11580 - Watching Young Planetary Nebulae Grow: The Movie

Cycle: 17, 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	(10) CRL-2688	WFC3/UVIS	1	28-Oct-2009 21:31:56.0	yes
02	(4) CRL618	WFC3/UVIS	2	28-Oct-2009 21:32:14.0	yes
03	(3) HEN3-1475	WFC3/UVIS	1	28-Oct-2009 21:32:27.0	yes
04	(2) OH231.8+04.2	ACS/WFC	2	28-Oct-2009 21:32:39.0	yes
05	(10) CRL-2688	WFC3/IR	1	28-Oct-2009 21:32:45.0	yes
06	(4) CRL618	WFC3/IR	2	28-Oct-2009 21:32:50.0	yes
07	(3) HEN3-1475	WFC3/IR	2	28-Oct-2009 21:32:56.0	yes
08	(2) OH231.8+04.2	WFC3/IR	2	28-Oct-2009 21:33:02.0	yes

13 Total Orbits Used

ABSTRACT

The development of magneto-hydro gas dynamical models is the key to the understanding of both the physics (processes) and astronomy (initial conditions) of astrophysical nebulae of all sorts. The models are reaching their highest degree of accuracy when applied to and compared against pre Planetary Nebulae (pPNe) thanks to the simplicity, relative lack of extinction, and the detail of the imaging and kinematic data that have bcome available for these objects.

The primary barrier to progress is inadequate kinematic data of pPNe against which the predictions models can be tested. Unlike PNe, pPNe do not emit emission lines for detailed Doppler measurements. Therefore it is essential to find another way to monitor the morphological evolution.

Only HST can uncover the dynamics of the growth patterns by subtracting multi-epoch images spanning a decade or more. We have selected four pPNe with highly collimated outflows in different evolutionary stages for which high-quality first-epoch images were obtained from 1996 to 2002. All of them display regularly shaped thin rims, sharp edges, and symmetric pairs of knots or bowshocks that are ideal for our purposes. We will closely mimic many of the earlier exposures using ACS and to monitor changes in structures. The morphology and its evolution will be compared to 3-D MHD models with adaptive grids in order to build a far clearer picture of the nuclear geometry which shaped the outflows and constrained their propagation to the present. We shall also obtain R, J, and H images for use with a 3-D dust radiative transfer code LELUYA to model the dust distribution deep into the nuclear zones.

OBSERVING DESCRIPTION

The program emulates imaging observations of the targets taken about 10 years earlier. Differences in the old and new images reveal the growth patterns which, in turn, illuminate the process that are shaping the outflows from these post-AGB stars.

Visit

Proposal 11580, Visit 01, completed Thu Oct 29 01:33:08 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT 5D TO 15 D; ORIENT 185D TO 195 D

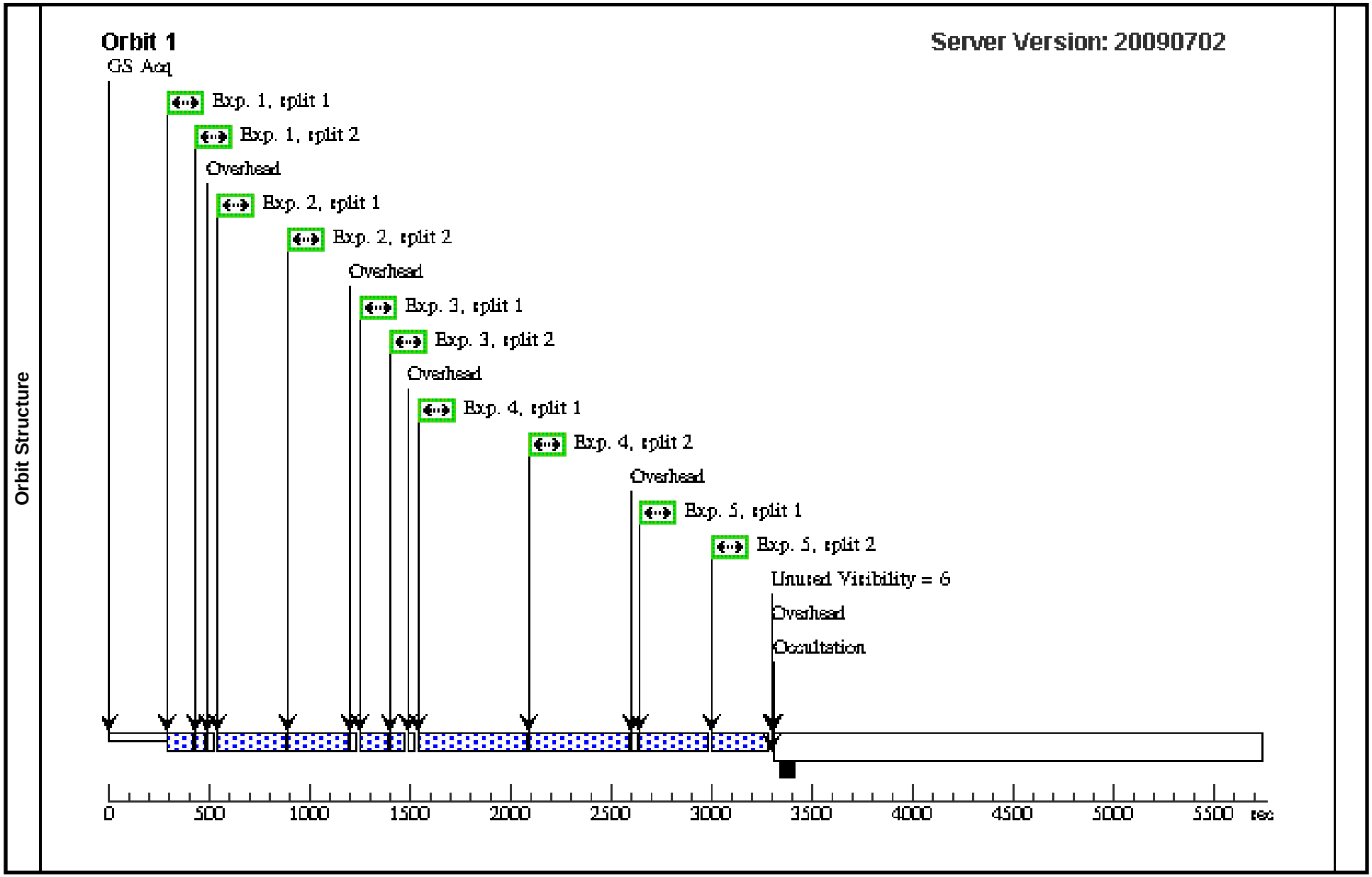
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	CRL-2688	RA: 21 02 18.6085 (315.5775354d) Dec: +36 41 36.80 (36.69356d) Equinox: J2000		V=14.0	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(10) CRL-2688	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F606W				100 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
2		(10) CRL-2688	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F606W				600 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
3		(10) CRL-2688	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F814W				150 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
4		(10) CRL-2688	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F814W				1000 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
5		(10) CRL-2688	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F673N				570 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20090702
GS Acq
Exp. 1, split 1
Exp. 1, split 2
Overhead
Exp. 2, split 1
Exp. 2, split 2
Overhead
Exp. 3, split 1
Exp. 3, split 2
Overhead
Exp. 4, split 1
Exp. 4, split 2
Overhead
Exp. 5, split 1
Exp. 5, split 2
Unused Visibility = 6
Overhead
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 11580, Visit 02, completed Thu Oct 29 01:33:09 GMT 2009

