



10867 - SAINTS - Supernova 1987A INTensive Survey

Cycle: 15, Proposal Category: GO

(Availability Mode: SUPPORTED)

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<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
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VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(2) SN1987A-OFFSET (3) SN1987A-GRISM-O120	ACS/HRC	1	21-May-2007 19:57:16.0	yes
02	(2) SN1987A-OFFSET (3) SN1987A-GRISM-O120	ACS/HRC	1	21-May-2007 19:57:23.0	yes
03	(2) SN1987A-OFFSET (3) SN1987A-GRISM-O120	ACS/HRC	1	21-May-2007 19:57:29.0	yes
07	(1) SN1987A	ACS/HRC	4	21-May-2007 19:57:43.0	yes
08	(1) SN1987A	ACS/HRC	3	21-May-2007 19:57:53.0	yes
09	(1) SN1987A	ACS/HRC	3	21-May-2007 19:58:05.0	yes
10	(2) SN1987A-OFFSET (4) SN1987A-GRISM-O300	ACS/HRC	1	21-May-2007 19:58:10.0	yes
11	(2) SN1987A-OFFSET (4) SN1987A-GRISM-O300	ACS/HRC	1	21-May-2007 19:58:15.0	yes
12	(2) SN1987A-OFFSET (4) SN1987A-GRISM-O300	ACS/HRC	1	21-May-2007 19:58:19.0	yes
20	(1) SN1987A	NIC2	1	21-May-2007 19:58:23.0	yes
21	(1) SN1987A	NIC1	4	21-May-2007 19:58:30.0	yes
30	(1) SN1987A	ACS/HRC	4	21-May-2007 19:58:41.0	yes

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
33	(1) SN1987A	WFPC2	3	21-May-2007 19:58:47.0	yes
34	(1) SN1987A	WFPC2	3	21-May-2007 19:58:54.0	yes

31 Total Orbits Used

ABSTRACT

SAINTS is a program to observe SN 1987A, the brightest supernova in 383 years, as it morphs into the youngest supernova remnant at age 19. HST is a unique tool for spatially-resolved observations of the many physical components of SN 1987A. A violent encounter is now underway between the fastest-moving debris and the circumstellar ring: the collision excites "hotspots" that light up suddenly. The optical, infrared and X-ray fluxes are rising rapidly and vary significantly on 6-month time scales: regularly-spaced HST, SPITZER, and CHANDRA observations are needed to understand the physics of these shocked regions. In Cycle 15, the many separate hotspots may begin to fuse as the shock fully enters the circumstellar ring. Photons from these shocks may excite previously invisible gas outside the ring, revealing the true extent of the mass loss that preceded the explosion of Sanduleak -69 202. The inner debris of the explosion itself, still excited by radioactive isotopes produced in the explosion, is now resolved by ACS and seen to be aspherical, providing direct evidence on the asymmetry of the explosion.

Many questions about SN 1987A remain unanswered despite our diligent efforts at observation and analysis since the launch of HST. How did the enigmatic three rings form? Precisely what took place in the core during the core collapse and bounce? Is a black hole or a neutron star left behind in the debris? The rich and deep data set from SAINTS will be a resource for current use and for future reference to help answer these central questions of supernova science.

OBSERVING DESCRIPTION

Our ACS/HRC imaging program provides continuing information on the debris luminosity and expansion, eruption of new hotspots, and recombination of the rings, all at the highest available spatial resolution. Observations in a basic set of filters

(F250W, F330W, F435W, F555W, F625W, F814W, F658N, F660N, and F502N) will connect with our earlier observations at similar signal-to-noise ratio (S/N).

We have good knowledge of the exposure times needed to obtain these data. Based on our experience in Cycle 14, with 7 orbits we obtain S/N ≈ 5 –20 in the debris and 5–100 in the hotspots.

In previous cycles, we were able to take advantage of the CVZ and use fewer orbits to obtain the observations. In Cycle 15, with the 2-gyro mode and possible shorter orbits, we are requesting a time allocation that is adequate to match the data from previous cycles. Since the ACS/HRC G800L grism spectra described below will pose some complications in extracting the emission-line strengths of some lines, we would like to use narrow-band images through both F658N and F660N to help extract the strengths of H α and [N II] individually. We request 4 additional orbits to obtain a deep H α image to make a sensitive search for brightening of as-yet unseen structures connected to the ring. We expect that the rapidly increasing X-ray and EUV flux will photoionize any gas in the vicinity and reveal its presence. The reconnaissance for eruption of new hotspots should be done again late in Cycle 15, which takes 3 additional orbits.

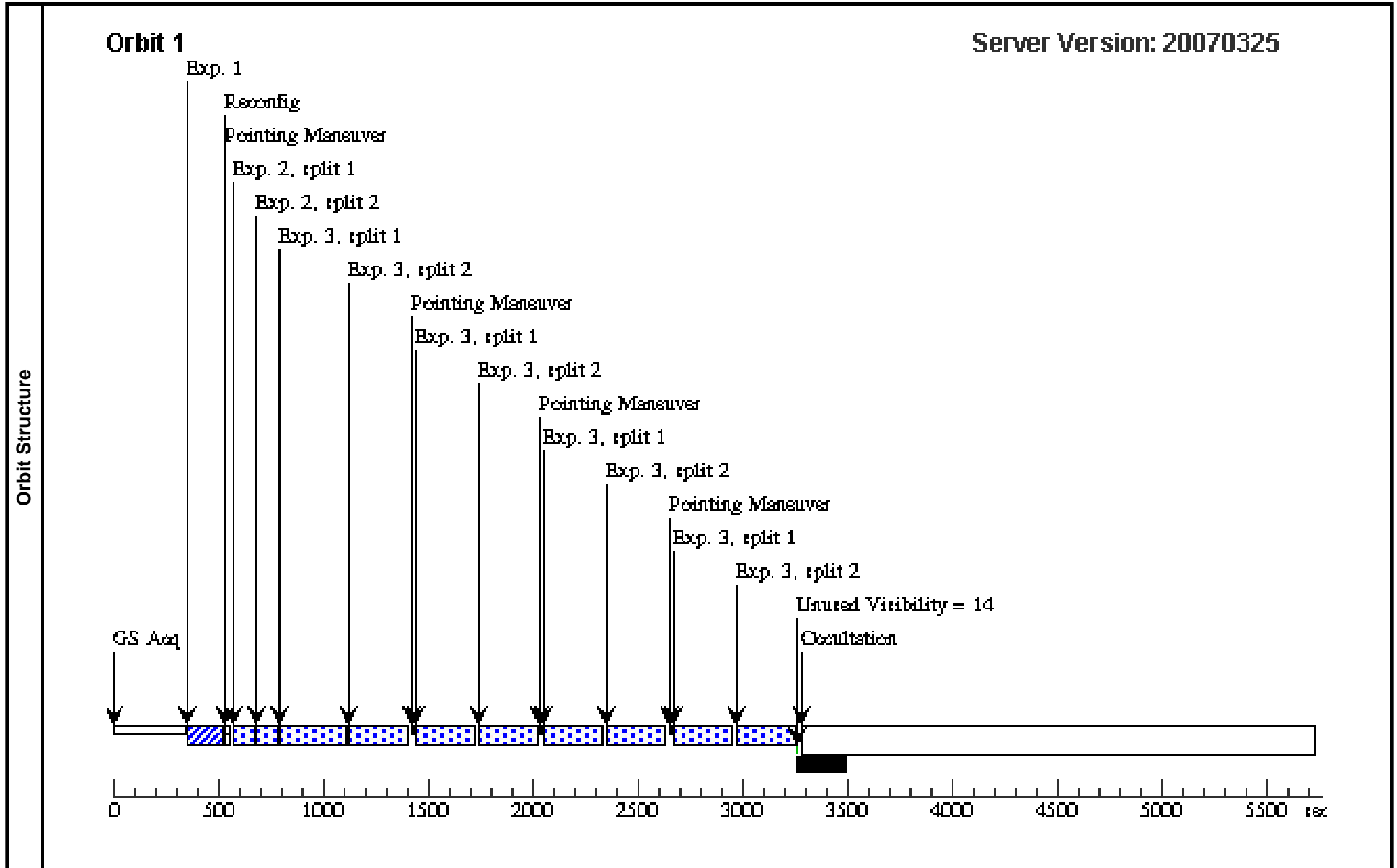
The ACS/HRC/G800L grism observations require 3 orbits per visit and are effective in providing spatially-resolved spectra of the individual hotspots in the 5500–9800 Å spectral range. Each orbit will consist of a set of dithered exposures with different roll orientations to help remove the complex background; we have had some preliminary success so far (See Figure 4). A second visit after a six-month delay will provide a

180-degree-reversed orientation that will remove most of the spatial-spectral confusion. These Cycle 15 grism spectra will provide a direct comparison to the Cycle 14 data and our earlier STIS G750L spectra, in order to monitor the rapidly changing line fluxes in individual hot spots. NICMOS observations for Cycle 15 would include F110W, F160W, F205W, F108N, F164N, F187N, and F212N, requiring 5 orbits and will yield a S/N of $\approx 5-20$ in the debris and 20-100 in the hotspots. Observations in these filters were carried out in Cycles 7, 8 and 14. Those observations will be used as templates to measure changes in the emission of the debris and the ring from 7 years ago. They will also provide the best limits on emission from a compact remnant in the debris.

Proposal 10867 - Visit 01 - SAINTS - Supernova 1987A INTensive Survey

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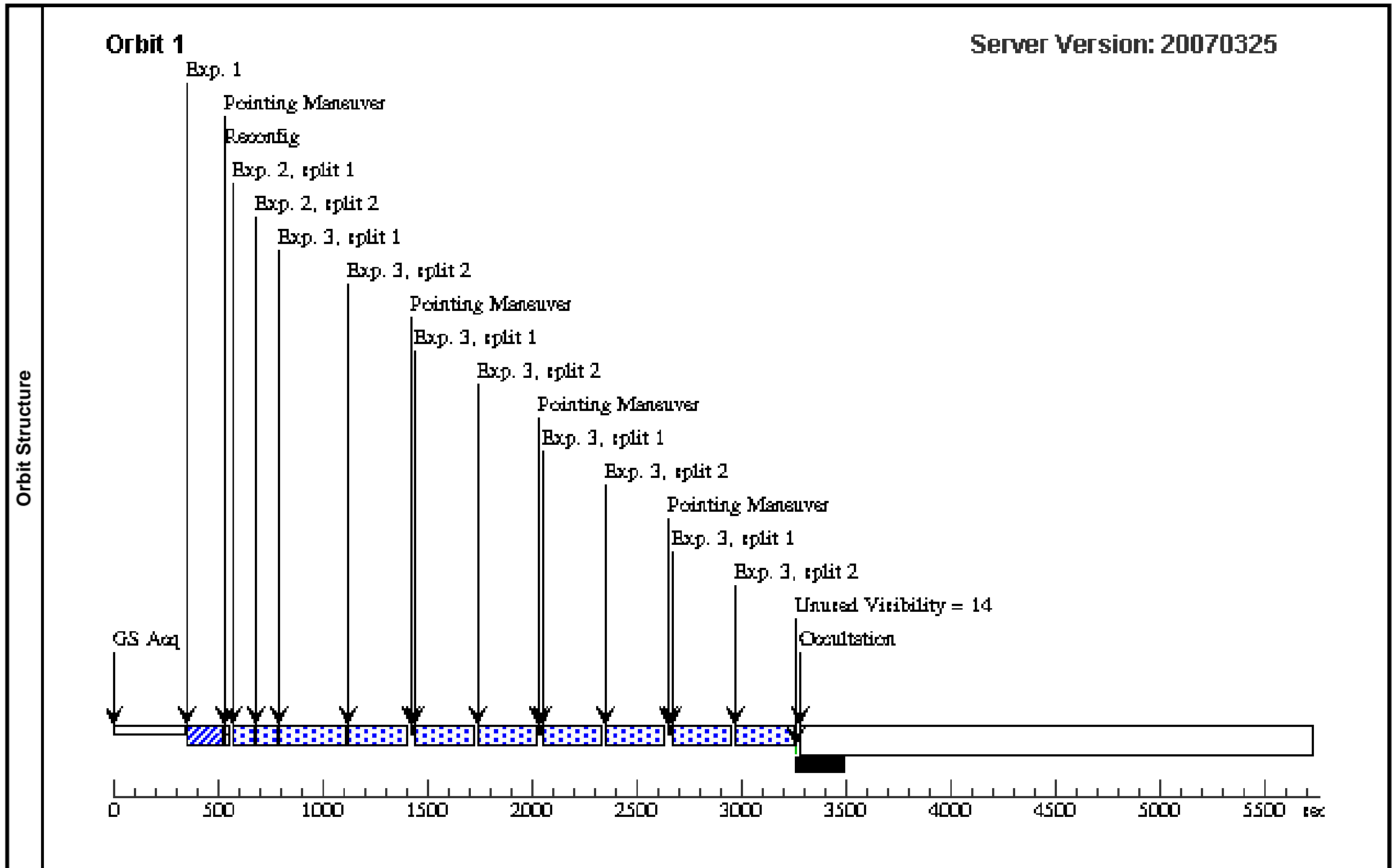
Visit	Proposal 10867, Visit 01, pi Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: ORIENT 128.0D TO 128.0 D; BETWEEN 01-JAN-2007:00:00:00 AND 01-AUG-2007:00:00:00; SEQ 01,02,03 WITHIN 20 D									
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	SN1987A-OFFSET	RA: 05 35 30.5800 (83.8774167d) Dec: -69 16 18.32 (-69.27176d) Equinox: J2000		V=16.07	Reference Frame: ICRS				
	(3)	SN1987A-GRISM-O120	RA: 05 35 27.3610 (83.8640042d) Dec: -69 16 18.31 (-69.27175d) Equinox: J2000		V=23.0	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(2) SN1987A-OFFSET	ACS/HRC, ACQ, HRC-ACQ	F625W				2.0 Secs	
									[==>]	[1]
	2		(3) SN1987A-GRISM-O120	ACS/HRC, ACCUM, HRC-FIX	F625W	CR-SPLIT=2			120.0 Secs	
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								[==>(Split 2)]		
3		(3) SN1987A-GRISM-O120	ACS/HRC, ACCUM, HRC-FIX	G800L		CR-SPLIT=2; AUTOIMAGE=NO		Pattern 3-3 (1)	500.0 Secs	
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Proposal 10867 - Visit 02 - SAINTS - Supernova 1987A INTensive Survey

