



12241 - SAINTS - The SN 1987A Intensive Study

Cycle: 18, Proposal Category: GO

(Availability Mode: SUPPORTED)

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VISITS

Visit	Targets used in Visit	Configurations used in Visit	Orbits Used	Last Orbit Planner Run	OP Current with Visit?
10	(1) SN-1987A	WFC3/IR WFC3/UVIS	3	13-Dec-2010 21:02:55.0	yes
20	(3) SN-1987A-STIS-ACQ (4) SN-1987A-HOTSPOTS-52X2	STIS/CCD	2	13-Dec-2010 21:03:14.0	yes
40	(5) SN-1987A-COS (6) SN-1987A-COS-ACQ ANY	ACS/WFC COS/FUV COS/NUV WFC3/UVIS	3	13-Dec-2010 21:03:30.0	yes
50	(5) SN-1987A-COS (6) SN-1987A-COS-ACQ ANY	ACS/WFC COS/FUV COS/NUV WFC3/UVIS	4	13-Dec-2010 21:03:44.0	yes

12 Total Orbits Used

ABSTRACT

SAINTS is a program to observe SN 1987A, the brightest supernova since 1604, as it matures into the youngest supernova remnant at age 23. HST is the essential tool for observing SN 1987A's many physical components. A violent encounter is underway between the fastest-moving debris and the circumstellar ring: shocks excite "hotspots." Radio, optical, infrared and X-ray fluxes have been rising rapidly: we have organized VLT, Spitzer, and Chandra observations to understand the several emission mechanisms at work. The inner debris, excited by radioactive isotopes from the explosion, is now resolved and seen to be aspherical, providing

direct evidence on the shape of the explosion itself and on dust that formed in the debris. Questions about SN 1987A remain unanswered. For example, where is the compact object whose formation sent neutrinos our way in February 1987 ? A rich and unbroken data set from SAINTS will help answer these central questions and will build an archive for the future to help answer questions we have not yet thought to ask. For Cycle 18, these data will include novel observations with the IR channel of WFC3 and UV observations with COS.

OBSERVING DESCRIPTION

Our proposed Cycle 18 imaging program of SN~1987A will provide continuing information on the luminosity and expansion of the debris, eruption and evolution of hotspots, all at the highest available spatial resolution.

Observations using WFC3/UVIS with filters

F435W, F625W, and F675N will connect with our earlier observations at similar signal-to-noise ratio (S/N).

One orbit is requested to obtain these drizzled exposures.

Our proposed WFC3/IR imaging will use filters F110W, F160W, F164N, F167N requiring 2 orbits to accommodate the 4 filters, 4 pointings and sufficient NSAMP readouts to yield a S/N $\approx 25-100$ in the hotspots and debris.

The IR images may provide the best limits on emission from a compact remnant in the debris if there is lower extinction due to dust.

The advantage of HST over AO from the ground is the clean and constant HST PSF.

The AO PSF halo adds large and variable contamination from the

underlying structures,
which makes both spectroscopy and photometry from the ground
complicated and uncertain. Our experience is that, used together, HST
and ground-based AO is
a very powerful combination. The F167N filter
will also image the high velocity [FeII] 1.64 emission.

The proposed STIS observations will observe the complete SN~1987A ring
using the 52X2 slit with the G750M grating.

The observations will be planned to match orientations of
previous observations (GTO 7123, GO 9428, 10263, 11653).

In this way, subtle changes in the hotspot fluxes can be measured by
using

image subtraction techniques (see Figure 3).

We will obtain spectra through the 52X2 slit in two pointings and
multiple exposures to deliver the observations at the full spatial and
spectral resolution. These high spatial resolution spectra
isolate each spot to complement observations from the ground with high
spectral (but low
spatial) resolution.

The COS observations will probe the collisionless shock at sufficient
depth to constrain models of SN~1987A. We require $S/N \approx 15$
in the broad, red-shifted component of N~V 1240Å visible in our recent STIS
G140L observations. We use
STIS-based flux estimates ($1-2 \times 10^{15}$ ergs/cm²/s/Å) to
calculate the COS
exposure times using ETC. We need 2.5 orbits with COS G130M to
achieve $S/N \approx 15$ (ETC COS.A268514).

To search for the weak coronal lines

we require S/N ≈ 10 in the narrower CIV ring emission in G160M.

This can

be achieved in ≈ 4.5 orbits (COS.A268618). At this depth, we

expect to observe blue-shifted Ly α (S/N

20), SiIV (S/N ≈ 10), and HeII (S/N ≈ 15). We will

require S/N ≈ 40

pointing verification images (≈ 600 s)

with the COS NUV imaging mode to facilitate post-processing

and analysis. Combining these, we require 7 orbits for the

COS observations.

We will observe SN~1987A using four central wavelength settings of

each the G130M (1291, 1300, 1309, 1318) and

G160M (1589, 1600, 1611, 1623) gratings. This ensures

continuous wavelength coverage at

relatively constant S/N, and effectively performs a focal plane split

to minimize fixed pattern noise on the

COS MCP detector. We will perform COS target acquisition following

the established offset from an isolated 18mag star used by the SAINTS team

during previous STIS observations. The acquisition with COS will use NUV/MIRRORA/PSA and

16 seconds per ACQ/SEARCH position. (COS.A269045),

The aperture attenuation for objects outside the COS Primary Science

Aperture (PSA) and the COS cross-dispersion imaging capability ensure

that star 3, 1.7 arcsec to the southeast

(with a 1300Å flux of $\approx 10^{-14}$ erg/cm²/s/Å, will

not significantly contaminate the spectrum of the remnant ($\lesssim 10\%$), provided we

orient the spacecraft so that the cross-dispersion axis of COS

is parallel to the star-PSA line at an angle of -61.7° . (See Figures 6 and 7).

We would like to use coordinated parallels where feasible during the long COS exposures. SAINTS member Nino Panagia and his students have been industrious in using the parallel images obtained during our spectroscopic visits which provides information on the stellar population and star-formation history of this region of the LMC.