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: (none)

Diagnostics

(Visit 02) Warning (Orbit Planner): VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=WFC3-UVIS-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.173 Line Spacing=0.112	Coordinate Frame=POS-TARG Pattern Orientation=23.884 Angle Between Sides=81.785 Center Pattern=false		(1), (2), (3), (4), (5), (6)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	CRL618	RA: 04 42 53.5000 (70.7229167d) Dec: +36 06 52.00 (36.11444d) Equinox: J2000		V=17	Reference Frame: ICRS

Exposures

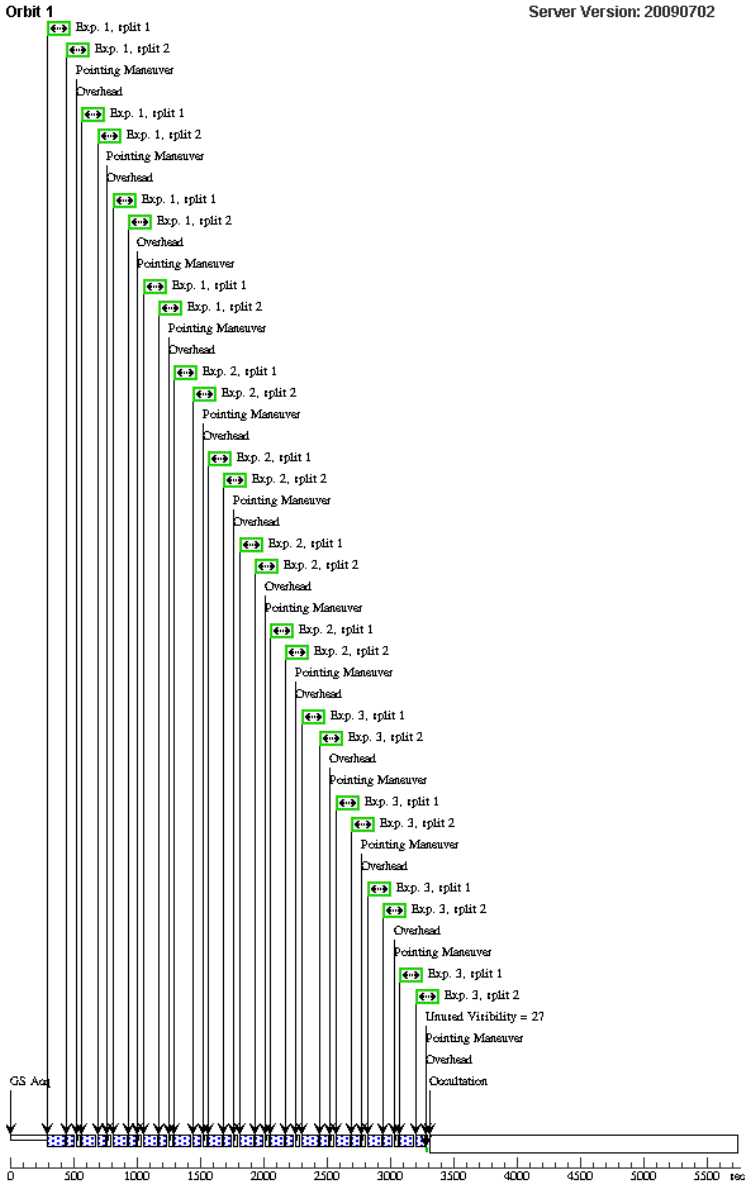
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(4) CRL618	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F606W			Pattern 1, Exps 1-1 (1)	125 Secs	
								[==>(Pattern 1, Split 1)]	***[1]***
								[==>(Pattern 1, Split 2)]	
								[==>(Pattern 2, Split 1)]	
								[==>(Pattern 2, Split 2)]	
								[==>(Pattern 3, Split 1)]	
								[==>(Pattern 3, Split 2)]	
								[==>(Pattern 4, Split 1)]	
								[==>(Pattern 4, Split 2)]	

Exposures (continued)

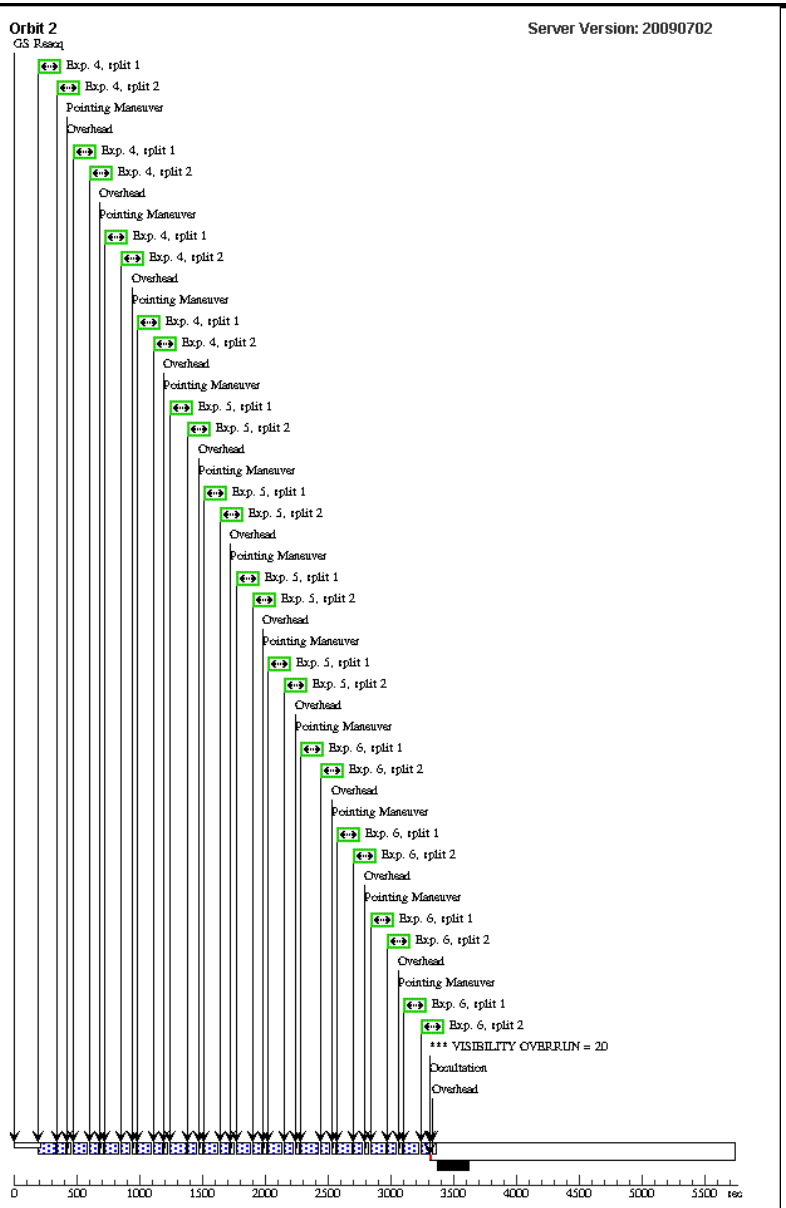
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
2		(4) CRL618	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F547M			Pattern 1, Exps 2-2 (1)	130 Secs	
								[==>(Pattern 1, Split 1)] *[==>(Pattern 1, Split 2)]* *[==>(Pattern 2, Split 1)]* *[==>(Pattern 2, Split 2)]* *[==>(Pattern 3, Split 1)]* *[==>(Pattern 3, Split 2)]* *[==>(Pattern 4, Split 1)]* *[==>(Pattern 4, Split 2)]*	***[1]***
3		(4) CRL618	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F953N			Pattern 1, Exps 3-3 (1)	135 Secs	
								[==>(Pattern 1, Split 1)] *[==>(Pattern 1, Split 2)]* *[==>(Pattern 2, Split 1)]* *[==>(Pattern 2, Split 2)]* *[==>(Pattern 3, Split 1)]* *[==>(Pattern 3, Split 2)]* *[==>(Pattern 4, Split 1)]* *[==>(Pattern 4, Split 2)]*	***[1]***
4		(4) CRL618	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F658N			Pattern 1, Exps 4-4 (1)	140 Secs	
								[==>(Pattern 1, Split 1)] *[==>(Pattern 1, Split 2)]* *[==>(Pattern 2, Split 1)]* *[==>(Pattern 2, Split 2)]* *[==>(Pattern 3, Split 1)]* *[==>(Pattern 3, Split 2)]* *[==>(Pattern 4, Split 1)]* *[==>(Pattern 4, Split 2)]*	***[2]***
5		(4) CRL618	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F656N			Pattern 1, Exps 5-5 (1)	140 Secs	
								[==>(Pattern 1, Split 1)] *[==>(Pattern 1, Split 2)]* *[==>(Pattern 2, Split 1)]* *[==>(Pattern 2, Split 2)]* *[==>(Pattern 3, Split 1)]* *[==>(Pattern 3, Split 2)]* *[==>(Pattern 4, Split 1)]* *[==>(Pattern 4, Split 2)]*	***[2]***

Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	6		(4) CRL618	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F673N			Pattern 1, Exps 6-6 (1)	150 Secs	
									[==>(Pattern 1, Split 1)]	***[2]***
									[==>(Pattern 1, Split 2)]	
									[==>(Pattern 2, Split 1)]	
									[==>(Pattern 2, Split 2)]	
									[==>(Pattern 3, Split 1)]	
									[==>(Pattern 3, Split 2)]	
									[==>(Pattern 4, Split 1)]	
									[==>(Pattern 4, Split 2)]	

Orbit Structure



Orbit Structure (continued)



Visit

Proposal 11580, Visit 03, completed Thu Oct 29 01:33:11 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT 15D TO 35 D; ORIENT 105D TO 135 D; ORIENT 195D TO 215 D; ORIENT 285D TO 305 D

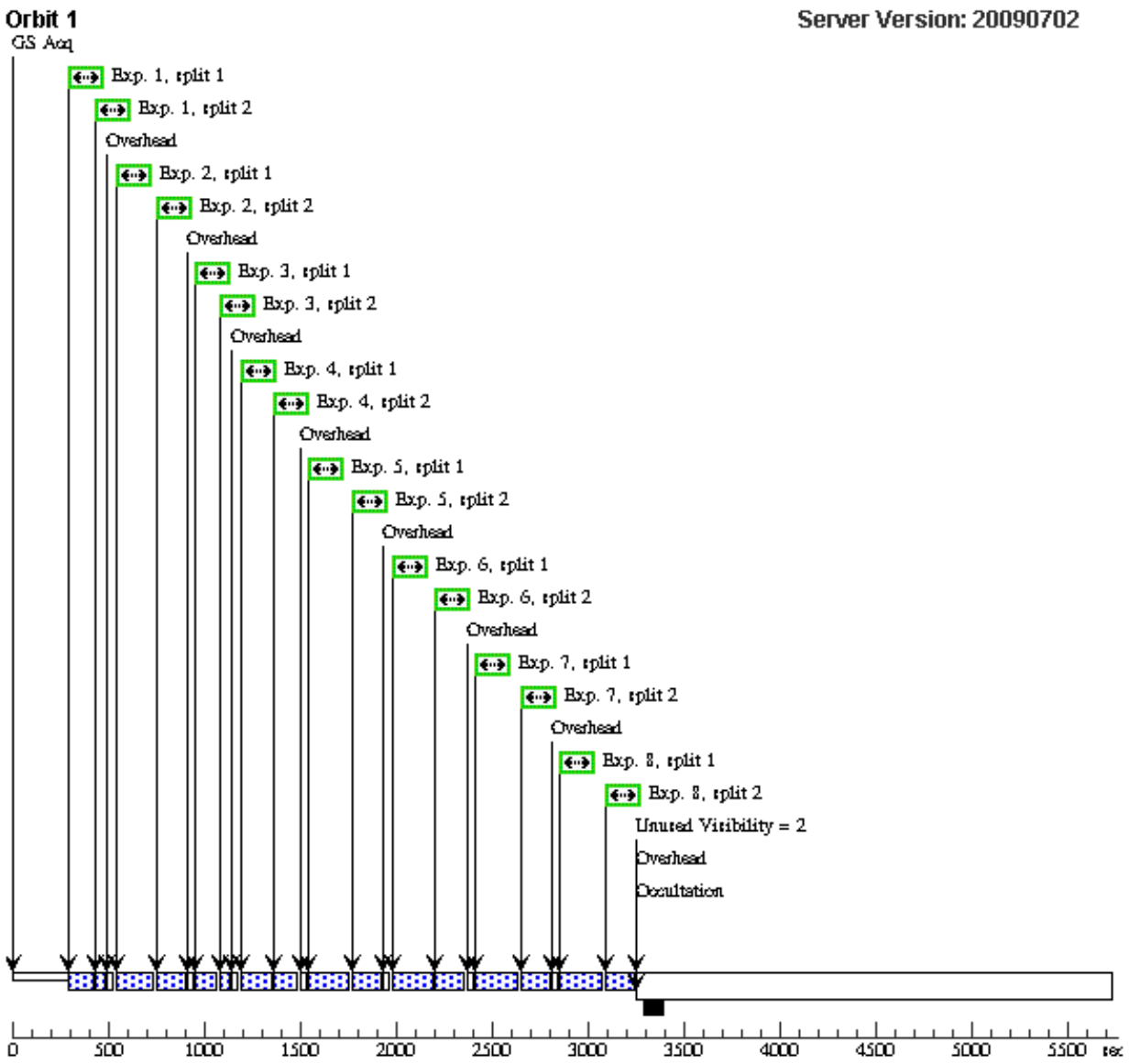
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	HEN3-1475	RA: 17 45 14.1600 (266.3090000d) Dec: -17 56 46.60 (-17.94628d) Equinox: J2000		V=12.9	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) HEN3-1475	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F555W				100 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
2		(3) HEN3-1475	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F555W				300 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
3		(3) HEN3-1475	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F814W				100 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
4		(3) HEN3-1475	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F814W				235 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
5		(3) HEN3-1475	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F658N				300 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
6		(3) HEN3-1475	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F656N				300 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
7		(3) HEN3-1475	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F673N				300 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***
8		(3) HEN3-1475	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F631N				301 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[1]***

