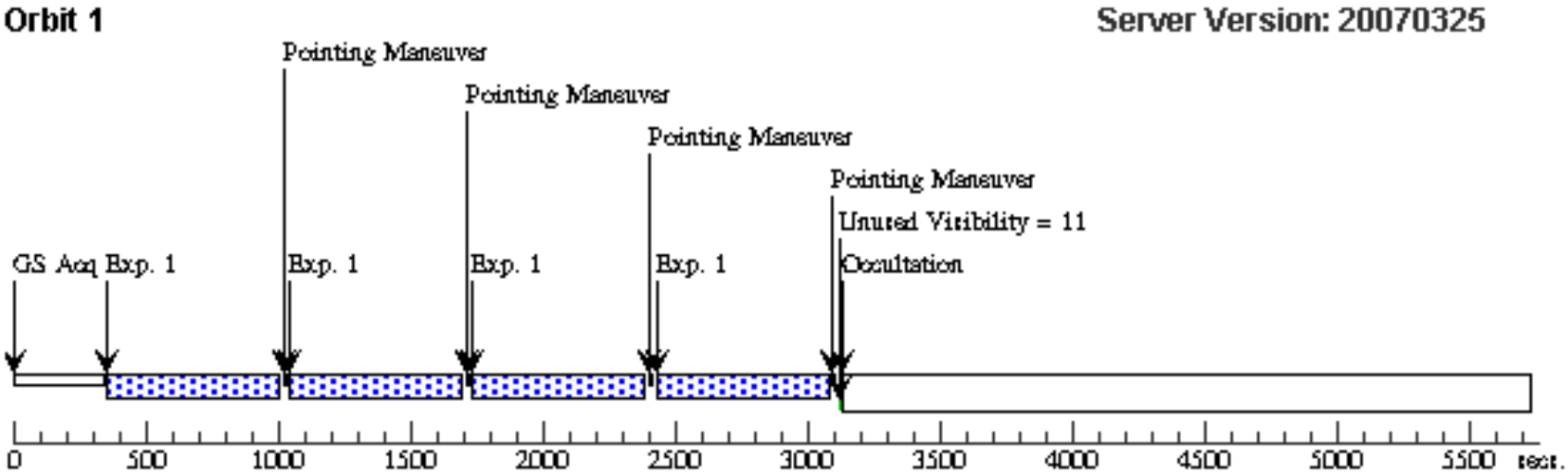
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) GALAXY-HIGHZ-2	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0145,0.0223; GS ACQ SCENARIO BASE1TNS	Pattern 1-1 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(2) GALAXY-HIGHZ-2	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.026,0.075	Pattern 2-2 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***
3		(2) GALAXY-HIGHZ-2	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0335,0.062	Pattern 3-3 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[3]***

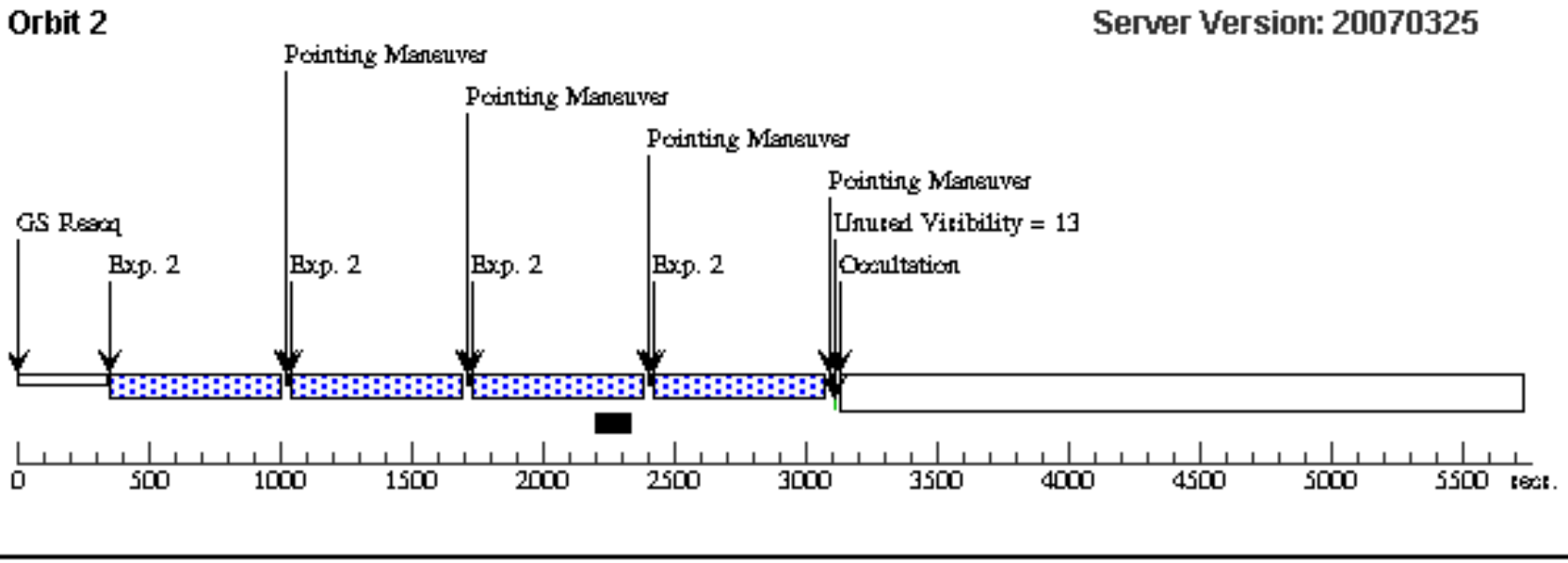
Exposures (continued)

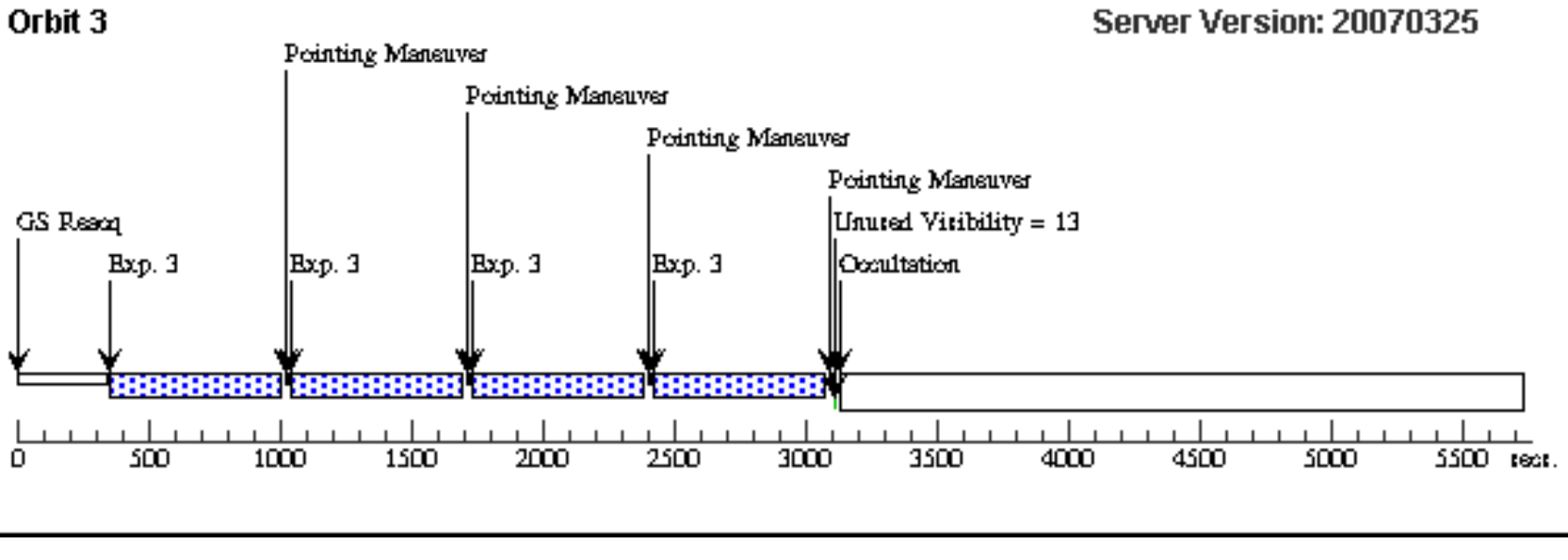
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
4		(2) GALAXY-HIGH Z-2	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS 64	POS TARG 0.12,0.0 5	Pattern 4-4 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[4]***

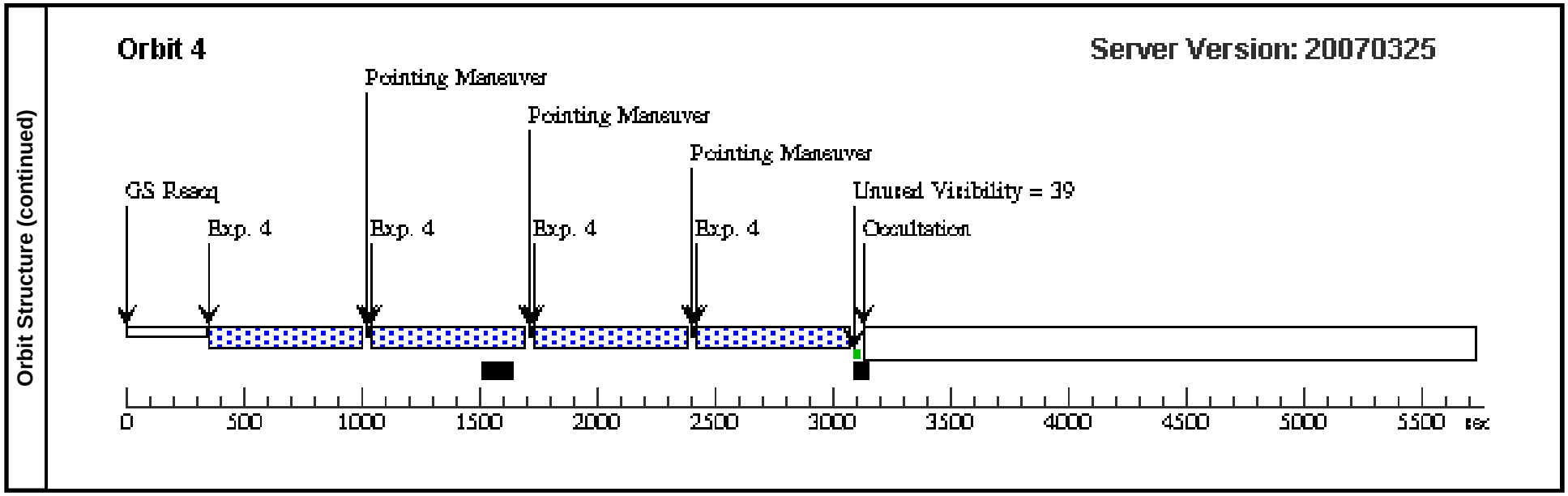
Orbit Structure



Orbit Structure (continued)






Orbit Structure (continued)
Orbit 4
Server Version: 20070325
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 4
Exp. 4
Exp. 4
Exp. 4
Unused Visibility = 39
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10908, Visit 04, withdrawn Mon May 21 19:51:32 GMT 2007

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: PCS MODE FINE; GROUP 04,03 WITHIN 1.0D; ON HOLD

Comments: This is the 2-orbit ACS F850LP observations of a z~6 galaxy (paired with visit 03 which is NIC3)

On Hold Comments: Target of opportunity

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(2)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=4 Point Spacing=0.164 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.17 Angle Between Sides= Center Pattern=false			(1)
(3)	Pattern Type=ACS-WFC-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.304 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=137.22 Angle Between Sides= Center Pattern=false	Pattern Type=LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.164 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=47.17 Angle Between Sides= Center Pattern=false	(2)

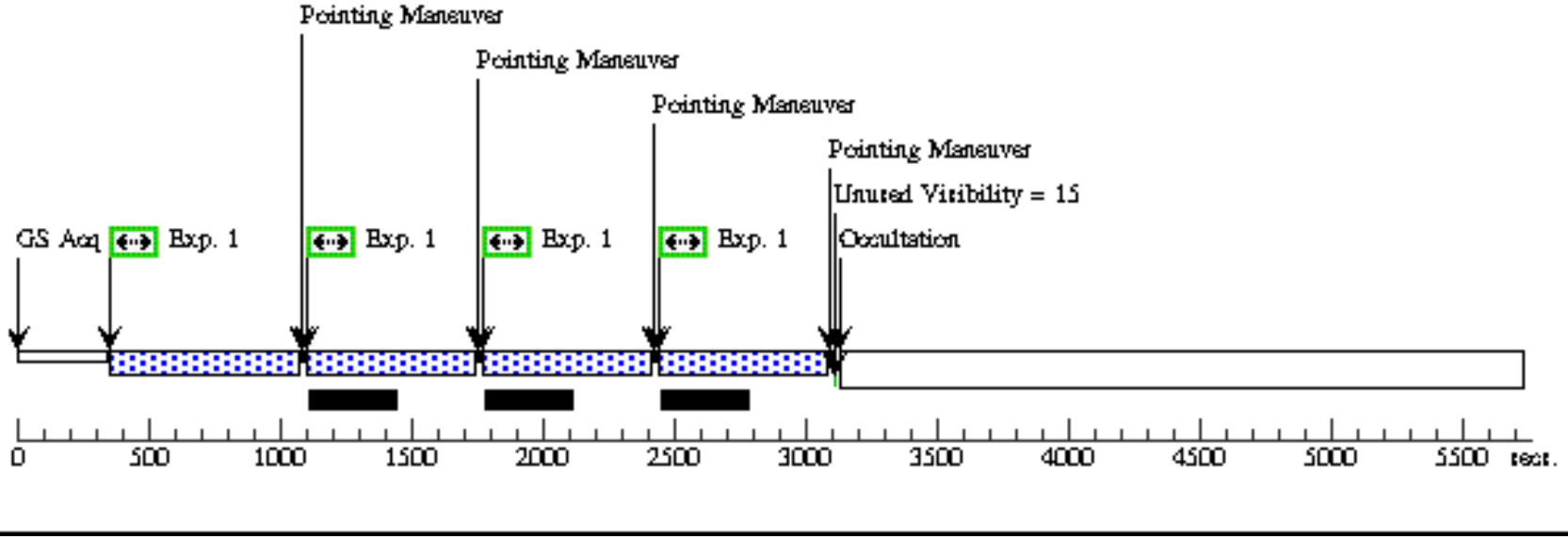
Fixed Targets

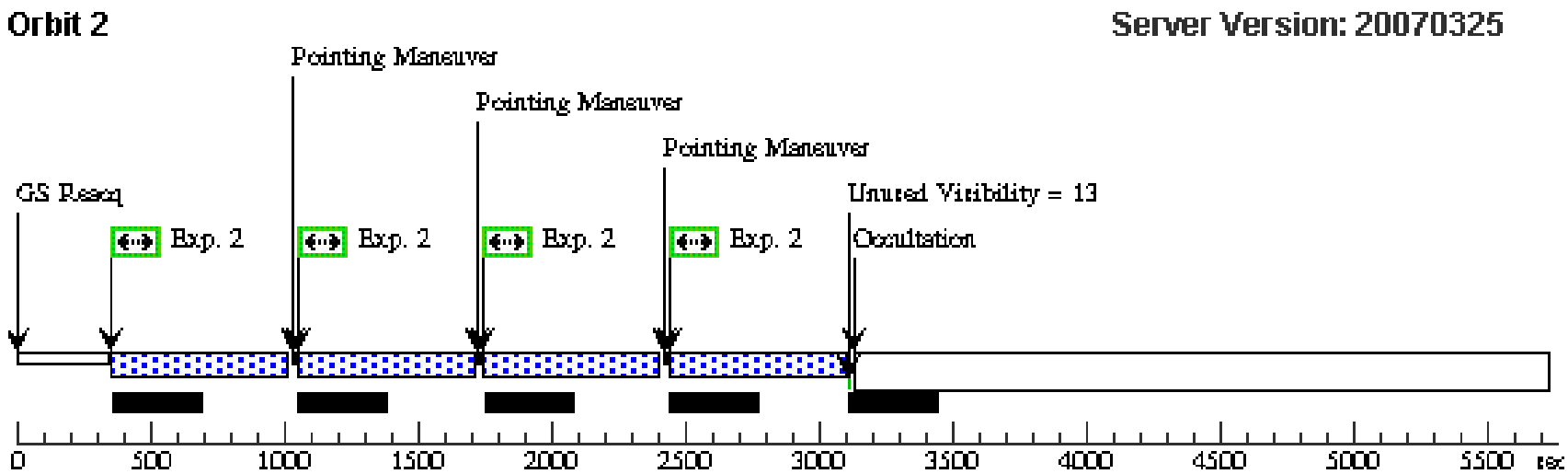
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	GALAXY-HIGHZ-2	RA: 00 00 0.0000 (.0000000d) Dec: +00 00 0.00 (.00000d) Equinox: J2000 Plate Id: (?)		V=35.0	Reference Frame: GSC1

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) GALAXY-HIGHZ-2	ACS/WFC, ACCUM, WFC1	F850LP	CR-SPLIT=NO		Pattern 1-1 (2)	514.0 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(2) GALAXY-HIGHZ-2	ACS/WFC, ACCUM, WFC1	F850LP	CR-SPLIT=NO	POS TARG 0.279,0.0773	Pattern 2-2 (3)	540.0 Secs	
								[==>(Pattern 1,1)] *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[2]***

Orbit Structure





Visit

Proposal 10908, Visit 05, implementation Mon May 21 19:51:33 GMT 2007

Diagnostic Status: Error

Scientific Instruments: NIC3

Special Requirements: PCS MODE FINE; SAME ORIENT AS 06; GROUP 05,06 WITHIN 1.0D; ON HOLD

Comments: This is the first group of 3-orbit NIC3 F160W observations of a z>7 galaxy (grouped with visit 06 which is the second set of 3-orbit NIC3 observations). Orientation of visits 05 and 06 should be the same.

On Hold Comments: Target of opportunity

Diagnostics

(Visit 05) Error: Unresolvable ORIENT references.

(Exposure 1 (Pattern 1-1) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2-2) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 3 (Pattern 3-3) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=NIC-SPIRAL-DITH	Coordinate Frame=POS-TARG		(1), (2), (3)
	Purpose=DITHER	Pattern Orientation=23		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=5.06	Center Pattern=true		
	Line Spacing=			

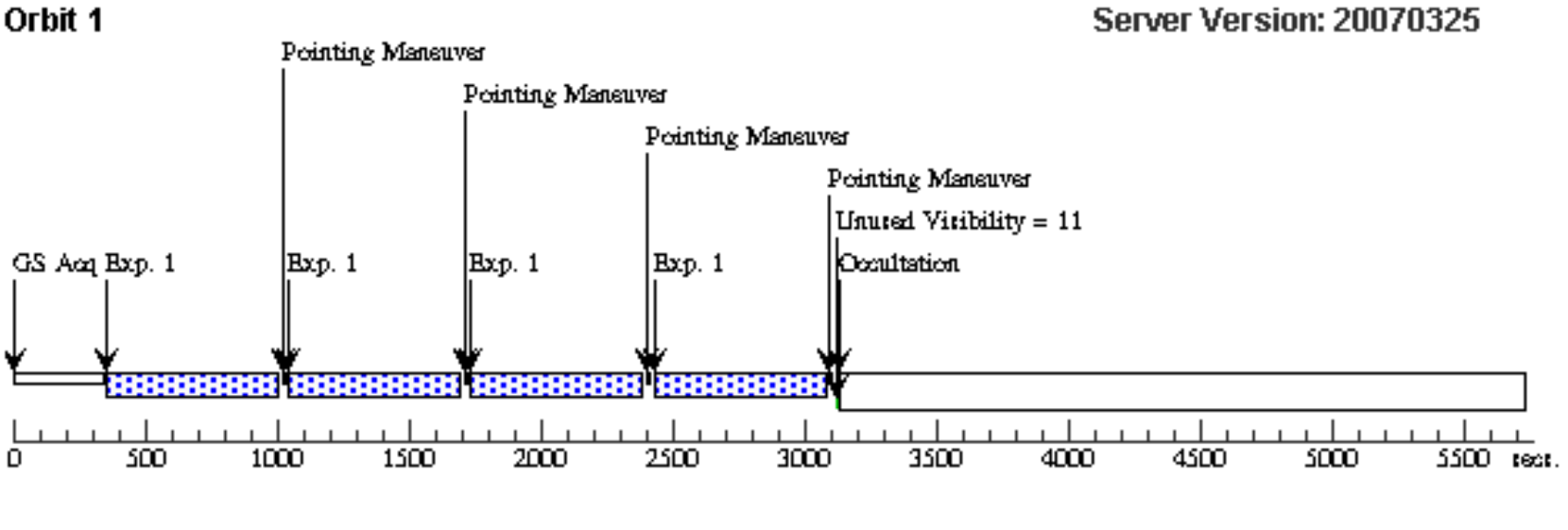
Fixed Targets

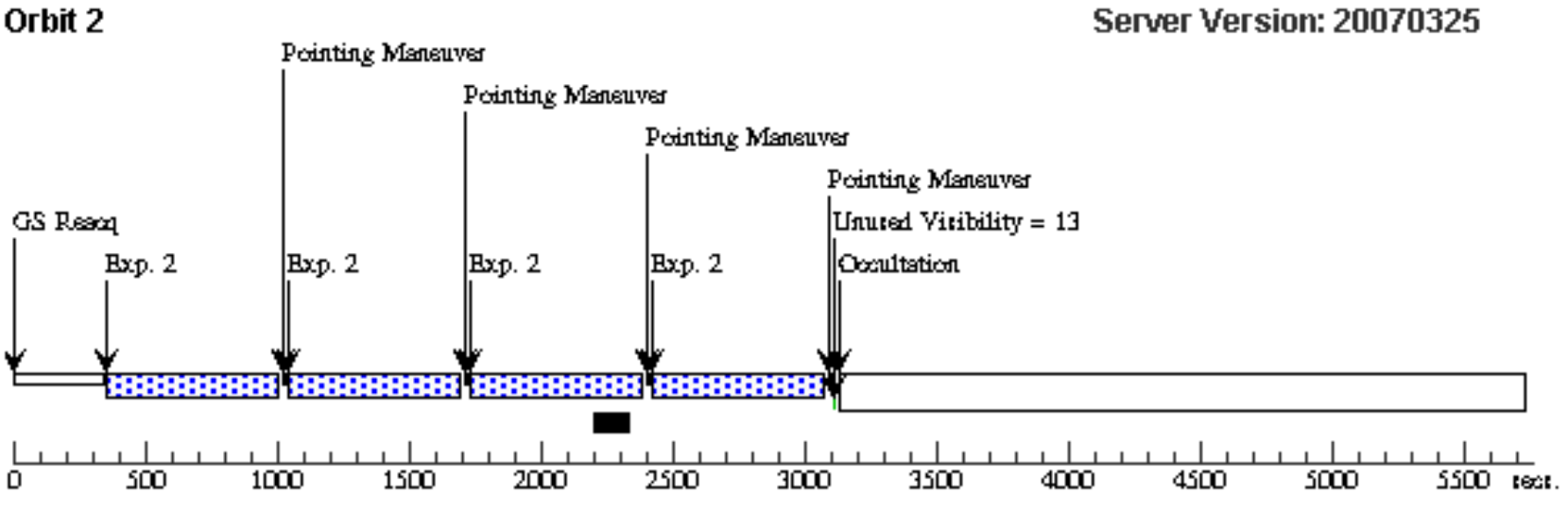
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	GALAXY-HIGHZ-3	RA: 00 00 0.0000 (.0000000d) Dec: +00 00 0.00 (.00000d) Equinox: J2000 Plate Id: (?)		V=35.0	Reference Frame: GSC1

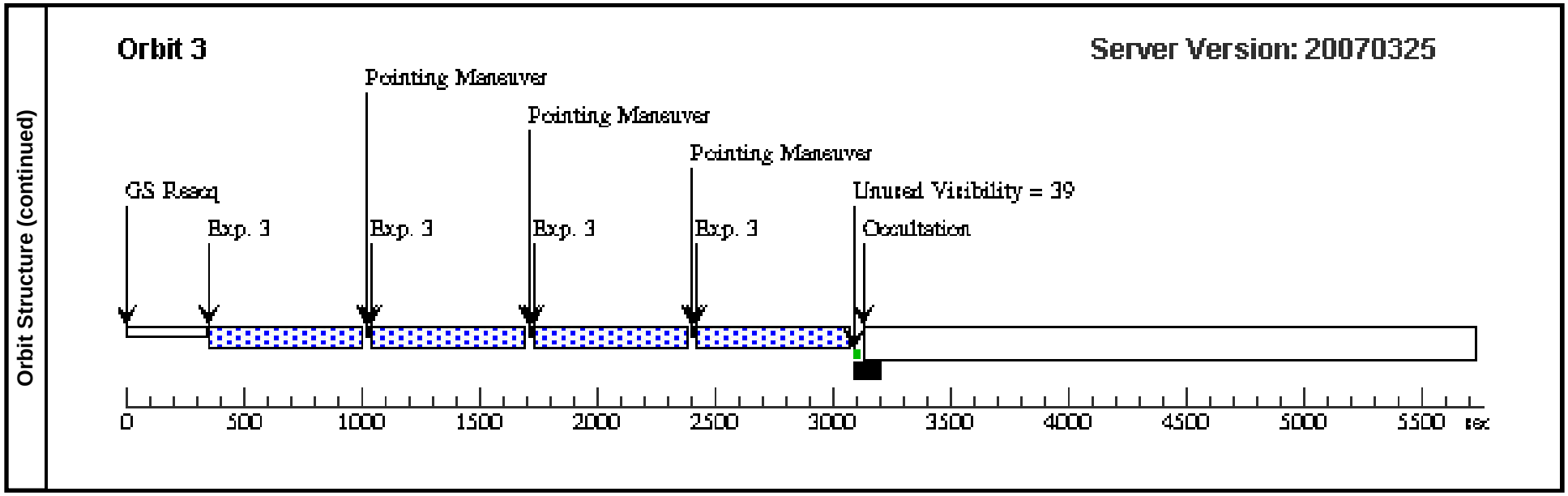
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) GALAXY-HIGHZ-3	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0145,0.0223; GS ACQ SCENARIO BASE1TNS	Pattern 1-1 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(3) GALAXY-HIGHZ-3	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.026,0.075	Pattern 2-2 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***
3		(3) GALAXY-HIGHZ-3	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0335,0.062	Pattern 3-3 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[3]***

Orbit Structure






Orbit Structure (continued)
Orbit 3
Server Version: 20070325
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Exp. 3
Exp. 3
Exp. 3
Exp. 3
Unused Visibility = 39
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10908, Visit 06, implementation Mon May 21 19:51:34 GMT 2007

Diagnostic Status: Error

Scientific Instruments: NIC3

Special Requirements: PCS MODE FINE; SAME ORIENT AS 05; GROUP 06,05 WITHIN 1.0D; ON HOLD

Comments: This is the second group of 3-orbit NIC3 F160W observations of a z>7 galaxy (grouped with visit 05 which is the first set of 3-orbit NIC3 observations). Orientation of visits 05 and 06 should be the same.

On Hold Comments: Target of opportunity

Diagnostics

(Visit 06) Error: Unresolvable ORIENT references.

(Exposure 1 (Pattern 1-1) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2-2) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 3 (Pattern 3-3) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=NIC-SPIRAL-DITH	Coordinate Frame=POS-TARG		(1), (2), (3)
	Purpose=DITHER	Pattern Orientation=23		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=5.06	Center Pattern=true		
	Line Spacing=			

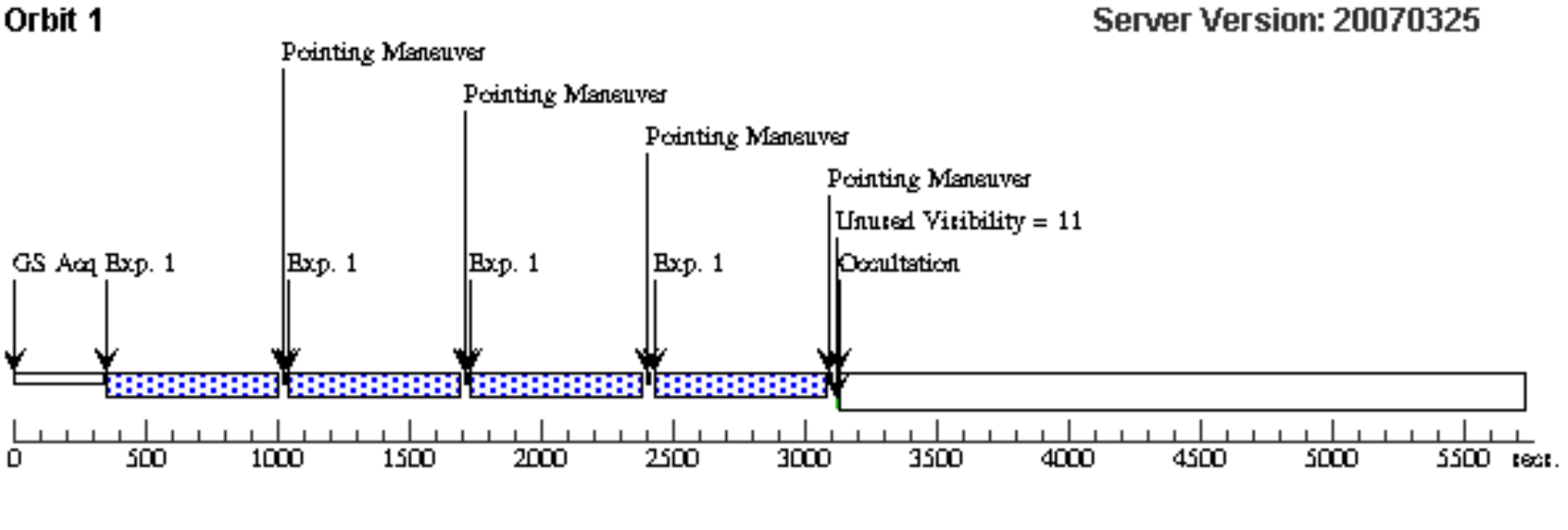
Fixed Targets

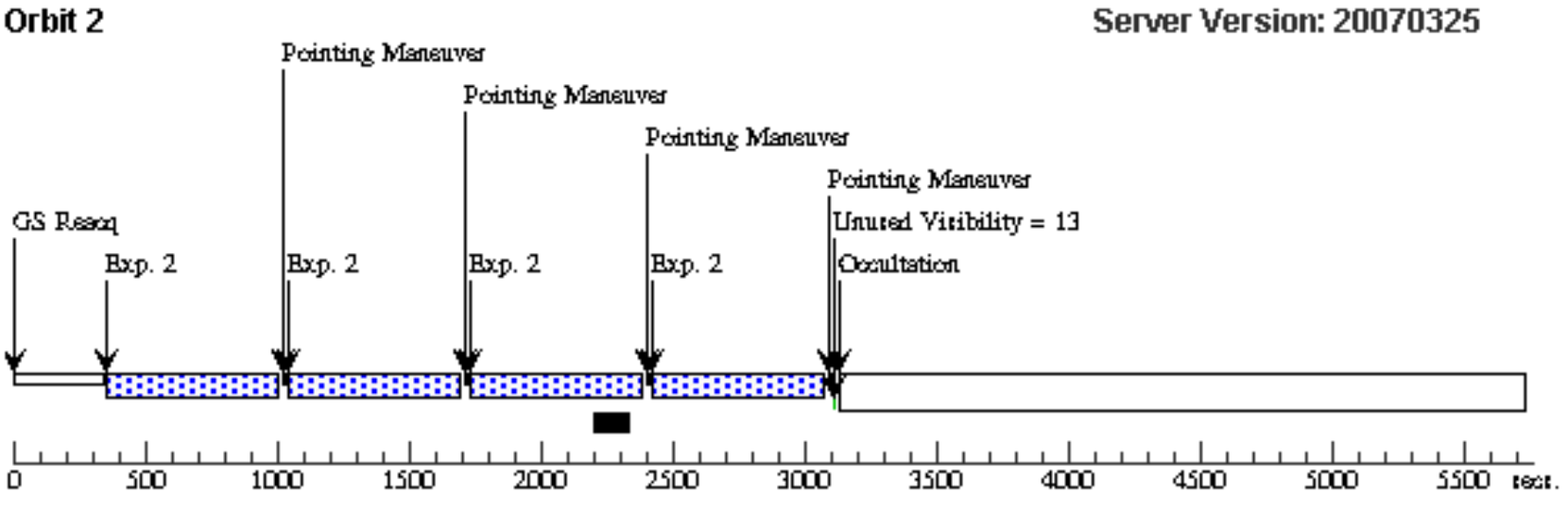
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	GALAXY-HIGHZ-3	RA: 00 00 0.0000 (.0000000d) Dec: +00 00 0.00 (.00000d) Equinox: J2000 Plate Id: (?)		V=35.0	Reference Frame: GSC1

Exposures

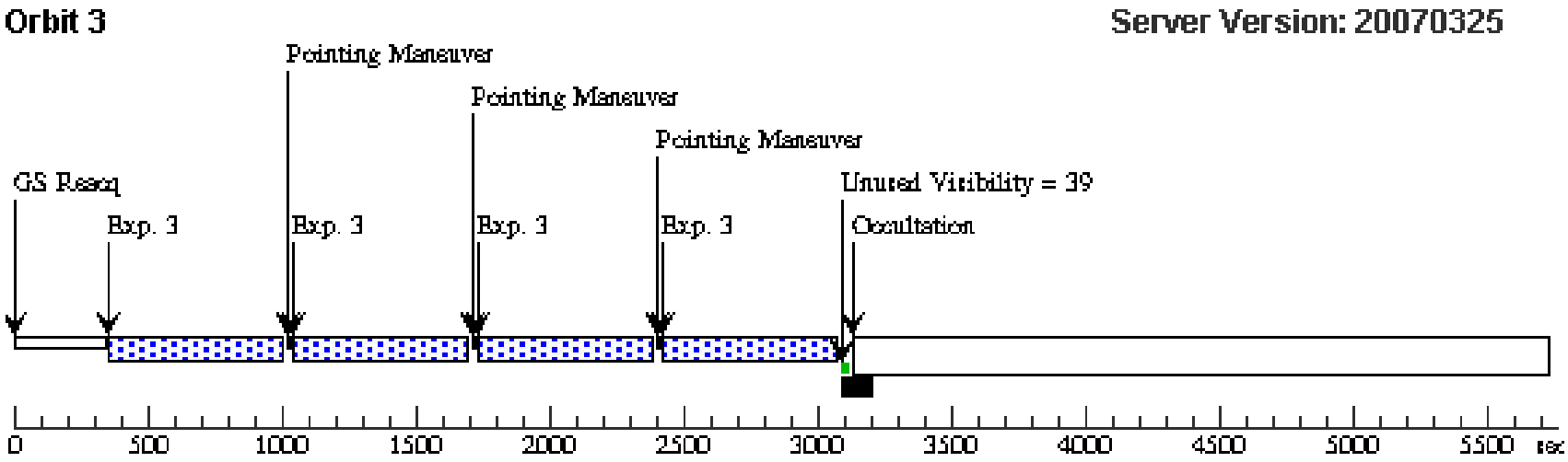
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) GALAXY-HIGHZ-3	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0245,0.0123; GS ACQ SCENARIO BASE1TNS	Pattern 1-1 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(3) GALAXY-HIGHZ-3	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.036,0.085	Pattern 2-2 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***
3		(3) GALAXY-HIGHZ-3	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0235,0.052	Pattern 3-3 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[3]***

Orbit Structure





Orbit Structure (continued)



Visit

Proposal 10908, Visit 07, implementation Mon May 21 19:51:35 GMT 2007

Diagnostic Status: Error

Scientific Instruments: NIC3

Special Requirements: PCS MODE FINE; SAME ORIENT AS 08; GROUP 07,08 WITHIN 1.0D; ON HOLD

Comments: This is the first group of 3-orbit NIC3 F160W observations of a z>7 galaxy (grouped with visit 08 which is the second set of 3-orbit NIC3 observations). Orientation of visits 07 and 08 should be the same.

On Hold Comments: Target of opportunity

Diagnostics

(Visit 07) Error: Unresolvable ORIENT references.

(Exposure 1 (Pattern 1-1) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2-2) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 3 (Pattern 3-3) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=NIC-SPIRAL-DITH	Coordinate Frame=POS-TARG		(1), (2), (3)
	Purpose=DITHER	Pattern Orientation=23		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=5.06	Center Pattern=true		
	Line Spacing=			

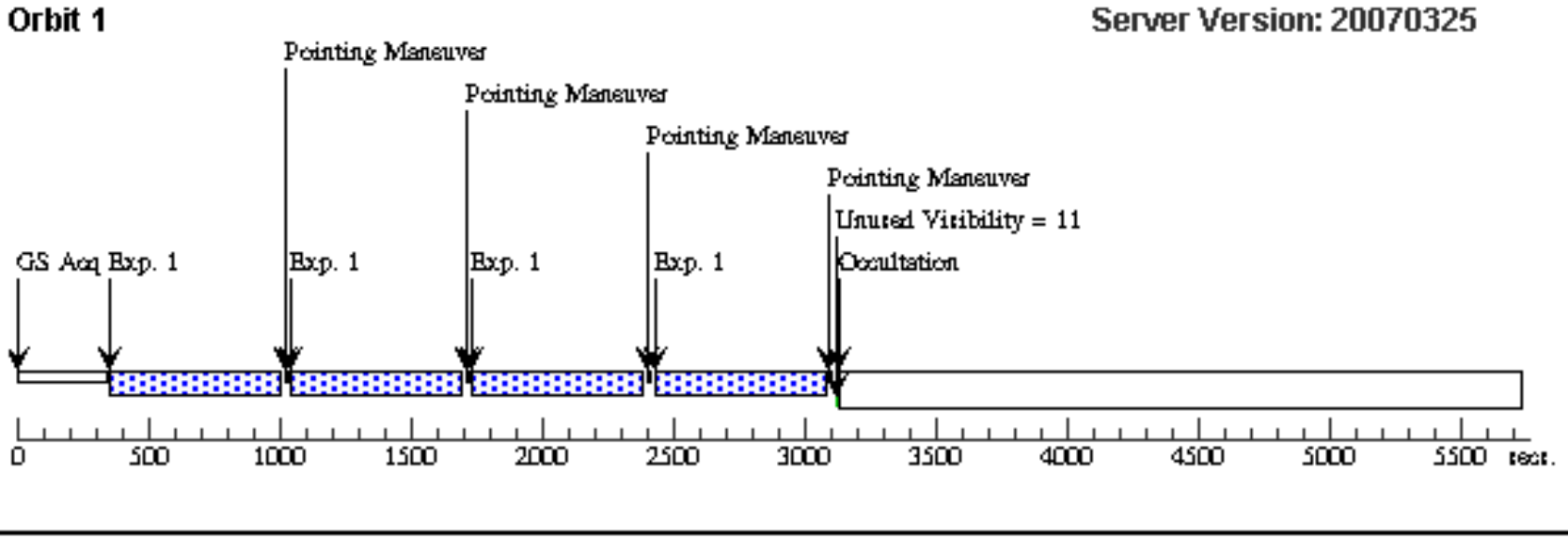
Fixed Targets

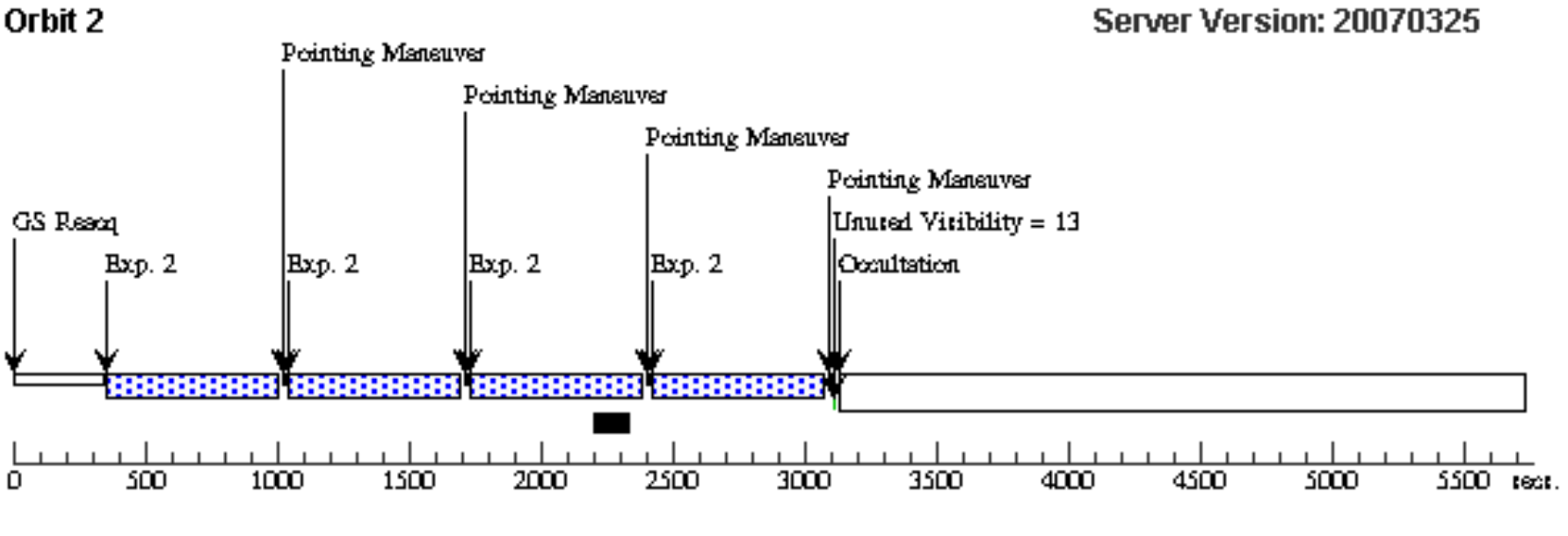
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	GALAXY-HIGHZ-4	RA: 00 00 0.0000 (.0000000d) Dec: +00 00 0.00 (.00000d) Equinox: J2000 Plate Id: (?)		V=35.0	Reference Frame: GSC1

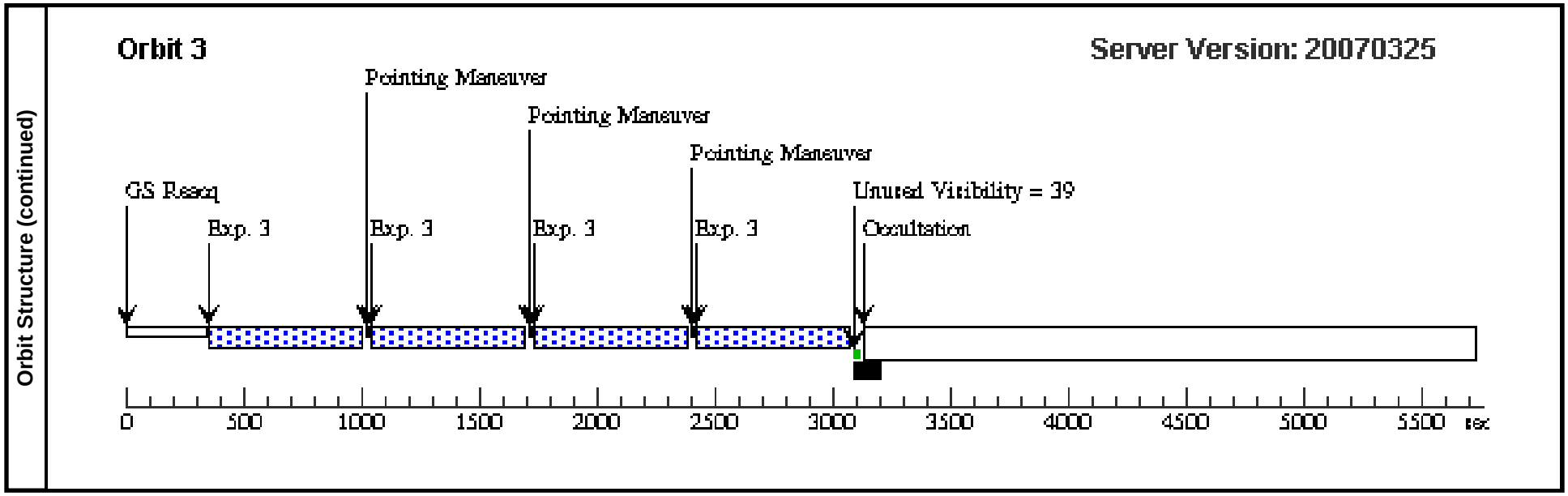
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(4) GALAXY-HIGHZ-4	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0145,0.0223; GS ACQ SCENARIO BASE1TNS	Pattern 1-1 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(4) GALAXY-HIGHZ-4	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.026,0.075	Pattern 2-2 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***
3		(4) GALAXY-HIGHZ-4	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0335,0.062	Pattern 3-3 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[3]***

Orbit Structure






Orbit Structure (continued)
Orbit 3
Server Version: 20070325
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Unused Visibility = 39
Exp. 3
Exp. 3
Exp. 3
Exp. 3
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10908, Visit 08, implementation Mon May 21 19:51:36 GMT 2007

Diagnostic Status: Error

Scientific Instruments: NIC3

Special Requirements: PCS MODE FINE; SAME ORIENT AS 07; GROUP 08,07 WITHIN 1.0D; ON HOLD

Comments: This is the second group of 3-orbit NIC3 F160W observations of a z>7 galaxy (grouped with visit 07 which is the first set of 3-orbit NIC3 observations). Orientation of visits 07 and 08 should be the same.

On Hold Comments: Target of opportunity

Diagnostics

(Visit 08) Error: Unresolvable ORIENT references.

(Exposure 1 (Pattern 1-1) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2-2) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 3 (Pattern 3-3) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=NIC-SPIRAL-DITH	Coordinate Frame=POS-TARG		(1), (2), (3)
	Purpose=DITHER	Pattern Orientation=23		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=5.06	Center Pattern=true		
	Line Spacing=			

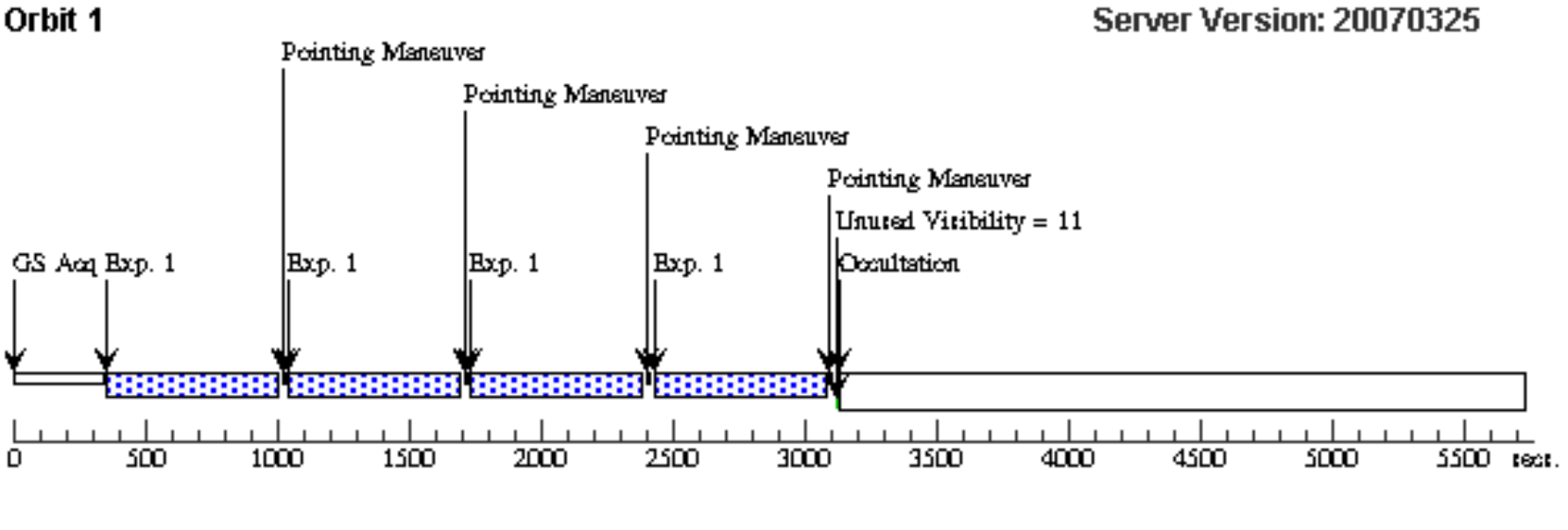
Fixed Targets

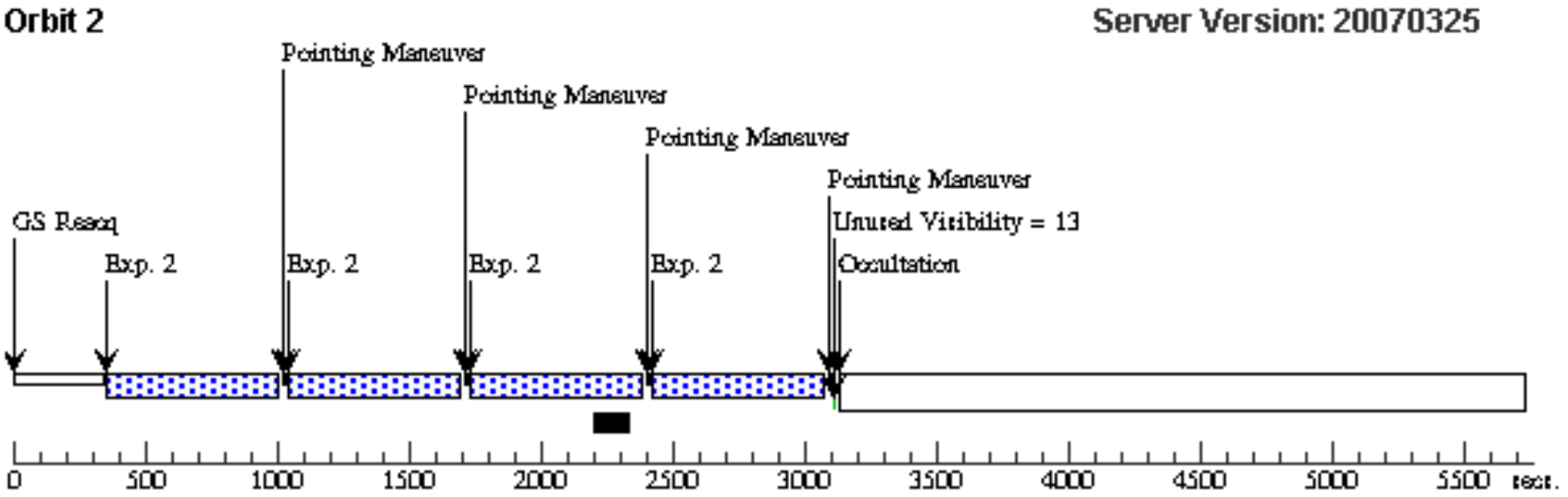
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	GALAXY-HIGHZ-4	RA: 00 00 0.0000 (.0000000d) Dec: +00 00 0.00 (.00000d) Equinox: J2000 Plate Id: (?)		V=35.0	Reference Frame: GSC1

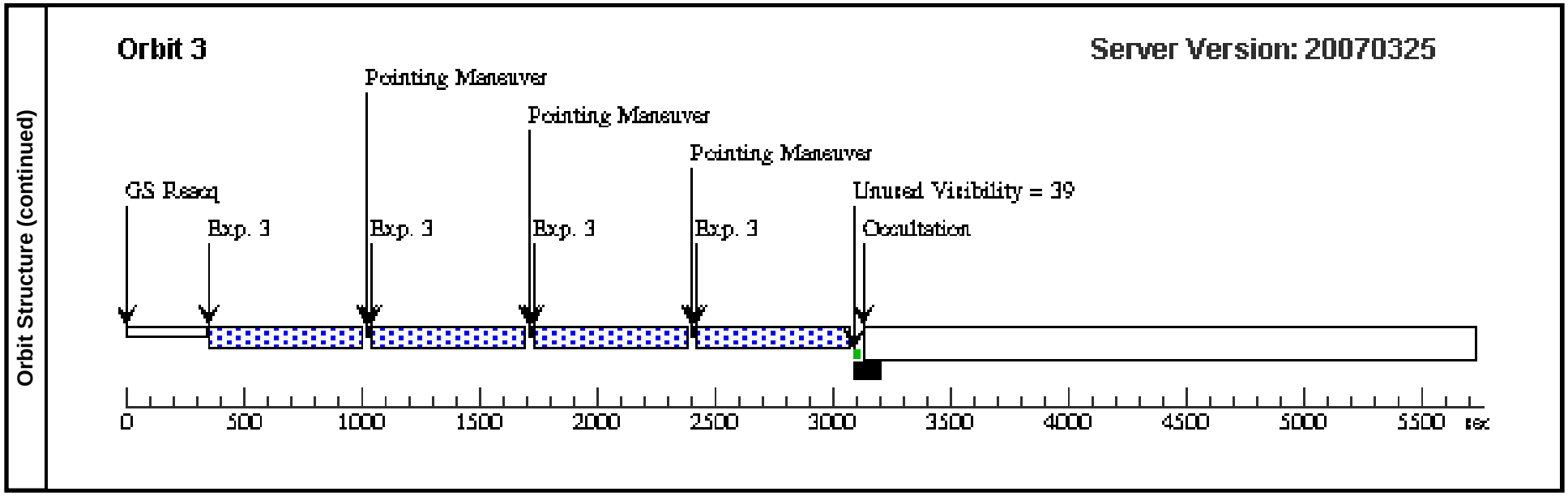
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(4) GALAXY-HIGHZ-4	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0245,0.0123; GS ACQ SCENARIO BASE1TNS	Pattern 1-1 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(4) GALAXY-HIGHZ-4	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.036,0.085	Pattern 2-2 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***
3		(4) GALAXY-HIGHZ-4	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0235,0.052	Pattern 3-3 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[3]***

Orbit Structure






Orbit Structure (continued)
Orbit 3
Server Version: 20070325
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Unused Visibility = 39
Exp. 3
Exp. 3
Exp. 3
Exp. 3
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 10908, Visit 09 Mon May 21 19:51:37 GMT 2007

Diagnostic Status: Error

Scientific Instruments: NIC3

Special Requirements: PCS MODE FINE; SAME ORIENT AS 10; GROUP 09,10 WITHIN 1.0D

Comments: This is the first group of 3-orbit NIC3 F160W observations of GRB061222A (grouped with visit 10 which is the second set of 3-orbit NIC3 observations). Orientation of visits 09 and 10 should be the same.

Diagnostics

(Visit 09) Error: Unresolvable ORIENT references.

(Exposure 1 (Pattern 1-1) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2-2) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 3 (Pattern 3-3) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=NIC-SPIRAL-DITH	Coordinate Frame=POS-TARG		(1), (2), (3)
	Purpose=DITHER	Pattern Orientation=23		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=5.06	Center Pattern=true		
	Line Spacing=			

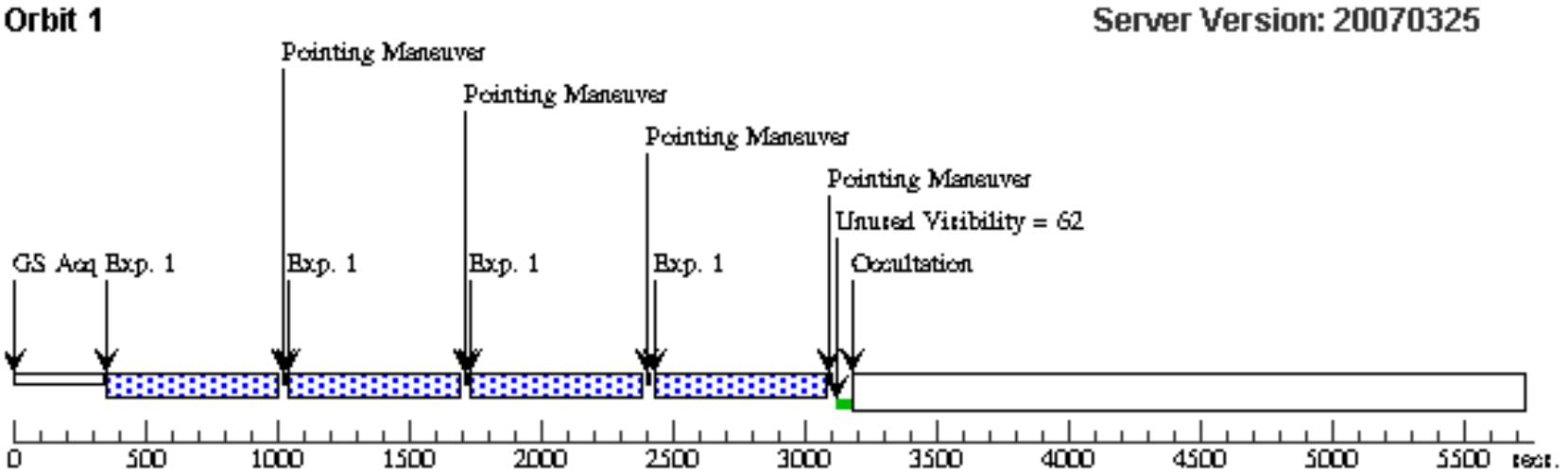
Fixed Targets

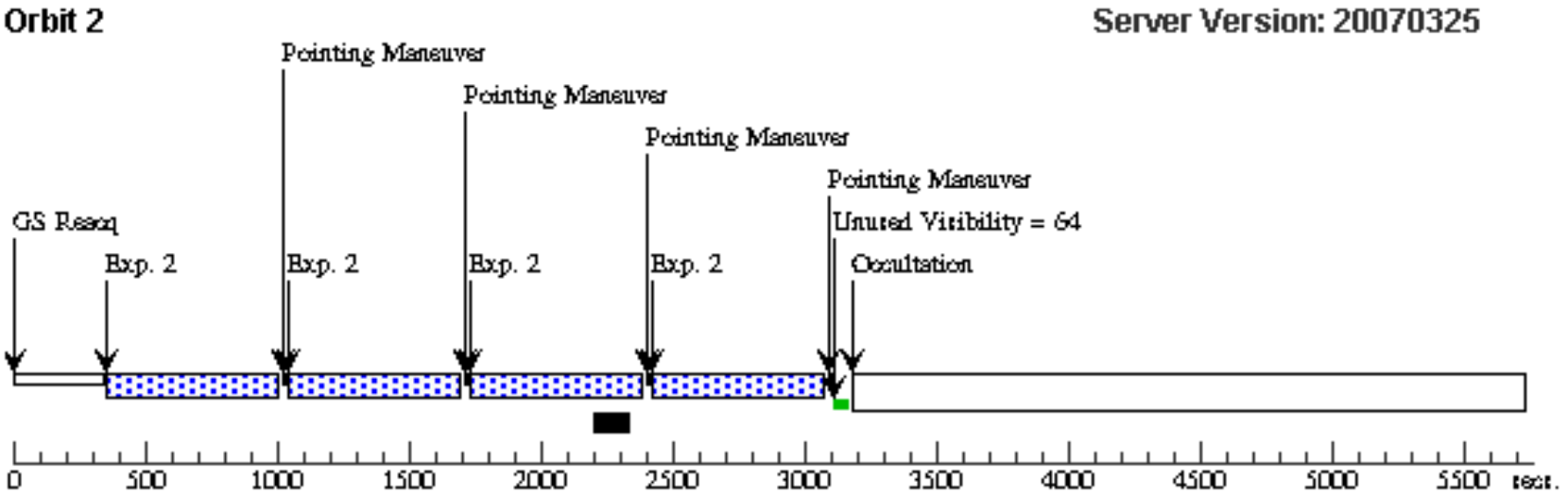
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	GRB061222A	RA: 23 53 3.4190 (358.2642458d)		V=35.0	Reference Frame: GSC1
		Dec: +46 31 58.60 (46.53294d)			
		Equinox: J2000			
		Plate Id: (?)			

Exposures

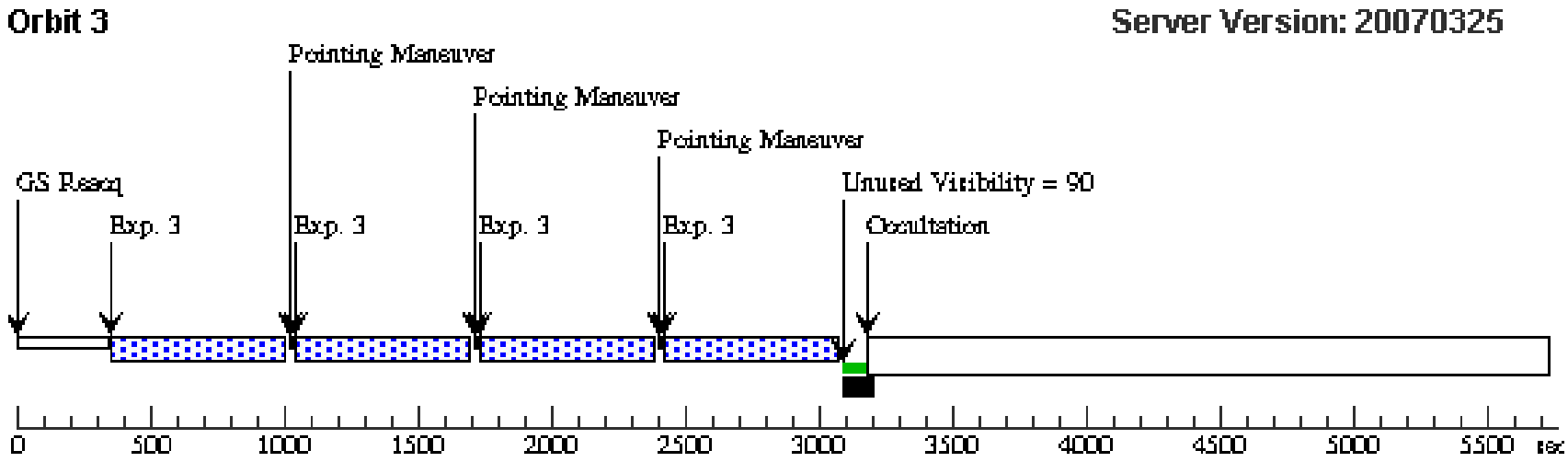
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(5) GRB061222A	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0145,0.0223; GS ACQ SCENARIO BASE1TNS	Pattern 1-1 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(5) GRB061222A	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.026,0.075	Pattern 2-2 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***
3		(5) GRB061222A	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0335,0.062	Pattern 3-3 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[3]***

Orbit Structure





Orbit Structure (continued)



Visit

Proposal 10908, Visit 10 Mon May 21 19:51:38 GMT 2007

Diagnostic Status: Error

Scientific Instruments: NIC3

Special Requirements: PCS MODE FINE; SAME ORIENT AS 09; GROUP 10,09 WITHIN 1.0D

Comments: This is the second group of 3-orbit NIC3 F160W observations of GRB061222A (grouped with visit 09 which is the first set of 3-orbit NIC3 observations). Orientation of visits 09 and 10 should be the same.

Diagnostics

(Visit 10) Error: Unresolvable ORIENT references.

(Exposure 1 (Pattern 1-1) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 2-2) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 3 (Pattern 3-3) special requirements) Warning: Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=NIC-SPIRAL-DITH	Coordinate Frame=POS-TARG		(1), (2), (3)
	Purpose=DITHER	Pattern Orientation=23		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=5.06	Center Pattern=true		
	Line Spacing=			

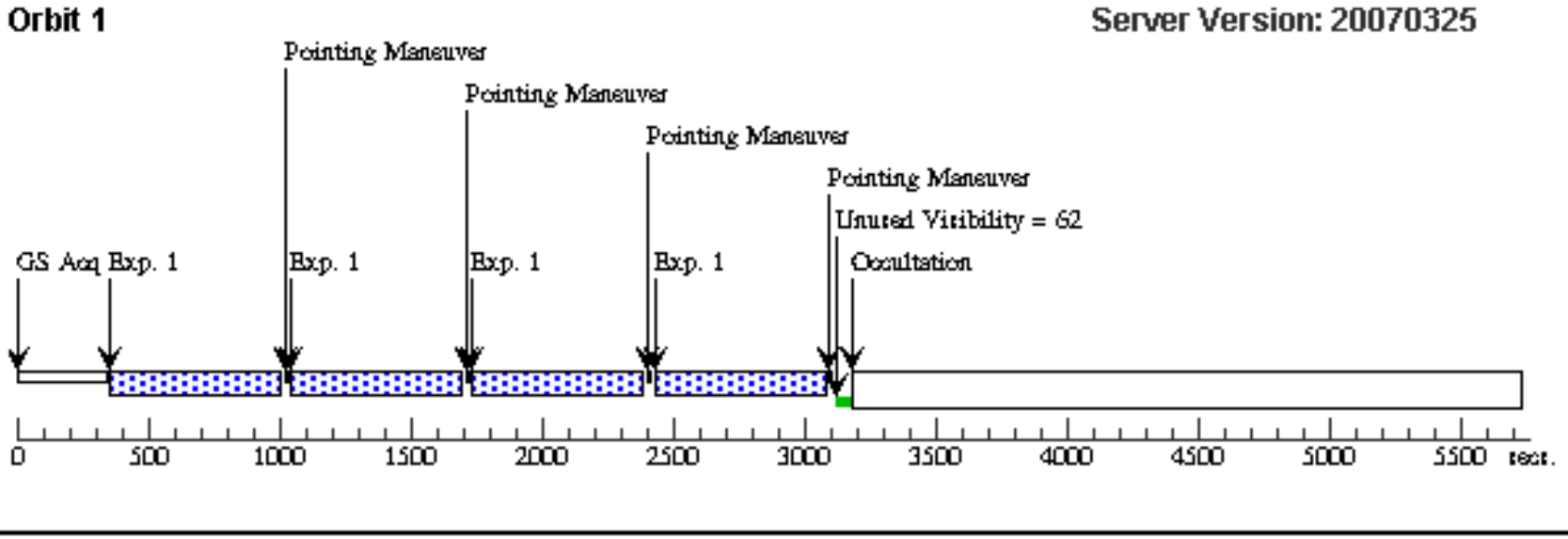
Fixed Targets

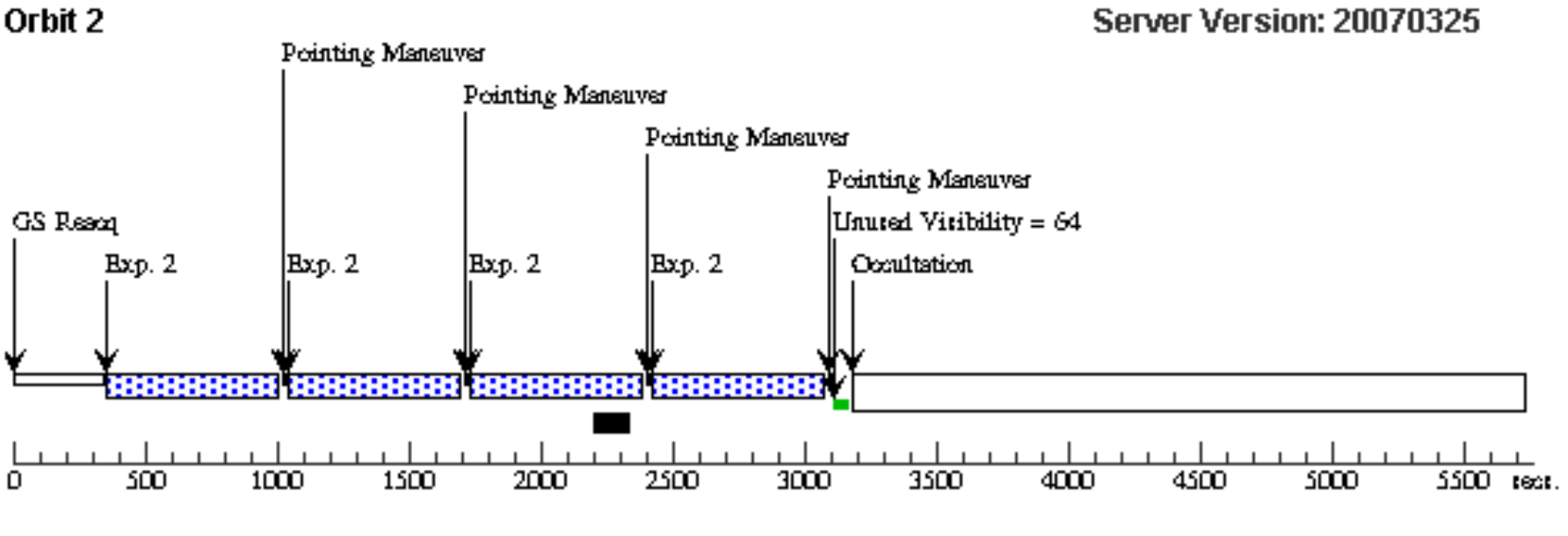
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	GRB061222A	RA: 23 53 3.4190 (358.2642458d)		V=35.0	Reference Frame: GSC1
		Dec: +46 31 58.60 (46.53294d)			
		Equinox: J2000			
		Plate Id: (?)			

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(5) GRB061222A	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0245,0.0123; GS ACQ SCENARIO BASE1TNS	Pattern 1-1 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(5) GRB061222A	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.036,0.085	Pattern 2-2 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***
3		(5) GRB061222A	NIC3, MULTIACCUM, NIC3	F160W	NSAMP=12; SAMP-SEQ=SPARS64	POS TARG 0.0235,0.052	Pattern 3-3 (1)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[3]***

Orbit Structure





Orbit Structure (continued)