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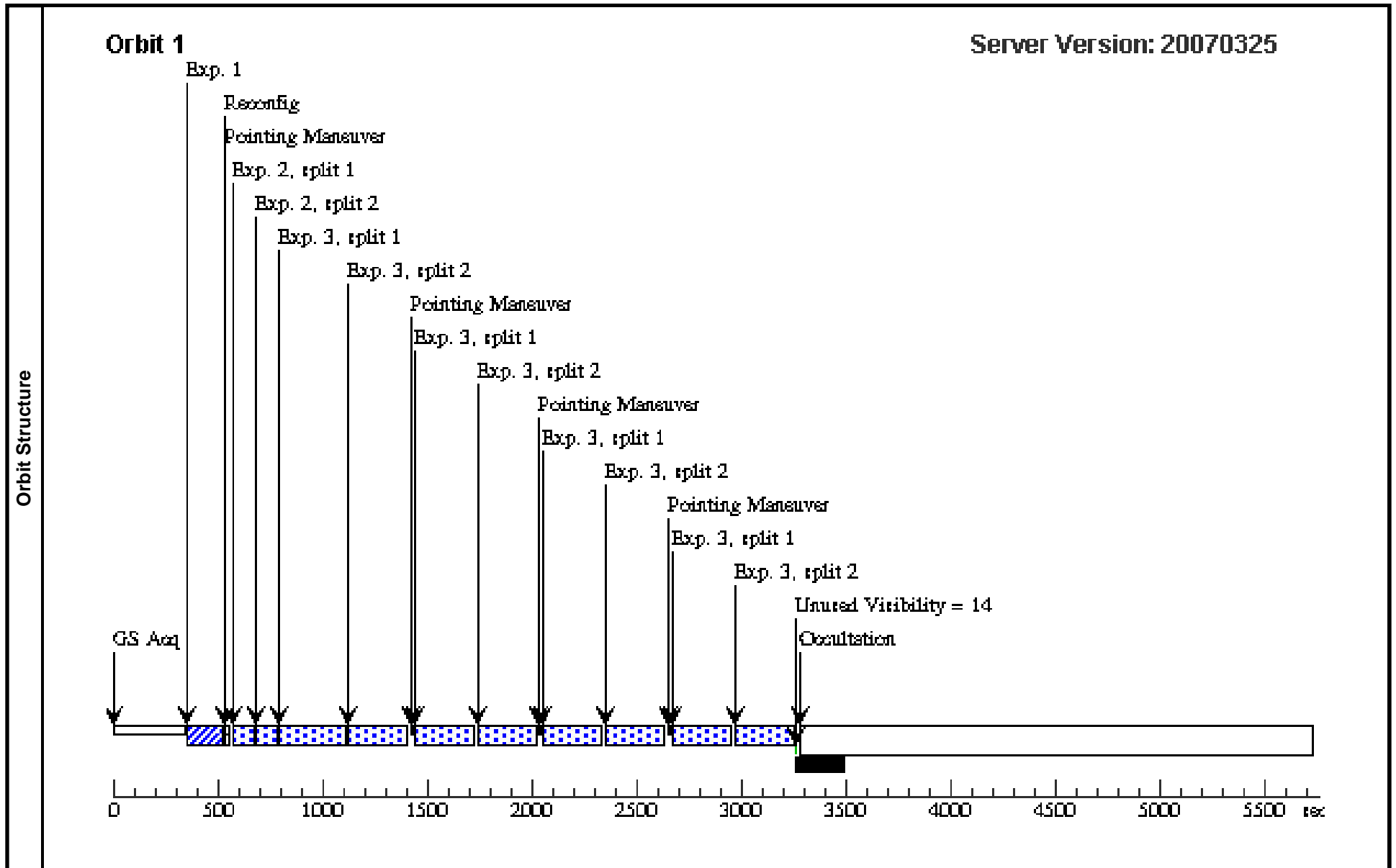
Visit	Proposal 10867, Visit 02, pi Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: ORIENT 132.0D TO 132.0 D									
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	SN1987A-OFFSET	RA: 05 35 30.5800 (83.8774167d) Dec: -69 16 18.32 (-69.27176d) Equinox: J2000		V=16.07	Reference Frame: ICRS				
	(3)	SN1987A-GRISM-O120	RA: 05 35 27.3610 (83.8640042d) Dec: -69 16 18.31 (-69.27175d) Equinox: J2000		V=23.0	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(2) SN1987A-OFFSET	ACS/HRC, ACQ, HRC-ACQ	F625W				2.0 Secs	
									[==>]	[1]
	2		(3) SN1987A-GRISM-O120	ACS/HRC, ACCUM, HRC-FIX	F625W	CR-SPLIT=2			120.0 Secs	
								[==>(Split 1)]	[1]	
								[==>(Split 2)]		
3		(3) SN1987A-GRISM-O120	ACS/HRC, ACCUM, HRC-FIX	G800L		CR-SPLIT=2; AUTOIMAGE=NO		Pattern 3-3 (1)	500.0 Secs	
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Proposal 10867 - Visit 03 - SAINTS - Supernova 1987A INTensive Survey

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Visit	Proposal 10867, Visit 03, pi Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: ORIENT 136.0D TO 136.0 D									
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	SN1987A-OFFSET	RA: 05 35 30.5800 (83.8774167d) Dec: -69 16 18.32 (-69.27176d) Equinox: J2000		V=16.07	Reference Frame: ICRS				
	(3)	SN1987A-GRISM-O120	RA: 05 35 27.3610 (83.8640042d) Dec: -69 16 18.31 (-69.27175d) Equinox: J2000		V=23.0	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(2) SN1987A-OFFSET	ACS/HRC, ACQ, HRC-ACQ	F625W				2.0 Secs	
									[==>]	[1]
	2		(3) SN1987A-GRISM-O120	ACS/HRC, ACCUM, HRC-FIX	F625W	CR-SPLIT=2			120.0 Secs	
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3		(3) SN1987A-GRISM-O120	ACS/HRC, ACCUM, HRC-FIX	G800L		CR-SPLIT=2; AUTOIMAGE=NO		Pattern 3-3 (1)	500.0 Secs	
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								[==>(Pattern 3, Split 1)]		
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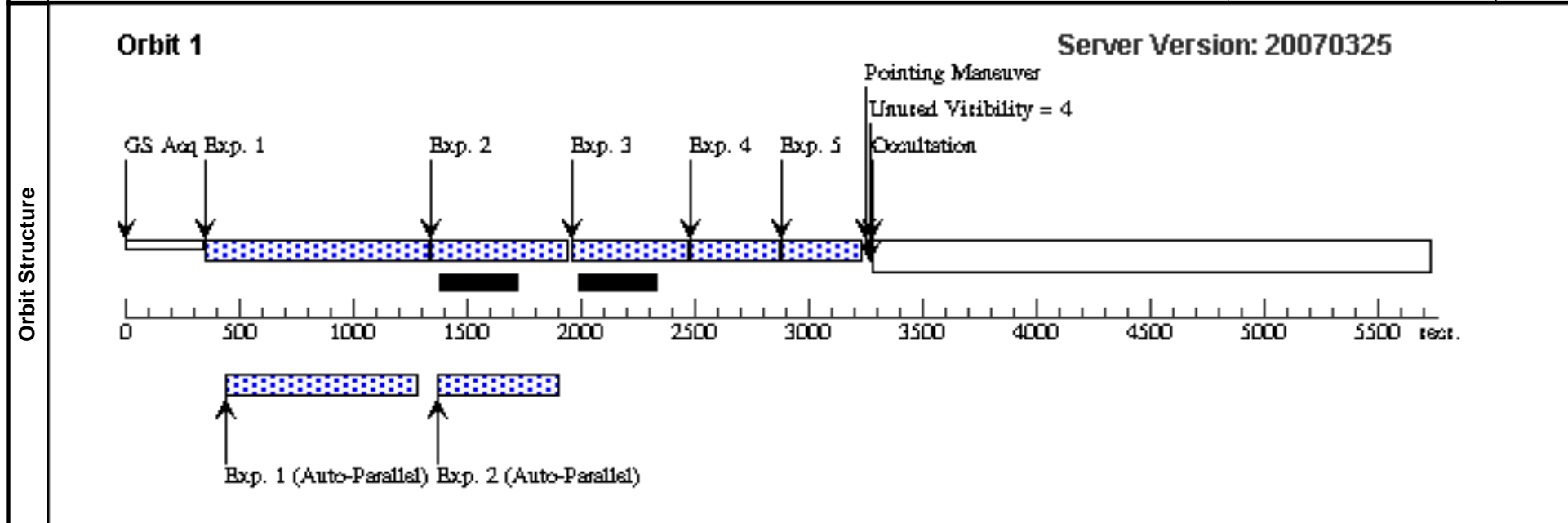
Proposal 10867 - Visit 07 - SAINTS - Supernova 1987A INTensive Survey