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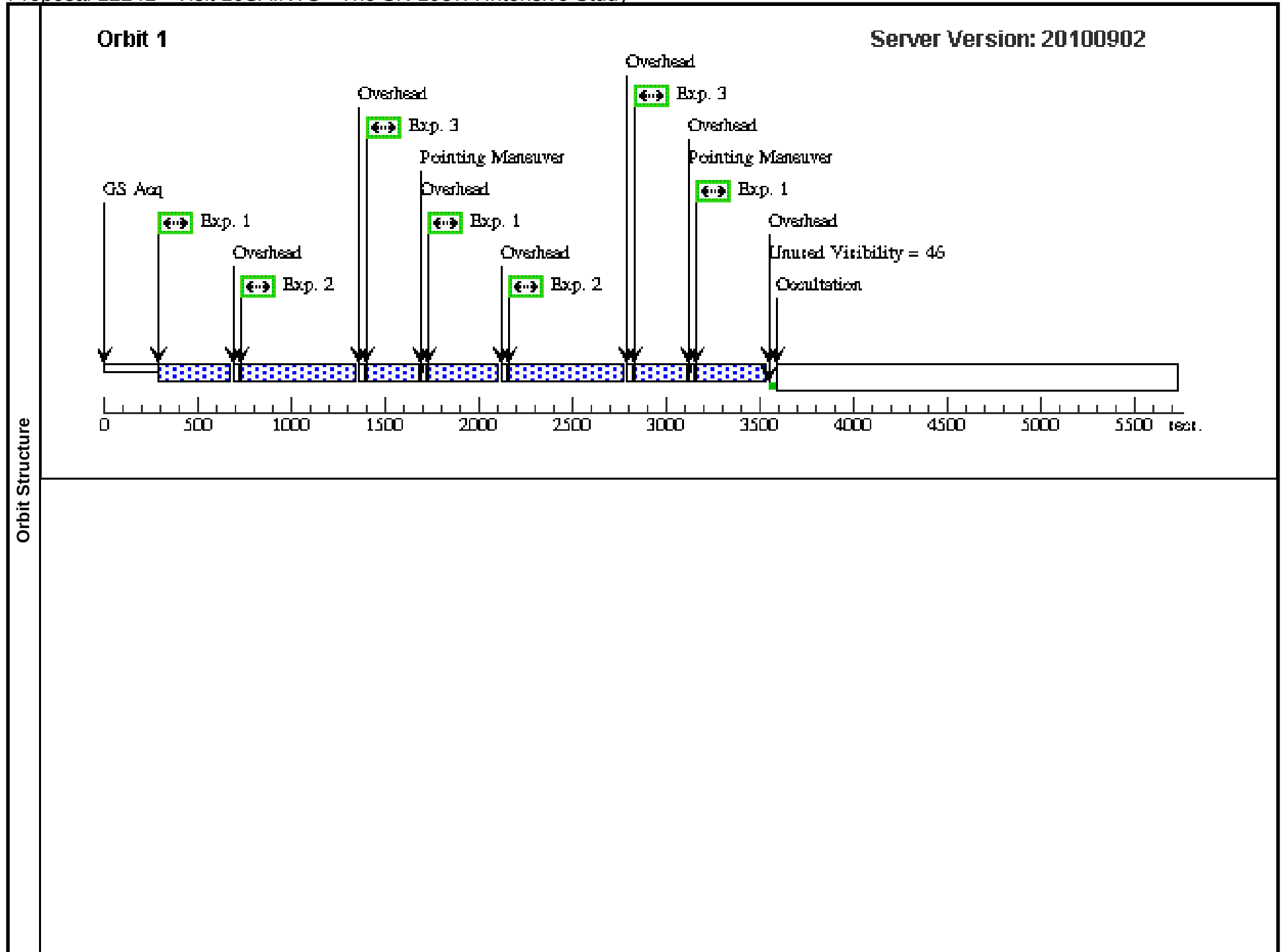
Visit	Proposal 12241, Visit 10, scheduling Tue Dec 14 02:03:51 GMT 2010				
	Diagnostic Status: No Diagnostics Scientific Instruments: WFC3/IR, WFC3/UVIS Special Requirements: BETWEEN 01-DEC-2010:00:00:00 AND 02-FEB-2011:00:00:00 Comments: The between is just suggestion. It would useful to get these data during this time period, but its not critical.				
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	(1-3)	
	(2)	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	(6-9), (10-12)	
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(1)	SN-1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000	Proper Motion RA: null Proper Motion Dec: null Epoch of Position:	V=23+/- Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					

Proposal 12241 - Visit 10SAINTS - The SN 1987A Intensive Study

Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F438W	CR-SPLIT=NO		Pattern 1, Exps 1-3 in Visit 10 (1)	350 Secs	
									[==>(Pattern 1)]	
									[==>(Pattern 2)]	[1]
									[==>(Pattern 3)]	
									[==>(Pattern 4)]	[2]
	2		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F657N	CR-SPLIT=NO		Pattern 1, Exps 1-3 in Visit 10 (1)	600 Secs	
									[==>(Pattern 1)]	
									[==>(Pattern 2)]	[1]
									[==>(Pattern 3)]	
									[==>(Pattern 4)]	[2]
	3		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F625W	CR-SPLIT=NO		Pattern 1, Exps 1-3 in Visit 10 (1)	250 Secs	
									[==>(Pattern 1)]	
									[==>(Pattern 2)]	[1]
									[==>(Pattern 3)]	
									[==>(Pattern 4)]	[2]
	4		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS2-M512C-SUB	F625W	CR-SPLIT=NO			140 Secs	
									[==>]	[2]
	5		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS	F625W	CR-SPLIT=NO			60 Secs	
									[==>]	[2]
	6		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB128	F110W	NSAMP=15; SAMP-SEQ=SPAR S10		Pattern 2, Exps 6-9 in Visit 10 (2)	[==>(Pattern 1)]	[2]
									[==>(Pattern 2)]	
									[==>(Pattern 3)]	[3]
									[==>(Pattern 4)]	
	7		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB128	F160W	NSAMP=15; SAMP-SEQ=SPAR S10		Pattern 2, Exps 6-9 in Visit 10 (2)	[==>(Pattern 1)]	[2]
									[==>(Pattern 2)]	
									[==>(Pattern 3)]	[3]
									[==>(Pattern 4)]	
	8		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB128	F164N	NSAMP=15; SAMP-SEQ=SPAR S10		Pattern 2, Exps 6-9 in Visit 10 (2)	[==>(Pattern 1)]	[2]
									[==>(Pattern 2)]	
									[==>(Pattern 3)]	[3]
									[==>(Pattern 4)]	
	9		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB128	F126N	NSAMP=15; SAMP-SEQ=SPAR S10		Pattern 2, Exps 6-9 in Visit 10 (2)	[==>(Pattern 1)]	[2]
									[==>(Pattern 2)]	
									[==>(Pattern 3)]	[3]
									[==>(Pattern 4)]	
	10		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB128	F160W	NSAMP=15; SAMP-SEQ=SPAR S10	POS TARG 0.20842 5,0.208425	Pattern 2, Exps 10-12 in Visit 10 (2)	[==>(Pattern 1)]	
									[==>(Pattern 2)]	
									[==>(Pattern 3)]	
									[==>(Pattern 4)]	[3]

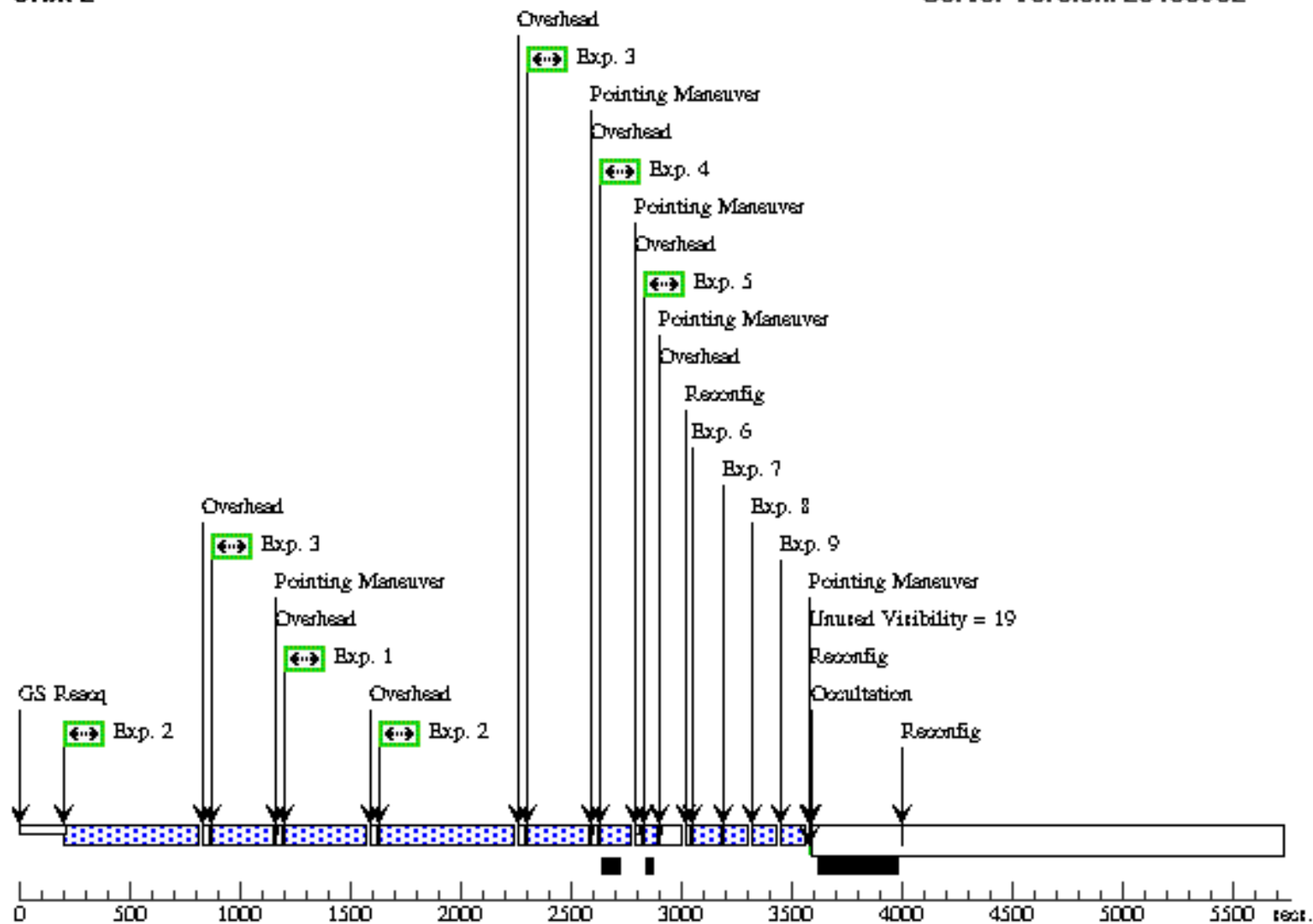
Proposal 12241 - Visit 10SAINTS - The SN 1987A Intensive Study

11	(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB128	F164N	NSAMP=15; SAMP-SEQ=SPAR S10	POS TARG 0.20842 5,0.208425	Pattern 2, Exps 10-1 2 in Visit 10 (2)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]
12	(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB128	F126N	NSAMP=15; SAMP-SEQ=SPAR S10	POS TARG 0.20842 5,0.208425	Pattern 2, Exps 10-1 2 in Visit 10 (2)	[==>(Pattern 1)] [==>(Pattern 2)] [==>(Pattern 3)] [==>(Pattern 4)]	[3]

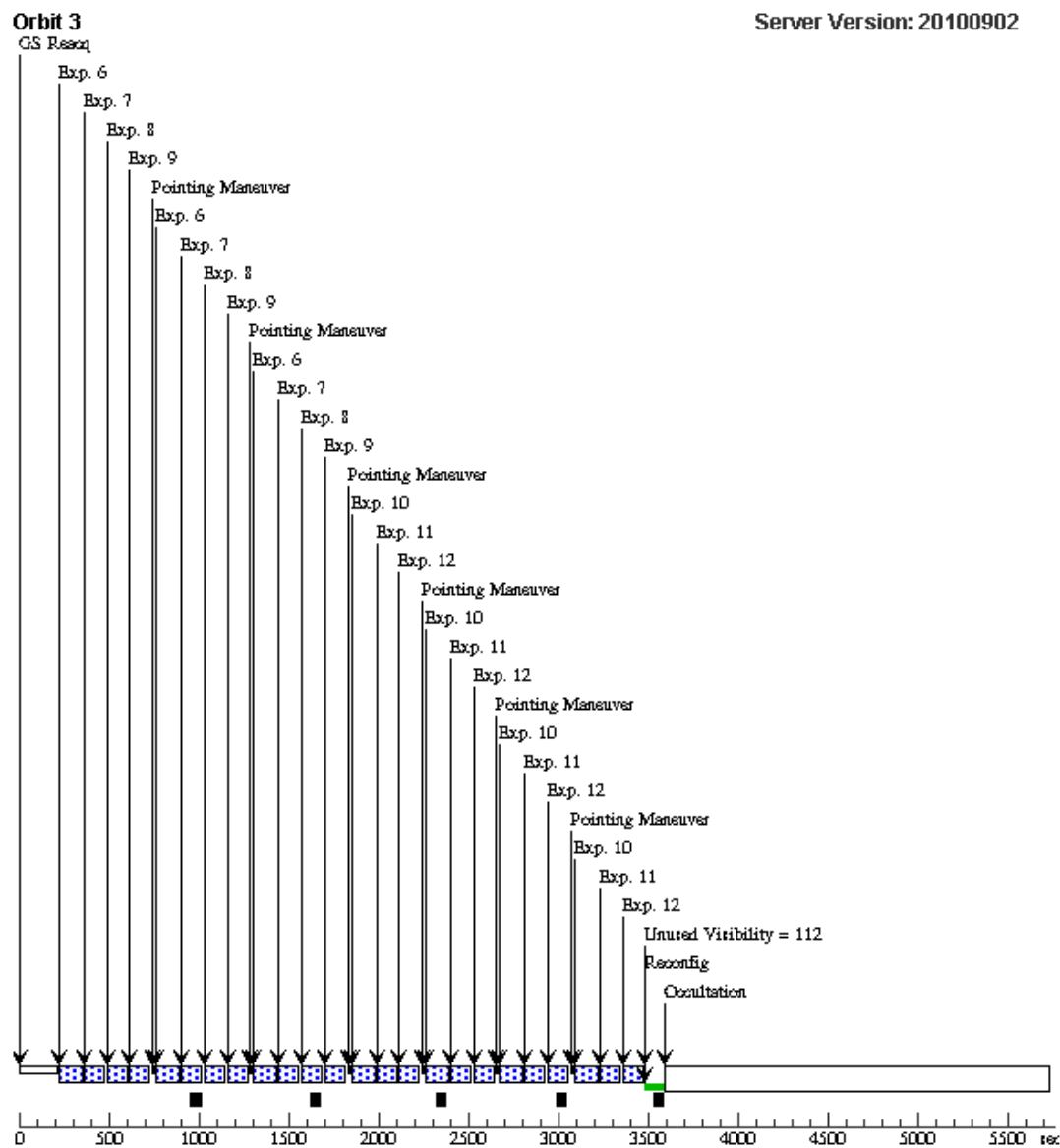


Orbit 2

Server Version: 20100902



Server Version: 20100902

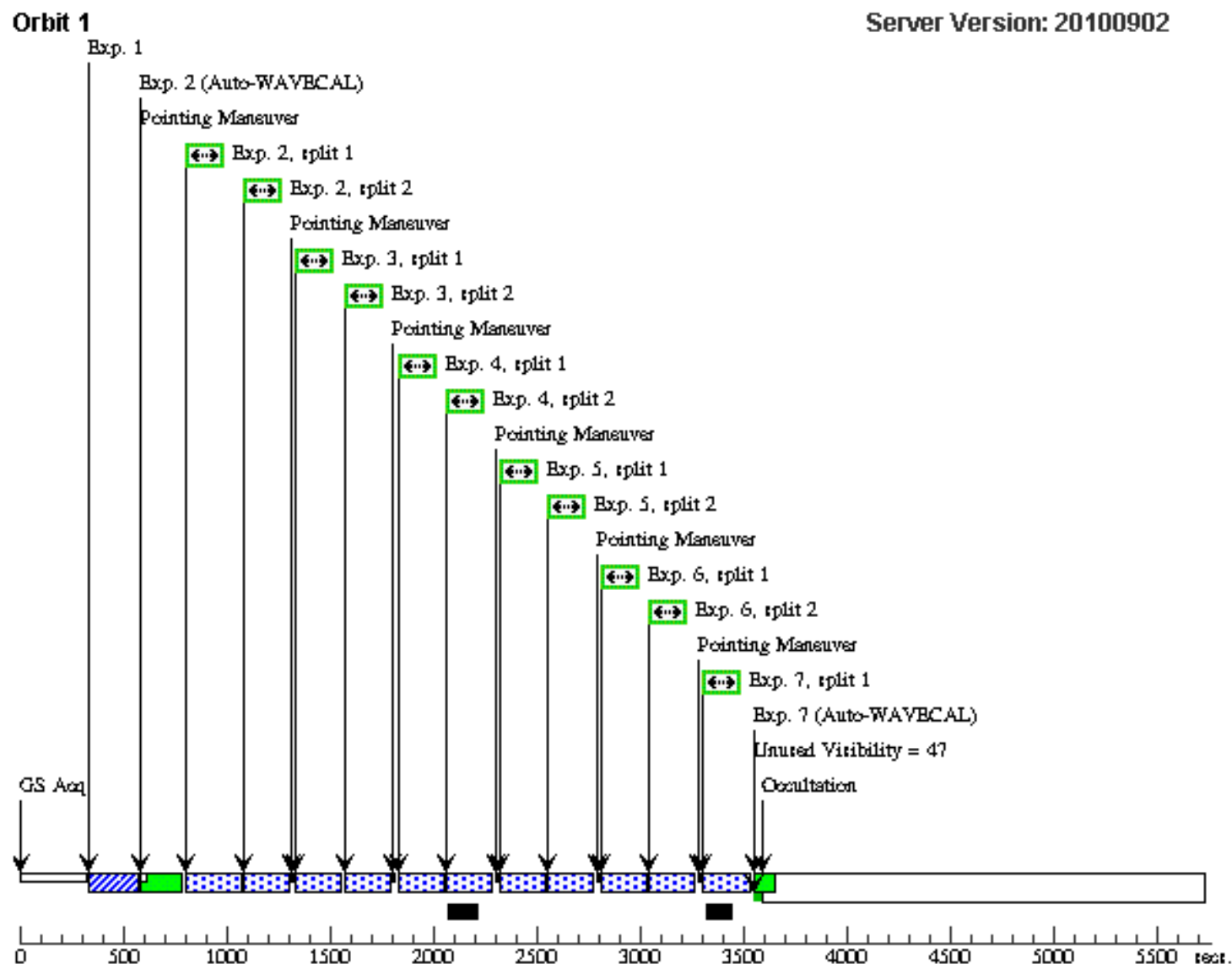


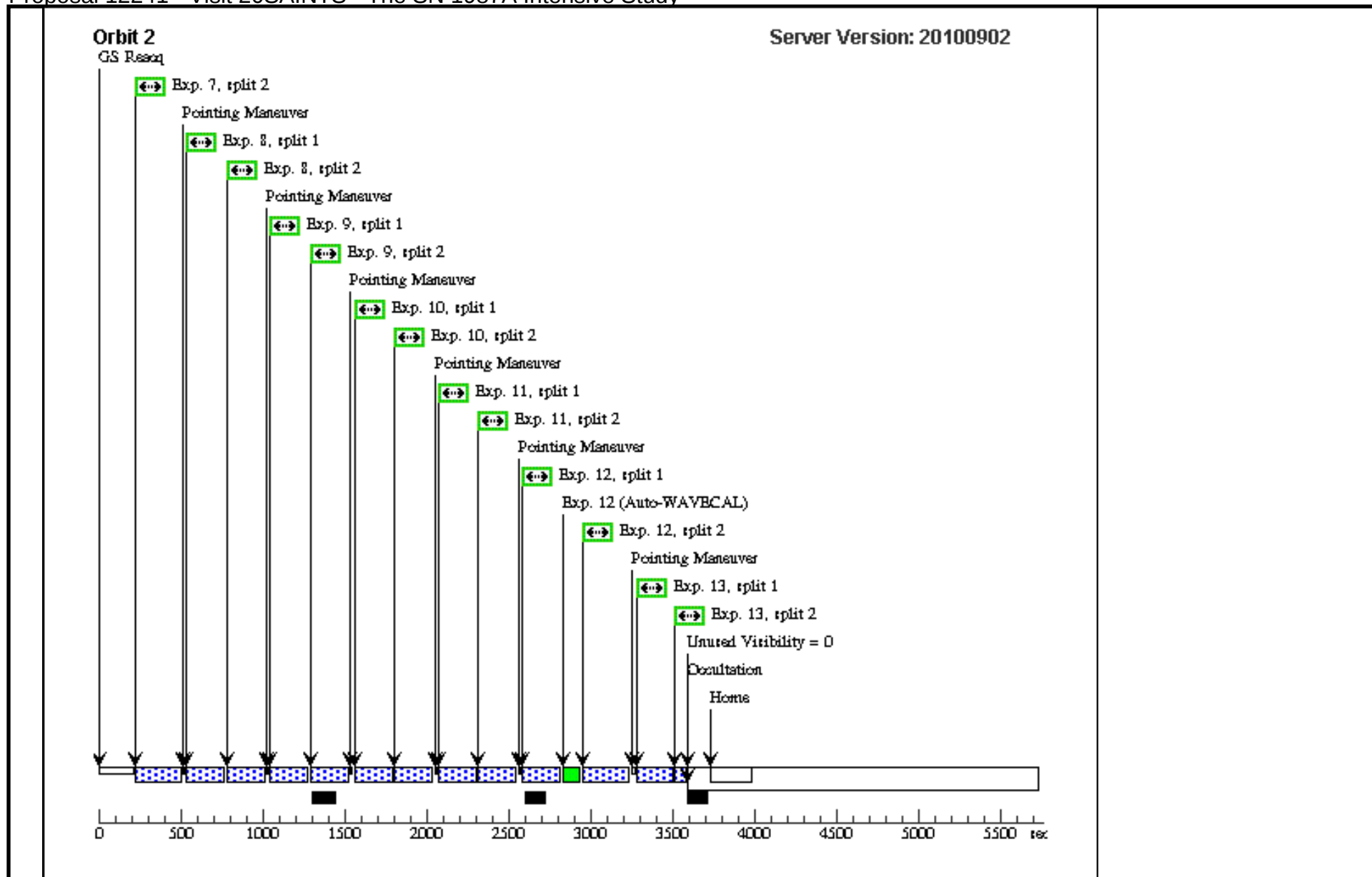
Proposal 12241 - Visit 20SAINTS - The SN 1987A Intensive Study

Visit	Proposal 12241, Visit 20, scheduling					Tue Dec 14 02:03:54 GMT 2010
	Diagnostic Status: No Diagnostics					
	Scientific Instruments: STIS/CCD					
	Special Requirements: ORIENT 131.5D TO 131.5 D; ORIENT 311.5D TO 311.5 D					
	Comments: please use SAA free orbits.Past STIS spectra (GO 7123, 7587, 8243, 8806, 11653) have avoided the use of the following guide stars; we also request their exclusion: 9162.0247 5:35:55.781 -69:09:52.63 8.92 3 1 448.96 05ZW; 9163.0606 5:37:26.026 -69:21:42.41 12.77 3 1 675.31 05ZW; 9163.0775 5:37:44.940 -69:20:05.68 11.91 3 1 738.05 05ZW; 9163.0933 5: 37:36.307 -69:06:44.42 12.84 0 1 913.91 