Orbit Structure



Visit

Proposal 11580, Visit 04, implementation Thu Oct 29 01:33:11 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC

Special Requirements: (none)

Patterns

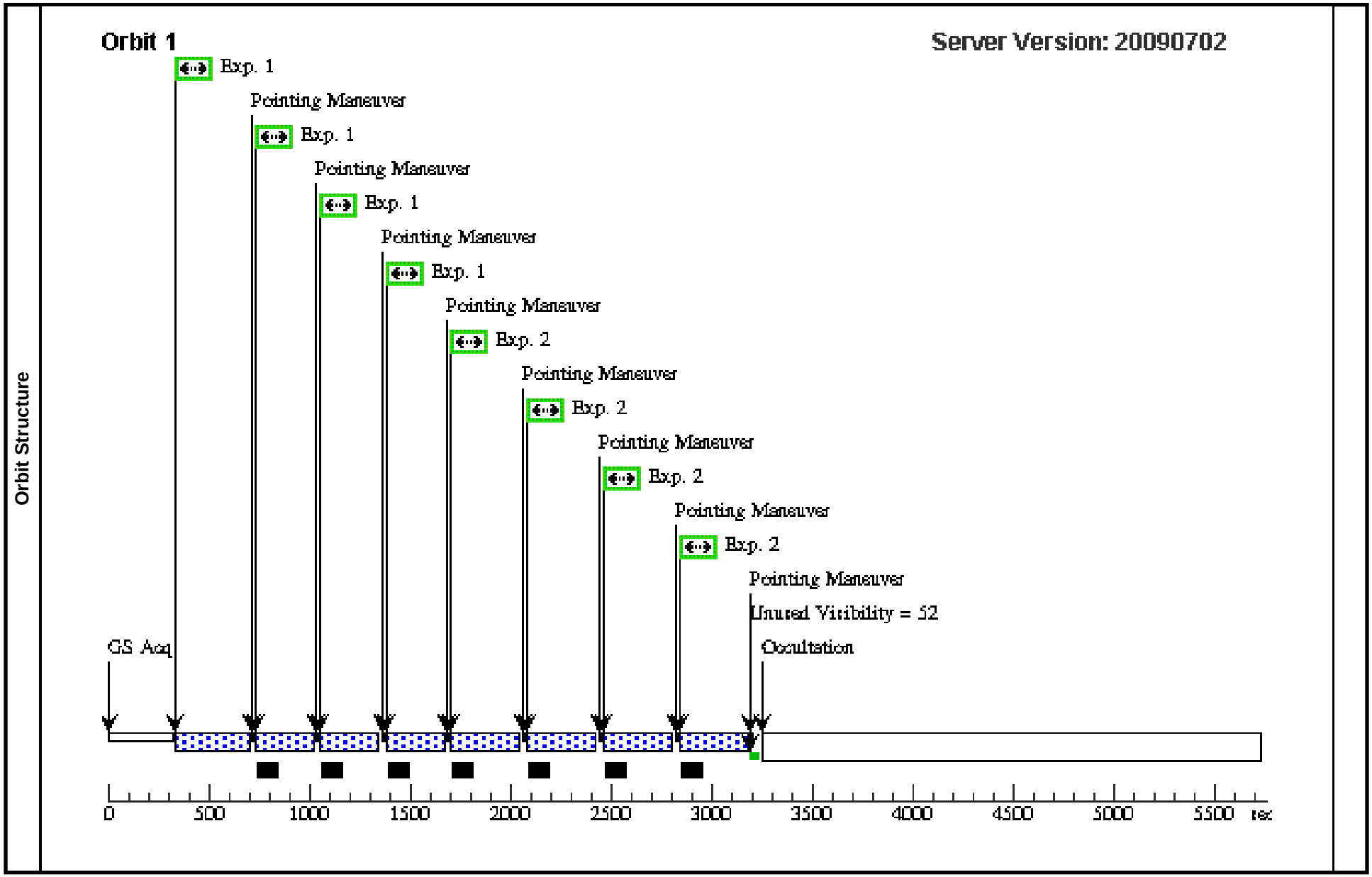
#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.265 Line Spacing=0.187	Coordinate Frame=POS-TARG Pattern Orientation=20.67 Angle Between Sides=69.05 Center Pattern=false		(1), (2), (3), (4)

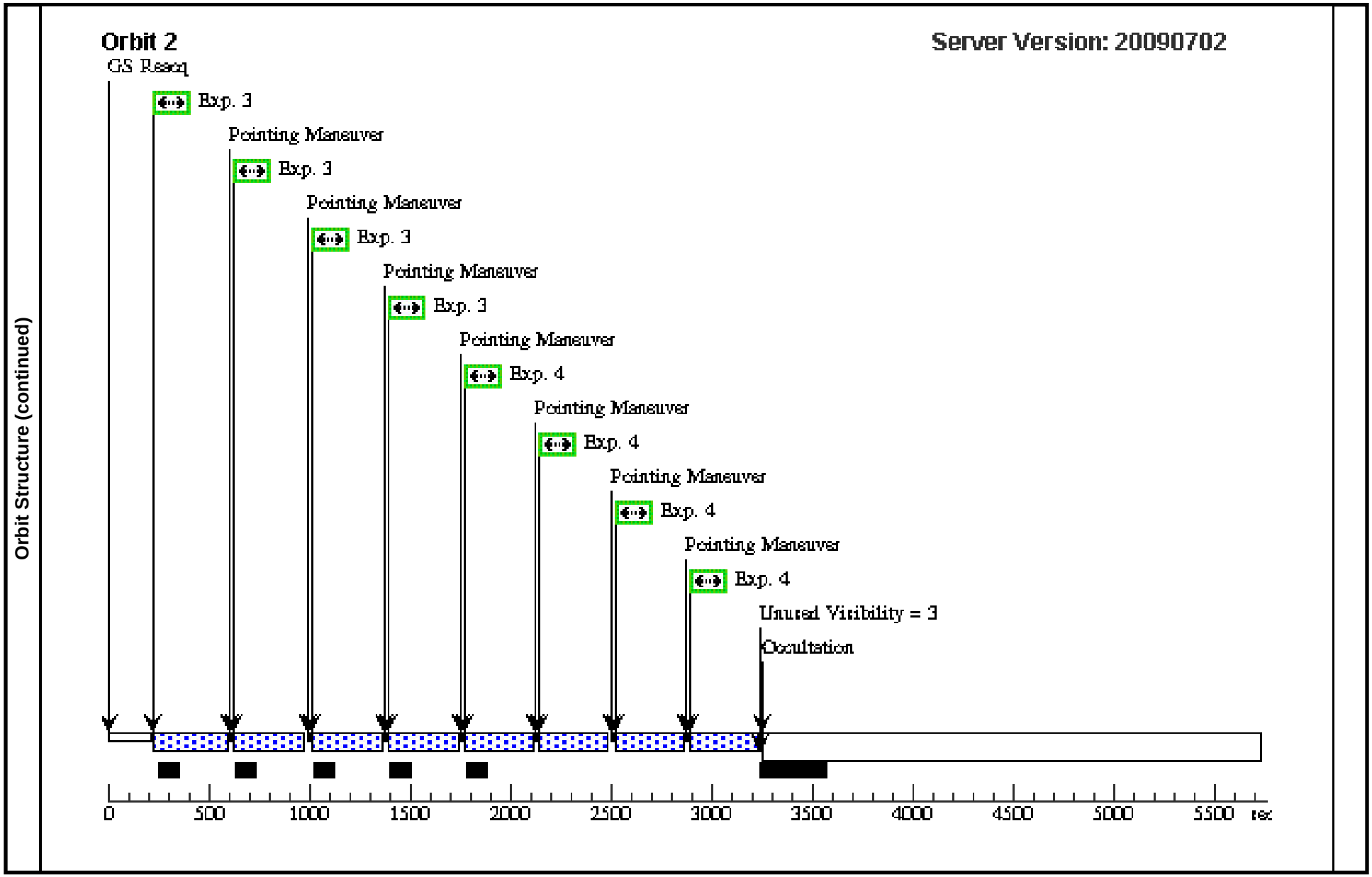
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	OH231.8+04.2	RA: 07 42 16.6300 (115.5692917d) Dec: -14 43 0.00 (-14.71667d) Equinox: J2000		V=9.47 B=8.3	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) OH231.8+04.2	ACS/WFC, ACCUM, WFC1-2K	F606W			Pattern 2, Exps 1-1 (2)	110 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
2		(2) OH231.8+04.2	ACS/WFC, ACCUM, WFC1-2K	F606W			Pattern 2, Exps 2-2 (2)	167 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
3		(2) OH231.8+04.2	ACS/WFC, ACCUM, WFC1-2K	F658N			Pattern 2, Exps 3-3 (2)	169 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***
4		(2) OH231.8+04.2	ACS/WFC, ACCUM, WFC1-2K	F658N			Pattern 2, Exps 4-4 (2)	162 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***