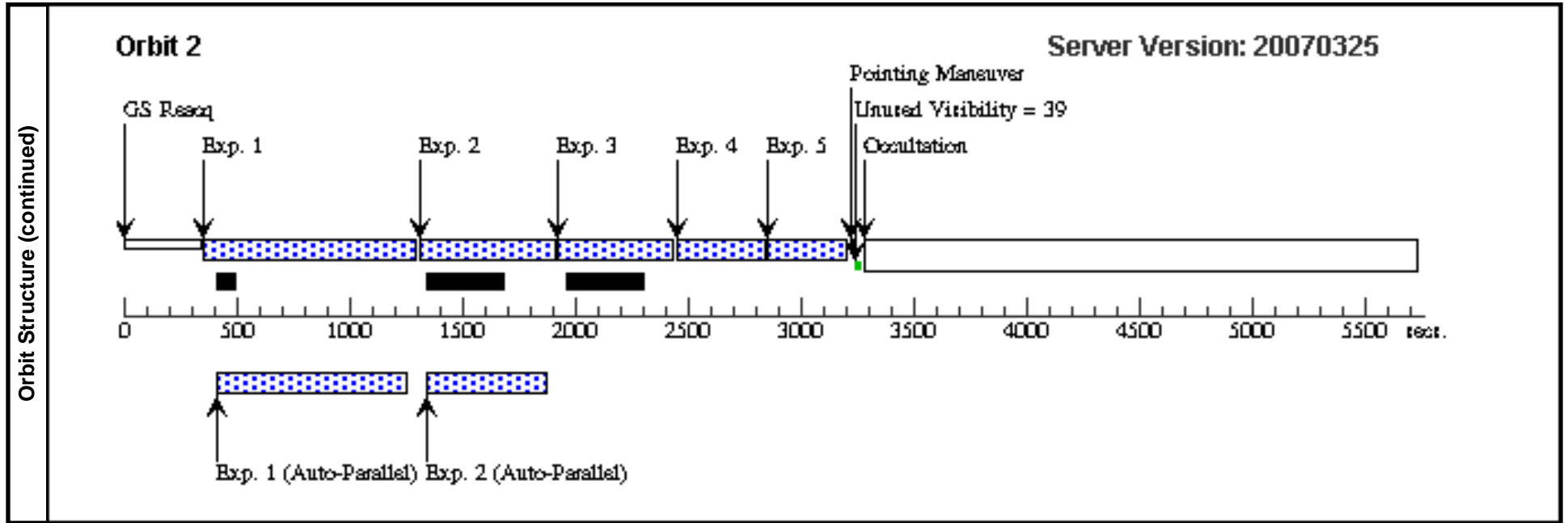
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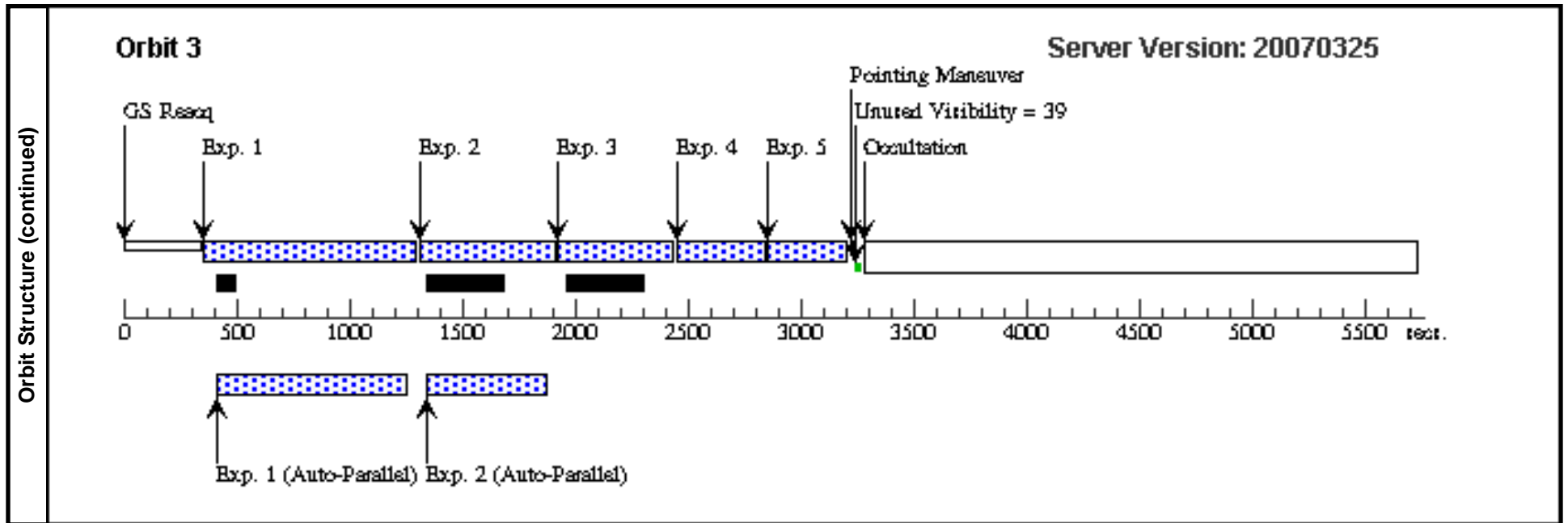
Visit	Proposal 10867, Visit 07, completed Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: BETWEEN 01-SEP-2006:00:00:00 AND 01-JAN-2007:00:00:00; SEQ 07,08 WITHIN 20 D									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SN1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000		V=24.0+/-1.0	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) SN1987A	ACS/HRC, ACCUM, HRC	F250W	CR-SPLIT=NO		Pattern 1-5 (1)	865.0 Secs	
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									[==>(Pattern 3)]	[3]
									[==>(Pattern 4)]	[4]
	2		(1) SN1987A	ACS/HRC, ACCUM, HRC	F330W	CR-SPLIT=NO		Pattern 1-5 (1)	550.0 Secs	
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									[==>(Pattern 2)]	[2]
									[==>(Pattern 3)]	[3]
									[==>(Pattern 4)]	[4]
	3		(1) SN1987A	ACS/HRC, ACCUM, HRC	F435W	CR-SPLIT=NO		Pattern 1-5 (1)	450.0 Secs	
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									[==>(Pattern 3)]	[3]
									[==>(Pattern 4)]	[4]
	4		(1) SN1987A	ACS/HRC, ACCUM, HRC	F555W	CR-SPLIT=NO		Pattern 1-5 (1)	300.0 Secs	
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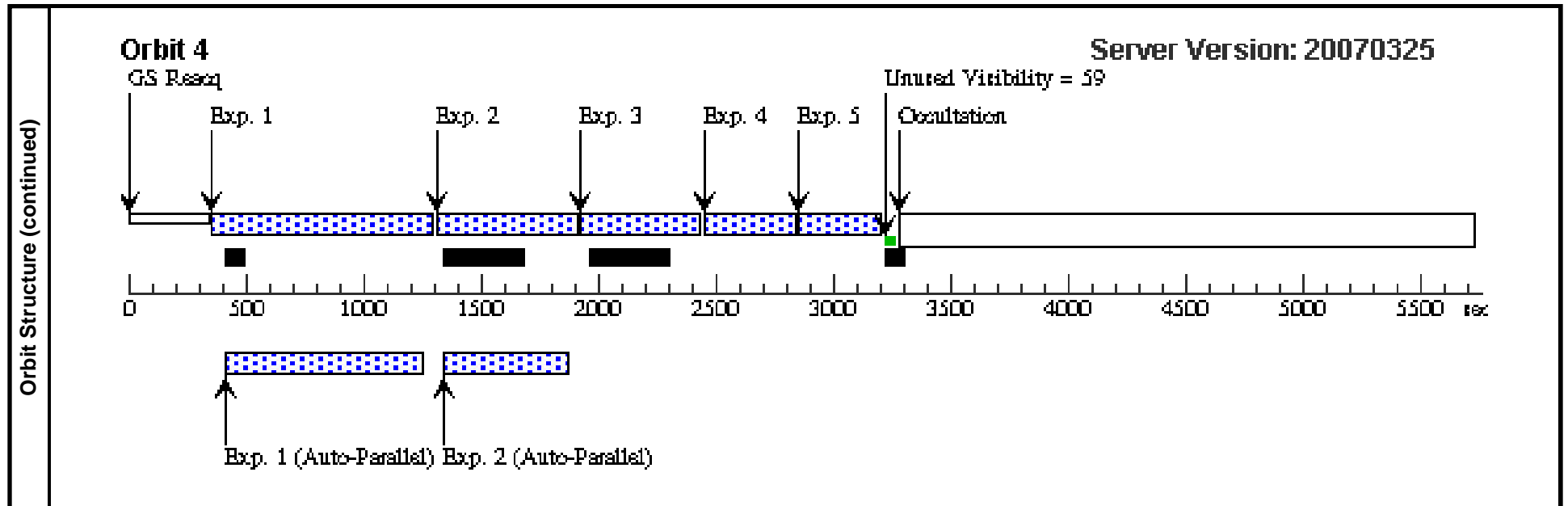
Proposal 10867 - Visit 07 - SAINTS - Supernova 1987A INTensive Survey

Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	5		(1) SN1987A	ACS/HRC, ACCUM, HRC	F625W	CR-SPLIT=NO		Pattern 1-5 (1)	300.0 Secs	
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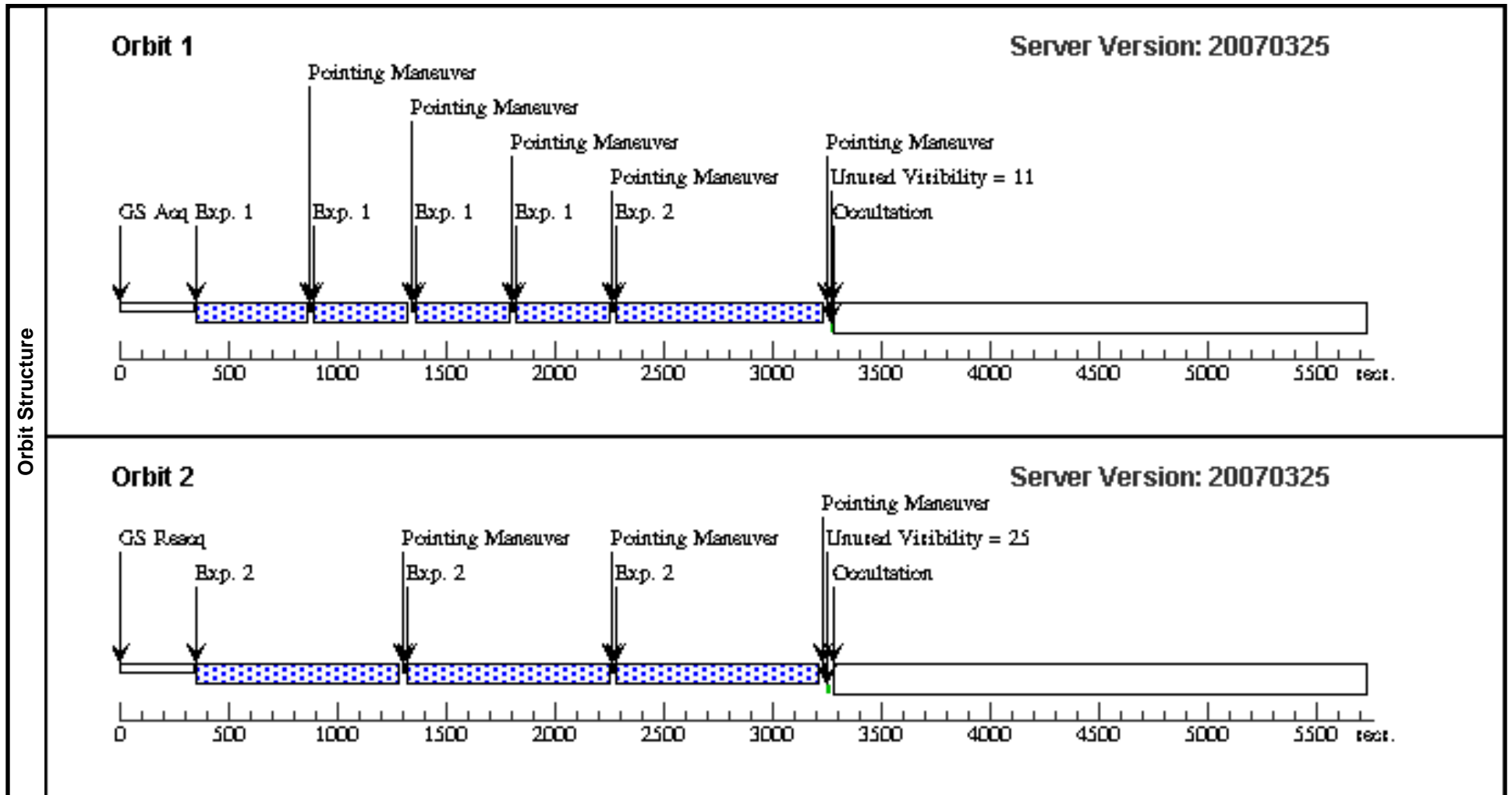