05ZW; 9163.0948 5:37:38.971 -69:10:15.46 11.56 3 1 798.03 05ZW; 9163.0976 5:37:46.306 -69:20:50.42 10.95 3 1 757.05 05ZW; 9163.0979 5:37:47.071 -69:09:11.09 10.30 3 1 869.06 05ZW; 9166.0229 5:35:26.179 -69:28:02.93 11.36 3 1 663.23 05ZW; 9166.0750 5:34:45.540 -69:23:24.68 12.98 3 1 450.65 05ZW; 9166.0800 5:34:28.980 -69:25:40.04 12.78 3 1 611.46 05ZW; 9167.0336 5:37:02.275 -69:22:51.67 12.31 3 1 601.04 05ZW; 9167.0507 5:36:47.107 -69:29:54.56 9.07 3 1 874.09 05ZW; 9167.0510 5:36:40.378 -69:23:17.12 12.54 0 1 529.46 05ZW; 9167.0663 5:36:40.058 -69:22:43.64 12.57 3 1 505.04 05ZW					
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
	(3)	SN-1987A-STIS-ACQ	RA: 05 35 30.5800 (83.8774167d)	Proper Motion RA: null	V=16.07+/-	Reference Frame: ICRS
			Dec: -69 16 18.32 (-69.27176d)	Proper Motion Dec: null	B=15.92,	
			Equinox: J2000	Epoch of Position:	U=15.03	
	Comments: This object was generated by the targetselector and retrieved from the NED database.					
Fixed Targets	(4)	SN-1987A-HOTSPOTS-52X2	Offset from SN-1987A-STIS-ACQ by	Proper Motion RA: null	V=23.0+/-	Offset Position (SN-1987A-HOTSPOTS-52X2)
			RA Offset: -2.47 Secs	Proper Motion Dec: null		
			Dec Offset: 7.47 Arcsec	Epoch of Position:		Reference Frame: ICRS
	Comments: This object was generated by the targetselector and retrieved from the NED database.					