Orbit Structure
Orbit 1
Server Version: 20090702
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 1
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 2
Pointing Maneuver
Unused Visibility = 52
Occultation
GS Acq
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec


Orbit Structure (continued)
Orbit 2
Server Version: 20090702
GS Reacq
Exp. 3
Pointing Maneuver
Exp. 3
Pointing Maneuver
Exp. 3
Pointing Maneuver
Exp. 3
Pointing Maneuver
Exp. 4
Pointing Maneuver
Exp. 4
Pointing Maneuver
Exp. 4
Pointing Maneuver
Exp. 4
Unused Visibility = 3
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 11580, Visit 05, completed Thu Oct 29 01:33:12 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 10D TO 40 D; ORIENT 90D TO 120 D; ORIENT 190D TO 230 D; ORIENT 270D TO 300 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(3)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(3), (4)

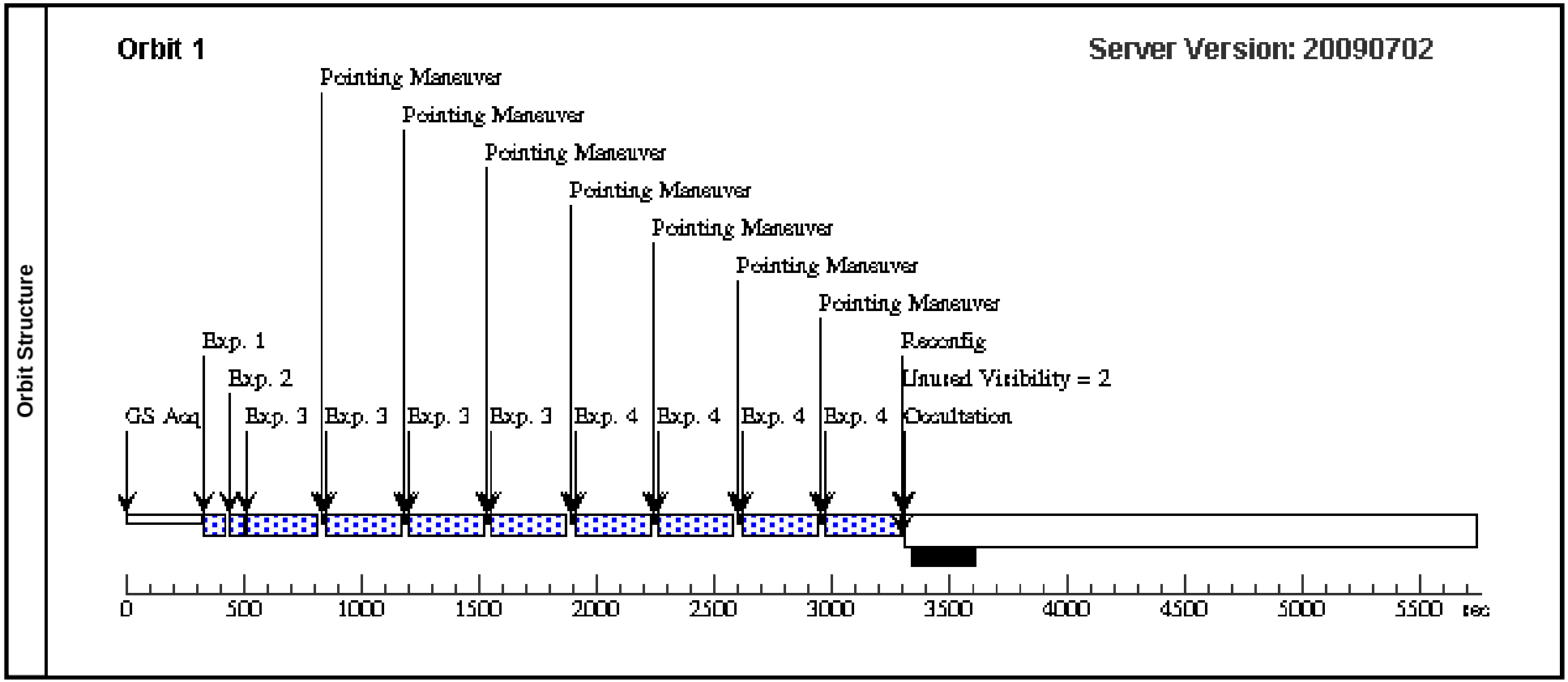
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	CRL-2688	RA: 21 02 18.6085 (315.5775354d) Dec: +36 41 36.80 (36.69356d) Equinox: J2000		V=14.0	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(10) CRL-2688	WFC3/IR, MULTIACCUM, IRSUB512-FIX	F110W	NSAMP=4; SAMP-SEQ=SPARS25			*[==>]*	***[1]***
2		(10) CRL-2688	WFC3/IR, MULTIACCUM, IRSUB512-FIX	F160W	NSAMP=3; SAMP-SEQ=SPARS25			*[==>]*	***[1]***
3		(10) CRL-2688	WFC3/IR, MULTIACCUM, IRSUB512-FIX	F160W	NSAMP=4; SAMP-SEQ=SPARS100		Pattern 3, Exps 3-3 (3)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
4		(10) CRL-2688	WFC3/IR, MULTIACCUM, IRSUB512-FIX	F110W	NSAMP=4; SAMP-SEQ=SPARS100		Pattern 3, Exps 4-4 (3)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20090702
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Reconfig
Exp. 1
Exp. 2
Unused Visibility = 2
GS Acq
Exp. 3
Exp. 3
Exp. 3
Exp. 3
Exp. 4
Exp. 4
Exp. 4
Exp. 4
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 11580, Visit 06, scheduling Thu Oct 29 01:33:13 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(3)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(3), (4)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	CRL618	RA: 04 42 53.5000 (70.7229167d) Dec: +36 06 52.00 (36.11444d) Equinox: J2000		V=17	Reference Frame: ICRS