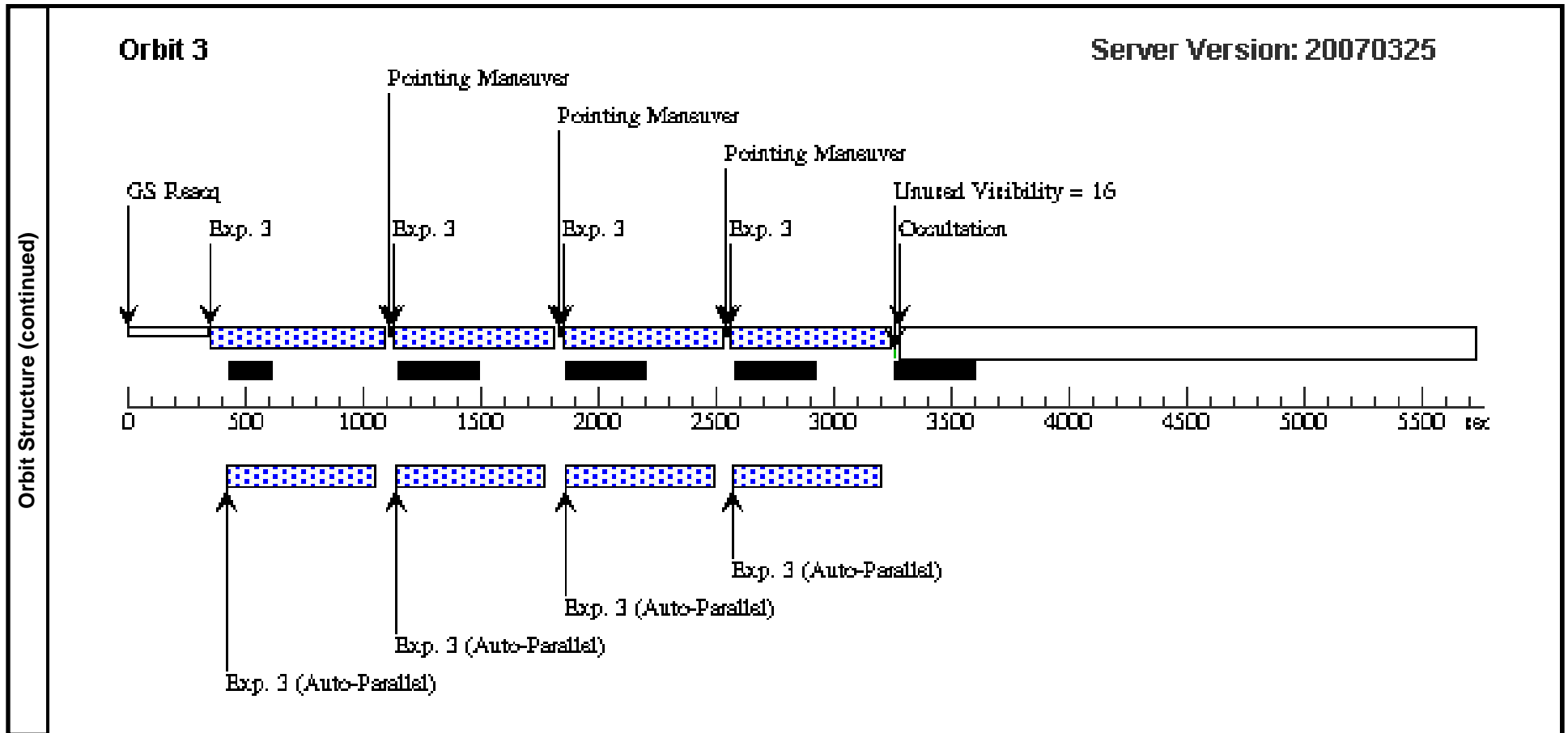


Proposal 10867 - Visit 08 - SAINTS - Supernova 1987A INTensive Survey

Mon May 21 18:59:00 GMT 2007

Visit	Proposal 10867, Visit 08, completed Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: (none)									
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
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Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) SN1987A	ACS/HRC, ACCUM, HRC	F814W	CR-SPLIT=NO		Pattern 1-1 (1)	395.0 Secs	
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2		(1) SN1987A	ACS/HRC, ACCUM, HRC	F660N		CR-SPLIT=NO; PAREXP=DEF		Pattern 2-2 (1)	900.0 Secs	
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3		(1) SN1987A	ACS/HRC, ACCUM, HRC	F502N		CR-SPLIT=NO		Pattern 3-3 (1)	650.0 Secs	
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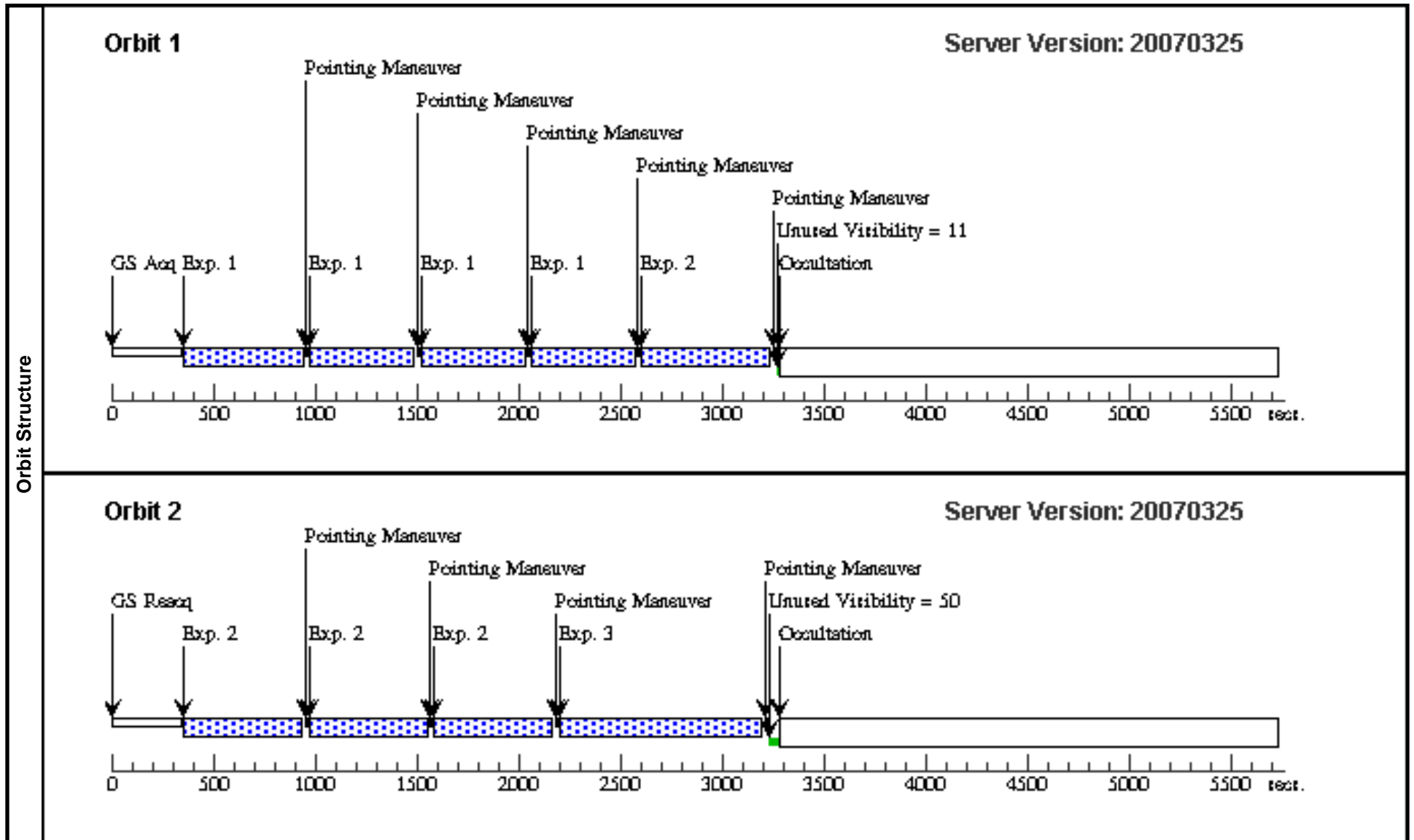


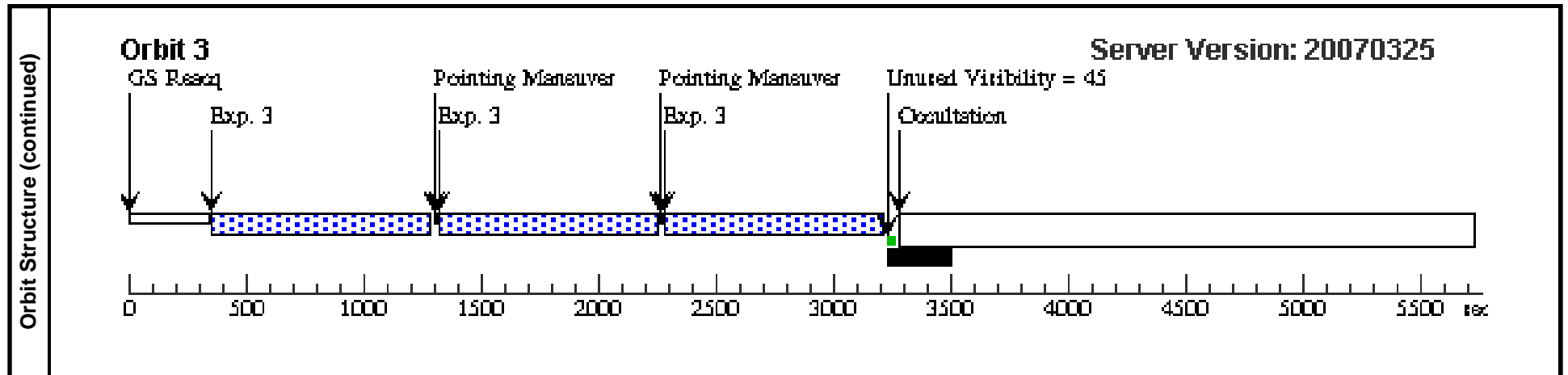


Proposal 10867 - Visit 09 - SAINTS - Supernova 1987A INTensive Survey

Mon May 21 18:59:01 GMT 2007

Visit	Proposal 10867, Visit 09, pi Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: AFTER 07 BY 140 D TO 300 D									
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Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SN1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000		V=24.0+/-1.0	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) SN1987A	ACS/HRC, ACCUM, HRC	F625W	CR-SPLIT=NO		Pattern 1-1 (1)	475.0 Secs	
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									[==>(Pattern 3)]	[1]
									[==>(Pattern 4)]	
	2		(1) SN1987A	ACS/HRC, ACCUM, HRC	F435W	CR-SPLIT=NO		Pattern 2-2 (1)	550.0 Secs	
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									[==>(Pattern 3)]	[2]
								[==>(Pattern 4)]		
3		(1) SN1987A	ACS/HRC, ACCUM, HRC	F658N	CR-SPLIT=NO			Pattern 3-3 (1)	900.0 Secs	
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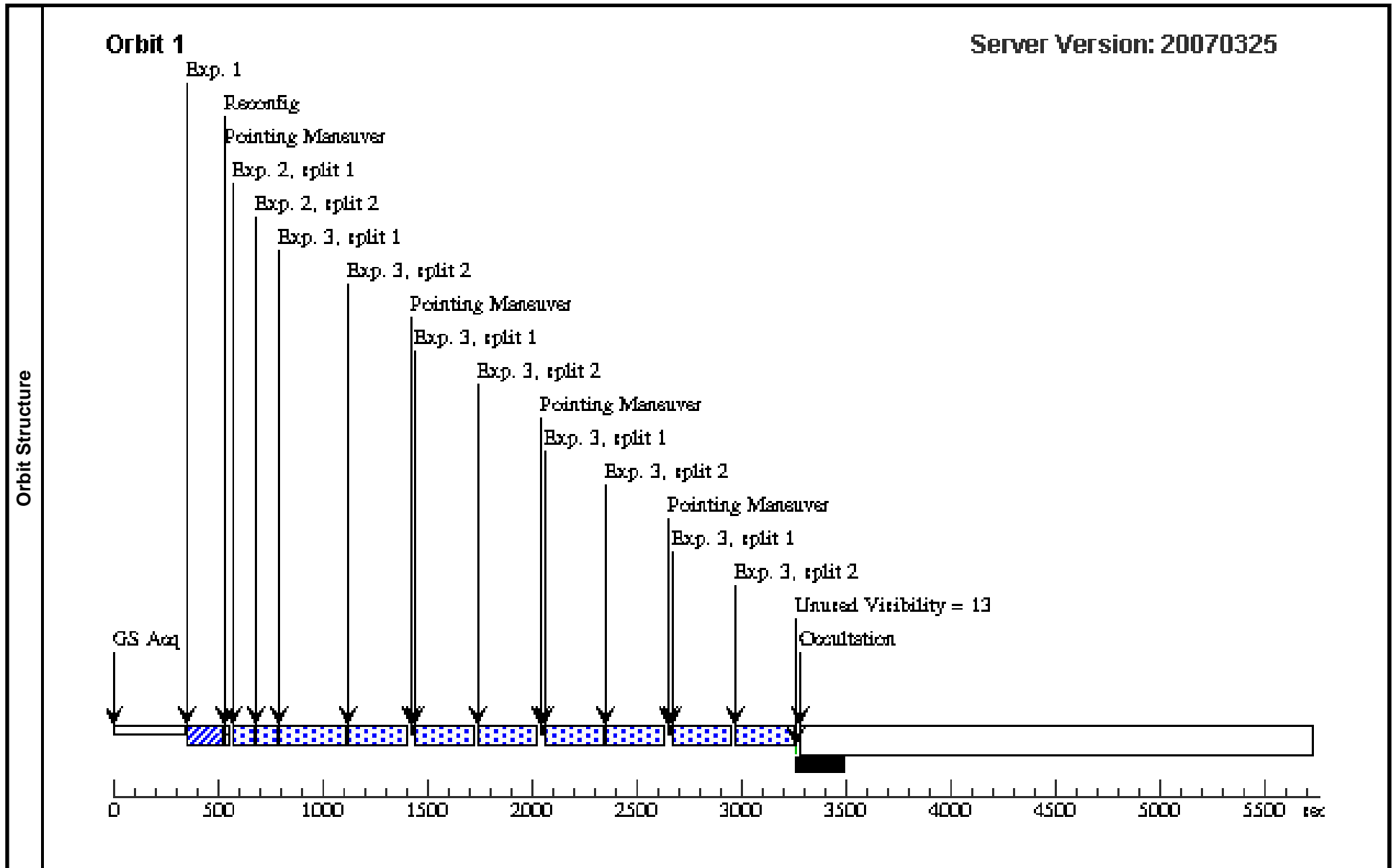




Proposal 10867 - Visit 10 - SAINTS - Supernova 1987A INTensive Survey

Mon May 21 18:59:02 GMT 2007

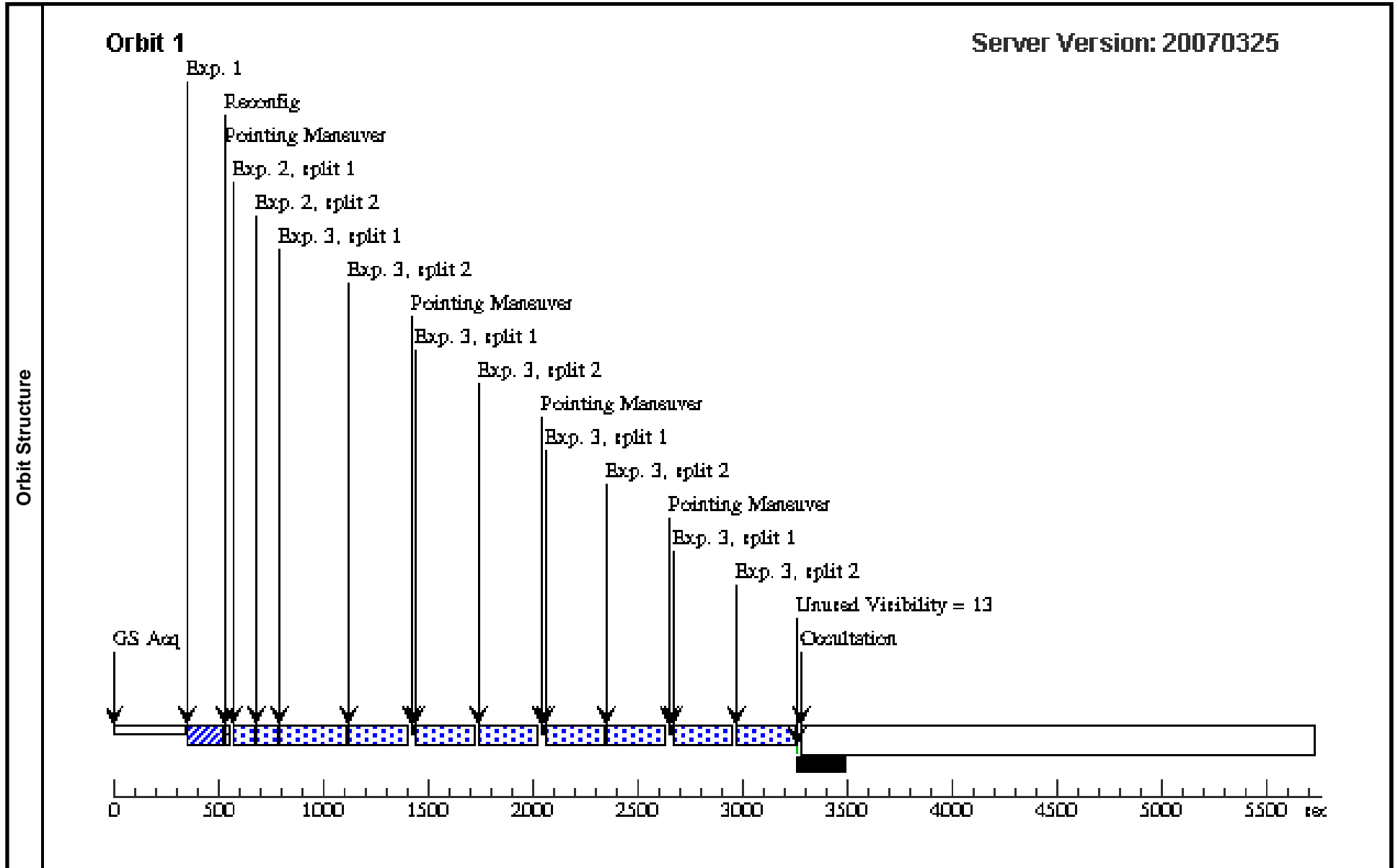
Visit	Proposal 10867, Visit 10, completed Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: ORIENT 286.0D TO 286.0 D; BETWEEN 01-AUG-2006:00:00:00 AND 01-JAN-2007:00:00:00; SEQ 10,11,12 WITHIN 20 D									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(1)	Pattern Type=ACS-HRC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.15 Line Spacing=0.098	Coordinate Frame=POS-TARG Pattern Orientation=19.89 Angle Between Sides=63.5 Center Pattern=false					(3)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	SN1987A-OFFSET	RA: 05 35 30.5800 (83.8774167d) Dec: -69 16 18.32 (-69.27176d) Equinox: J2000		V=16.07	Reference Frame: ICRS				
	(4)	SN1987A-GRISM-O300	RA: 05 35 28.2600 (83.8677500d) Dec: -69 16 2.67 (-69.26741d) Equinox: J2000		V=24.0	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(2) SN1987A-OFFSET	ACS/HRC, ACQ, HRC-ACQ	F625W				2.0 Secs	
									[==>]	[1]
	2		(4) SN1987A-GRISM-O300	ACS/HRC, ACCUM, HRC-FIX	F625W	CR-SPLIT=2			120.0 Secs	
								[==>(Split 1)]	[1]	
								[==>(Split 2)]		
3		(4) SN1987A-GRISM-O300	ACS/HRC, ACCUM, HRC-FIX	G800L		CR-SPLIT=2; AUTOIMAGE=NO		Pattern 3-3 (1)	500.0 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]	



Proposal 10867 - Visit 11 - SAINTS - Supernova 1987A INTensive Survey

Mon May 21 18:59:02 GMT 2007

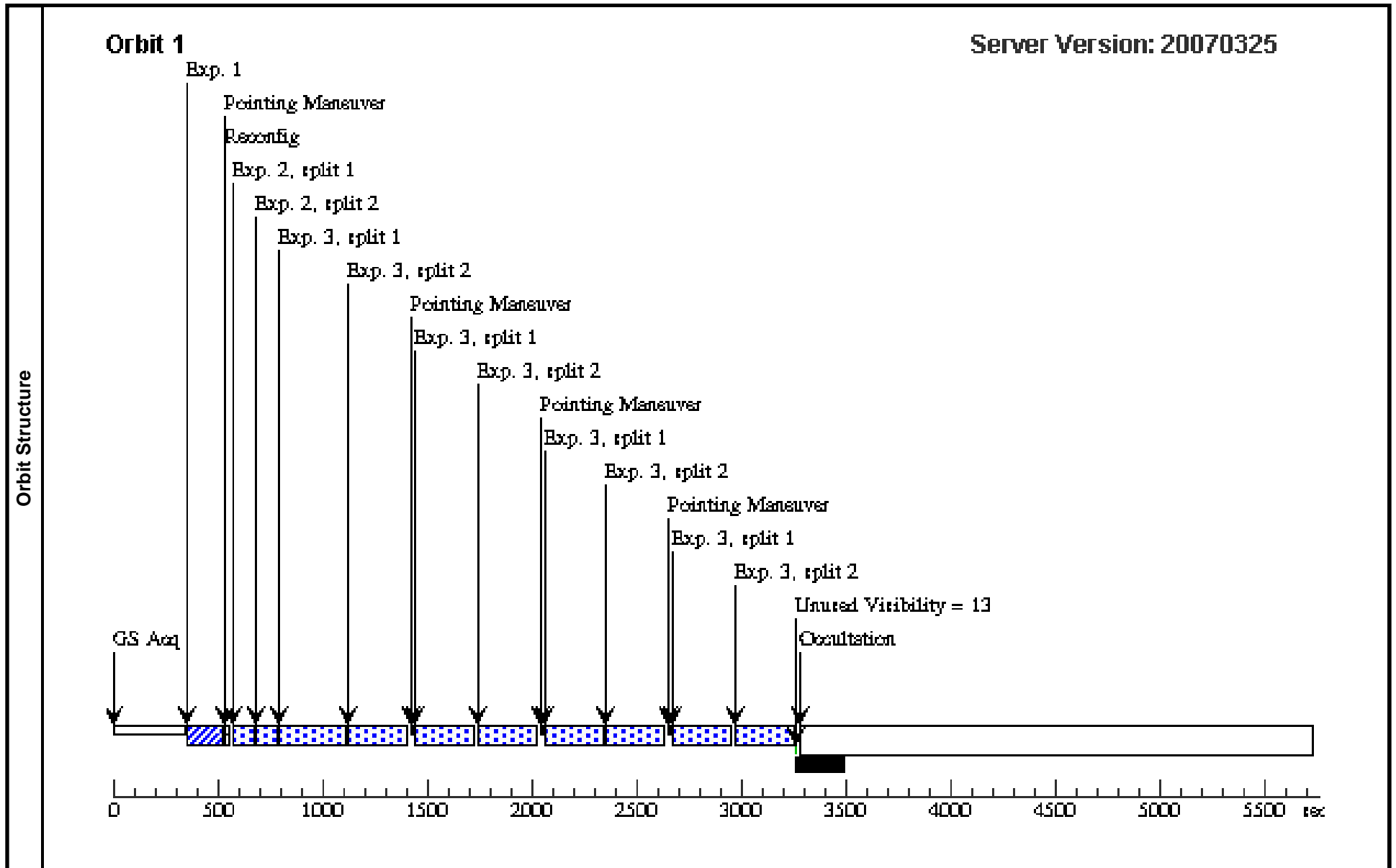
Visit	Proposal 10867, Visit 11, completed Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: ORIENT 290.0D TO 290.0 D									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(1)	Pattern Type=ACS-HRC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.15 Line Spacing=0.098	Coordinate Frame=POS-TARG Pattern Orientation=19.89 Angle Between Sides=63.5 Center Pattern=false					(3)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(2)	SN1987A-OFFSET	RA: 05 35 30.5800 (83.8774167d) Dec: -69 16 18.32 (-69.27176d) Equinox: J2000		V=16.07	Reference Frame: ICRS				
	(4)	SN1987A-GRISM-O300	RA: 05 35 28.2600 (83.8677500d) Dec: -69 16 2.67 (-69.26741d) Equinox: J2000		V=24.0	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(2) SN1987A-OFFSET	ACS/HRC, ACQ, HRC-ACQ	F625W				2.0 Secs	
									[==>]	[1]
	2		(4) SN1987A-GRISM-O300	ACS/HRC, ACCUM, HRC-FIX	F625W	CR-SPLIT=2			120.0 Secs	
								[==>(Split 1)]	[1]	
								[==>(Split 2)]		
3		(4) SN1987A-GRISM-O300	ACS/HRC, ACCUM, HRC-FIX	G800L		CR-SPLIT=2; AUTOIMAGE=NO		Pattern 3-3 (1)	500.0 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]	



Proposal 10867 - Visit 12 - SAINTS - Supernova 1987A INTensive Survey

Mon May 21 18:59:02 GMT 2007

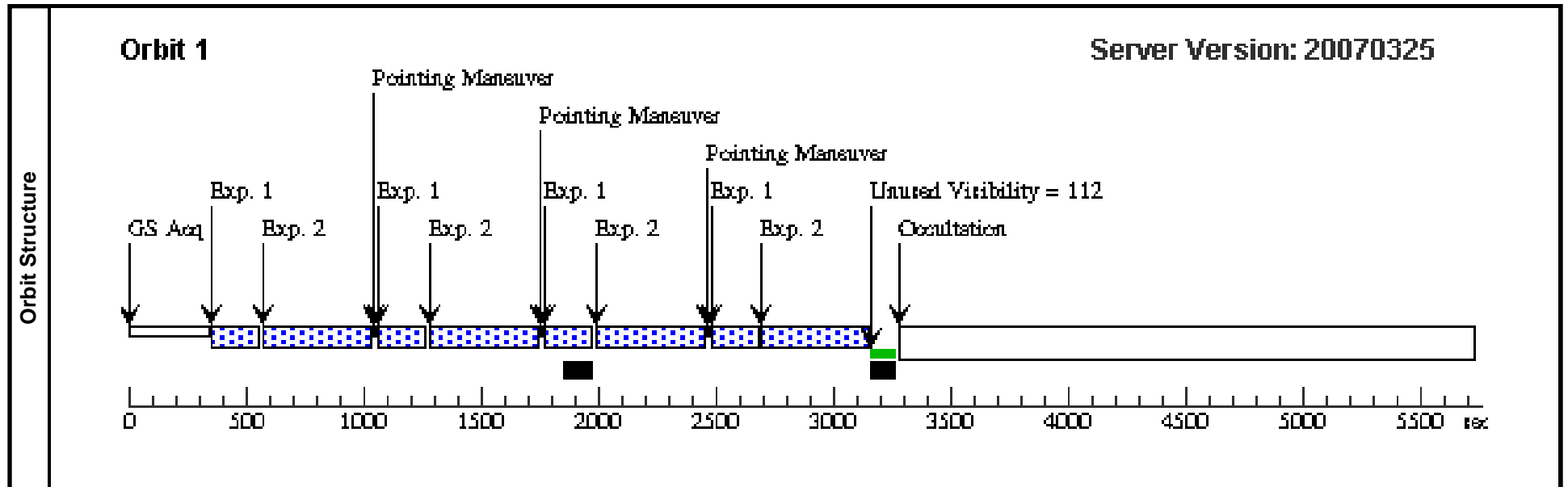
Visit	Proposal 10867, Visit 12, completed Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: ORIENT 294.0D TO 294.0 D									
	Patterns	#	Primary Pattern	Secondary Pattern				Exposures		
		(1)	Pattern Type=ACS-HRC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.15 Line Spacing=0.098	Coordinate Frame=POS-TARG Pattern Orientation=19.89 Angle Between Sides=63.5 Center Pattern=false					(3)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections		Fluxes	Miscellaneous			
	(2)	SN1987A-OFFSET	RA: 05 35 30.5800 (83.8774167d) Dec: -69 16 18.32 (-69.27176d) Equinox: J2000			V=16.07	Reference Frame: ICRS			
	(4)	SN1987A-GRISM-O300	RA: 05 35 28.2600 (83.8677500d) Dec: -69 16 2.67 (-69.26741d) Equinox: J2000			V=24.0	Reference Frame: ICRS			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(2) SN1987A-OFFSET	ACS/HRC, ACQ, HRC-ACQ	F625W				2.0 Secs	
									[==>]	[1]
	2		(4) SN1987A-GRISM-O300	ACS/HRC, ACCUM, HRC-FIX	F625W	CR-SPLIT=2			120.0 Secs	
								[==>(Split 1)]	[1]	
								[==>(Split 2)]		
3		(4) SN1987A-GRISM-O300	ACS/HRC, ACCUM, HRC-FIX	G800L		CR-SPLIT=2; AUTOIMAGE=NO		Pattern 3-3 (1)	500.0 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]	



Proposal 10867 - Visit 20 - SAINTS - Supernova 1987A INTensive Survey

Mon May 21 18:59:03 GMT 2007

Visit	Proposal 10867, Visit 20, completed Diagnostic Status: No Diagnostics Scientific Instruments: NIC2 Special Requirements: BETWEEN 01-SEP-2006:00:00:00 AND 01-JAN-2007:00:00:00; SEQ 20,21 WITHIN 20 D Comments: please schedule in SAA Free orbits									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
(3)		Pattern Type=NIC-YSTRIP-DITH Coordinate Frame=POS-TARG Purpose=DITHER Pattern Orientation=90 Number Of Points=4 Angle Between Sides= Point Spacing=0.755 Center Pattern=false Line Spacing=		(1-2)						
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SN1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000		V=24.0+/-1.0	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) SN1987A	(1) SN1987A	NIC2, MULTIACCUM, NIC2	F205W	NSAMP=13; SAMP-SEQ=STEP3 2	GS ACQ SCENARI O BASE1TNS	Pattern 1-2 (3)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]
	2	(1) SN1987A	(1) SN1987A	NIC2, MULTIACCUM, NIC2	F212N	NSAMP=21; SAMP-SEQ=STEP3 2		Pattern 1-2 (3)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[1]



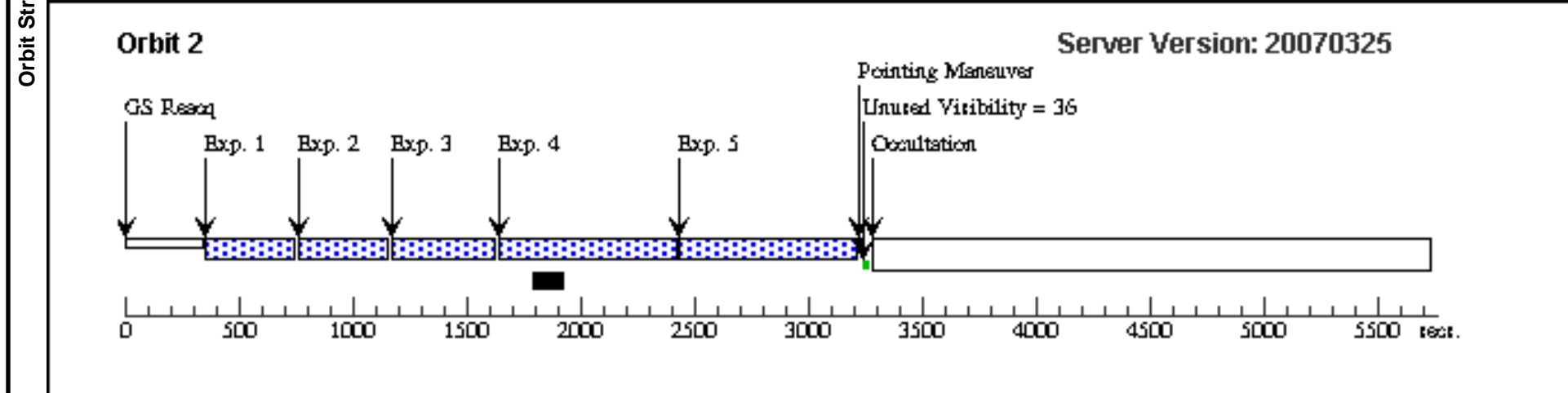
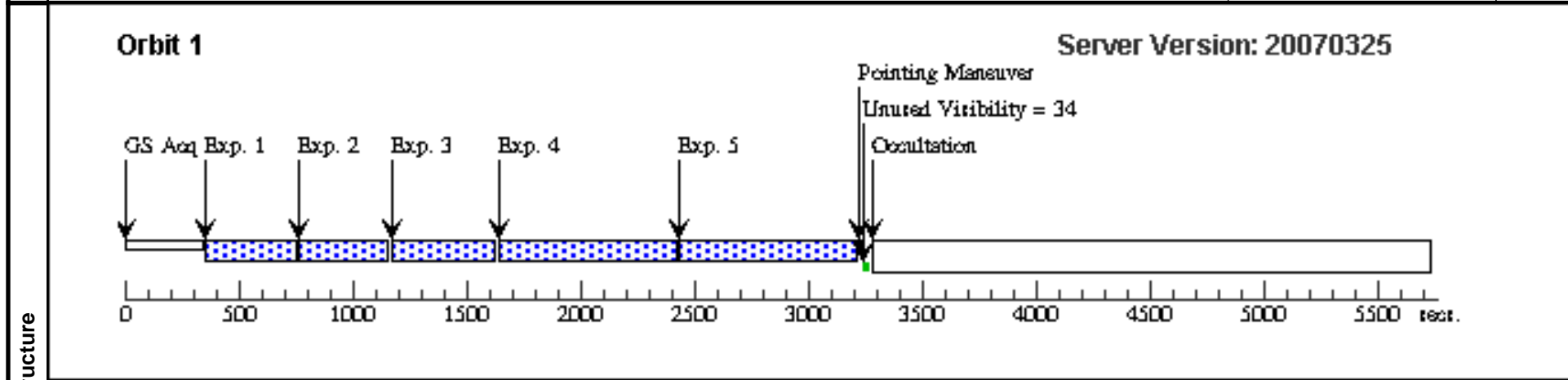
Proposal 10867 - Visit 21 - SAINTS - Supernova 1987A INTensive Survey

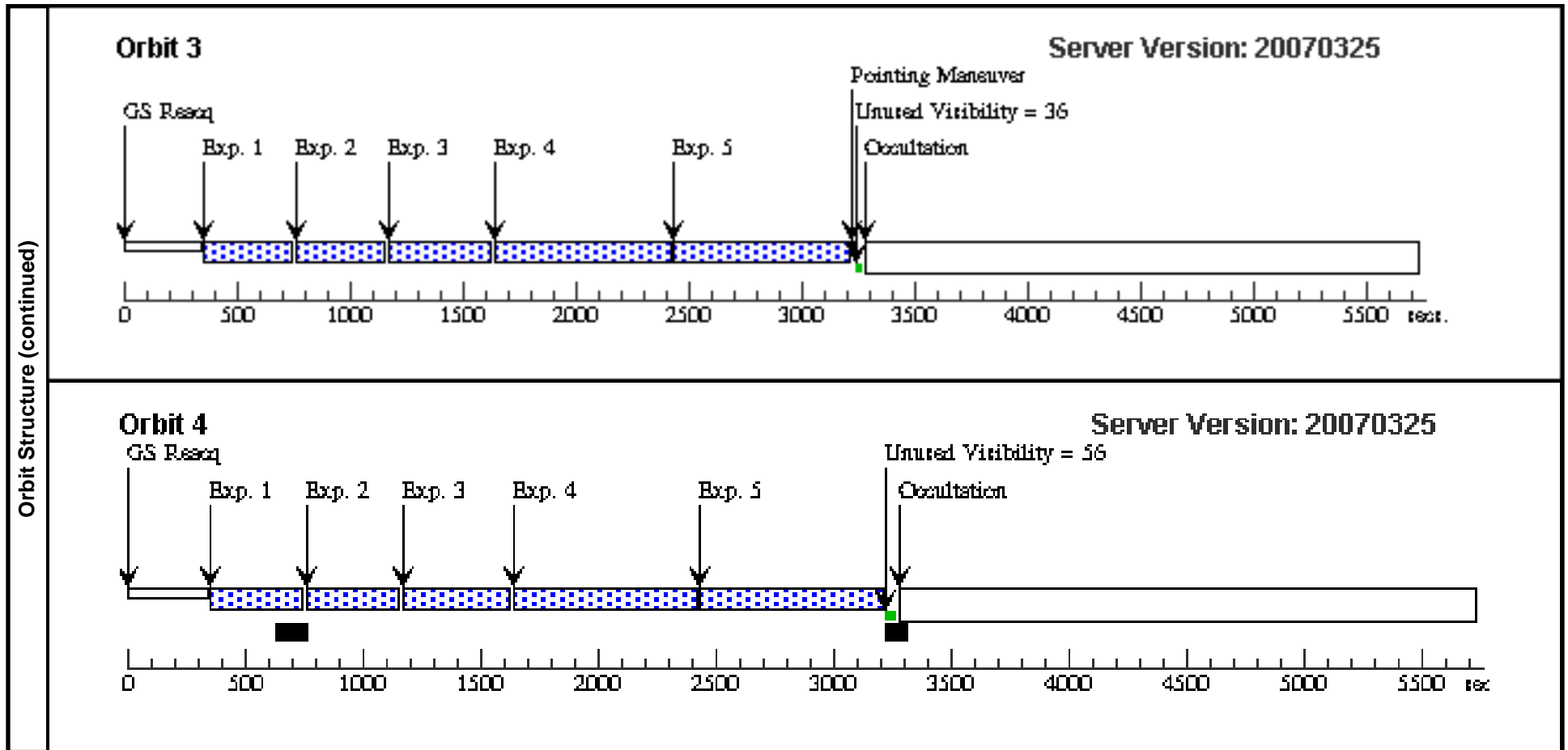
Mon May 21 18:59:03 GMT 2007

Visit	Proposal 10867, Visit 21, completed Diagnostic Status: No Diagnostics Scientific Instruments: NIC1 Special Requirements: (none) <i>Comments: please schedule in SAA Free orbits</i>									
	Patterns	#	Primary Pattern	Secondary Pattern	Exposures					
	(2)	Pattern Type=NIC-YSTRIP-DITH Purpose=DITHER Number Of Points=4 Point Spacing=0.255 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90 Angle Between Sides= Center Pattern=false		(1-5)					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SN1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000		V=24.0+/-1.0	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) SN1987A	NIC1, MULTIACCUM, NIC1	F110W	NSAMP=8; SAMP-SEQ=SPARS 64	GS ACQ SCENARI O BASE1TNS	Pattern 1-5 (2)	[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]	[2]	
								[==>(Pattern 3)]	[3]	
								[==>(Pattern 4)]	[4]	
	2	(1) SN1987A	NIC1, MULTIACCUM, NIC1	F160W	NSAMP=8; SAMP-SEQ=SPARS 64		Pattern 1-5 (2)	[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]	[2]	
								[==>(Pattern 3)]	[3]	
								[==>(Pattern 4)]	[4]	
	3	(1) SN1987A	NIC1, MULTIACCUM, NIC1	F108N	NSAMP=9; SAMP-SEQ=SPARS 64		Pattern 1-5 (2)	[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]	[2]	
								[==>(Pattern 3)]	[3]	
								[==>(Pattern 4)]	[4]	
	4	(1) SN1987A	NIC1, MULTIACCUM, NIC1	F187N	NSAMP=14; SAMP-SEQ=SPARS 64		Pattern 1-5 (2)	[==>(Pattern 1)]	[1]	
								[==>(Pattern 2)]	[2]	
								[==>(Pattern 3)]	[3]	
							[==>(Pattern 4)]	[4]		

Proposal 10867 - Visit 21 - SAINTS - Supernova 1987A INTensive Survey

Exposures (continued)	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	5		(1) SN1987A	NIC1, MULTIACCUM, NIC1	F164N	NSAMP=14; SAMP-SEQ=SPARS 64		Pattern 1-5 (2)	[==>(Pattern 1)]	[1]
									[==>(Pattern 2)]	[2]
									[==>(Pattern 3)]	[3]
									[==>(Pattern 4)]	[4]

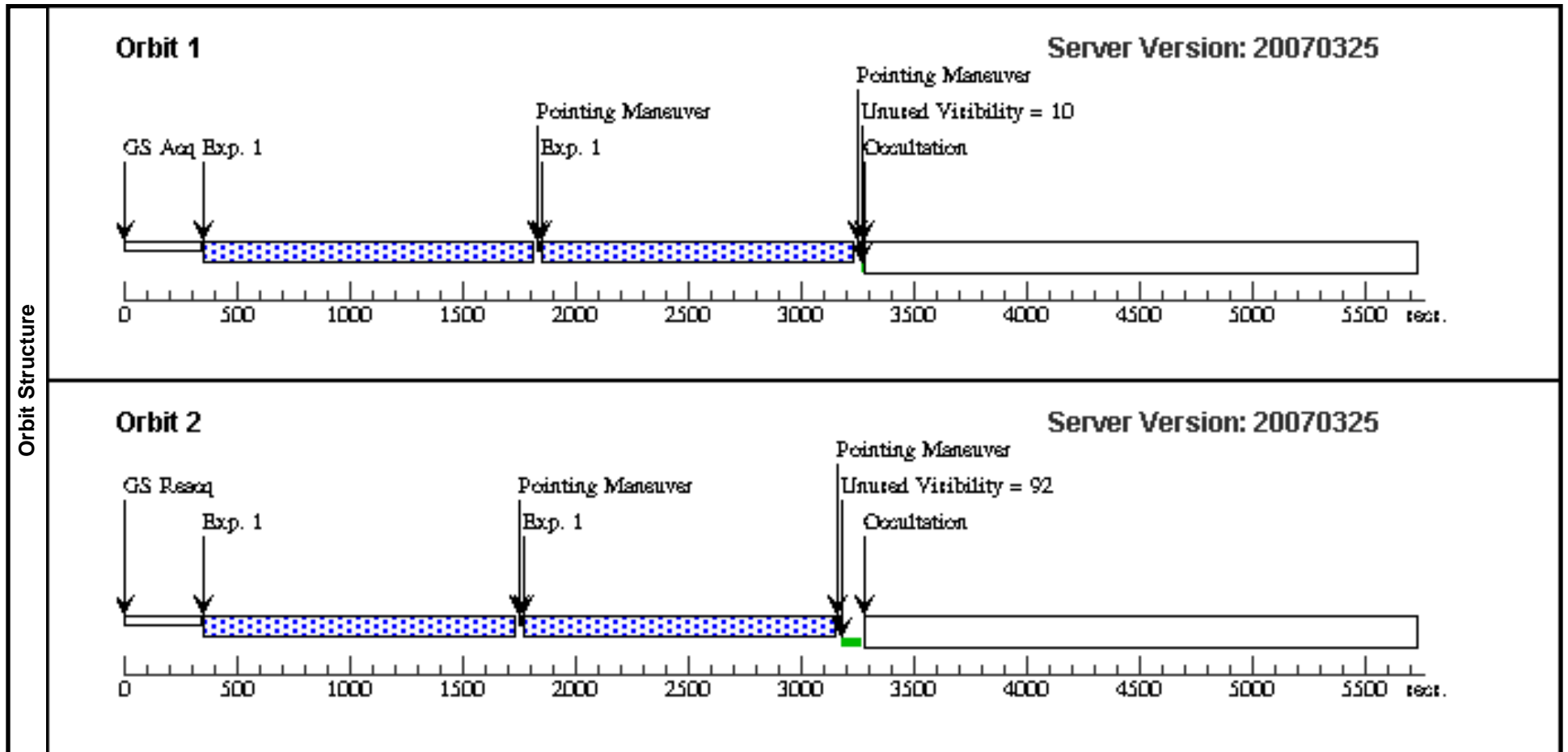


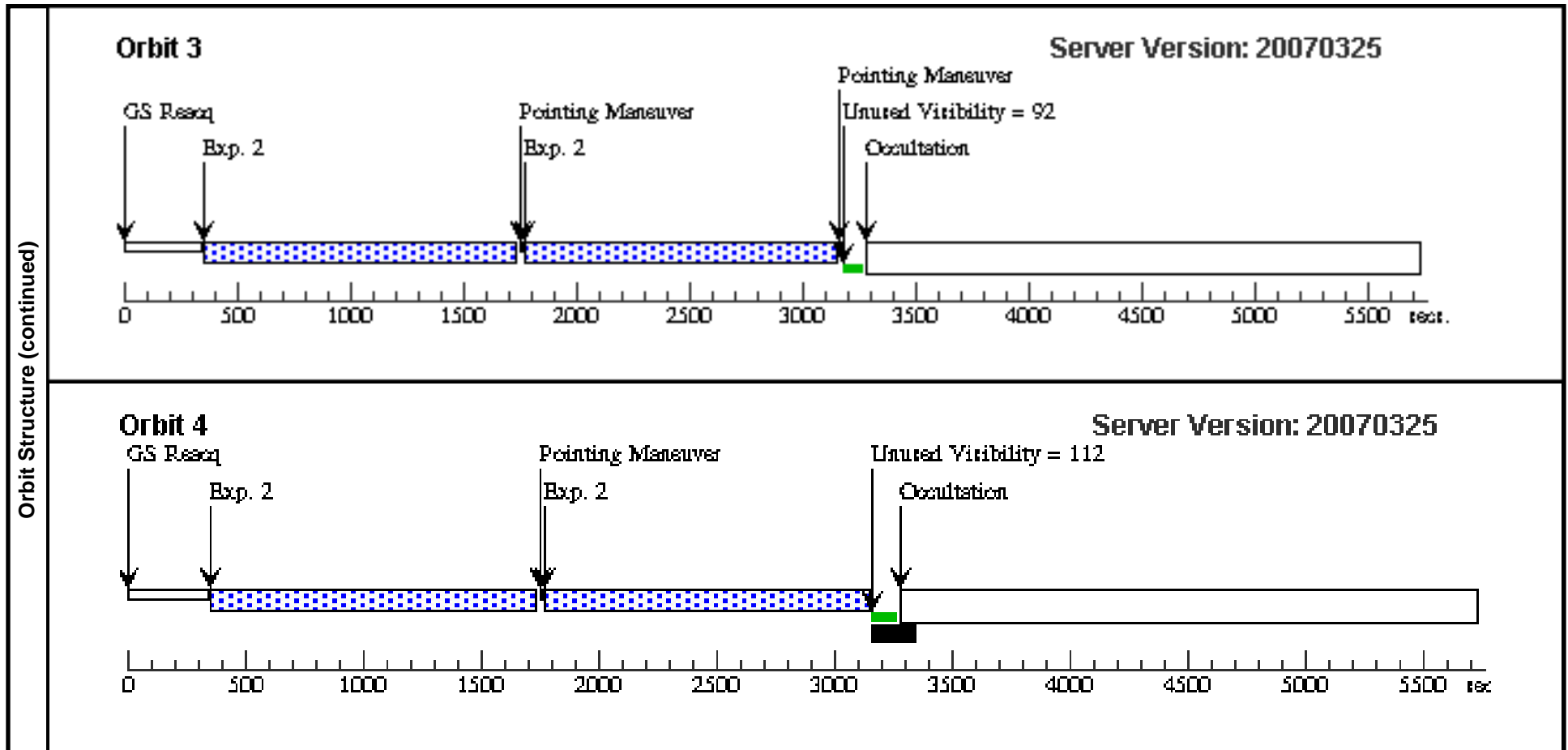


Proposal 10867 - Visit 30 - SAINTS - Supernova 1987A INTensive Survey

Mon May 21 18:59:04 GMT 2007

Visit	Proposal 10867, Visit 30, completed Diagnostic Status: No Diagnostics Scientific Instruments: ACS/HRC Special Requirements: SEQ 07.08.30 WITHIN 30 D									
	Patterns	#	Primary Pattern			Secondary Pattern			Exposures	
		(1)	Pattern Type=ACS-HRC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.15 Line Spacing=0.098	Coordinate Frame=POS-TARG Pattern Orientation=19.89 Angle Between Sides=63.5 Center Pattern=false					(1), (2)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	SN1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000		V=24.0+/-1.0	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) SN1987A	ACS/HRC, ACCUM, HRC	F658N	CR-SPLIT=NO; PAREXP=DEF		Pattern 1-1 (1)	1350.0 Secs	
									[==>(Pattern 1)]	[1]
									[==>(Pattern 2)]	
									[==>(Pattern 3)]	[2]
									[==>(Pattern 4)]	
2		(1) SN1987A	ACS/HRC, ACCUM, HRC	F658N	CR-SPLIT=NO; PAREXP=DEF	POS TARG 0.5,0.5		Pattern 2-2 (1)	1350.0 Secs	
									[==>(Pattern 1)]	[3]
									[==>(Pattern 2)]	
									[==>(Pattern 3)]	[4]
									[==>(Pattern 4)]	

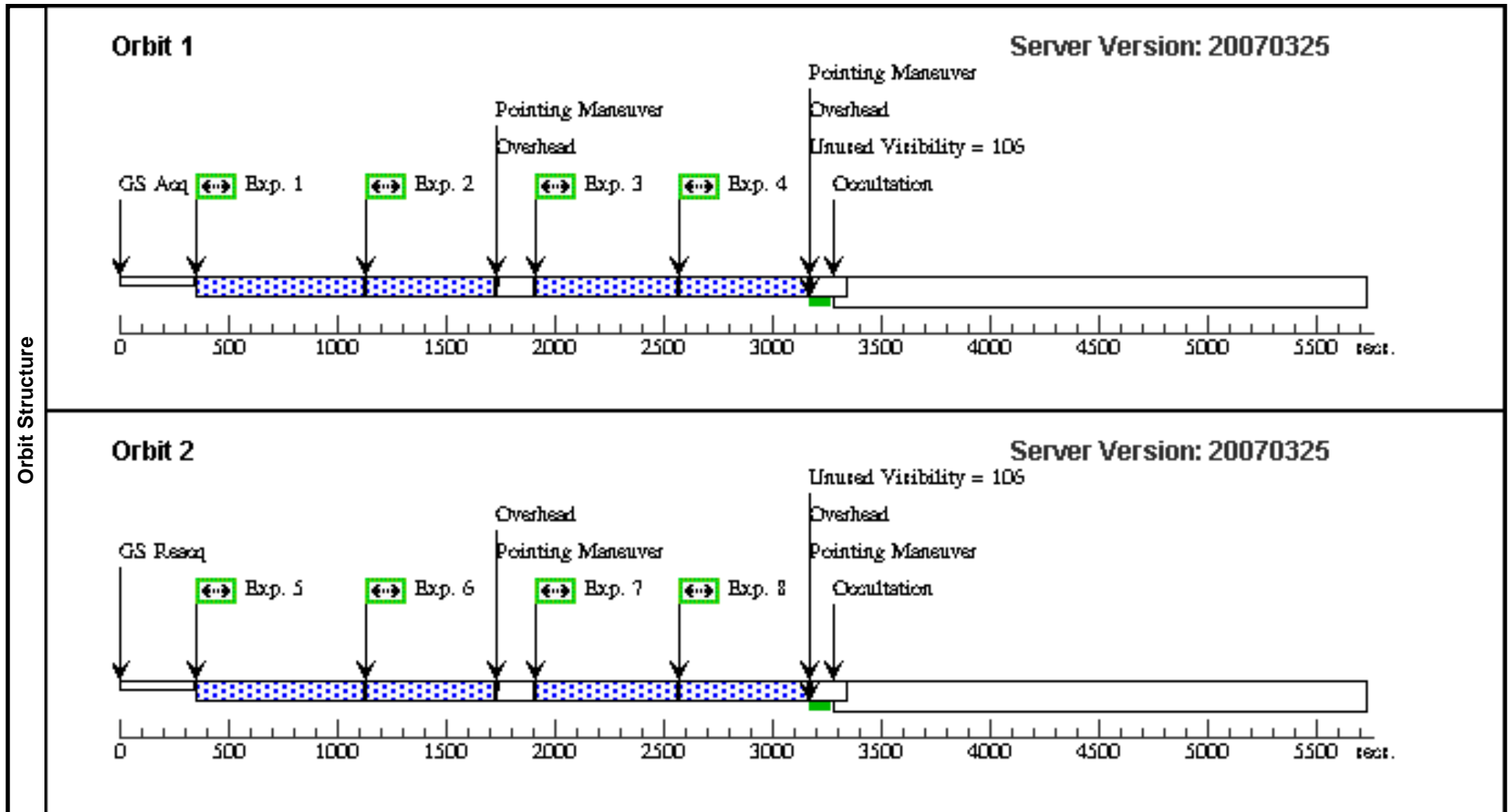


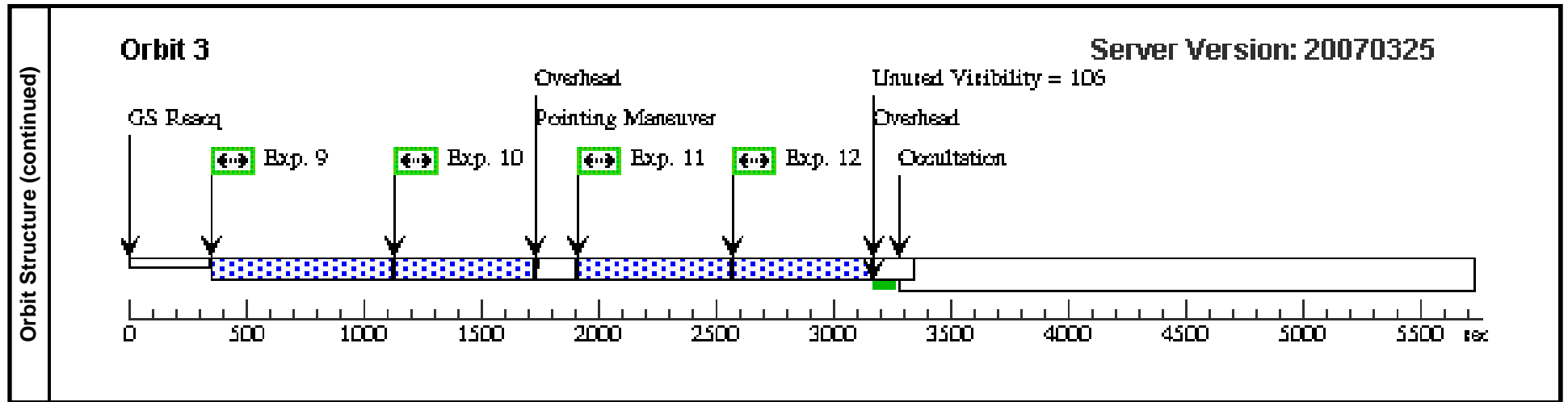


Proposal 10867 - Visit 33 - SAINTS - Supernova 1987A INTensive Survey

Mon May 21 18:59:04 GMT 2007

Visit	Proposal 10867, Visit 33 Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: ORIENT 160.0D TO 180.0 D Comments: please try to schedule at orient 170									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(1)	SN1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000			V=24.0+/-1.0	Reference Frame: ICRS			
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) SN1987A	WFPC2, IMAGE, PC1	F675W	CR-SPLIT=NO				500.0 Secs [==>]	[1]
	2	(1) SN1987A	WFPC2, IMAGE, PC1	F439W	CR-SPLIT=NO				500.0 Secs [==>]	[1]
	3	(1) SN1987A	WFPC2, IMAGE, PC1	F675W	CR-SPLIT=NO		POS TARG 0.498,0.249		400.0 Secs [==>]	[1]
	4	(1) SN1987A	WFPC2, IMAGE, PC1	F439W	CR-SPLIT=NO		POS TARG 0.498,0.249		500.0 Secs [==>]	[1]
	5	(1) SN1987A	WFPC2, IMAGE, PC1	F675W	CR-SPLIT=NO		POS TARG 0.747,0.747		500.0 Secs [==>]	[2]
	6	(1) SN1987A	WFPC2, IMAGE, PC1	F439W	CR-SPLIT=NO		POS TARG 0.747,0.747		500.0 Secs [==>]	[2]
	7	(1) SN1987A	WFPC2, IMAGE, PC1	F675W	CR-SPLIT=NO		POS TARG 0.249,0.498		400.0 Secs [==>]	[2]
	8	(1) SN1987A	WFPC2, IMAGE, PC1	F439W	CR-SPLIT=NO		POS TARG 0.249,0.498		500.0 Secs [==>]	[2]
	9	(1) SN1987A	WFPC2, IMAGE, PC1	F675W	CR-SPLIT=NO		POS TARG -0.445,-0.445		500.0 Secs [==>]	[3]
	10	(1) SN1987A	WFPC2, IMAGE, PC1	F439W	CR-SPLIT=NO		POS TARG -0.445,-0.445		500.0 Secs [==>]	[3]
	11	(1) SN1987A	WFPC2, IMAGE, PC1	F675W	CR-SPLIT=NO		POS TARG -0.4227 5,0.24475		400.0 Secs [==>]	[3]
	12	(1) SN1987A	WFPC2, IMAGE, PC1	F439W	CR-SPLIT=NO		POS TARG -0.4227 5,0.24475		500.0 Secs [==>]	[3]





Proposal 10867 - Visit 34 - SAINTS - Supernova 1987A INTensive Survey

Mon May 21 18:59:05 GMT 2007

Visit	Proposal 10867, Visit 34 Diagnostic Status: No Diagnostics Scientific Instruments: WFPC2 Special Requirements: ORIENT 160.0D TO 180.0 D Comments: please try to schedule at orient 170									
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(1)	SN1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000		V=24.0+/-1.0	Reference Frame: ICRS				
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1	(1) SN1987A	WFPC2, IMAGE, PC1	F656N	CR-SPLIT=NO				500.0 Secs [==>]	[1]
	2	(1) SN1987A	WFPC2, IMAGE, PC1	F656N	CR-SPLIT=NO				500.0 Secs [==>]	[1]
	3	(1) SN1987A	WFPC2, IMAGE, PC1	F656N	CR-SPLIT=NO		POS TARG 0.498,0.249		500.0 Secs [==>]	[1]
	4	(1) SN1987A	WFPC2, IMAGE, PC1	F656N	CR-SPLIT=NO		POS TARG 0.498,0.249		500.0 Secs [==>]	[1]
	5	(1) SN1987A	WFPC2, IMAGE, PC1	F656N	CR-SPLIT=NO		POS TARG 0.747,0.747		500.0 Secs [==>]	[2]
	6	(1) SN1987A	WFPC2, IMAGE, PC1	F656N	CR-SPLIT=NO		POS TARG 0.747,0.747		500.0 Secs [==>]	[2]
	7	(1) SN1987A	WFPC2, IMAGE, PC1	F656N	CR-SPLIT=NO		POS TARG 0.249,0.498		500.0 Secs [==>]	[2]
	8	(1) SN1987A	WFPC2, IMAGE, PC1	F656N	CR-SPLIT=NO		POS TARG 0.249,0.498		500.0 Secs [==>]	[2]
	9	(1) SN1987A	WFPC2, IMAGE, PC1	F656N	CR-SPLIT=NO		POS TARG -0.445,-0.445		500.0 Secs [==>]	[3]
	10	(1) SN1987A	WFPC2, IMAGE, PC1	F656N	CR-SPLIT=NO		POS TARG -0.445,-0.445		500.0 Secs [==>]	[3]
	11	(1) SN1987A	WFPC2, IMAGE, PC1	F656N	CR-SPLIT=NO		POS TARG -0.4227 5,0.24475		500.0 Secs [==>]	[3]
	12	(1) SN1987A	WFPC2, IMAGE, PC1	F656N	CR-SPLIT=NO		POS TARG -0.4227 5,0.24475		500.0 Secs [==>]	[3]