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Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(3) SN-1987A-STIS-ACQ	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARI O BASE1BNS		3 Secs [==>]	[1]
	2		(4) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2E1	G750M 6581 A	CR-SPLIT=2	POS TARG -0.8976, 3.5497		375 Secs [==>187.5 Secs (Split 1)] [==>187.5 Secs (Split 2)]	[1]
	3		(4) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2E1	G750M 6581 A	CR-SPLIT=2	POS TARG -0.8976, 2.5355		375 Secs [==>187.5 Secs (Split 1)] [==>187.5 Secs (Split 2)]	[1]
	4		(4) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2E1	G750M 6581 A	CR-SPLIT=2	POS TARG -0.8976, 1.2678		375 Secs [==>187.5 Secs (Split 1)] [==>187.5 Secs (Split 2)]	[1]
	5		(4) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2E1	G750M 6581 A	CR-SPLIT=2	POS TARG -0.8976, 0		375 Secs [==>187.5 Secs (Split 1)] [==>187.5 Secs (Split 2)]	[1]
	6		(4) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2E1	G750M 6581 A	CR-SPLIT=2	POS TARG -0.8976, -2.5355		375 Secs [==>187.5 Secs (Split 1)] [==>187.5 Secs (Split 2)]	[1]
	7		(4) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2E1	G750M 6581 A	CR-SPLIT=2	POS TARG -0.8976, -5.0710		390 Secs [==>195.0 Secs (Split 1)] [==>195.0 Secs (Split 2)]	[1] [2]
	8		(4) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2E1	G750M 6581 A	CR-SPLIT=2	POS TARG 0.8976,- 4.3104		395 Secs [==>(Split 1)] [==>(Split 2)]	[2]
	9		(4) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2E1	G750M 6581 A	CR-SPLIT=2	POS TARG 0.8976,- 2.2820		395 Secs [==>197.5 Secs (Split 1)] [==>197.5 Secs (Split 2)]	[2]
	10		(4) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2E1	G750M 6581 A	CR-SPLIT=2	POS TARG 0.8976,0 .0		395 Secs [==>197.5 Secs (Split 1)] [==>197.5 Secs (Split 2)]	[2]
	11		(4) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2E1	G750M 6581 A	CR-SPLIT=2	POS TARG 0.8976,2 .0284		395 Secs [==>197.5 Secs (Split 1)] [==>197.5 Secs (Split 2)]	[2]
	12		(4) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2E1	G750M 6581 A	CR-SPLIT=2	POS TARG 0.8976,4 .0568		395 Secs [==>197.5 Secs (Split 1)] [==>197.5 Secs (Split 2)]	[2]
	13		(4) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, F28X50LP	MIRROR	CR-SPLIT=2			60 Secs [==>30.0 Secs (Split 1)] [==>30.0 Secs (Split 2)]	[2]





Proposal 12241 - Visit 40SAINTS - The SN 1987A Intensive Study

Visit	Proposal 12241, Visit 40, implementation Tue Dec 14 02:03:55 GMT 2010				
	Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC, COS/NUV, COS/FUV, WFC3/UVIS Special Requirements: ORIENT 60.0D TO 90.0 D; VISIBILITY INTERVAL 57 M <i>Comments: ideal angle is 75</i>				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(5)	SN-1987A-COS	Offset from SN-1987A-COS-ACQ by RA Offset: -2.5 Secs Dec Offset: 7.6 Arcsec	Proper Motion RA: null Proper Motion Dec: null Epoch of Position:	V=23.0+/- Offset Position (SN-1987A-COS) Reference Frame: ICRS
Fixed Targets	<i>Comments: This object was generated by the targetselector and retrieved from the NED database.</i>				
	(6)	SN-1987A-COS-ACQ	RA: 05 35 30.5650 (83.8773542d) Dec: -69 16 18.35 (-69.27176d) Equinox: J2000	Proper Motion RA: null Proper Motion Dec: null Epoch of Position:	V=16.071+/- B=15.915, U=15.029 Reference Frame: ICRS
Fixed Targets	<i>Comments: V=16.071, B-V=-0.156,U-B=-0.886,V-R=-0.057,V-I=-0.109</i> <i>B=15.915</i> <i>U=15.029</i> COS.A351911, ACQ= MIRROR B + PSA Brightest pixel 18.753 Count rate entire detector 515.776 ives: Time = 11.8457				