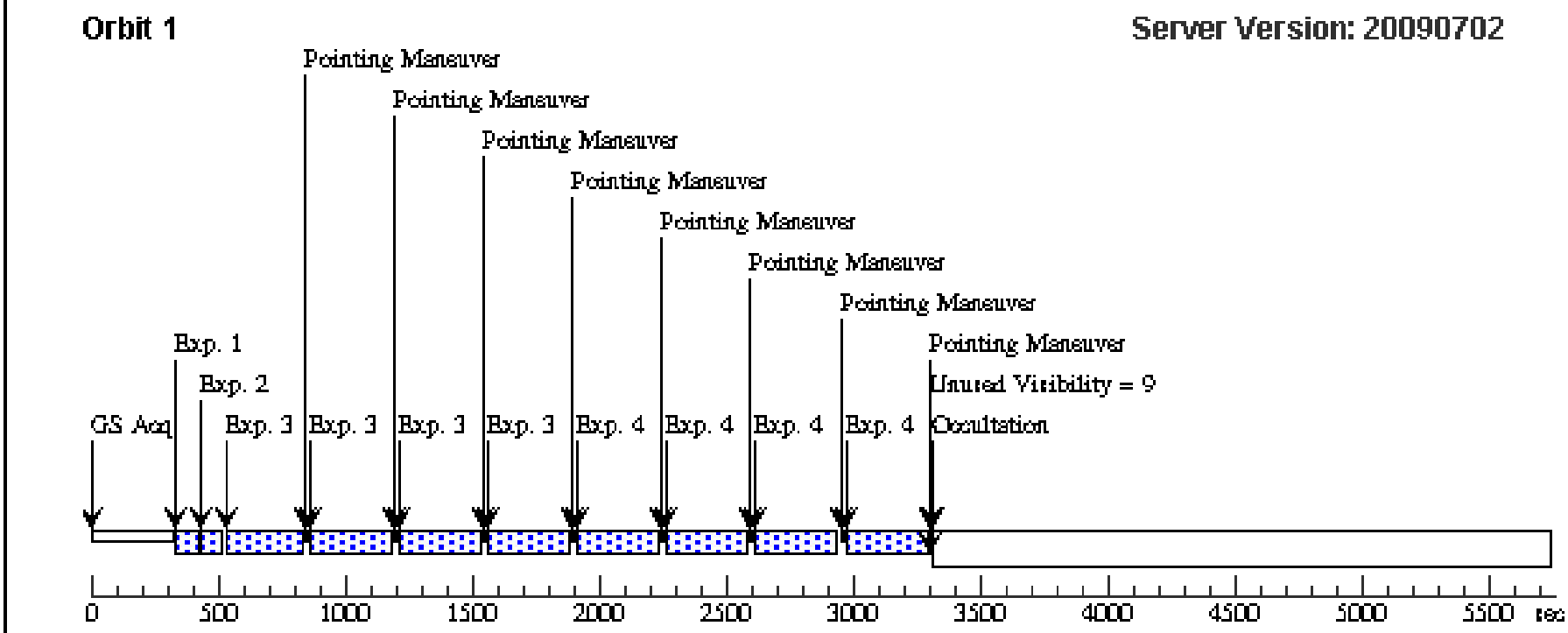
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(4) CRL618	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F110W	NSAMP=4; SAMP-SEQ=SPARS25			*[==>]*	***[1]***
2		(4) CRL618	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F160W	NSAMP=4; SAMP-SEQ=SPARS25			*[==>]*	***[1]***
3		(4) CRL618	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F160W	NSAMP=4; SAMP-SEQ=SPARS100		Pattern 3, Exps 3-3 (3)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
4		(4) CRL618	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F110W	NSAMP=4; SAMP-SEQ=SPARS100		Pattern 3, Exps 4-4 (3)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
5		(4) CRL618	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F128N	NSAMP=5; SAMP-SEQ=SPARS200			*[==>]*	***[2]***
6		(4) CRL618	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F130N	NSAMP=4; SAMP-SEQ=SPARS200			*[==>]*	***[2]***

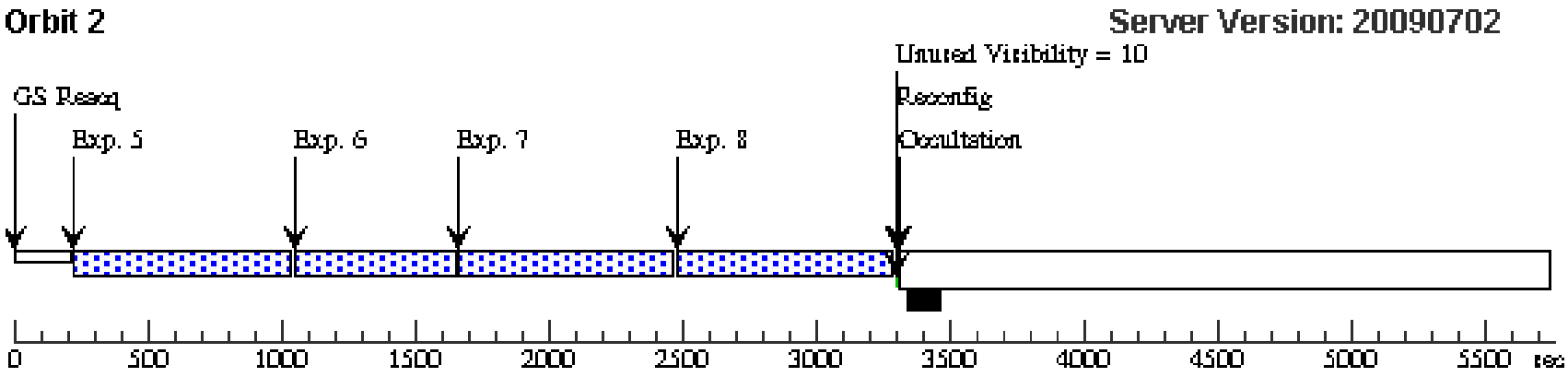
Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
7		(4) CRL618	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F164N	NSAMP=5; SAMP-SEQ=SPARS200			*[==>]*	***[2]***
8		(4) CRL618	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F167N	NSAMP=5; SAMP-SEQ=SPARS200			*[==>]*	***[2]***

Orbit Structure



Orbit Structure (continued)



Visit

Proposal 11580, Visit 07, completed Thu Oct 29 01:33:13 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(3)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(3), (4)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	HEN3-1475	RA: 17 45 14.1600 (266.3090000d) Dec: -17 56 46.60 (-17.94628d) Equinox: J2000		V=12.9	Reference Frame: ICRS