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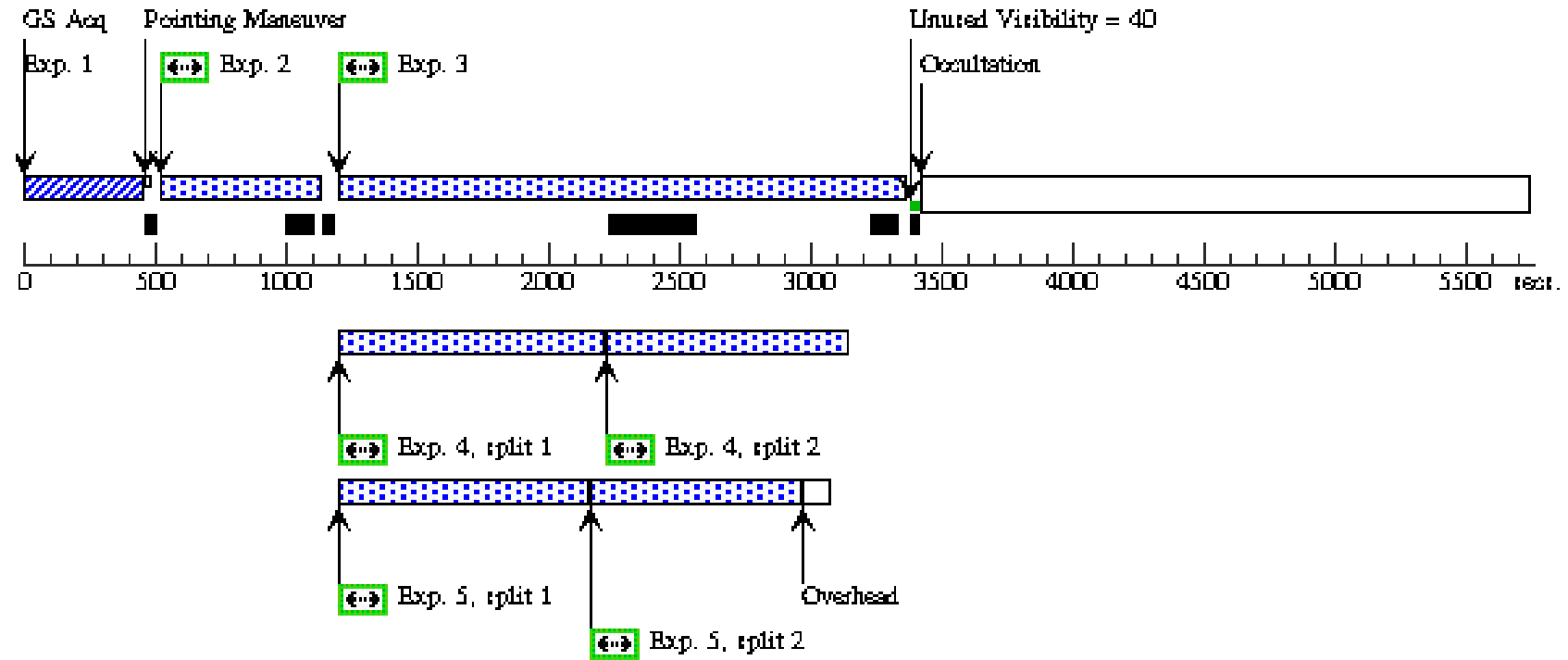
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(6) SN-1987A-COS-ACQ	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				14 Secs [==>]	[1]
	Comments: COS.A351911 Model ID = 98217 + Kurucz (B3V): Temp = 18700, LogZ = 0.0, Logg = 3.9 . Renormalized to Johnson U = 15.03 in magnitudes relative to Vega COS.A351916 Kurucz (B5V): Temp = 15400, I average the two.. 12 seconds with B3V, and 16 seconds with B5V									
	2		(5) SN-1987A-COS	COS/NUV, TIME-TAG, PSA	MIRRORB	BUFFER-TIME=49 0			600 Secs [==>]	[1]
	Comments: star 3: V=15.60 B-V 0.46 U-B -0.89 V = 15.60 B=16.06 U=15.17 B3 star Exposure ID: COS.A331360 If the aperture falls on nearby star 3;COS.A331366 Brightest pixel 16.484 Count rate entire detector 491.586 Exposure time (seconds) = 600.0000 Model ID = 96513 + Kurucz (B3V): Temp = 18700, LogZ = 0.0, Logg = 3.9 . Renormalized to Johnson U = 15.17 in magnitudes relative to Vega The distance between star 3 and the edge of the COS aperture is 0.69", figure 7.1 show the throughput is 0.7									
	3		(5) SN-1987A-COS	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=18 90		Prime + Parallel Group 3-5 in Visit 40	2000 Secs [==>]	[1]
	4		ANY	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=2		Prime + Parallel Group 3-5 in Visit 40	1600 Secs [==>(Split 1)] [==>(Split 2)]	[1]
	5		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=2		Prime + Parallel Group 3-5 in Visit 40	1600 Secs [==>(Split 1)] [==>(Split 2)]	[1]
	6		(5) SN-1987A-COS	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=12 88			1398 Secs [==>]	[2]
	7		(5) SN-1987A-COS	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=13 15		Prime + Parallel Group 7-9 in Visit 40	1425 Secs [==>]	[2]
	8		ANY	ACS/WFC, ACCUM, WFC	F606W	CR-SPLIT=2		Prime + Parallel Group 7-9 in Visit 40	1200 Secs [==>(Split 1)] [==>(Split 2)]	[2]
	9		ANY	WFC3/UVIS, ACCUM, UVIS	F606W	CR-SPLIT=2		Prime + Parallel Group 7-9 in Visit 40	1200 Secs [==>(Split 1)] [==>(Split 2)]	[2]
	10		(5) SN-1987A-COS	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=29 50		Prime + Parallel Group 10-12 in Visit 40	3060 Secs [==>]	[3]
	11		ANY	ACS/WFC, ACCUM, WFC	F475W	CR-SPLIT=2		Prime + Parallel Group 10-12 in Visit 40	2500 Secs [==>(Split 1)] [==>(Split 2)]	[3]

Proposal 12241 - Visit 40SAINTS - The SN 1987A Intensive Study

	12	ANY	WFC3/UVIS, ACCUM, UVIS	F475W	CR-SPLIT=2	Prime + Parallel Group 10-12 in Visit 40	2400 Secs	[3]
							[==>(Split 1)]	
							[==>(Split 2)]	

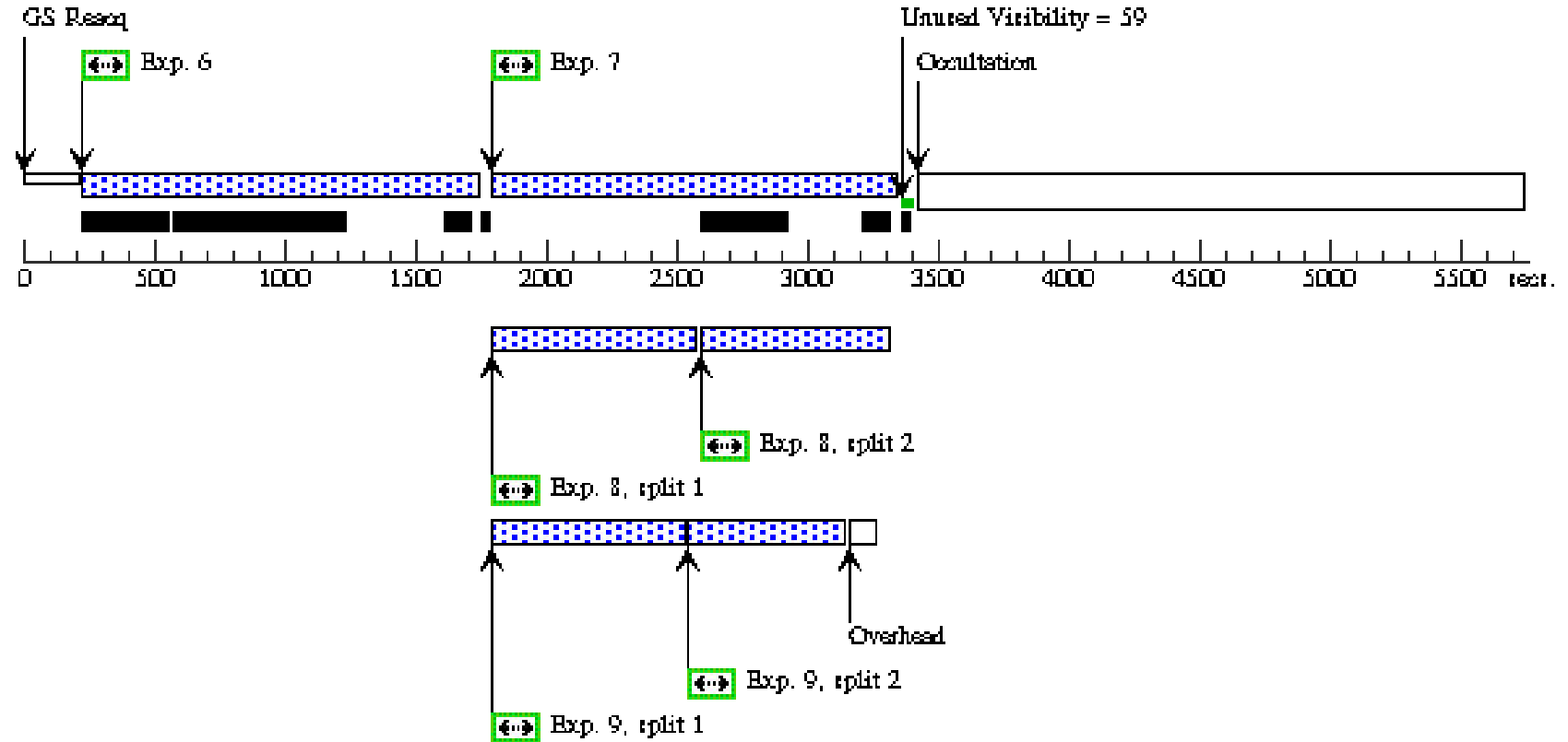
Orbit 1

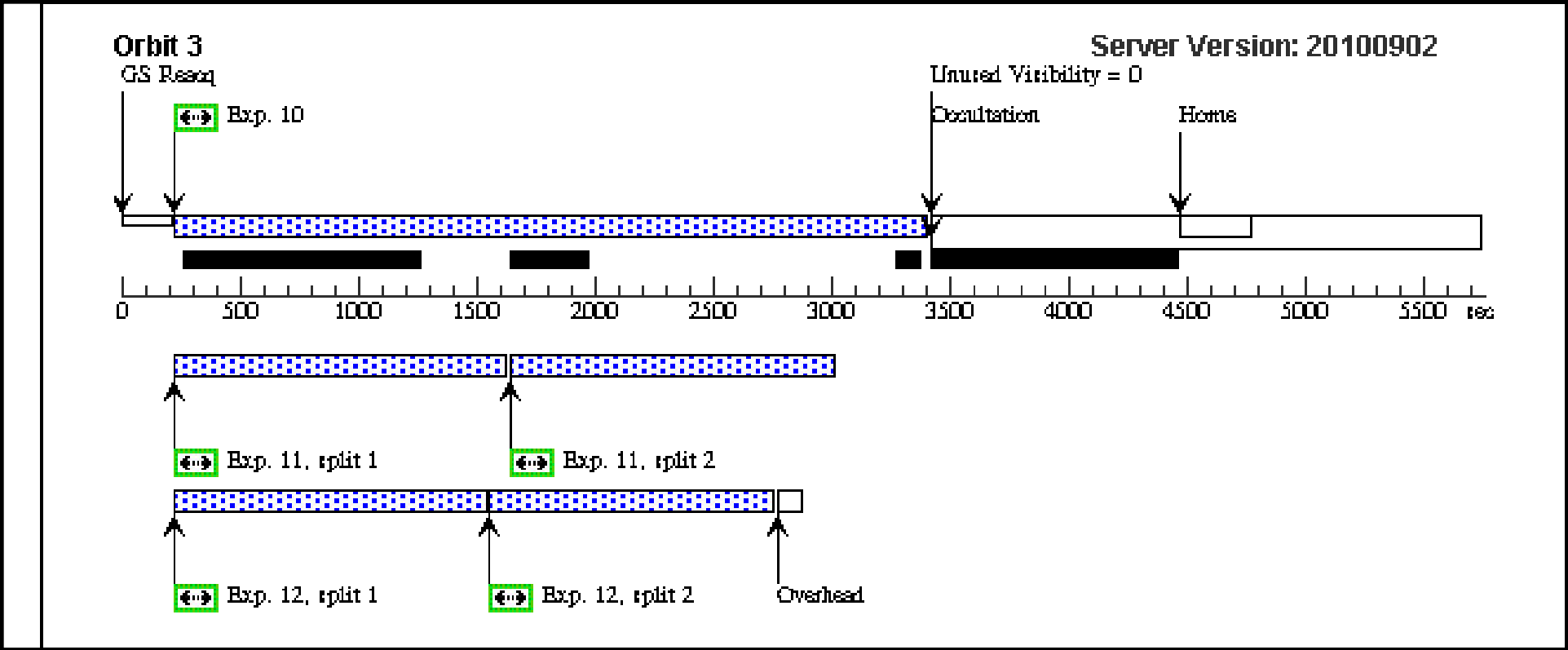
Server Version: 20100902



Orbit 2

Server Version: 20100902





Proposal 12241 - Visit 50SAINTS - The SN 1987A Intensive Study

Visit	Proposal 12241, Visit 50, implementation Tue Dec 14 02:03:57 GMT 2010				
	Diagnostic Status: No Diagnostics Scientific Instruments: ACS/WFC, COS/NUV, COS/FUV, WFC3/UVIS Special Requirements: ORIENT 60D TO 120 D; AFTER 40 BY 30 D TO 120 D; VISIBILITY INTERVAL 55 M <i>Comments: ideal angle is 75 same as visit 30</i>				
Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
	(5)	SN-1987A-COS	Offset from SN-1987A-COS-ACQ by RA Offset: -2.5 Secs Dec Offset: 7.6 Arcsec	Proper Motion RA: null Proper Motion Dec: null Epoch of Position:	V=23.0+/- Offset Position (SN-1987A-COS) Reference Frame: ICRS
Fixed Targets	<i>Comments: This object was generated by the targetselector and retrieved from the NED database.</i>				
	(6)	SN-1987A-COS-ACQ	RA: 05 35 30.5650 (83.8773542d) Dec: -69 16 18.35 (-69.27176d) Equinox: J2000	Proper Motion RA: null Proper Motion Dec: null Epoch of Position:	V=16.071+/- B=15.915, U=15.029 Reference Frame: ICRS
Fixed Targets	<i>Comments: V=16.071, B-V=-0.156,U-B=-0.886,V-R=-0.057,V-I=-0.109 B=15.915 U=15.029 COS.A351911, ACQ= MIRROR B + PSA Brightest pixel 18.753 Count rate entire detector 515.776 ives: Time = 11.8457</i>				

Proposal 12241 - Visit 50SAINTS - The SN 1987A Intensive Study

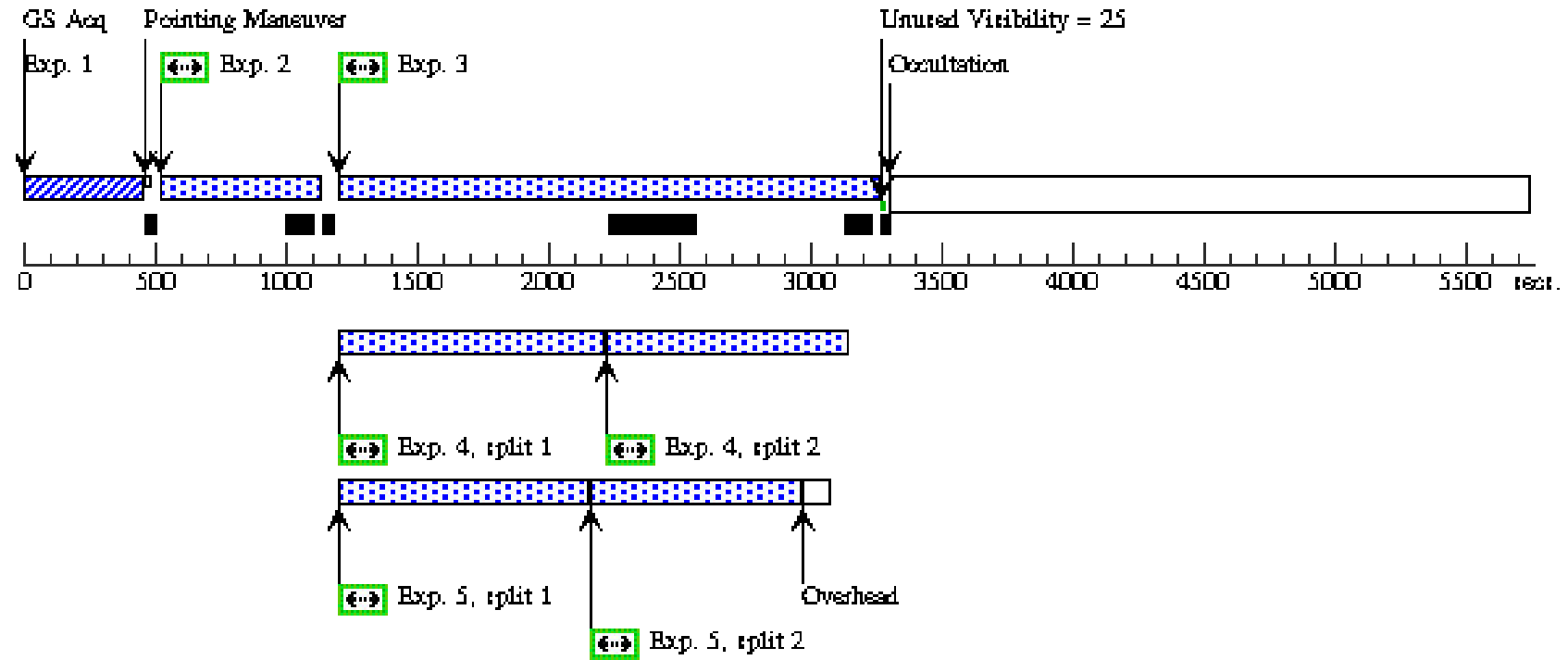
Exposures	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
	1		(6) SN-1987A-COS-ACQ	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				14 Secs [==>]	[1]
	Comments: COS.A351911 Model ID = 98217 + Kurucz (B3V): Temp = 18700, LogZ = 0.0, Logg = 3.9 . Renormalized to Johnson U = 15.03 in magnitudes relative to Vega COS.A351916 Kurucz (B5V): Temp = 15400, I average the two.. 12 seconds with B3V, and 16 seconds with B5V									
	2		(5) SN-1987A-COS	COS/NUV, TIME-TAG, PSA	MIRRORB	BUFFER-TIME=49 0			600 Secs [==>]	[1]
	Comments: star 3: V=15.60 B-V 0.46 U-B -0.89 V = 15.60 B=16.06 U=15.17 B3 star Exposure ID: COS.A331360 If the aperture falls on nearby star 3;COS.A331366 Brightest pixel 16.484 Count rate entire detector 491.586 Exposure time (seconds) = 600.0000 Model ID = 96513 + Kurucz (B3V): Temp = 18700, LogZ = 0.0, Logg = 3.9 . Renormalized to Johnson U = 15.17 in magnitudes relative to Vega The distance between star 3 and the edge of the COS aperture is 0.69", figure 7.1 show the throughput is 0.7									
	3		(5) SN-1987A-COS	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=17 40		Prime + Parallel Group 3-5 in Visit 50	1850 Secs [==>]	[1]
	4		ANY	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=2		Prime + Parallel Group 3-5 in Visit 50	1600 Secs [==>(Split 1)] [==>(Split 2)]	[1]
	5		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=2		Prime + Parallel Group 3-5 in Visit 50	1600 Secs [==>(Split 1)] [==>(Split 2)]	[1]
	6		(5) SN-1987A-COS	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=28 30		Prime + Parallel Group 6-8 in Visit 50	2940 Secs [==>]	[2]
	7		ANY	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=2		Prime + Parallel Group 6-8 in Visit 50	2758 Secs [==>(Split 1)] [==>(Split 2)]	[2]
	8		ANY	WFC3/UVIS, ACCUM, UVIS	F657N	CR-SPLIT=2		Prime + Parallel Group 6-8 in Visit 50	2800 Secs [==>(Split 1)] [==>(Split 2)]	[2]
	9		(5) SN-1987A-COS	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=28 30		Prime + Parallel Group 9-11 in Visit 50	2940 Secs [==>]	[3]
	10		ANY	ACS/WFC, ACCUM, WFC	F606W	CR-SPLIT=2		Prime + Parallel Group 9-11 in Visit 50	1200 Secs [==>(Split 1)] [==>(Split 2)]	[3]
	11		ANY	WFC3/UVIS, ACCUM, UVIS	F606W	CR-SPLIT=2		Prime + Parallel Group 9-11 in Visit 50	1200 Secs [==>(Split 1)] [==>(Split 2)]	[3]

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	12	(5) SN-1987A-COS	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=28 30	Prime + Parallel Group 12-14 in Visit 50	2940 Secs	
							[==>]	[4]
	13	ANY	ACS/WFC, ACCUM, WFC	F475W	CR-SPLIT=2	Prime + Parallel Group 12-14 in Visit 50	2500 Secs	
							[==>(Split 1)] [==>(Split 2)]	[4]
	14	ANY	WFC3/UVIS, ACCUM, UVIS	F475W	CR-SPLIT=2	Prime + Parallel Group 12-14 in Visit 50	2400 Secs	
							[==>(Split 1)] [==>(Split 2)]	[4]

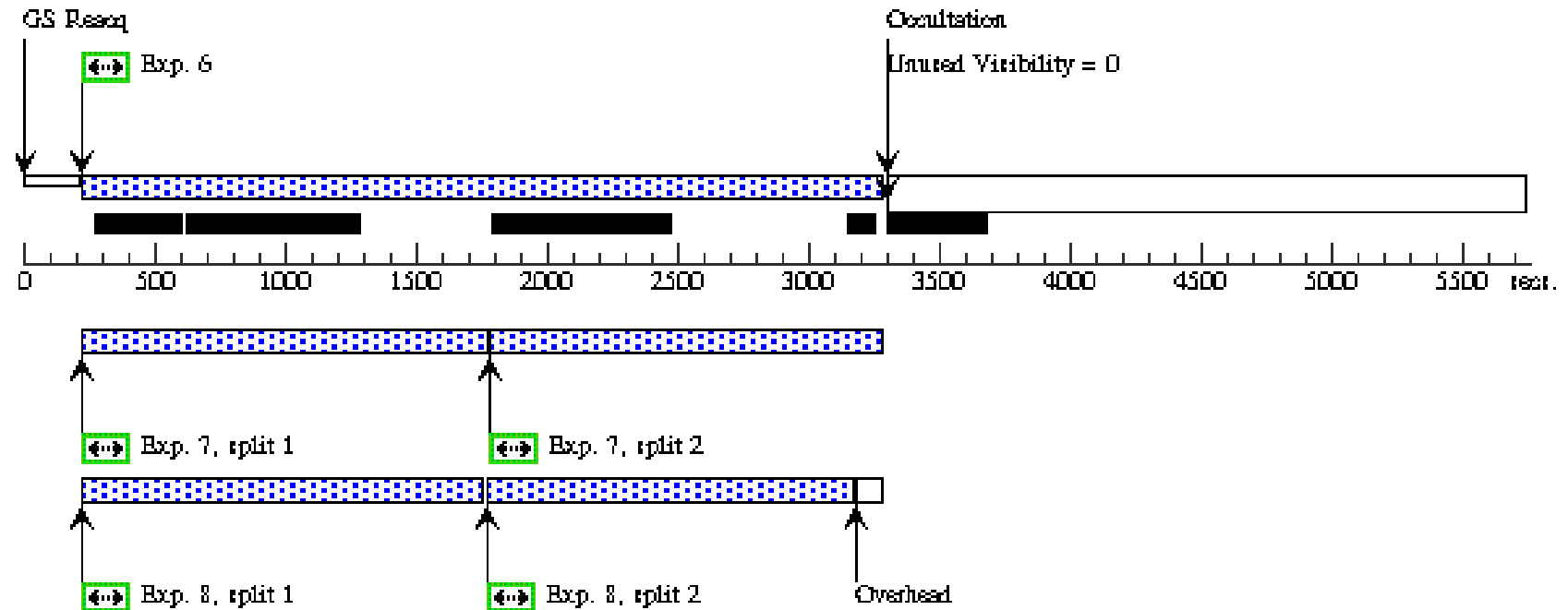
Orbit 1

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Orbit 2

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Orbit 3

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