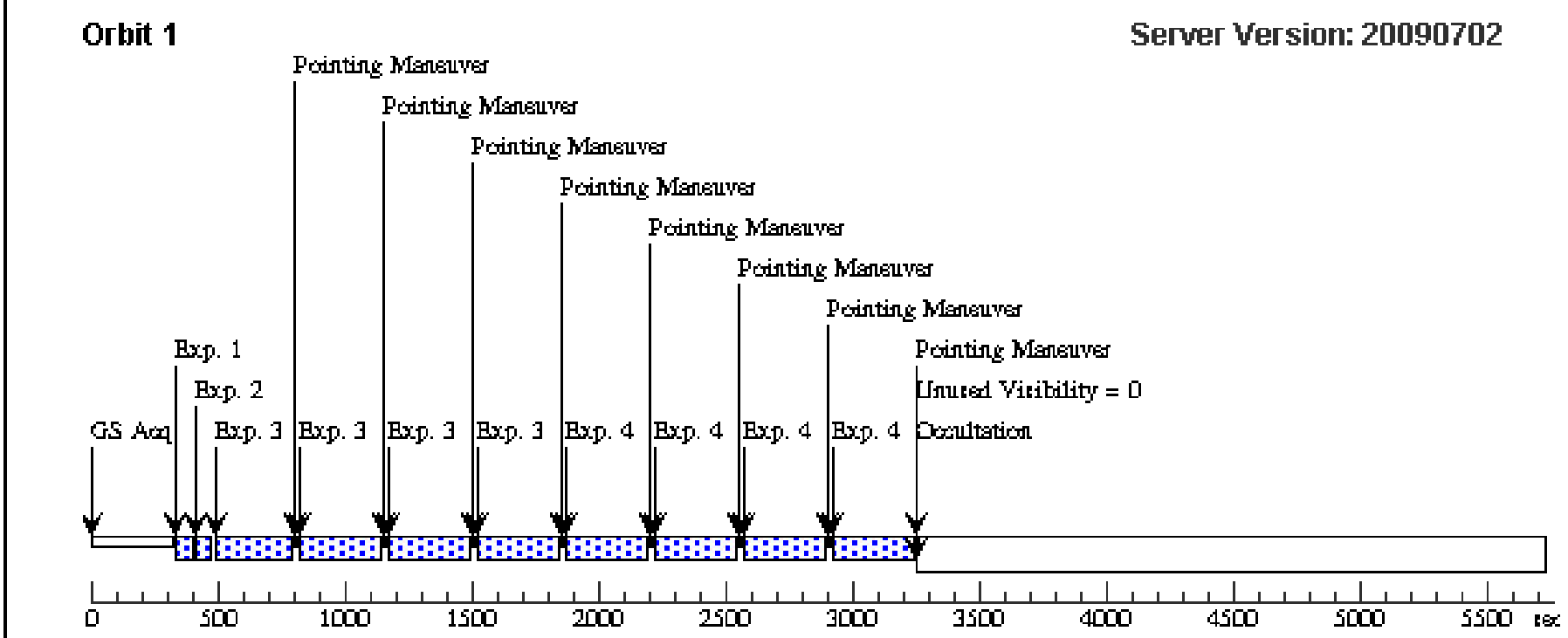
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(3) HEN3-1475	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F110W	NSAMP=3; SAMP-SEQ=SPARS25			*[==>]*	***[1]***
2		(3) HEN3-1475	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F160W	NSAMP=3; SAMP-SEQ=SPARS25			*[==>]*	***[1]***
3		(3) HEN3-1475	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F160W	NSAMP=4; SAMP-SEQ=SPARS100		Pattern 3, Exps 3-3 (3)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
4		(3) HEN3-1475	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F110W	NSAMP=4; SAMP-SEQ=SPARS100		Pattern 3, Exps 4-4 (3)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
5		(3) HEN3-1475	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F128N	NSAMP=4; SAMP-SEQ=SPARS200			*[==>]*	***[2]***
6		(3) HEN3-1475	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F164N	NSAMP=4; SAMP-SEQ=SPARS200			*[==>]*	***[2]***

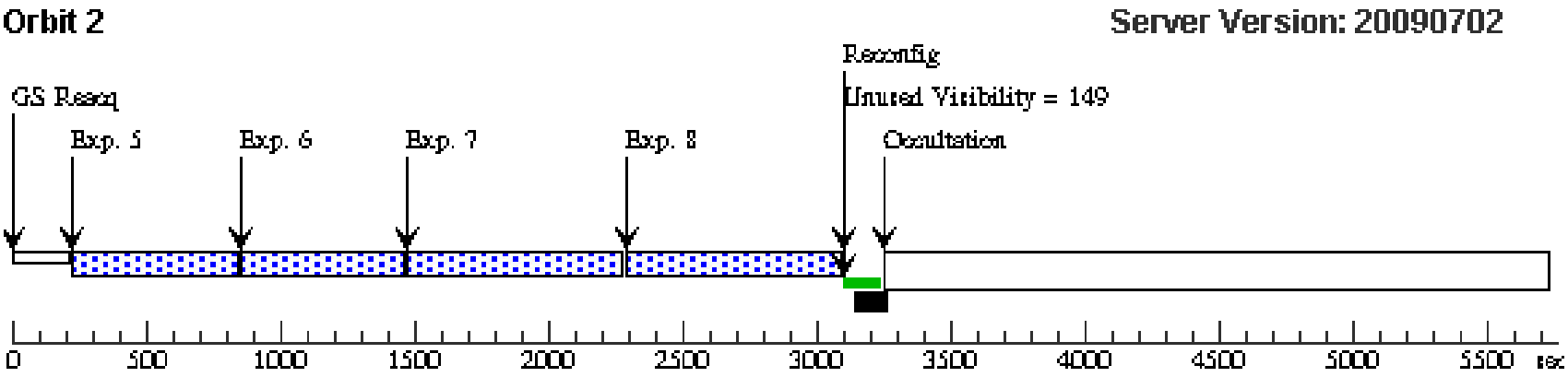
Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
7		(3) HEN3-1475	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F167N	NSAMP=5; SAMP-SEQ=SPARS200			*[==>]*	*[2]*
8		(3) HEN3-1475	WFC3/IR, MULTIACCUM, IRSUB256-FIX	F130N	NSAMP=5; SAMP-SEQ=SPARS200			*[==>]*	*[2]*

Orbit Structure



Orbit Structure (continued)



Visit

Proposal 11580, Visit 08, completed Thu Oct 29 01:33:14 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 0.0D TO 125 D; ORIENT 180D TO 315 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(3)	Pattern Type=WFC3-IR-DITHER-BOX-MIN Purpose=DITHER Number Of Points=4 Point Spacing=0.572 Line Spacing=0.365	Coordinate Frame=POS-TARG Pattern Orientation=18.528 Angle Between Sides=74.653 Center Pattern=false		(3), (4)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	OH231.8+04.2	RA: 07 42 16.6300 (115.5692917d) Dec: -14 43 0.00 (-14.71667d) Equinox: J2000		V=9.47 B=8.3	Reference Frame: ICRS

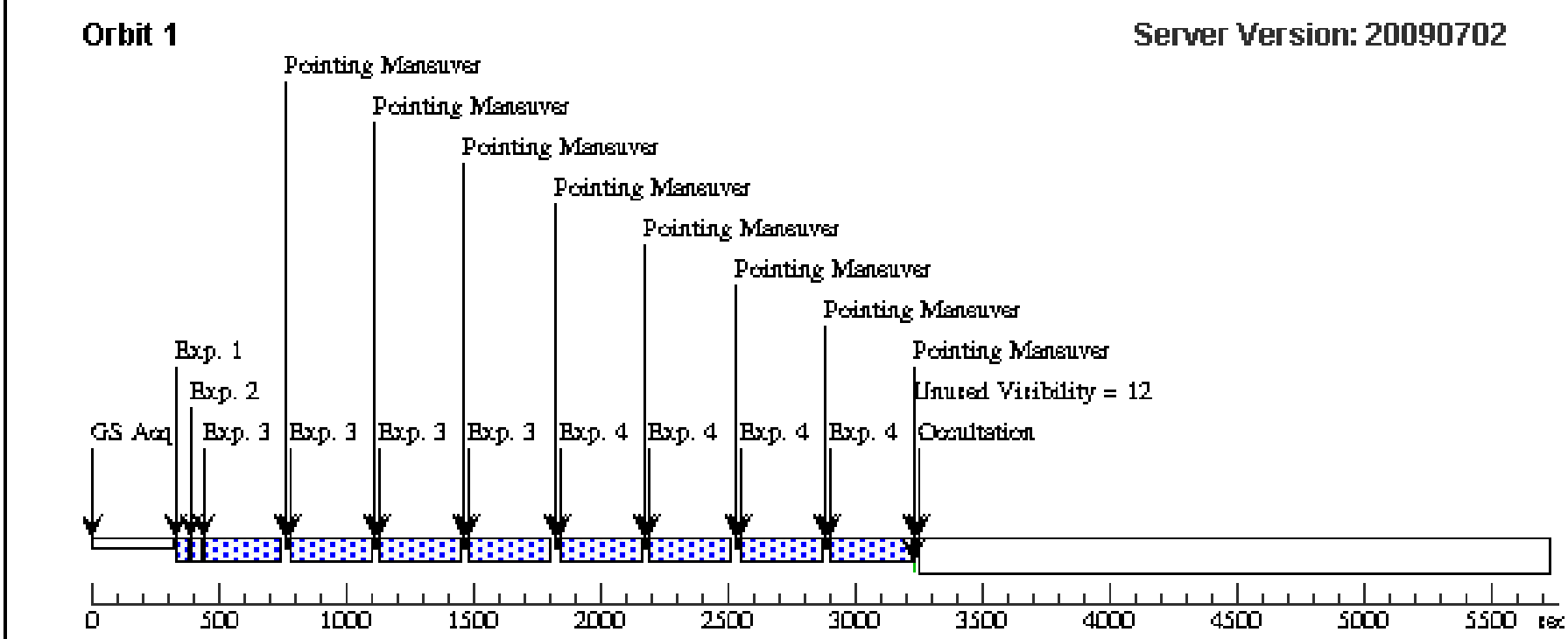
Exposures

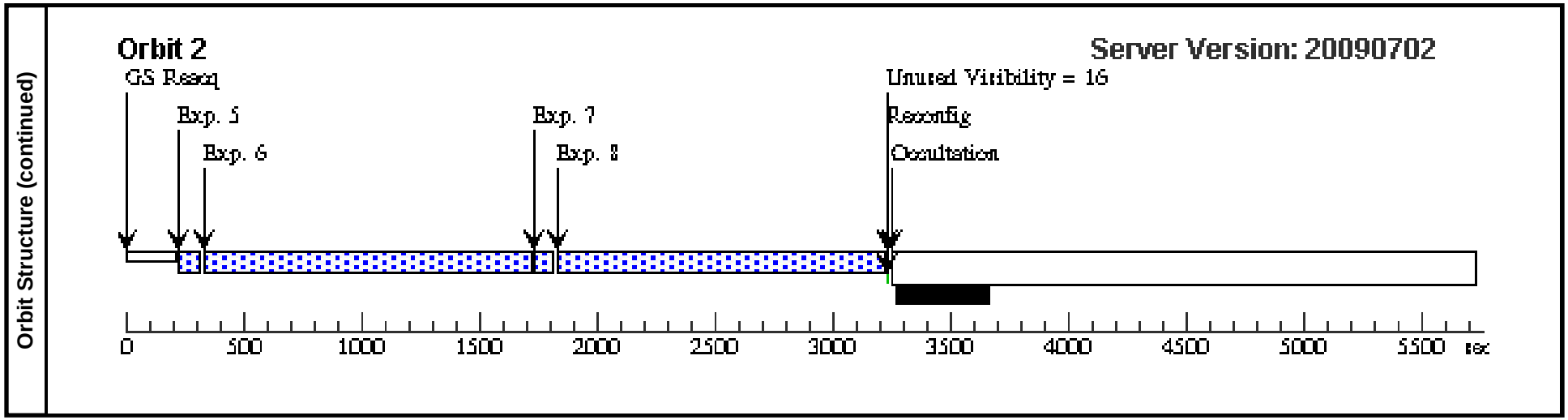
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) OH231.8+04.2	WFC3/IR, MULTIACCUM, IRSUB512-FIX	F110W	NSAMP=2; SAMP-SEQ=SPARS25			*[==>]*	***[1]***
2		(2) OH231.8+04.2	WFC3/IR, MULTIACCUM, IRSUB512-FIX	F160W	NSAMP=2; SAMP-SEQ=SPARS25			*[==>]*	***[1]***
3		(2) OH231.8+04.2	WFC3/IR, MULTIACCUM, IRSUB512-FIX	F160W	NSAMP=4; SAMP-SEQ=SPARS100		Pattern 3, Exps 3-3 (3)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
4		(2) OH231.8+04.2	WFC3/IR, MULTIACCUM, IRSUB512-FIX	F110W	NSAMP=4; SAMP-SEQ=SPARS100		Pattern 3, Exps 4-4 (3)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
5		(2) OH231.8+04.2	WFC3/IR, MULTIACCUM, IRSUB512-FIX	F164N	NSAMP=4; SAMP-SEQ=SPARS25			*[==>]*	***[2]***
6		(2) OH231.8+04.2	WFC3/IR, MULTIACCUM, IRSUB512-FIX	F164N	NSAMP=8; SAMP-SEQ=SPARS200			*[==>]*	***[2]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
7		(2) OH231.8+04.2	WFC3/IR, MULTIACCUM, IRSUB512-FIX	F167N	NSAMP=4; SAMP-SEQ=SPARS25			*[==>]*	***[2]***
8		(2) OH231.8+04.2	WFC3/IR, MULTIACCUM, IRSUB512-FIX	F167N	NSAMP=8; SAMP-SEQ=SPARS200			*[==>]*	***[2]***

Orbit Structure




Orbit Structure (continued)
Orbit 2
Server Version: 20090702
GS Reacq
Exp. 5
Exp. 6
Exp. 7
Exp. 8
Unused Vitibility = 16
Reconfig
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec