11653 - SAINTS - Supernova 1987A INTensive Survey

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?*
02	(1) SN-1987A	WFC3/IR	1	08-Dec-2009 21:01:21.0	yes
10	(2) SN-1987A-STIS-ACQ (3) SN-1987A-HOTSPOTS-52X2 CCDFLAT	STIS/CCD	2	08-Dec-2009 21:01:40.0	yes
20	(2) SN-1987A-STIS-ACQ (3) SN-1987A-HOTSPOTS-52X2	STIS/CCD	2	08-Dec-2009 21:01:52.0	yes
30	(2) SN-1987A-STIS-ACQ (3) SN-1987A-HOTSPOTS-52X2	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	3	08-Dec-2009 21:02:13.0	yes
40	(1) SN-1987A (2) SN-1987A-STIS-ACQ (3) SN-1987A-HOTSPOTS-52X2 ANY	ACS/WFC STIS/CCD STIS/FUV-MAMA WFC3/UVIS	3	08-Dec-2009 21:02:32.0	yes
50	(1) SN-1987A (2) SN-1987A-STIS-ACQ (3) SN-1987A-HOTSPOTS-52X2 ANY CCDFLAT	ACS/WFC STIS/CCD WFC3/UVIS	3	08-Dec-2009 21:02:45.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
60	(1) SN-1987A (2) SN-1987A-STIS-ACQ (3) SN-1987A-HOTSPOTS-52X2 ANY CCDFLAT	ACS/WFC STIS/CCD WFC3/UVIS	2	08-Dec-2009 21:02:59.0	yes
70	(1) SN-1987A ANY	ACS/WFC WFC3/UVIS	3	08-Dec-2009 21:03:09.0	yes
80	(1) SN-1987A	WFC3/UVIS	2	08-Dec-2009 21:03:23.0	yes
A2	(1) SN-1987A	WFC3/IR	1	08-Dec-2009 21:03:28.0	yes
A3	(2) SN-1987A-STIS-ACQ (3) SN-1987A-HOTSPOTS-52X2	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	3	08-Dec-2009 21:03:40.0	yes

25 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 21. HST is the essential tool for resolving SN1987A'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 Australia Telescope, HST, VLT, Spitzer, and Chandra observations to understand the several emission mechanisms at work. Photons from the shocked ring will excite previously invisible

gas outside the ring, revealing the true extent of the mass loss that preceded the explosion of Sanduleak -69 202. This will help test ideas for the progenitor of SN 1987A. 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. Questions about SN 1987A remain unanswered. 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.

OBSERVING DESCRIPTION

Our proposed Cycle 17 imaging program of SN 1987A will provide continuing information on the luminosity and expansion of the debris, eruption and evolution of hotspots, and photoionization of the as-yet unseen surrounding gas, all at the highest available spatial resolution.

Drizzled observations using ACS/HRC or WFC3/UVIS with filters (F250W, F330W, F435W, F555W, F625W, F814W, F502N and F656N) will connect with our earlier observations at similar signal-to-noise ratio (S/N).
To make a sensitive search for the effects of photoionization from the increasing X-ray and EUV flux from the shocks we plan to obtain a deep [OIII] image (F502N). This may reveal as-yet unseen gas structures outside the ring, predicted by shock models.
To continue the study of the changing debris shape and flux we will make a deep exposure in the F625W filter.

Six orbits are requested for this broad imaging survey. HRC has the highest spatial resolution, but WFC3 would also do a good job.

Our proposed IR imaging will use WFC3 IR channel with filters F110W, F160W, and F164N requiring 1 orbit to yield a $S/ N \approx 25-100$ in the hotspots.
The IR images may provide the best limits on emission from a compact remnant in the debris.
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. Used together, HST and ground-based AO spectroscopy can provide the true 3-D structure of the debris.
The IR images, specifically the F164N [FeII] traces high-density low-ionization gas with a spatial distribution that may be different from Ha.
Our proposed STIS spectroscopy will follow the rapid development of the interaction
shock and of the hotspots to diagnose the shock that is crushing these stalactites of gas. All STIS visits will employ a time-tested acquisition
strategy, include dithers to remove cosmic rays and hot pixels, and use a short STIS/CCD image to record the telescope pointing.

We expect most hotspots will continue to brighten and that Cycle 17 observations
will show significant differences from our earlier hotspot spectra. The proposed
observations will observe the complete SN 1987A ring and all newly discovered
hotspots with STIS using the 52X2 slit with the G140L, G230L, G430L, G750L, and G750M gratings.
The observations will be planned to match orientations of
previous observations (GTO 7123, GO/DD 8806, GO 9428, GO10263) for difference imaging.
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. Figure 6 shows observations obtained using this nifty technique. Important diagnostic lines that are blended in the G750L spectral range will be resolved by the G750M spectra. The exposures requested are: 1 orbit for each of G430L and G750L, and 2 for G750M; STIS/UV gratings G140L and G230L will need 1.5 orbits each, for a total of 7. These high spatial resolution spectra
isolate each spot to complement observations with high spectral but low spatial resolution from ground.
The revisit observation of the reverse shock region will employ 1 slit position approximately as shown in Figure 6.
The observations will use the 52X0.2 aperture in the same orientation as GO10263. The Hα measurements need 4 orbits with G750L, and

will also provide a spectrum of the extended debris.
The Lyα measurement with G140L will need 3 orbits.
As well as mapping the gas flowing through the reverse shock, the
comparison of Hα and Lyα in these positions will give us
the differential extinction of these two lines for the parts of the
reverse shock with the greatest redshifts and blueshifts.

We would like to use coordinated parallels where feasible during
the long STIS exposures. SAINTS member Nino Panagia and his
students have been industrious in using the parallel images
obtained during our spectroscopic visits to provide a
deep multi-band survey of this interesting segment of the LMC. We
would like to continue this practice, which provides information on
the stellar population and star-formation history of this region.
Also, the same parallel field can be observed when obtaining
the spectra for the reverse shock, which allows the discovery of
variable objects and possible high proper motion objects.
In some cases, parallel imaging can be used by us to pursue the
continuing saga of the light echo from the
interstellar dust along the line-of-sight to SN~1987A. Our plan is to
request parallel observations with all orbits where this is practical.

Visit

Proposal 11653, Visit 02, scheduling Wed Dec 09 02:03:46 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: (none)

Comments: please use SAA free orbits.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(7)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1-4)

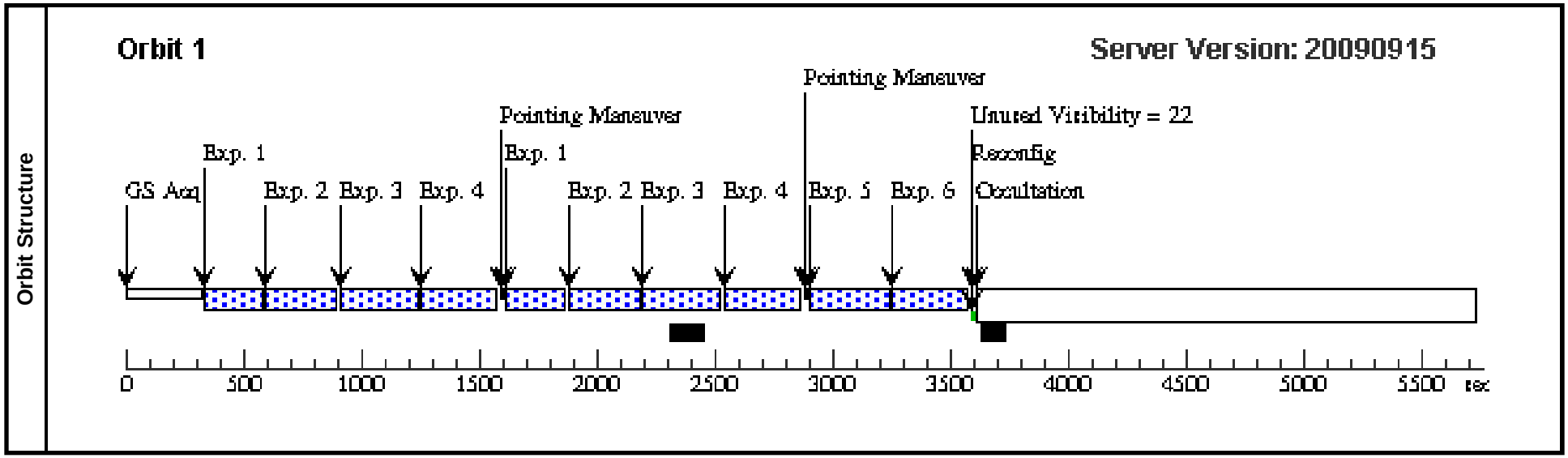
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN-1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000		V=23	Reference Frame: ICRS

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB256	F110W	NSAMP=11; SAMP-SEQ=SPARS25		Pattern 7, Exps 1-4 (7)	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB256	F160W	NSAMP=14; SAMP-SEQ=SPARS25		Pattern 7, Exps 1-4 (7)	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
3		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB256	F126N	NSAMP=15; SAMP-SEQ=SPARS25		Pattern 7, Exps 1-4 (7)	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
4		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB256	F164N	NSAMP=15; SAMP-SEQ=SPARS25		Pattern 7, Exps 1-4 (7)	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
5		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB256	F126N	NSAMP=15; SAMP-SEQ=SPARS25	POS TARG 0.5,-0.5		*[==>]*	***[1]***
6		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB256	F164N	NSAMP=15; SAMP-SEQ=SPARS25	POS TARG 0.5,-0.5		*[==>]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20090915
Pointing Maneuver
Pointing Maneuver
Unused Visibility = 22
Exp. 1
Exp. 1
Reconfig
GS Acq
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Exp. 3
Exp. 4
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 11653, Visit 10, completed Wed Dec 09 02:03:47 GMT 2009

Diagnostic Status: Warning

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) 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

Diagnostics

(Visit 10) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SN-1987A-STIS-ACQ	RA: 05 35 30.5800 (83.8774167d) Dec: -69 16 18.32 (-69.27176d) Equinox: J2000		V=16.07 B=15.92, U=15.03	Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					
(3)	SN-1987A-HOTSPOTS-52X2	Offset from SN-1987A-STIS-ACQ by RA Offset: -2.47 Secs Dec Offset: 7.47 Arcsec		V=23.0	Offset Position (SN-1987A-HOTSPOTS-52X2) Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					

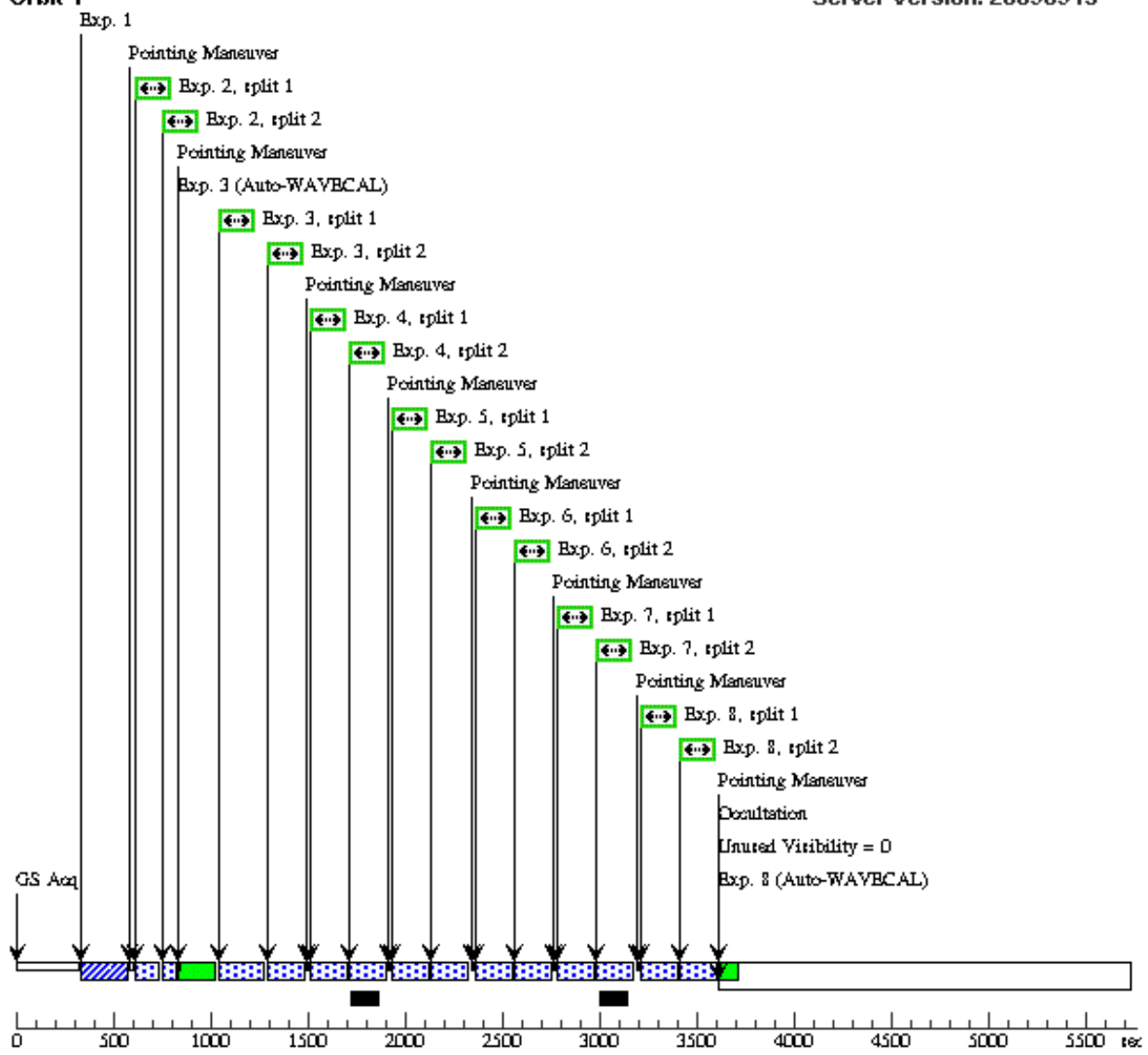
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) SN-1987A-STIS-ACQ	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3		3 Secs *[==>]*	***[1]***
2		(3) SN-1987A-HOTSPOTS-52X2	STIS/CCD, ACCUM, F28X50LP	MIRROR	CR-SPLIT=2	POS TARG -0.8976, -0.5071		60 Secs *[==>35.0 Secs (Split 1)]* *[==>35.0 Secs (Split 2)]*	***[1]***
3		(3) SN-1987A-HOTSPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750L 7751 A	CR-SPLIT=2	POS TARG -0.8976, -0.5071		300 Secs *[==>155.0 Secs (Split 1)]* *[==>155.0 Secs (Split 2)]*	***[1]***
4		(3) SN-1987A-HOTSPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750L 7751 A	CR-SPLIT=2	POS TARG -0.8976, 0.000		300 Secs *[==>155.0 Secs (Split 1)]* *[==>155.0 Secs (Split 2)]*	***[1]***
5		(3) SN-1987A-HOTSPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750L 7751 A	CR-SPLIT=2	POS TARG -0.8976, 0.5071		300 Secs *[==>155.0 Secs (Split 1)]* *[==>155.0 Secs (Split 2)]*	***[1]***

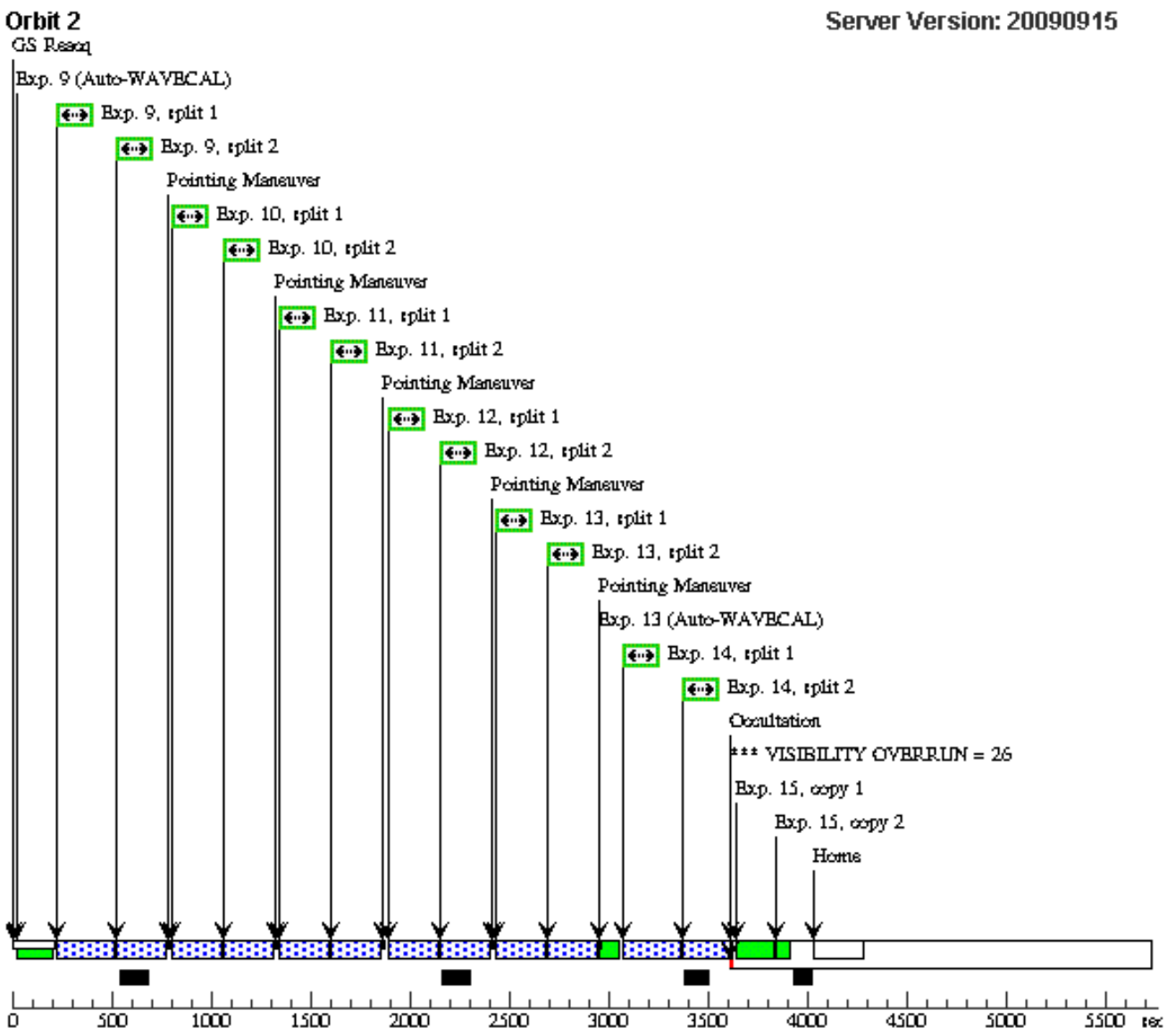
Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
6		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750L 7751 A	CR-SPLIT=2	POS TARG 0.8976,0 .5071		300 Secs *[==>155.0 Secs (Split 1)]* *[==>155.0 Secs (Split 2)]*	***[1]***
7		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750L 7751 A	CR-SPLIT=2	POS TARG 0.8976,0 .0		300 Secs *[==>155.0 Secs (Split 1)]* *[==>155.0 Secs (Split 2)]*	***[1]***
8		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750L 7751 A	CR-SPLIT=2	POS TARG 0.8976,-0.5071		300 Secs *[==>155.0 Secs (Split 1)]* *[==>155.0 Secs (Split 2)]*	***[1]***
9		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G430L 4300 A	CR-SPLIT=2	POS TARG 0.8976,0 .5071		400 Secs *[==>213.0 Secs (Split 1)]* *[==>213.0 Secs (Split 2)]*	***[2]***
10		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G430L 4300 A	CR-SPLIT=2	POS TARG 0.8976,0		400 Secs *[==>213.0 Secs (Split 1)]* *[==>213.0 Secs (Split 2)]*	***[2]***
11		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G430L 4300 A	CR-SPLIT=2	POS TARG 0.8976,-0.5071		400 Secs *[==>213.0 Secs (Split 1)]* *[==>213.0 Secs (Split 2)]*	***[2]***
12		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G430L 4300 A	CR-SPLIT=2	POS TARG -0.8976, -0.5071		400 Secs *[==>213.0 Secs (Split 1)]* *[==>213.0 Secs (Split 2)]*	***[2]***
13		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G430L 4300 A	CR-SPLIT=2	POS TARG -0.8976, 0		400 Secs *[==>213.0 Secs (Split 1)]* *[==>213.0 Secs (Split 2)]*	***[2]***
14		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G430L 4300 A	CR-SPLIT=2	POS TARG -0.8976, 0.5071		400 Secs *[==>213.0 Secs (Split 1)]* *[==>213.0 Secs (Split 2)]*	***[2]***
15		CCDFLAT	STIS/CCD, ACCUM, 52X2	G750L 7751 A				*[==>(Copy 1)]* *[==>(Copy 2)]*	***[2]***

Orbit Structure



Orbit Structure (continued)



Visit

Proposal 11653, Visit 20, completed Wed Dec 09 02:03:49 GMT 2009

Diagnostic Status: Warning

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) 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

Diagnostics

(Visit 20) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SN-1987A-STIS-ACQ	RA: 05 35 30.5800 (83.8774167d) Dec: -69 16 18.32 (-69.27176d) Equinox: J2000		V=16.07 B=15.92, U=15.03	Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					
(3)	SN-1987A-HOTSPOTS-52X2	Offset from SN-1987A-STIS-ACQ by RA Offset: -2.47 Secs Dec Offset: 7.47 Arcsec		V=23.0	Offset Position (SN-1987A-HOTSPOTS-52X2) Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					

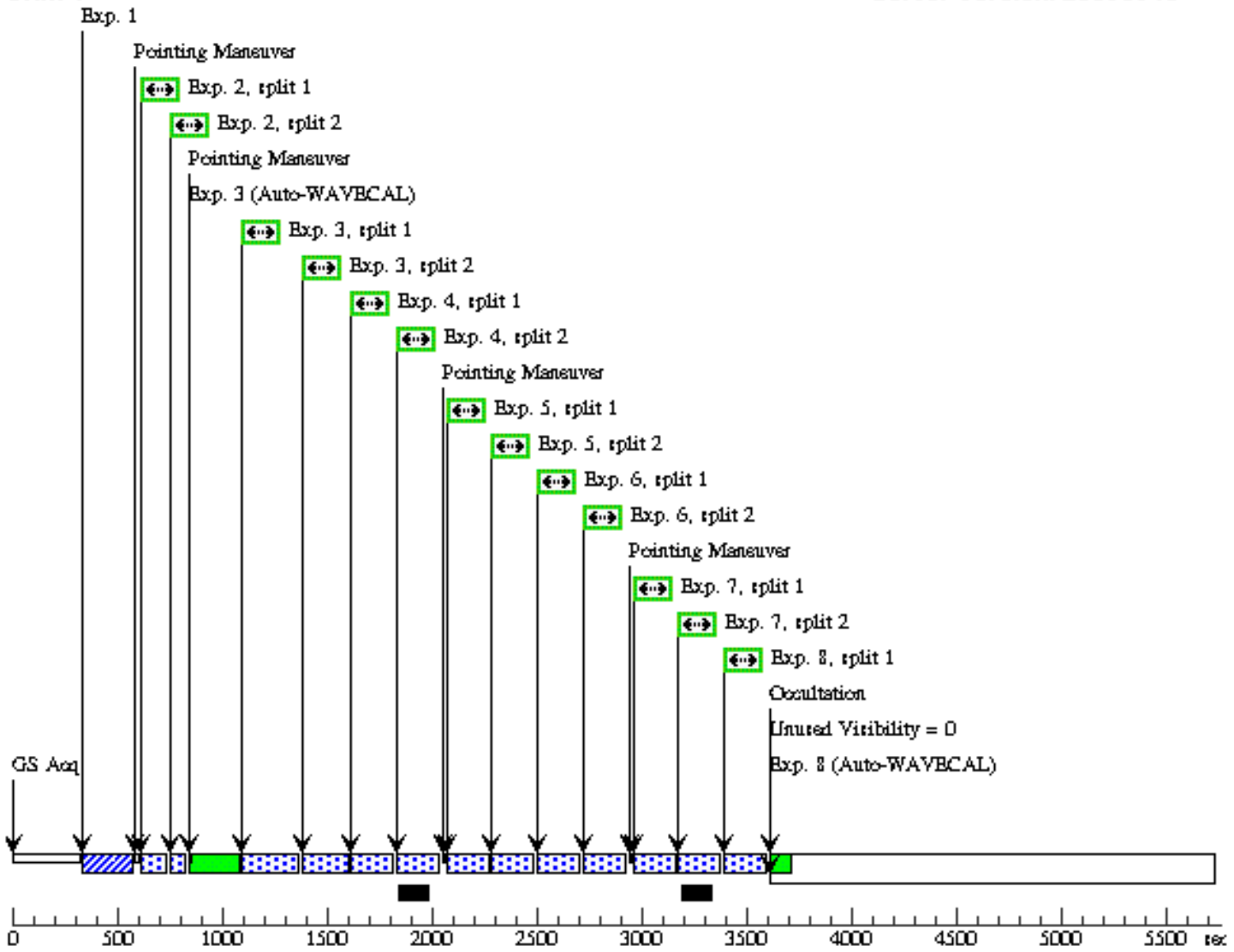
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) SN-1987A-STIS-ACQ	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3		3 Secs *[==>]*	*[1]*
2		(3) SN-1987A-HOTSPOTS-52X2	STIS/CCD, ACCUM, F28X50LP	MIRROR	CR-SPLIT=2	POS TARG -0.8974, -0.5071		60 Secs *[==>39.0 Secs (Split 1)]* *[==>39.0 Secs (Split 2)]*	*[1]*
3		(3) SN-1987A-HOTSPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750M 6581 A	CR-SPLIT=2	POS TARG -0.8976, -0.5071		360 Secs *[==>189.0 Secs (Split 1)]* *[==>189.0 Secs (Split 2)]*	*[1]*
4		(3) SN-1987A-HOTSPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750M 6581 A	CR-SPLIT=2	POS TARG -0.8976, -0.5071		325 Secs *[==>171.5 Secs (Split 1)]* *[==>171.5 Secs (Split 2)]*	*[1]*
5		(3) SN-1987A-HOTSPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750M 6581 A	CR-SPLIT=2	POS TARG -0.8976, 0		325 Secs *[==>171.5 Secs (Split 1)]* *[==>171.5 Secs (Split 2)]*	*[1]*

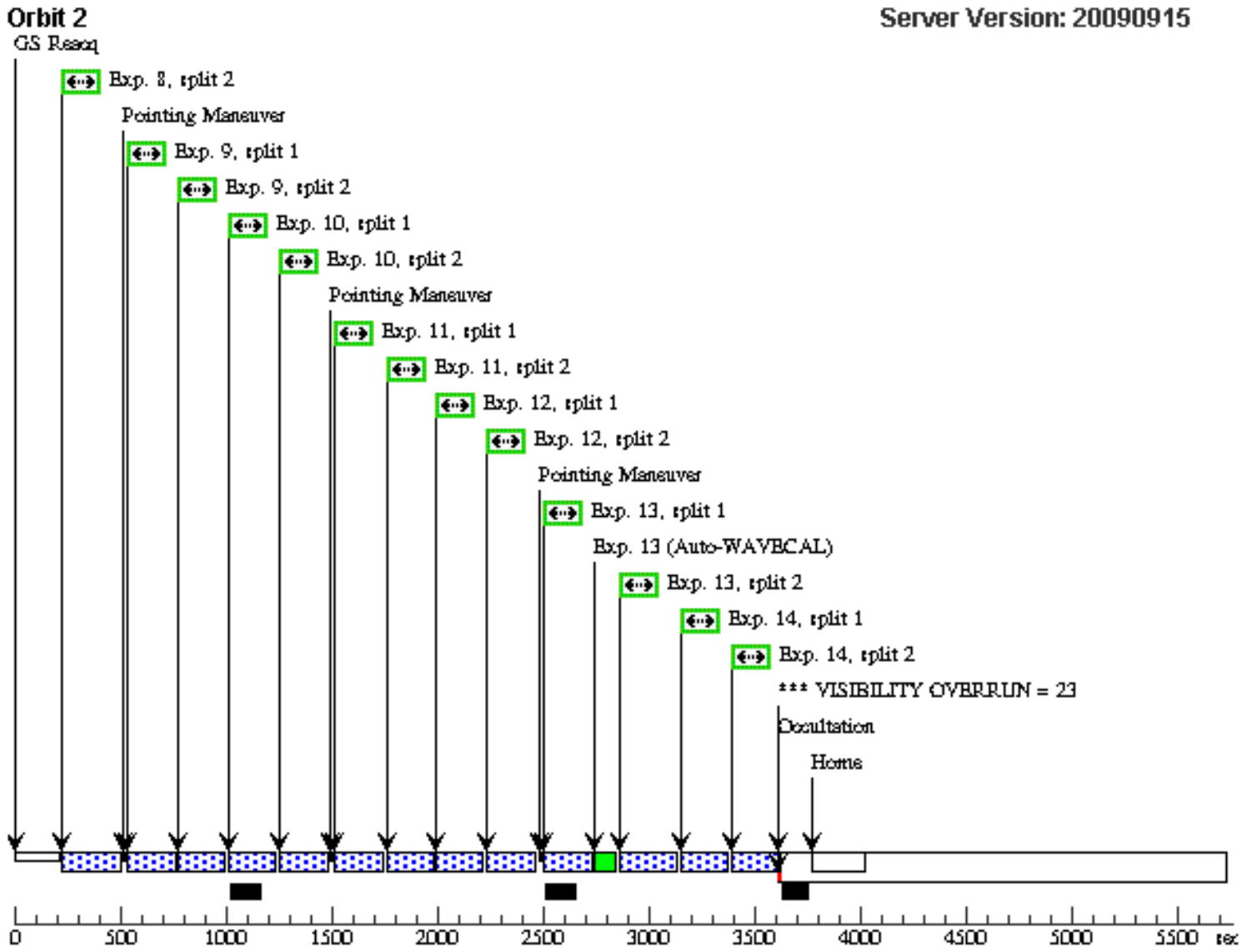
Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
6		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750M 6581 A	CR-SPLIT=2	POS TARG -0.8976, 0		325 Secs	
								[==>171.5 Secs (Split 1)]	***[1]***
								[==>171.5 Secs (Split 2)]	
7		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750M 6581 A	CR-SPLIT=2	POS TARG -0.8976, 0.5071		325 Secs	
								[==>171.5 Secs (Split 1)]	***[1]***
								[==>171.5 Secs (Split 2)]	
8		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750M 6581 A	CR-SPLIT=2	POS TARG -0.8976, 0.5071		325 Secs	
								[==>171.5 Secs (Split 1)]	***[1]***
								[==>194.5 Secs (Split 2)]	***[2]***
9		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750M 6581 A	CR-SPLIT=2	POS TARG 0.8976,0 .5071		325 Secs	
								[==>194.5 Secs (Split 1)]	***[2]***
								[==>194.5 Secs (Split 2)]	
10		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750M 6581 A	CR-SPLIT=2	POS TARG 0.8976,0 .5071		325 Secs	
								[==>194.5 Secs (Split 1)]	***[2]***
								[==>194.5 Secs (Split 2)]	
11		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750M 6581 A	CR-SPLIT=2	POS TARG 0.8976,0		325 Secs	
								[==>194.5 Secs (Split 1)]	***[2]***
								[==>194.5 Secs (Split 2)]	
12		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750M 6581 A	CR-SPLIT=2	POS TARG 0.8976,0 .000		325 Secs	
								[==>194.5 Secs (Split 1)]	***[2]***
								[==>194.5 Secs (Split 2)]	
13		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750M 6581 A	CR-SPLIT=2	POS TARG 0.8976,-0.5071		325 Secs	
								[==>194.5 Secs (Split 1)]	***[2]***
								[==>194.5 Secs (Split 2)]	
14		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, 52X2	G750M 6581 A	CR-SPLIT=2	POS TARG 0.8976,-0.5071		325 Secs	
								[==>194.5 Secs (Split 1)]	***[2]***
								[==>194.5 Secs (Split 2)]	

Orbit Structure



Orbit Structure (continued)



Visit

Proposal 11653, Visit 30, failed Wed Dec 09 02:03:50 GMT 2009

Diagnostic Status: Warning

Scientific Instruments: STIS/FUV-MAMA, STIS/CCD, STIS/NUV-MAMA

Special Requirements: ORIENT 131.5D TO 131.5 D; ORIENT 311.5D TO 311.5 D; SEQ 10,20,30 WITHIN 10 D

Comments: please use SAA free orbits.Past STIS spectra (GO 7123, 7587, 8243, 8806) 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

Diagnostics

(Visit 30) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 30) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

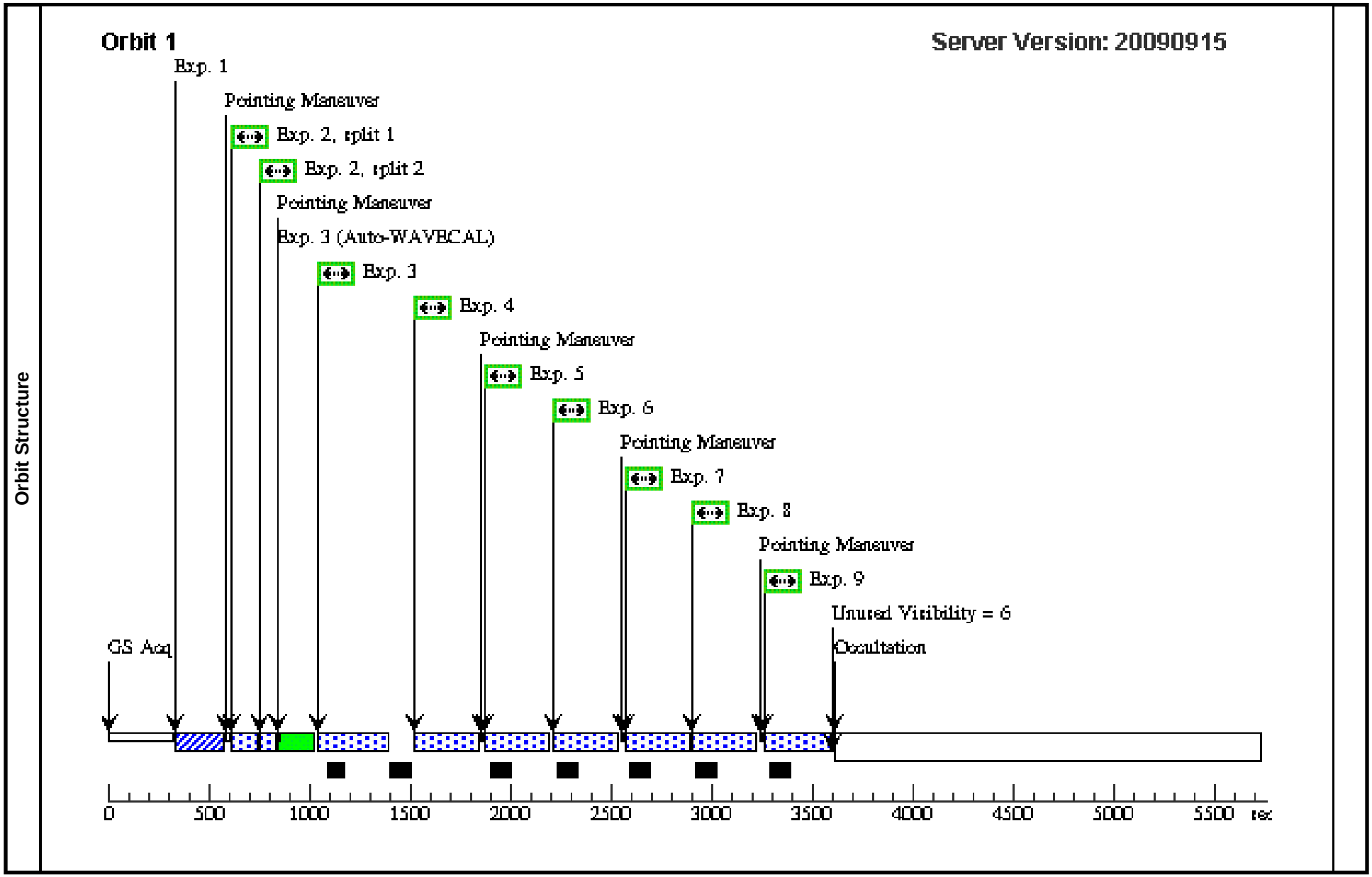
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SN-1987A-STIS-ACQ	RA: 05 35 30.5800 (83.8774167d) Dec: -69 16 18.32 (-69.27176d) Equinox: J2000		V=16.07 B=15.92, U=15.03	Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					
(3)	SN-1987A-HOTSPOTS-52X2	Offset from SN-1987A-STIS-ACQ by RA Offset: -2.47 Secs Dec Offset: 7.47 Arcsec		V=23.0	Offset Position (SN-1987A-HOTSPOTS-52X2) Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					

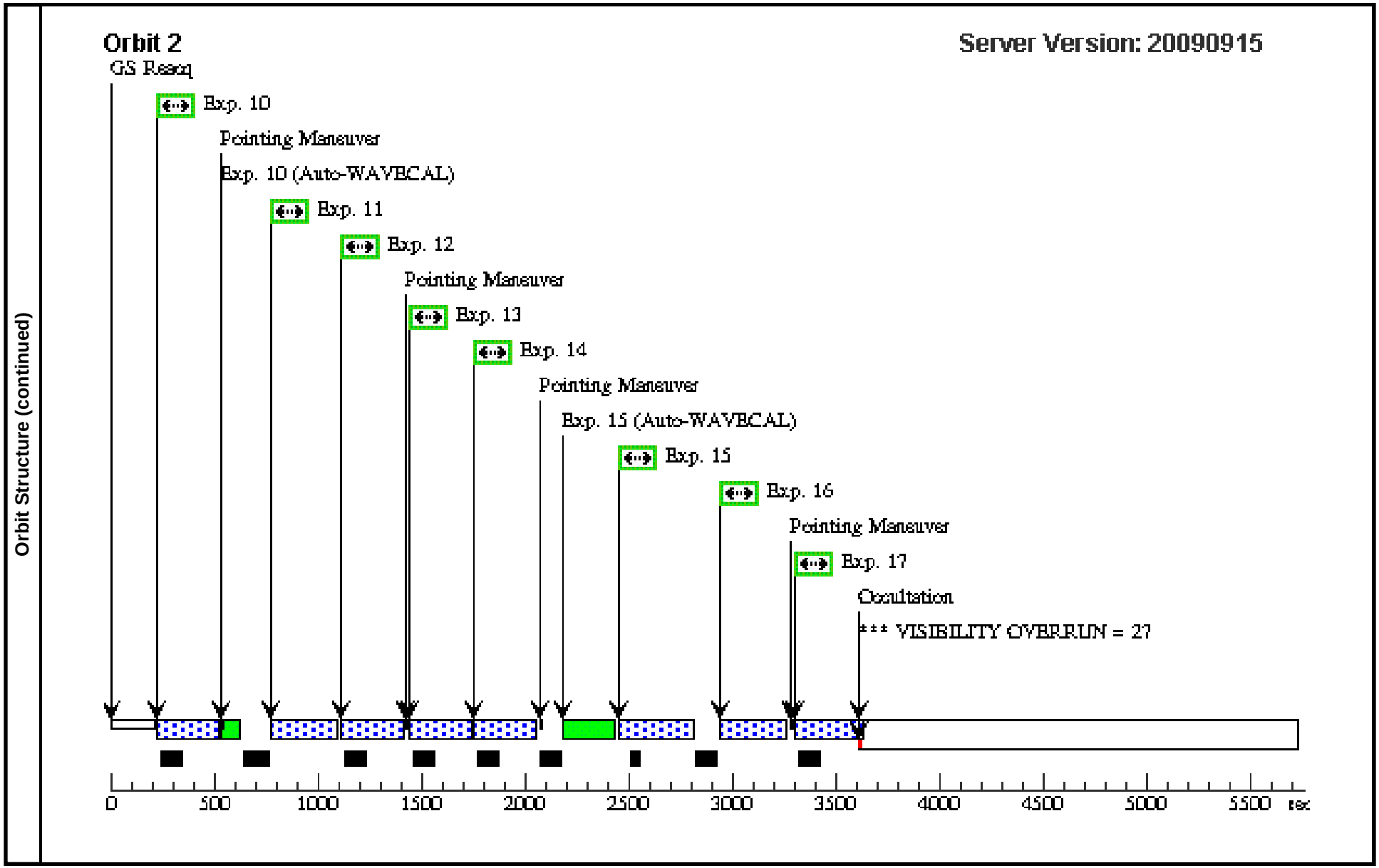
Exposures

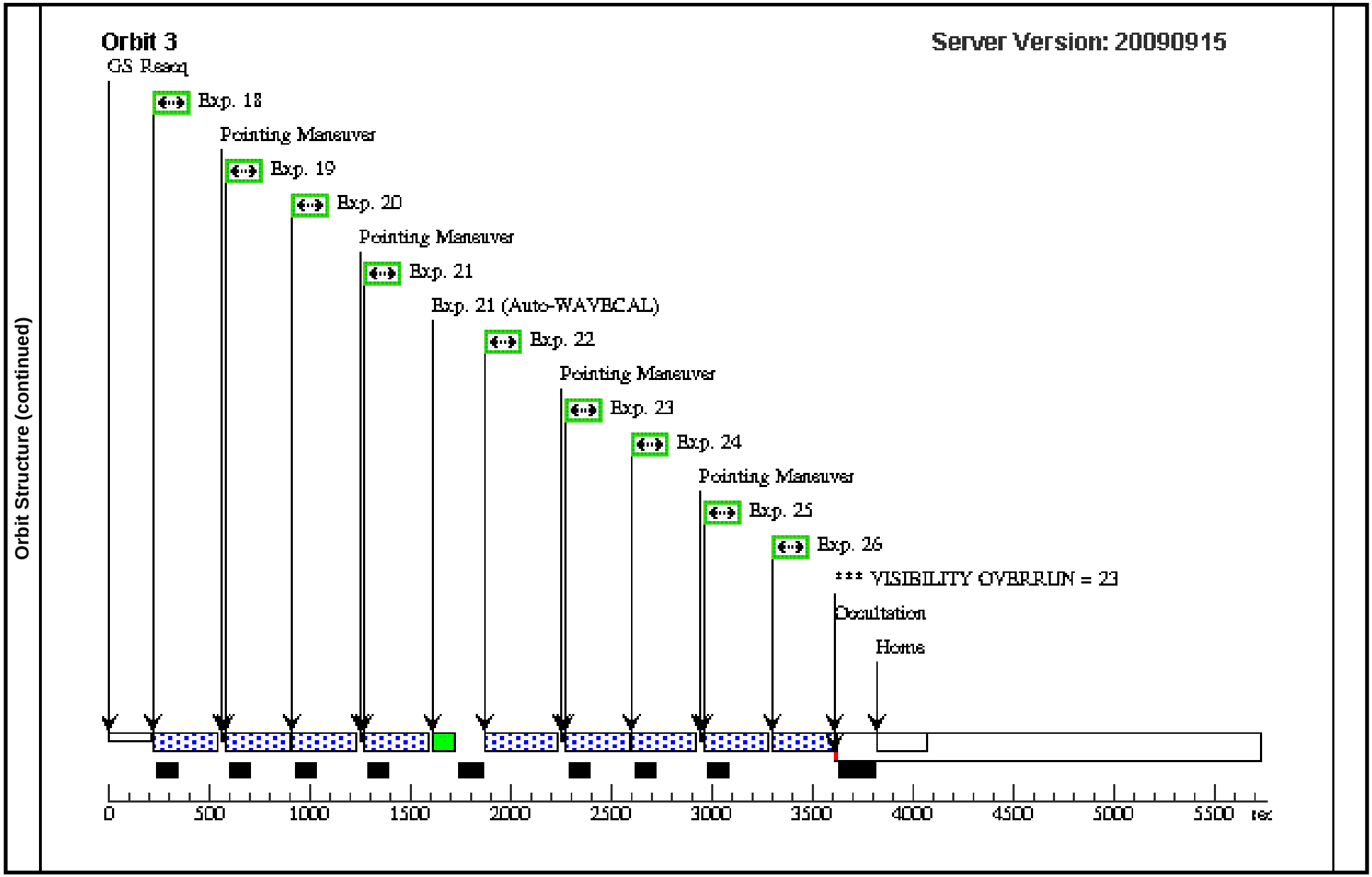
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) SN-1987A-STIS-ACQ	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3		3 Secs *[==>]*	 ***[1]***
2		(3) SN-1987A-HOTSPOTS-52X2	STIS/CCD, ACCUM, F28X50LP	MIRROR	CR-SPLIT=2	POS TARG -0.8976, -0.5071		60 Secs *[==>42.0 Secs (Split 1)]* *[==>42.0 Secs (Split 2)]*	 ***[1]***
3		(3) SN-1987A-HOTSPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG -0.8976, -0.5071		300 Secs *[==>312.0 Secs]*	 ***[1]***
4		(3) SN-1987A-HOTSPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG -0.8976, -0.5071		300 Secs *[==>312.0 Secs]*	 ***[1]***
5		(3) SN-1987A-HOTSPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG -0.8976, 0.000		300 Secs *[==>312.0 Secs]*	 ***[1]***
6		(3) SN-1987A-HOTSPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG -0.8976, 0.000		300 Secs *[==>312.0 Secs]*	 ***[1]***
7		(3) SN-1987A-HOTSPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG -0.8976, 0.5071		300 Secs *[==>312.0 Secs]*	 ***[1]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
8		(3) SN-1987A-HOT SPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG -0.8976, 0.5071		300 Secs *[==>312.0 Secs]*	 ***[1]***
9		(3) SN-1987A-HOT SPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG 0.8976,0 .5071		300 Secs *[==>312.0 Secs]*	 ***[1]***
10		(3) SN-1987A-HOT SPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG 0.8976,0 .5071		275 Secs *[==>287.0 Secs]*	 ***[2]***
11		(3) SN-1987A-HOT SPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG 0.8976,0 .000		275 Secs *[==>287.0 Secs]*	 ***[2]***
12		(3) SN-1987A-HOT SPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG 0.8976,0 .000		275 Secs *[==>287.0 Secs]*	 ***[2]***
13		(3) SN-1987A-HOT SPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG 0.8976,-0.5071		275 Secs *[==>287.0 Secs]*	 ***[2]***
14		(3) SN-1987A-HOT SPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG 0.8976,-0.5071		275 Secs *[==>287.0 Secs]*	 ***[2]***
15		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG -0.8976, -0.5071		300 Secs *[==>312.0 Secs]*	 ***[2]***
16		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG -0.8976, -0.5071		300 Secs *[==>312.0 Secs]*	 ***[2]***
17		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG -0.8976, 0.000		300 Secs *[==>312.0 Secs]*	 ***[2]***
18		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG -0.8976, 0.000		300 Secs *[==>311.0 Secs]*	 ***[3]***
19		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG -0.8976, 0.5071		300 Secs *[==>311.0 Secs]*	 ***[3]***
20		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG -0.8976, 0.5071		300 Secs *[==>311.0 Secs]*	 ***[3]***
21		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0.8976,0 .5071		300 Secs *[==>311.0 Secs]*	 ***[3]***
22		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0.8976,0 .5071		300 Secs *[==>311.0 Secs]*	 ***[3]***
23		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0.8976,0 .000		300 Secs *[==>311.0 Secs]*	 ***[3]***
24		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0.8976,0 .000		300 Secs *[==>311.0 Secs]*	 ***[3]***
25		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0.8976,-0.5071		300 Secs *[==>311.0 Secs]*	 ***[3]***
26		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0.8976,-0.5071		300 Secs *[==>311.0 Secs]*	 ***[3]***


Orbit 1
Server Version: 20090915
Orbit Structure
Exp. 1
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Pointing Maneuver
Exp. 3 (Auto-WAVECAL)
Exp. 3
Exp. 4
Pointing Maneuver
Exp. 5
Exp. 6
Pointing Maneuver
Exp. 7
Exp. 8
Pointing Maneuver
Exp. 9
Unused Visibility = 6
Occultation
GS Acq
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec


Orbit Structure (continued)
Orbit 2
Server Version: 20090915
GS Reacq
Exp. 10
Pointing Maneuver
Exp. 10 (Auto-WAVECAL)
Exp. 11
Exp. 12
Pointing Maneuver
Exp. 13
Exp. 14
Pointing Maneuver
Exp. 15 (Auto-WAVECAL)
Exp. 15
Exp. 16
Pointing Maneuver
Exp. 17
Occultation
*** VISIBILITY OVERRUN = 27
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec


Orbit Structure (continued)
Orbit 3
Server Version: 20090915
GS Reacq
Exp. 18
Pointing Maneuver
Exp. 19
Exp. 20
Pointing Maneuver
Exp. 21
Exp. 21 (Auto-WAVECAL)
Exp. 22
Pointing Maneuver
Exp. 23
Exp. 24
Pointing Maneuver
Exp. 25
Exp. 26
*** VISIBILITY OVERRUN = 23
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 11653, Visit 40, scheduling Wed Dec 09 02:03:52 GMT 2009

Diagnostic Status: Warning

Scientific Instruments: ACS/WFC, STIS/FUV-MAMA, STIS/CCD, WFC3/UVIS

Special Requirements: ORIENT 225D TO 225 D; ORIENT 45D TO 45 D; SEQ 40,50,60 WITHIN 10 D

Comments: please use SAA free orbits.Past STIS spectra (GO 7123, 7587, 8243, 8806) 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

Diagnostics

(Visit 40) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 40) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

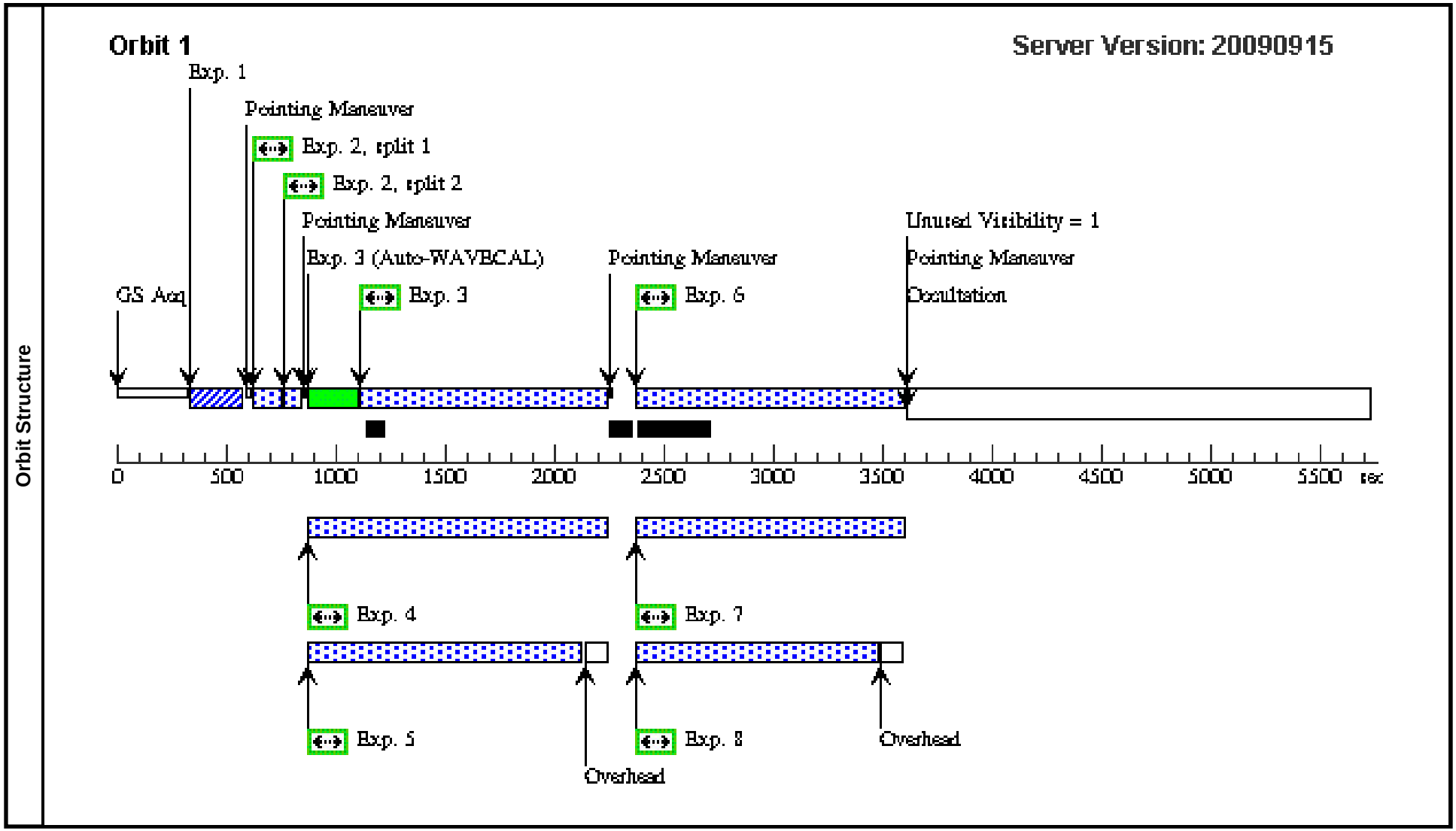
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN-1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000		V=23	Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					
(2)	SN-1987A-STIS-ACQ	RA: 05 35 30.5800 (83.8774167d) Dec: -69 16 18.32 (-69.27176d) Equinox: J2000		V=16.07 B=15.92, U=15.03	Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					
(3)	SN-1987A-HOTSPOTS-52X2	Offset from SN-1987A-STIS-ACQ by RA Offset: -2.47 Secs Dec Offset: 7.47 Arcsec		V=23.0	Offset Position (SN-1987A-HOTSPOTS-52X2) Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					

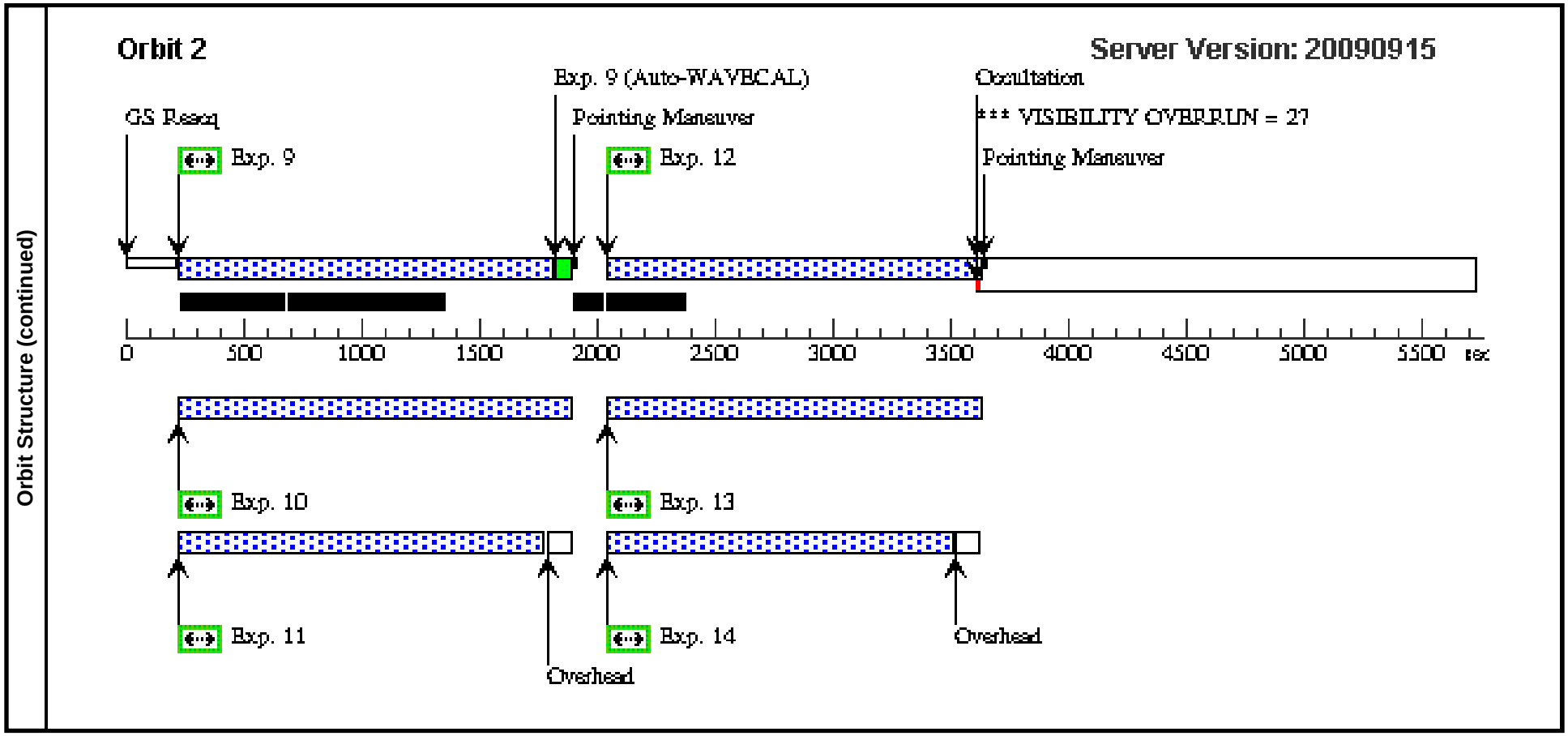
Exposures

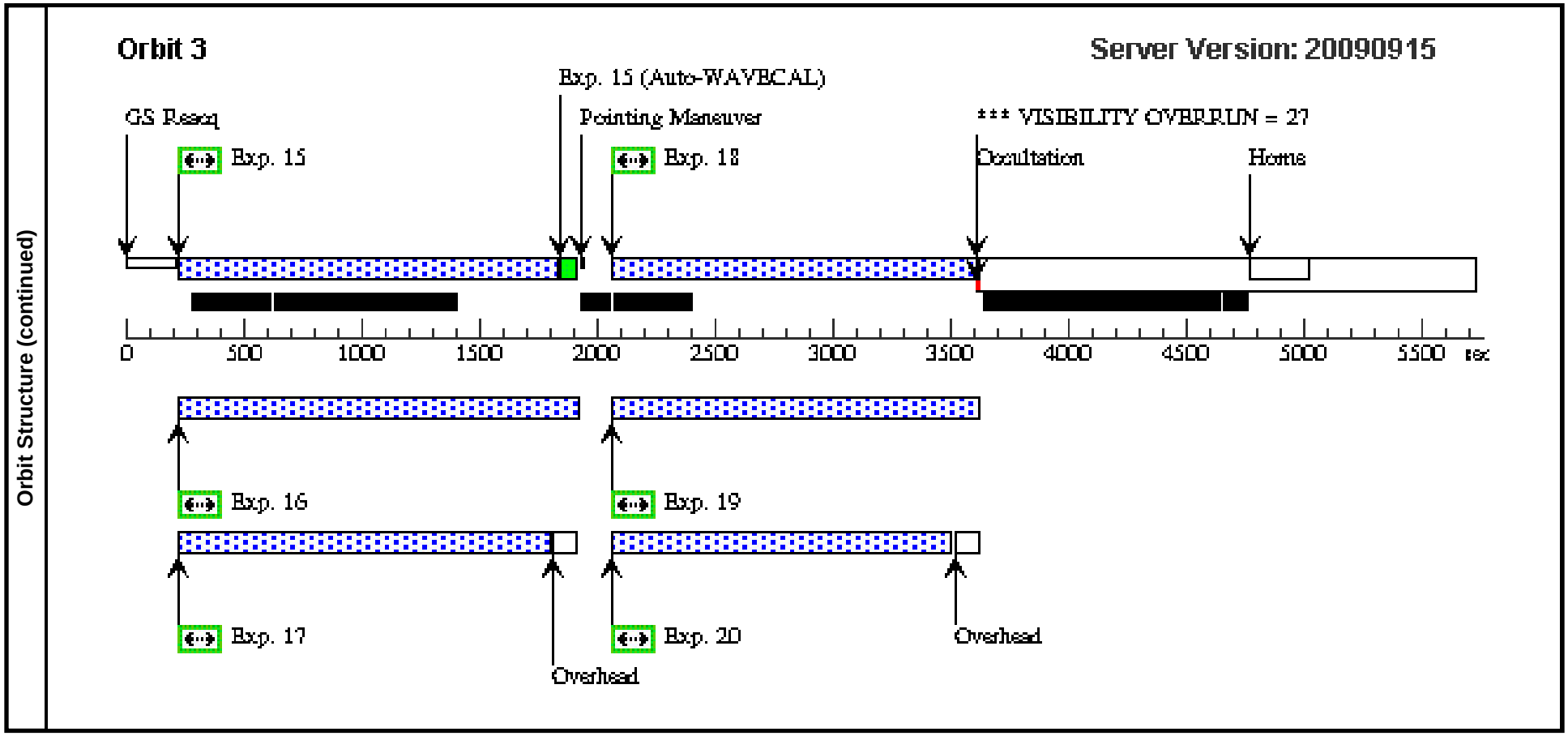
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) SN-1987A-STIS-ACQ	STIS/CCD, ACQ, 50CCD	MIRROR				1 Secs *[==>]*	*[1]*
2		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, F28X50LP	MIRROR	CR-SPLIT=2			60 Secs *[==>42.0 Secs (Split 1)]* *[==>42.0 Secs (Split 2)]*	*[1]*
3		(1) SN-1987A	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A		POS TARG 0.0,-0.2	Prime + Parallel Group 3-5	1100 Secs *[==>1112.0 Secs]*	*[1]*
4		ANY	ACS/WFC, ACCUM, WFC	F435W	CR-SPLIT=NO		Prime + Parallel Group 3-5	1000 Secs *[==>1160.0 Secs]*	*[1]*
5		ANY	WFC3/UVIS, ACCUM, UVIS	F336W	CR-SPLIT=NO		Prime + Parallel Group 3-5	1000 Secs *[==>1220.0 Secs]*	*[1]*

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
6		(1) SN-1987A	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A		POS TARG 0.0,-0.1	Prime + Parallel Group 6-8	1200 Secs *[==>1212.0 Secs]*	 ***[1]***
7		ANY	ACS/WFC, ACCUM, WFC	F435W	CR-SPLIT=NO		Prime + Parallel Group 6-8	1000 Secs *[==>1102.0 Secs]*	 ***[1]***
8		ANY	WFC3/UVIS, ACCUM, UVIS	F336W	CR-SPLIT=NO		Prime + Parallel Group 6-8	1000 Secs *[==>1112.0 Secs]*	 ***[1]***
9		(1) SN-1987A	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A		POS TARG 0.0,0.0	Prime + Parallel Group 9-11	1550 Secs *[==>1572.0 Secs]*	 ***[2]***
10		ANY	ACS/WFC, ACCUM, WFC	F435W	CR-SPLIT=NO		Prime + Parallel Group 9-11	1000 Secs *[==>1547.0 Secs]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS	F438W	CR-SPLIT=NO		Prime + Parallel Group 9-11	1000 Secs *[==>1534.0 Secs]*	 ***[2]***
12		(1) SN-1987A	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A		POS TARG 0.0,0.1	Prime + Parallel Group 12-14	1550 Secs *[==>1572.0 Secs]*	 ***[2]***
13		ANY	ACS/WFC, ACCUM, WFC	F435W	CR-SPLIT=NO		Prime + Parallel Group 12-14	1000 Secs *[==>1462.0 Secs]*	 ***[2]***
14		ANY	WFC3/UVIS, ACCUM, UVIS	F438W	CR-SPLIT=NO		Prime + Parallel Group 12-14	1000 Secs *[==>1472.0 Secs]*	 ***[2]***
15		(1) SN-1987A	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A		POS TARG 0.0,-0.2	Prime + Parallel Group 15-17	1550 Secs *[==>1597.0 Secs]*	 ***[3]***
16		ANY	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO		Prime + Parallel Group 15-17	1000 Secs *[==>1521.0 Secs]*	 ***[3]***
17		ANY	WFC3/UVIS, ACCUM, UVIS	F606W	CR-SPLIT=NO		Prime + Parallel Group 15-17	1000 Secs *[==>1562.0 Secs]*	 ***[3]***
18		(1) SN-1987A	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A		POS TARG 0.0,0.3	Prime + Parallel Group 18-20	1500 Secs *[==>1547.0 Secs]*	 ***[3]***
19		ANY	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO		Prime + Parallel Group 18-20	1400 Secs *[==>1437.0 Secs]*	 ***[3]***
20		ANY	WFC3/UVIS, ACCUM, UVIS	F606W	CR-SPLIT=NO		Prime + Parallel Group 18-20	1400 Secs *[==>1447.0 Secs]*	 ***[3]***


Orbit Structure
Orbit 1
Server Version: 20090915
Exp. 1
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Pointing Maneuver
Exp. 3 (Auto-WAVECAL)
Exp. 3
Pointing Maneuver
Exp. 6
Unused Visibility = 1
Pointing Maneuver
Occultation
GS Acq
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 4
Exp. 7
Exp. 5
Exp. 8
Overhead
Overhead


Orbit Structure (continued)
Orbit 2
Server Version: 20090915
GS Reacq
Exp. 9
Exp. 9 (Auto-WAVECAL)
Pointing Maneuver
Exp. 12
Occultation
*** VISIBILITY OVERRUN = 27
Pointing Maneuver
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 10
Exp. 13
Exp. 11
Exp. 14
Overhead
Overhead


Orbit Structure (continued)
Orbit 3
Server Version: 20090915
Exp. 15 (Auto-WAVECAL)
GS Reacq
Pointing Maneuver
*** VISIBILITY OVERRUN = 27
Exp. 15
Exp. 18
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 16
Exp. 19
Exp. 17
Exp. 20
Overhead
Overhead

Visit

Proposal 11653, Visit 50, scheduling Wed Dec 09 02:03:54 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC, STIS/CCD, WFC3/UVIS

Special Requirements: ORIENT 225D TO 225 D; ORIENT 45D TO 45 D

Comments: please use SAA free orbits.Past STIS spectra (GO 7123, 7587, 8243, 8806) 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

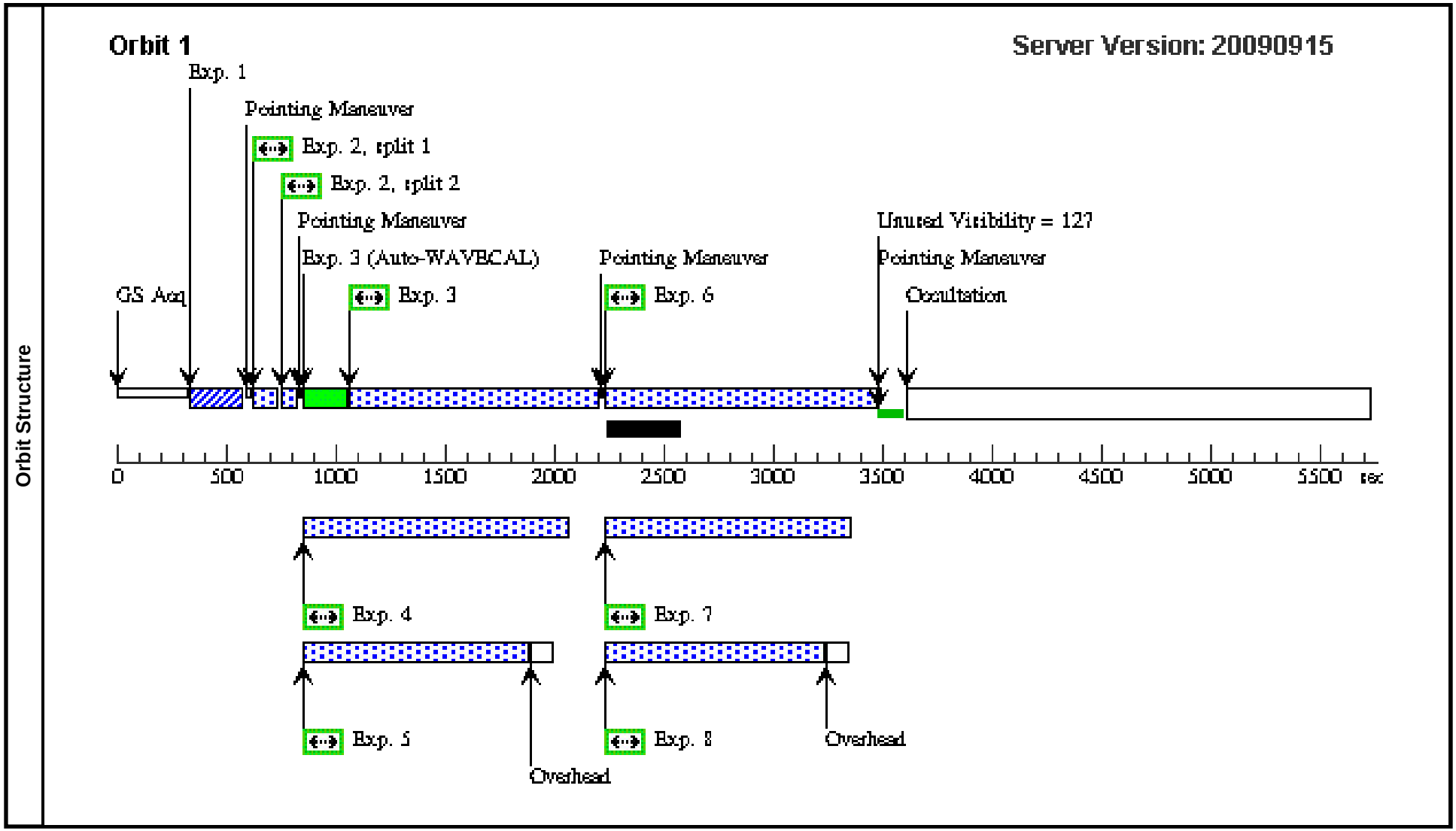
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN-1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000		V=23	Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					
(2)	SN-1987A-STIS-ACQ	RA: 05 35 30.5800 (83.8774167d) Dec: -69 16 18.32 (-69.27176d) Equinox: J2000		V=16.07 B=15.92, U=15.03	Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					
(3)	SN-1987A-HOTSPOTS-52X2	Offset from SN-1987A-STIS-ACQ by RA Offset: -2.47 Secs Dec Offset: 7.47 Arcsec		V=23.0	Offset Position (SN-1987A-HOTSPOTS-52X2) Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					

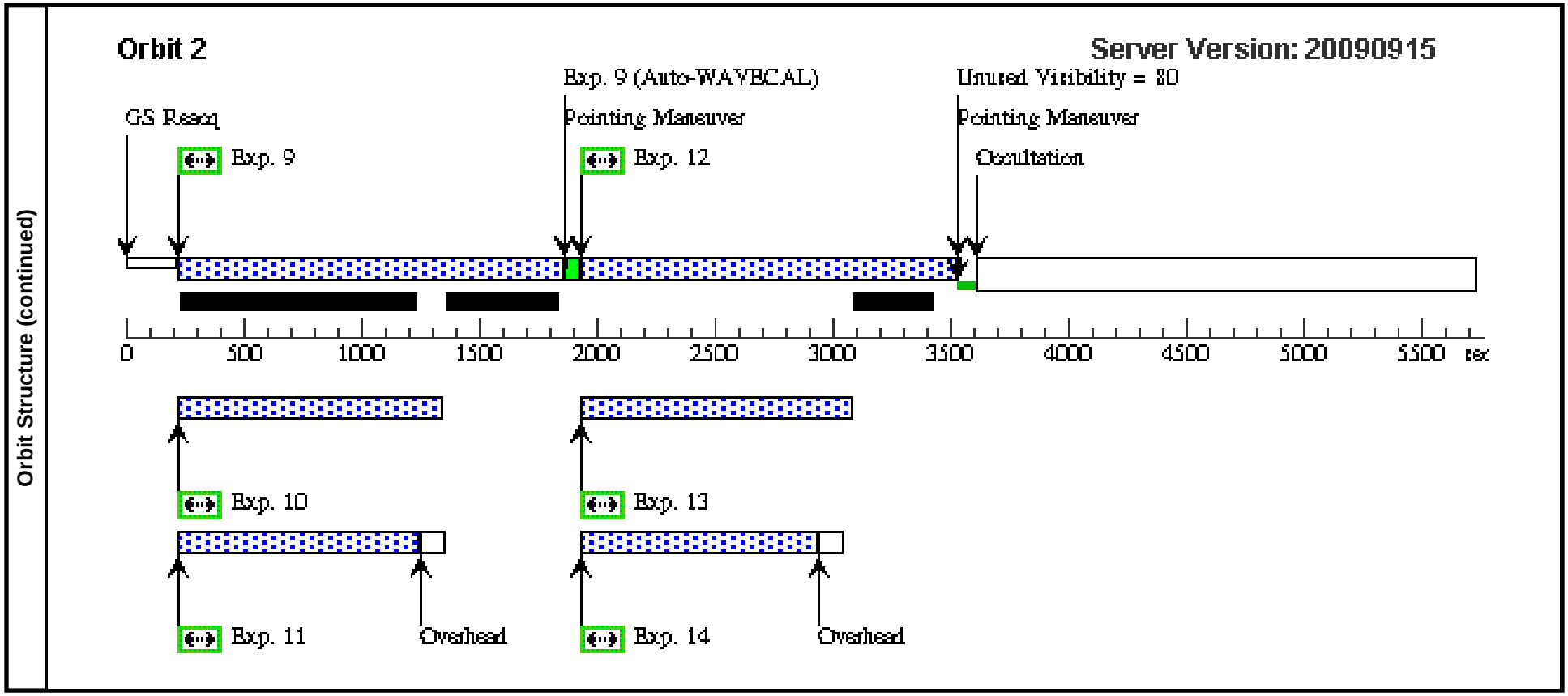
Exposures

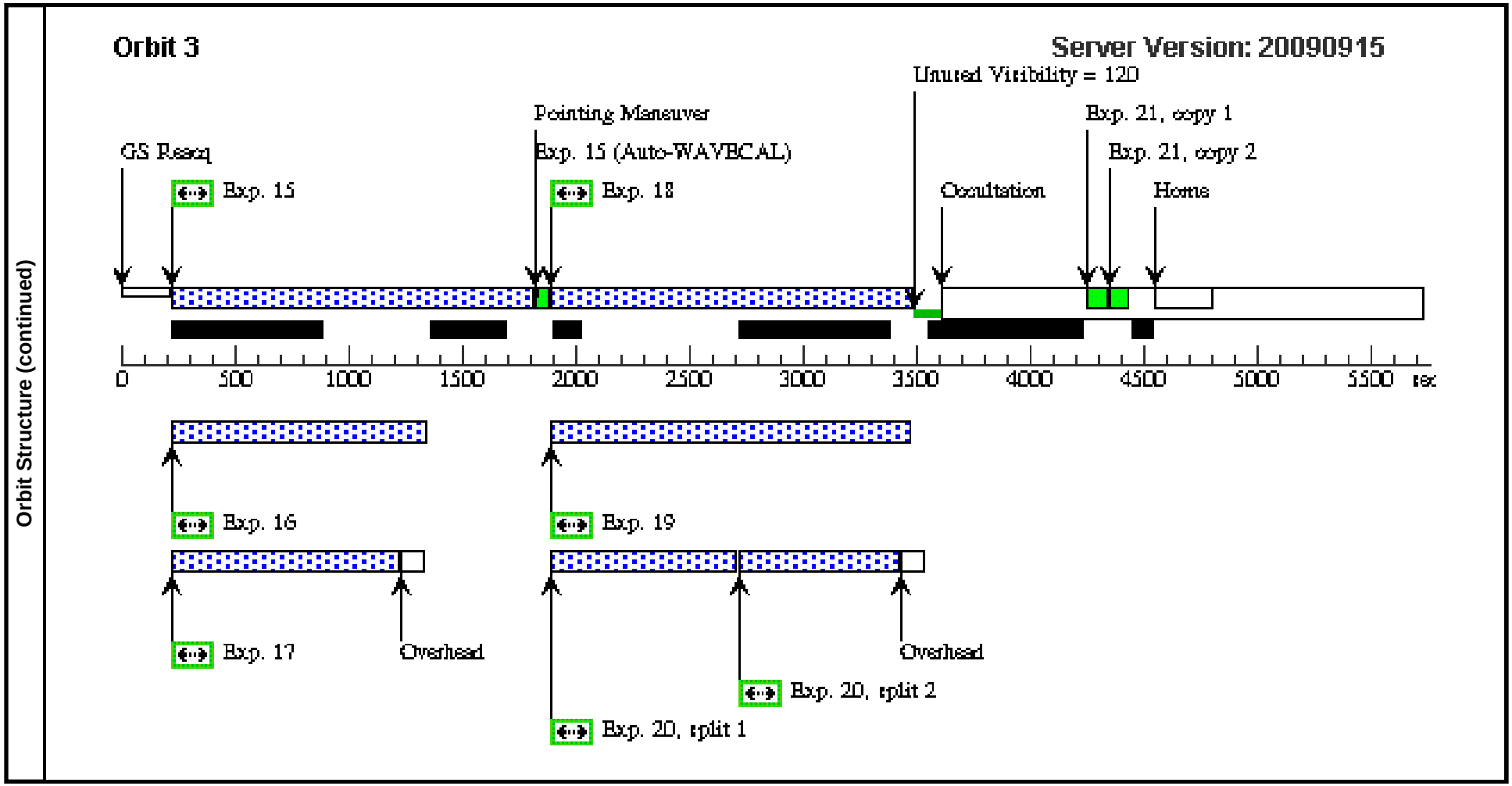
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) SN-1987A-STIS-ACQ	STIS/CCD, ACQ, 50CCD	MIRROR				1 Secs *[==>]*	 ***[1]***
2		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, F28X50LP	MIRROR	CR-SPLIT=2			60 Secs *[==>(Split 1)]* *[==>(Split 2)]*	 ***[1]***
3		(1) SN-1987A	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A	CR-SPLIT=NO	POS TARG 0.0,-0.2	Prime + Parallel Group 3-5	1100 Secs *[==>]*	 ***[1]***
4		ANY	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO		Prime + Parallel Group 3-5	1000 Secs *[==>]*	 ***[1]***
5		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 3-5	1000 Secs *[==>]*	 ***[1]***
6		(1) SN-1987A	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A	CR-SPLIT=NO	POS TARG 0.0,-0.15	Prime + Parallel Group 6-8	1200 Secs *[==>]*	 ***[1]***
7		ANY	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO		Prime + Parallel Group 6-8	1000 Secs *[==>]*	 ***[1]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
8		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 6-8	1000 Secs *[==>]*	***[1]***
9		(1) SN-1987A	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A	CR-SPLIT=NO	POS TARG 0.0,-0.10	Prime + Parallel Group 9-11	1590 Secs *[==>]*	***[2]***
10		ANY	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO		Prime + Parallel Group 9-11	1000 Secs *[==>]*	***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS	F658N	CR-SPLIT=NO		Prime + Parallel Group 9-11	1000 Secs *[==>]*	***[2]***
12		(1) SN-1987A	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A	CR-SPLIT=NO	POS TARG 0.0,-0.05	Prime + Parallel Group 12-14	1550 Secs *[==>]*	***[2]***
13		ANY	ACS/WFC, ACCUM, WFC	F606W	CR-SPLIT=NO		Prime + Parallel Group 12-14	1000 Secs *[==>]*	***[2]***
14		ANY	WFC3/UVIS, ACCUM, UVIS	F658N	CR-SPLIT=NO		Prime + Parallel Group 12-14	1000 Secs *[==>]*	***[2]***
15		(1) SN-1987A	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A	CR-SPLIT=NO	POS TARG 0.0,0.0	Prime + Parallel Group 15-17	1550 Secs *[==>]*	***[3]***
16		ANY	ACS/WFC, ACCUM, WFC	F606W	CR-SPLIT=NO		Prime + Parallel Group 15-17	1000 Secs *[==>]*	***[3]***
17		ANY	WFC3/UVIS, ACCUM, UVIS	F658N	CR-SPLIT=NO		Prime + Parallel Group 15-17	1000 Secs *[==>]*	***[3]***
18		(1) SN-1987A	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A	CR-SPLIT=NO	POS TARG 0.0,0.05	Prime + Parallel Group 18-20	1550 Secs *[==>]*	***[3]***
19		ANY	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO		Prime + Parallel Group 18-20	1400 Secs *[==>]*	***[3]***
20		ANY	WFC3/UVIS, ACCUM, UVIS	F658N			Prime + Parallel Group 18-20	1400 Secs *[==>(Split 1)]* *[==>(Split 2)]*	***[3]***
21		CCDFLAT	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A				*[==>(Copy 1)]* *[==>(Copy 2)]*	***[3]***


Orbit Structure
Orbit 1
Server Version: 20090915
Exp. 1
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Pointing Maneuver
Exp. 3 (Auto-WAVECAL)
Exp. 3
Pointing Maneuver
Exp. 6
Unused Visibility = 127
Pointing Maneuver
Occultation
GS Acq
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 4
Exp. 5
Overhead
Exp. 7
Exp. 8
Overhead


Orbit Structure (continued)
Orbit 2
Server Version: 20090915
GS Reacq
Exp. 9
Exp. 9 (Auto-WAVECAL)
Pointing Maneuver
Exp. 12
Unused Visibility = 80
Pointing Maneuver
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 10
Exp. 11
Overhead
Exp. 13
Exp. 14
Overhead


Orbit Structure (continued)
Orbit 3
Server Version: 20090915
Unused Visibility = 120
Pointing Maneuver
Exp. 15 (Auto-WAVECAL)
Exp. 21, copy 1
Exp. 21, copy 2
GS Reacq
Exp. 15
Exp. 18
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 16
Exp. 19
Exp. 17
Overhead
Overhead
Exp. 20, split 2
Exp. 20, split 1

Visit

Proposal 11653, Visit 60, scheduling Wed Dec 09 02:03:55 GMT 2009

Diagnostic Status: Warning

Scientific Instruments: ACS/WFC, STIS/CCD, WFC3/UVIS

Special Requirements: ORIENT 225D TO 225 D; ORIENT 45D TO 45 D

Comments: please use SAA free orbits.Past STIS spectra (GO 7123, 7587, 8243, 8806) 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

Diagnostics

(Visit 60) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

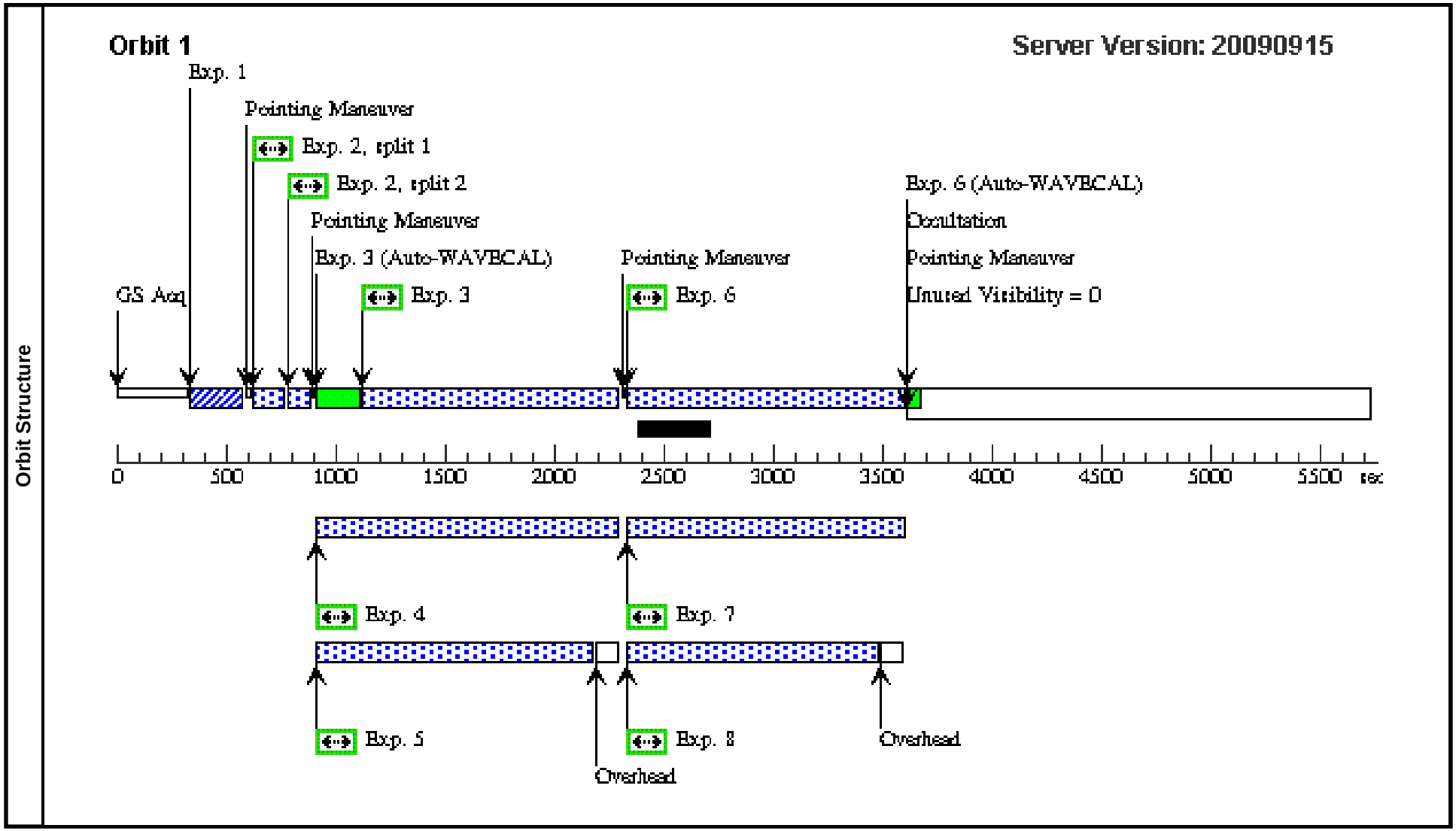
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN-1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000		V=23	Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					
(2)	SN-1987A-STIS-ACQ	RA: 05 35 30.5800 (83.8774167d) Dec: -69 16 18.32 (-69.27176d) Equinox: J2000		V=16.07 B=15.92, U=15.03	Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					
(3)	SN-1987A-HOTSPOTS-52X2	Offset from SN-1987A-STIS-ACQ by RA Offset: -2.47 Secs Dec Offset: 7.47 Arcsec		V=23.0	Offset Position (SN-1987A-HOTSPOTS-52X2) Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					

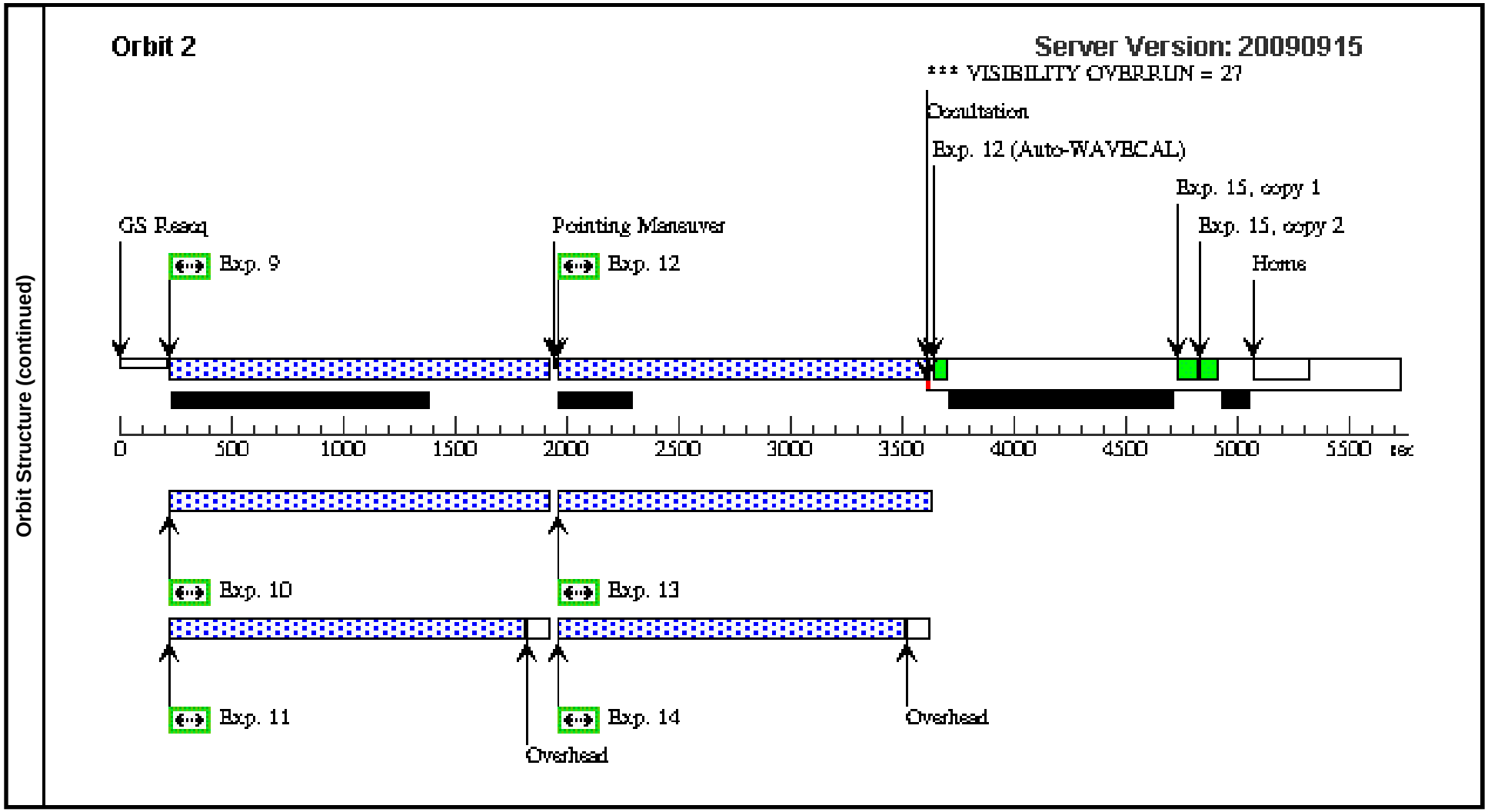
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) SN-1987A-STIS-ACQ	STIS/CCD, ACQ, 50CCD	MIRROR				1 Secs *[==>]*	***[1]***
2		(3) SN-1987A-HOT SPOTS-52X2	STIS/CCD, ACCUM, F28X50LP	MIRROR	CR-SPLIT=2			60 Secs *[==>61.0 Secs (Split 1)]* *[==>61.0 Secs (Split 2)]*	***[1]***
3		(1) SN-1987A	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A	CR-SPLIT=NO	POS TARG 0.0,0.1	Prime + Parallel Group 3-5	1100 Secs *[==>1131.0 Secs]*	***[1]***
4		ANY	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO		Prime + Parallel Group 3-5	1000 Secs *[==>1174.0 Secs]*	***[1]***
5		ANY	WFC3/UVIS, ACCUM, UVIS	F487N	CR-SPLIT=NO		Prime + Parallel Group 3-5	1000 Secs *[==>1234.0 Secs]*	***[1]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
6		(1) SN-1987A	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A	CR-SPLIT=NO	POS TARG 0.0,0.15	Prime + Parallel Group 6-8	1200 Secs *[==>1231.0 Secs]*	 ***[1]***
7		ANY	ACS/WFC, ACCUM, WFC	F502N	CR-SPLIT=NO		Prime + Parallel Group 6-8	1000 Secs *[==>1095.0 Secs]*	 ***[1]***
8		ANY	WFC3/UVIS, ACCUM, UVIS	F487N	CR-SPLIT=NO		Prime + Parallel Group 6-8	1000 Secs *[==>1156.0 Secs]*	 ***[1]***
9		(1) SN-1987A	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A	CR-SPLIT=NO	POS TARG 0.0,0.20	Prime + Parallel Group 9-11	1590 Secs *[==>1669.0 Secs]*	 ***[2]***
10		ANY	ACS/WFC, ACCUM, WFC	F502N	CR-SPLIT=NO		Prime + Parallel Group 9-11	1000 Secs *[==>1581.0 Secs]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS	F487N	CR-SPLIT=NO		Prime + Parallel Group 9-11	1000 Secs *[==>1591.0 Secs]*	 ***[2]***
12		(1) SN-1987A	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A	CR-SPLIT=NO	POS TARG 0.0,0.25	Prime + Parallel Group 12-14	1550 Secs *[==>1629.0 Secs]*	 ***[2]***
13		ANY	ACS/WFC, ACCUM, WFC	F502N	CR-SPLIT=NO		Prime + Parallel Group 12-14	1000 Secs *[==>1542.0 Secs]*	 ***[2]***
14		ANY	WFC3/UVIS, ACCUM, UVIS	F487N	CR-SPLIT=NO		Prime + Parallel Group 12-14	1000 Secs *[==>1552.0 Secs]*	 ***[2]***
15		CCDFLAT	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A				*[==>(Copy 1)]* *[==>(Copy 2)]*	***[2]***


Orbit Structure
Orbit 1
Server Version: 20090915
Exp. 1
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Pointing Maneuver
Exp. 3 (Auto-WAVECAL)
Exp. 3
Pointing Maneuver
Exp. 6
Exp. 6 (Auto-WAVECAL)
Occultation
Pointing Maneuver
Unused Visibility = 0
GS Acq
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 4
Exp. 7
Exp. 5
Exp. 8
Overhead
Overhead


Orbit Structure (continued)
Orbit 2
Server Version: 20090915
*** VISIBILITY OVERRUN = 27
Occultation
Exp. 12 (Auto-WAVECAL)
Exp. 15, copy 1
Exp. 15, copy 2
Home
GS Reacq
Exp. 9
Pointing Maneuver
Exp. 12
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 10
Exp. 13
Exp. 11
Exp. 14
Overhead
Overhead

Visit

Proposal 11653, Visit 70, scheduling Wed Dec 09 02:03:56 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: ACS/WFC, WFC3/UVIS

Special Requirements: ORIENT 358D TO 2 D; ORIENT 88D TO 92 D; ORIENT 178D TO 182 D; ORIENT 268D TO 272 D; SEQ 02,70,80 WITHIN 10 D

Comments: oreint 0,90,180, or 270 is perfered.
please use SAA free orbits.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(5)	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		(17), (18)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN-1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000		V=23	Reference Frame: ICRS

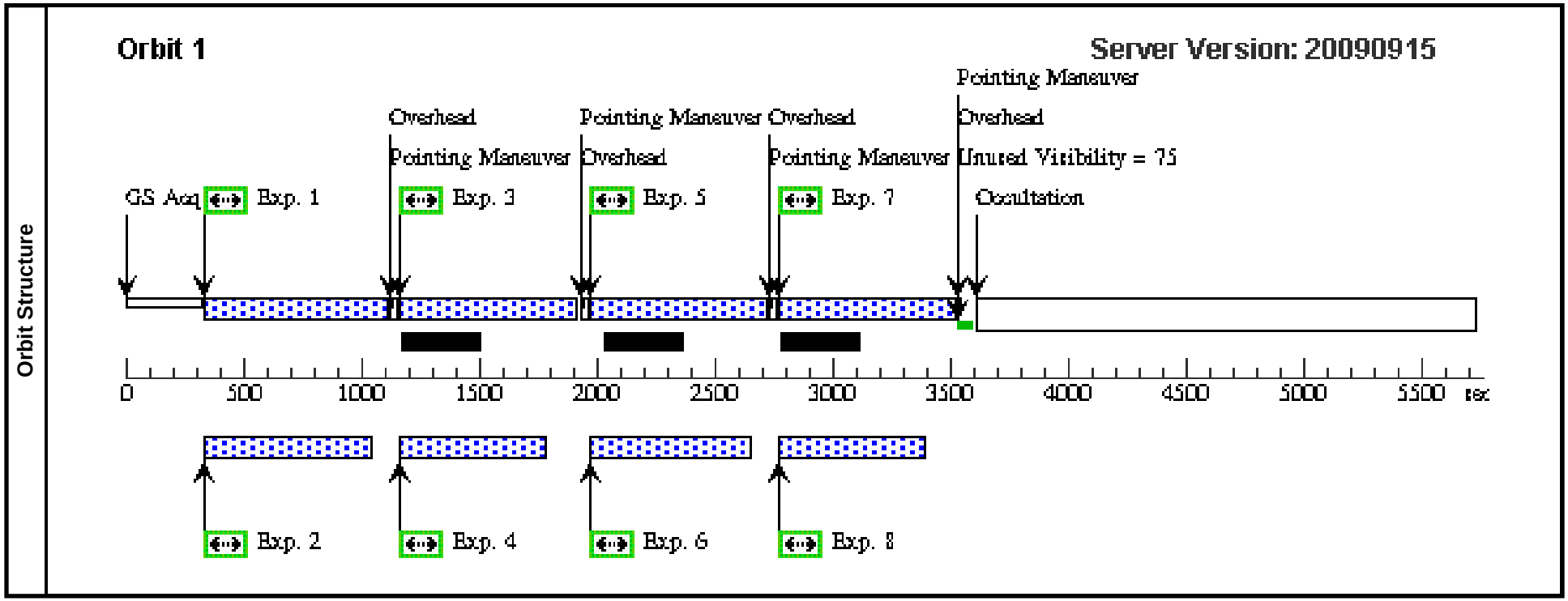
Comments: This object was generated by the targetselector and retrieved from the NED database.

Exposures

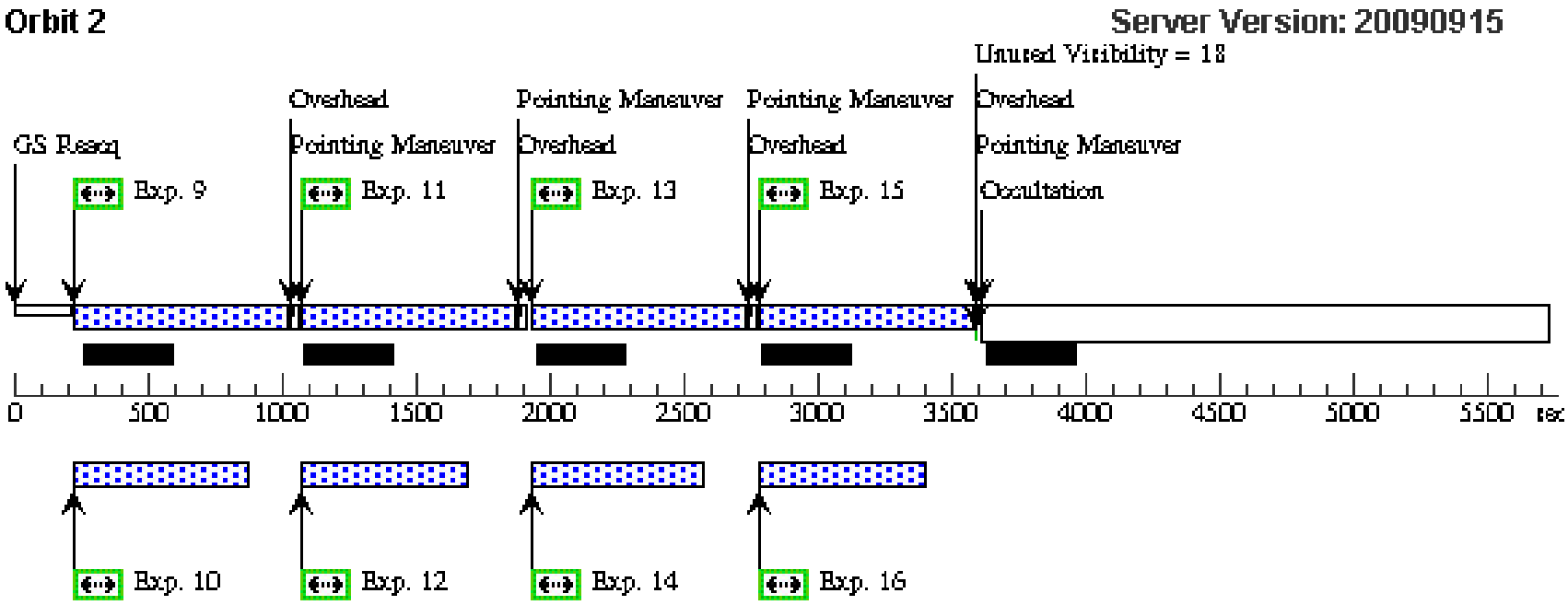
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F502N	CR-SPLIT=NO		Prime + Parallel Group 1-2	750 Secs	
								[==>]	***[1]***
2		ANY	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO		Prime + Parallel Group 1-2	500 Secs	
								[==>]	***[1]***
3		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F502N	CR-SPLIT=NO	POS TARG 0.2179,0.4348	Prime + Parallel Group 3-4	750 Secs	
								[==>]	***[1]***
4		ANY	ACS/WFC, ACCUM, WFC	F814W	CR-SPLIT=NO		Prime + Parallel Group 3-4	500 Secs	
								[==>]	***[1]***
5		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F502N	CR-SPLIT=NO	POS TARG 0.6537,0.6522	Prime + Parallel Group 5-6	750 Secs	
								[==>]	***[1]***
6		ANY	ACS/WFC, ACCUM, WFC	F606W	CR-SPLIT=NO		Prime + Parallel Group 5-6	500 Secs	
								[==>]	***[1]***
7		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F502N	CR-SPLIT=NO	POS TARG 0.4348,0.2179	Prime + Parallel Group 7-8	750 Secs	
								[==>]	***[1]***
8		ANY	ACS/WFC, ACCUM, WFC	F606W	CR-SPLIT=NO		Prime + Parallel Group 7-8	500 Secs	
								[==>]	***[1]***
9		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F502N	CR-SPLIT=NO	POS TARG -0.2179,-0.4348	Prime + Parallel Group 9-10	800 Secs	
								[==>]	***[2]***

Exposures (continued)

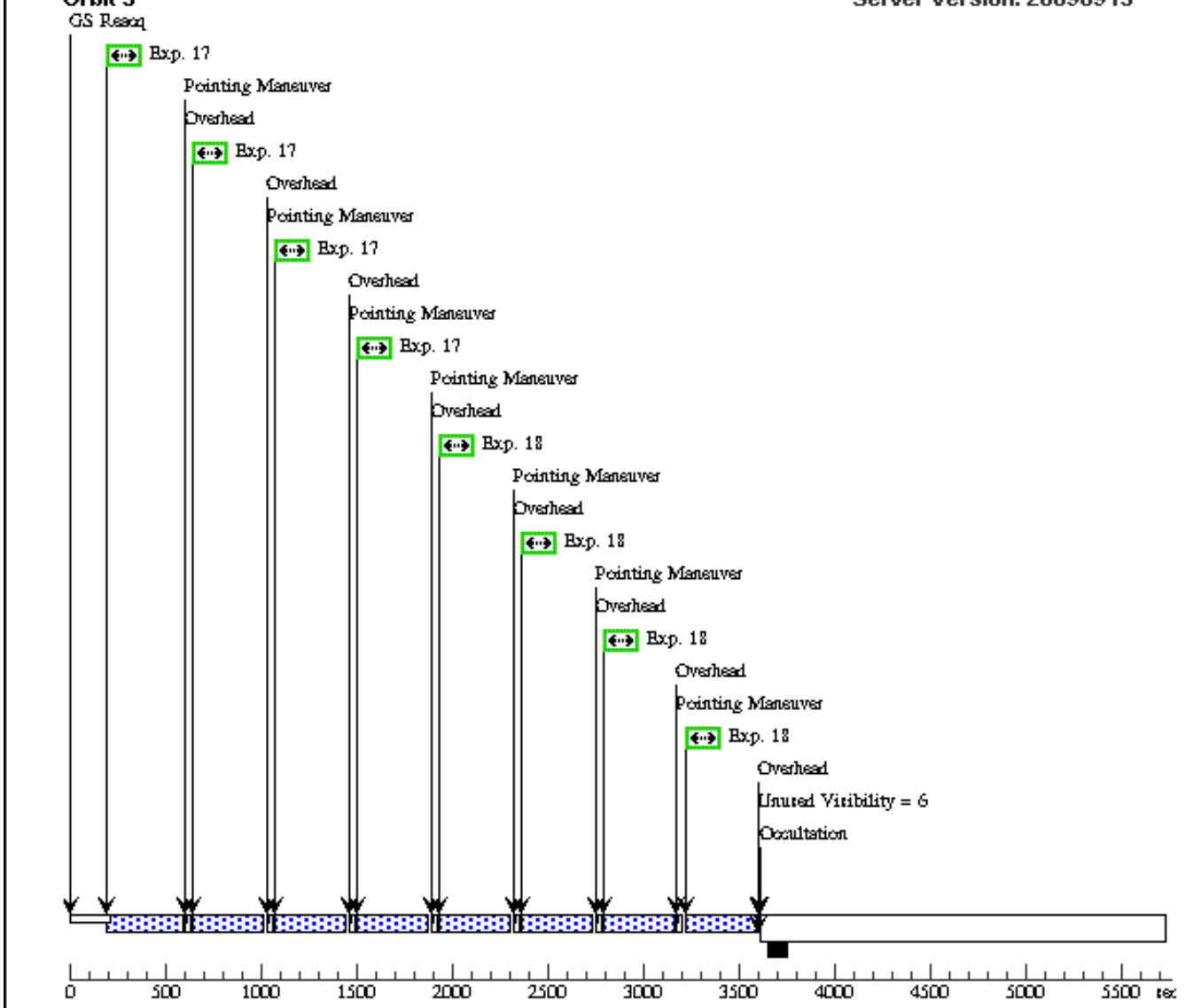
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
10		ANY	ACS/WFC, ACCUM, WFC	F475W	CR-SPLIT=NO		Prime + Parallel Group 9-10	500 Secs	
								[==>]	***[2]***
11		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F502N	CR-SPLIT=NO	POS TARG -0.6537, -0.6522	Prime + Parallel Group 11-12	800 Secs	
								[==>]	***[2]***
12		ANY	ACS/WFC, ACCUM, WFC	F475W	CR-SPLIT=NO		Prime + Parallel Group 11-12	500 Secs	
								[==>]	***[2]***
13		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F502N	CR-SPLIT=NO	POS TARG -0.4348, -0.2179	Prime + Parallel Group 13-14	800 Secs	
								[==>]	***[2]***
14		ANY	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO		Prime + Parallel Group 13-14	500 Secs	
								[==>]	***[2]***
15		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F502N	CR-SPLIT=NO	POS TARG 0.32685, 0.32685	Prime + Parallel Group 15-16	800 Secs	
								[==>]	***[2]***
16		ANY	ACS/WFC, ACCUM, WFC	F658N	CR-SPLIT=NO		Prime + Parallel Group 15-16	500 Secs	
								[==>]	***[2]***
17		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F625W	CR-SPLIT=NO		Pattern 5, Exps 17-17 (5)	375 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[3]***
18		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F625W	CR-SPLIT=NO	POS TARG 0.32685, 0.32685	Pattern 5, Exps 18-18 (5)	375 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[3]***


Orbit Structure
Orbit 1
Server Version: 20090915
GS Acq
Exp. 1
Overhead
Pointing Maneuver
Exp. 3
Pointing Maneuver
Overhead
Exp. 5
Pointing Maneuver
Overhead
Exp. 7
Pointing Maneuver
Overhead
Unused Visibility = 75
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 2
Exp. 4
Exp. 6
Exp. 8

Orbit Structure (continued)



Orbit Structure (continued)



Visit

Proposal 11653, Visit 80, scheduling Wed Dec 09 02:03:57 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT 358D TO 2 D; ORIENT 88D TO 92 D; ORIENT 178D TO 182 D; ORIENT 268D TO 272 D

Comments: please use SAA free orbits.
orient of 0,90,180 or 270 is perfered

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(5)	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		(1-5), (6)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN-1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000		V=23	Reference Frame: ICRS

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

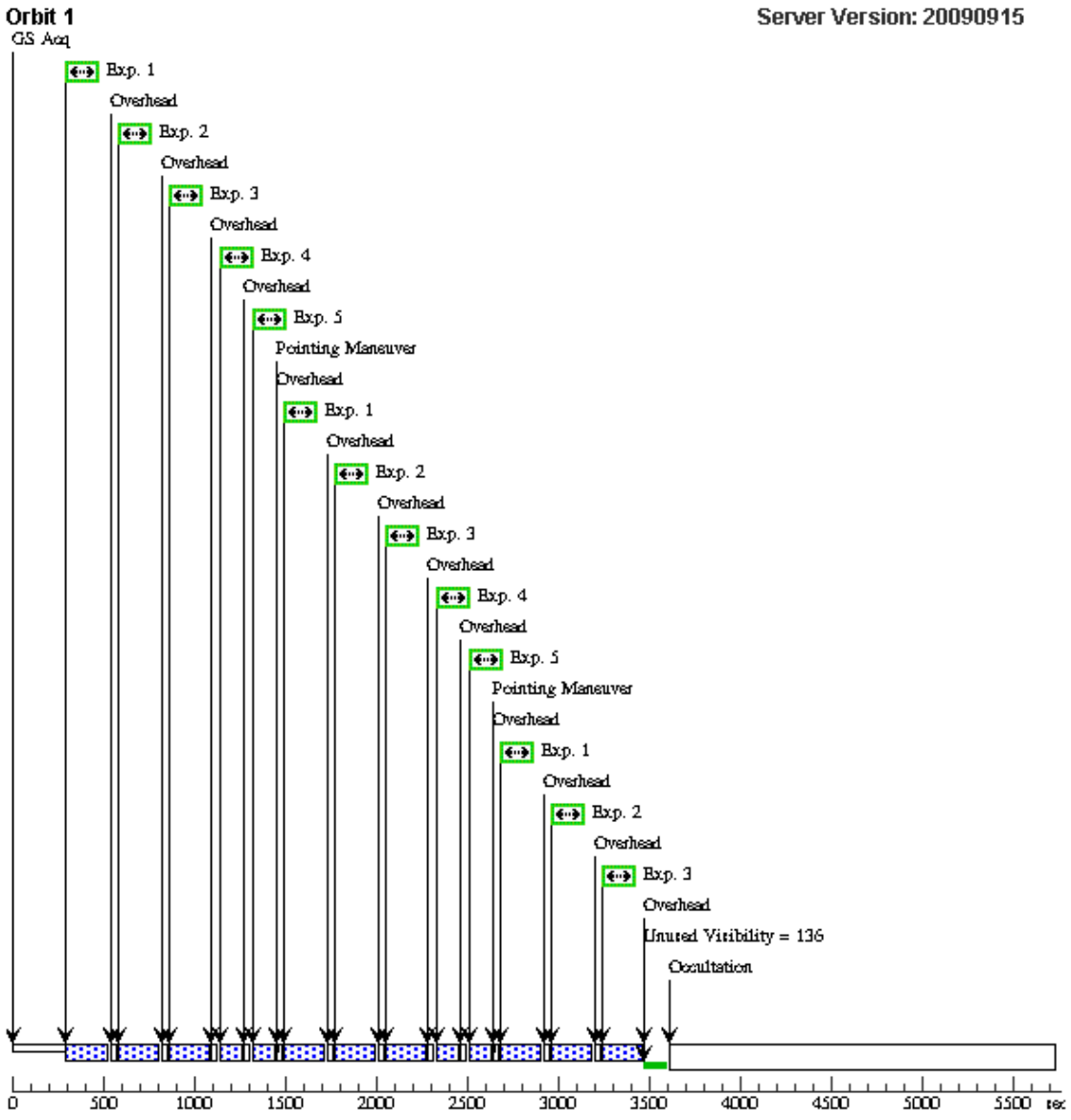
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F225W	CR-SPLIT=NO		Pattern 5, Exps 1-5 (5)	200 Secs	
								[==>(Pattern 1)]	
								[==>(Pattern 2)]	***[1]***
								[==>(Pattern 3)]	
								[==>(Pattern 4)]	***[2]***
2		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F336W	CR-SPLIT=NO		Pattern 5, Exps 1-5 (5)	200 Secs	
								[==>(Pattern 1)]	
								[==>(Pattern 2)]	***[1]***
								[==>(Pattern 3)]	
								[==>(Pattern 4)]	***[2]***
3		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F438W	CR-SPLIT=NO		Pattern 5, Exps 1-5 (5)	200 Secs	
								[==>(Pattern 1)]	
								[==>(Pattern 2)]	***[1]***
								[==>(Pattern 3)]	
								[==>(Pattern 4)]	***[2]***

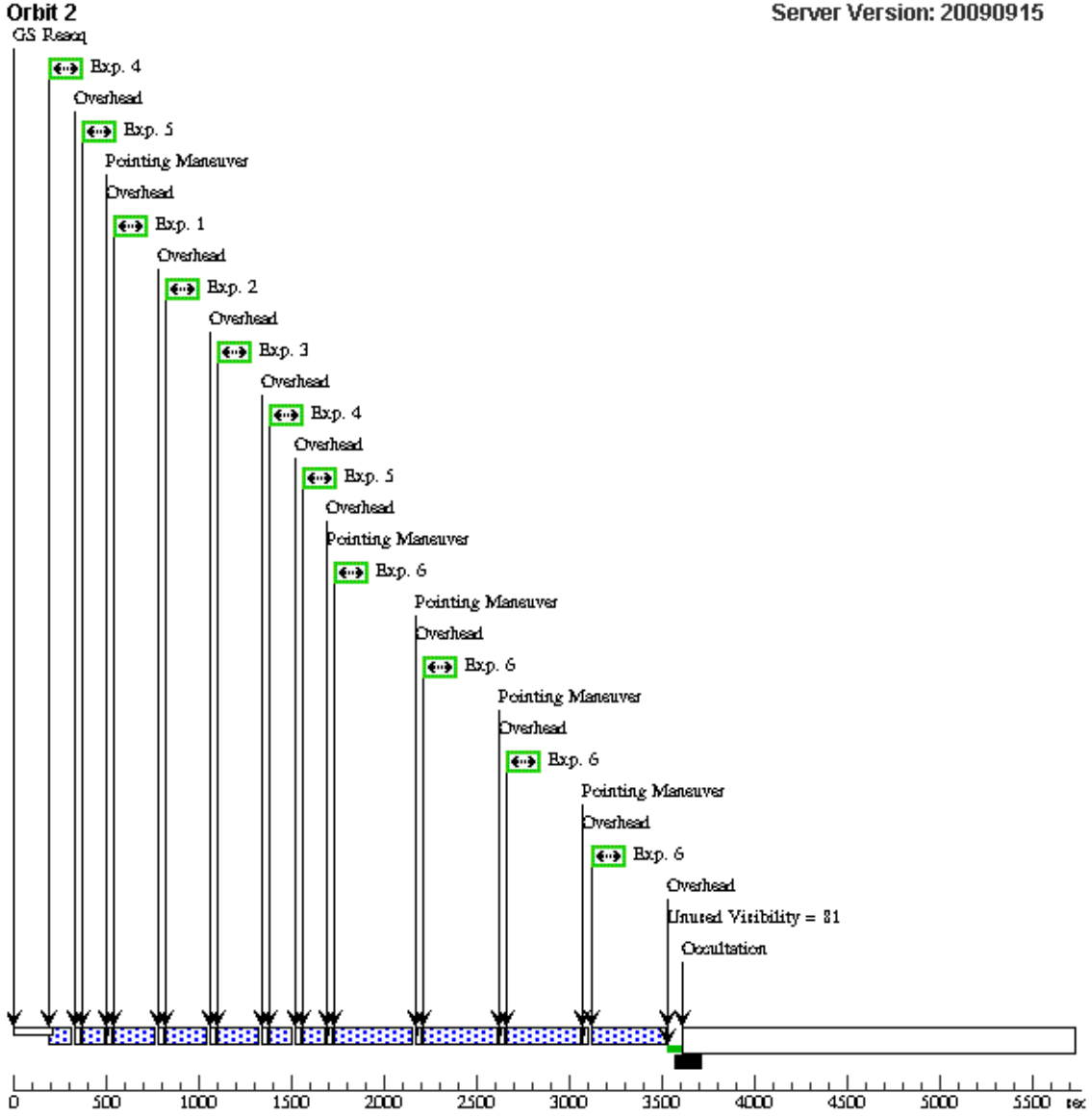
Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
4		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F555W	CR-SPLIT=NO		Pattern 5, Exps 1-5 (5)	100 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]*	***[1]***
								[==>(Pattern 3)] *[==>(Pattern 4)]*	***[2]***
5		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F814W	CR-SPLIT=NO		Pattern 5, Exps 1-5 (5)	100 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]*	***[1]***
								[==>(Pattern 3)] *[==>(Pattern 4)]*	***[2]***
6		(1) SN-1987A	WFC3/UVIS, ACCUM, UVIS1-M512-SUB	F657N	CR-SPLIT=NO		Pattern 5, Exps 6-6 (5)	400 Secs	
								[==>(Pattern 1)] *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***

Orbit Structure



Orbit Structure (continued)



Visit

Proposal 11653, Visit A2, implementation Wed Dec 09 02:03:57 GMT 2009

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: SEQ 70,80,A2 WITHIN 10 D

Comments: please use SAA free orbits.

Repeat of failed visit 02.

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(7)	Pattern Type=WFC3-IR-DITHER-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.636 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=41.788 Angle Between Sides= Center Pattern=false		(1-4)

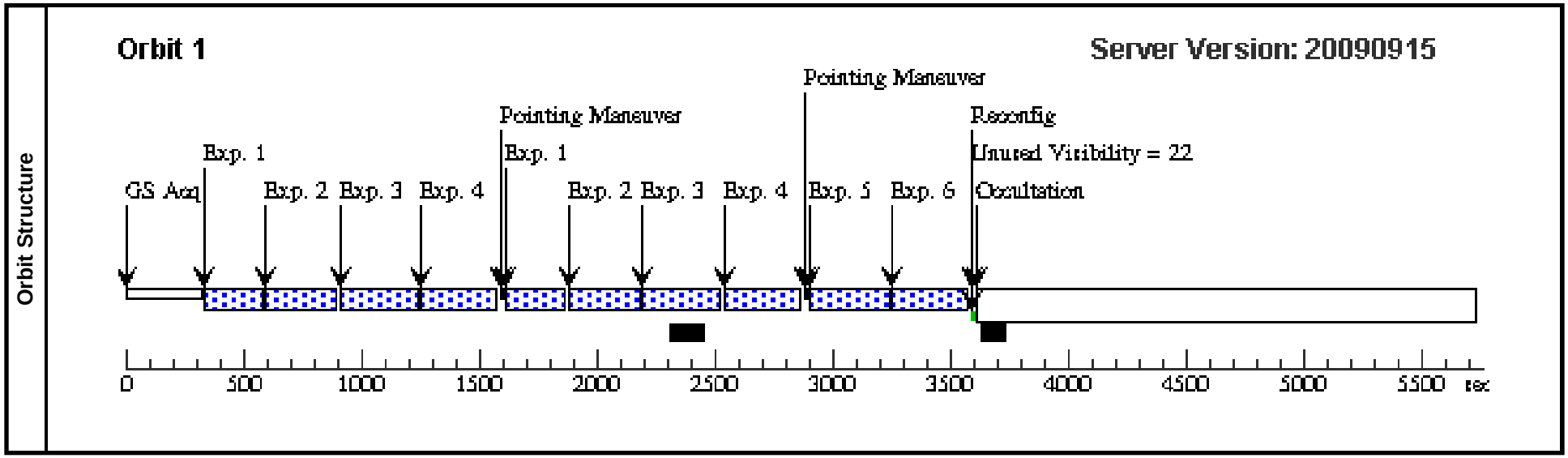
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN-1987A	RA: 05 35 28.1100 (83.8671250d) Dec: -69 16 10.85 (-69.26968d) Equinox: J2000		V=23	Reference Frame: ICRS

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

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB256	F110W	NSAMP=11; SAMP-SEQ=SPARS25	GSPAIR S1HE000172F2S1HE031210F1	Pattern 7, Exps 1-4 (7)	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
2		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB256	F160W	NSAMP=14; SAMP-SEQ=SPARS25		Pattern 7, Exps 1-4 (7)	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
3		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB256	F126N	NSAMP=15; SAMP-SEQ=SPARS25		Pattern 7, Exps 1-4 (7)	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
4		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB256	F164N	NSAMP=15; SAMP-SEQ=SPARS25		Pattern 7, Exps 1-4 (7)	*[==>(Pattern 1)]* *[==>(Pattern 2)]*	***[1]***
5		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB256	F126N	NSAMP=15; SAMP-SEQ=SPARS25	POS TARG 0.5,-0.5		*[==>]*	***[1]***
6		(1) SN-1987A	WFC3/IR, MULTIACCUM, IRSUB256	F164N	NSAMP=15; SAMP-SEQ=SPARS25	POS TARG 0.5,-0.5		*[==>]*	***[1]***


Orbit Structure
Orbit 1
Server Version: 20090915
Pointing Maneuver
Pointing Maneuver
Reconfig
Exp. 1
Exp. 1
Unused Visibility = 22
GS Acq
Exp. 2
Exp. 3
Exp. 4
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 11653, Visit A3, completed Wed Dec 09 02:03:58 GMT 2009

Diagnostic Status: Warning

Scientific Instruments: STIS/FUV-MAMA, STIS/CCD, STIS/NUV-MAMA

Special Requirements: ORIENT 131.5D TO 131.5 D; ORIENT 311.5D TO 311.5 D; SEQ 10,20,A3 WITHIN 10 D

Comments: Repeat of visit 30. Visit 30 was lost in the October 22, 2009 SIC&DH safing.

please use SAA free orbits.Past STIS spectra (GO 7123, 7587, 8243, 8806) 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

Diagnostics

(Visit A3) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit A3) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SN-1987A-STIS-ACQ	RA: 05 35 30.5800 (83.8774167d) Dec: -69 16 18.32 (-69.27176d) Equinox: J2000		V=16.07 B=15.92, U=15.03	Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					
(3)	SN-1987A-HOTSPOTS-52X2	Offset from SN-1987A-STIS-ACQ by RA Offset: -2.47 Secs Dec Offset: 7.47 Arcsec		V=23.0	Offset Position (SN-1987A-HOTSPOTS-52X2) Reference Frame: ICRS
Comments: This object was generated by the targetselector and retrieved from the NED database.					

Exposures

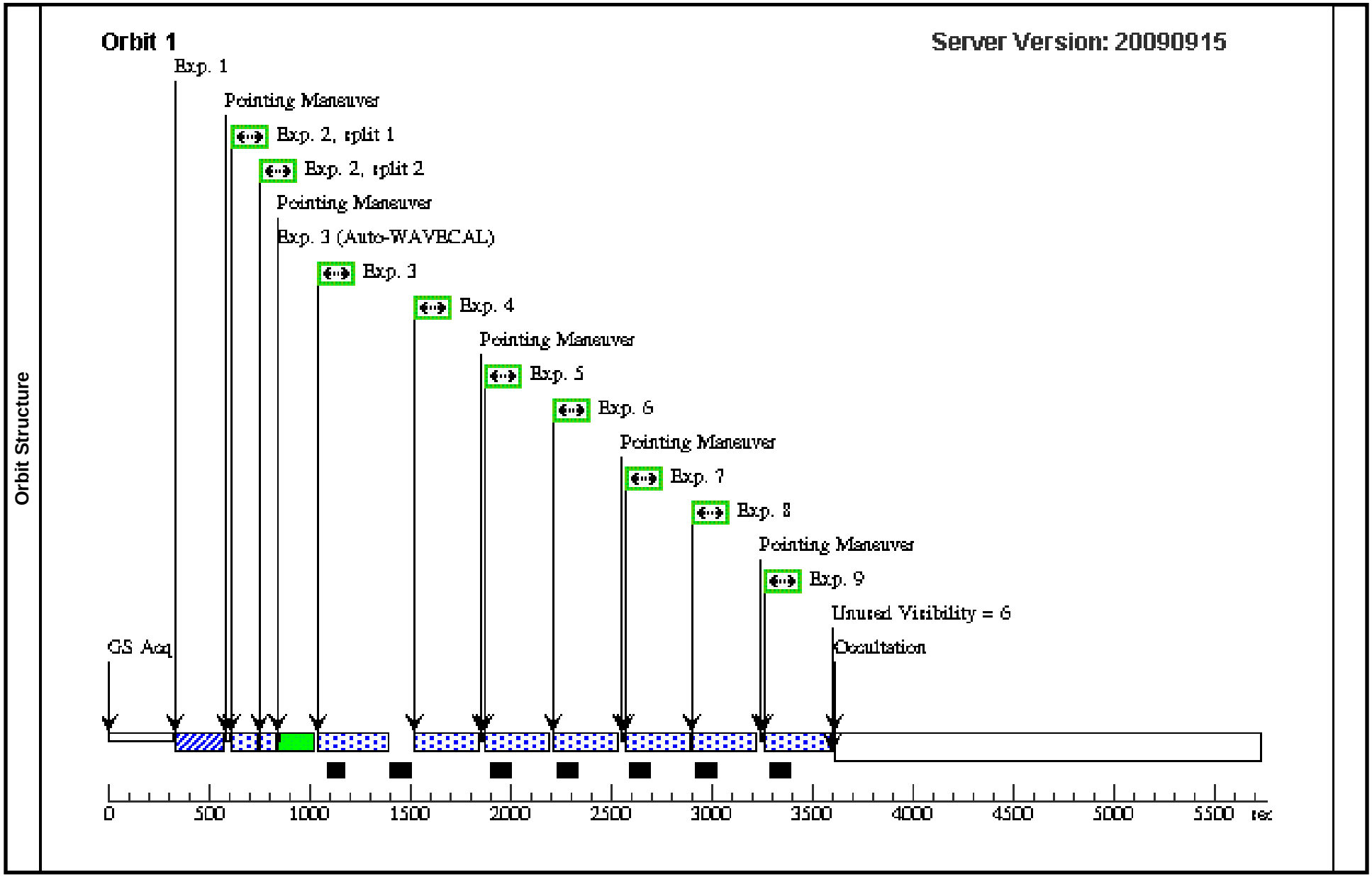
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(2) SN-1987A-STIS-ACQ	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3		3 Secs *[==>]*	 ***[1]***
2		(3) SN-1987A-HOTSPOTS-52X2	STIS/CCD, ACCUM, F28X50LP	MIRROR	CR-SPLIT=2	POS TARG -0.8976, -0.5071		60 Secs *[==>42.0 Secs (Split 1)]* *[==>42.0 Secs (Split 2)]*	 ***[1]***
3		(3) SN-1987A-HOTSPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG -0.8976, -0.5071		300 Secs *[==>312.0 Secs]*	 ***[1]***
4		(3) SN-1987A-HOTSPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG -0.8976, -0.5071		300 Secs *[==>312.0 Secs]*	 ***[1]***
5		(3) SN-1987A-HOTSPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG -0.8976, 0.000		300 Secs *[==>312.0 Secs]*	 ***[1]***
6		(3) SN-1987A-HOTSPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG -0.8976, 0.000		300 Secs *[==>312.0 Secs]*	 ***[1]***

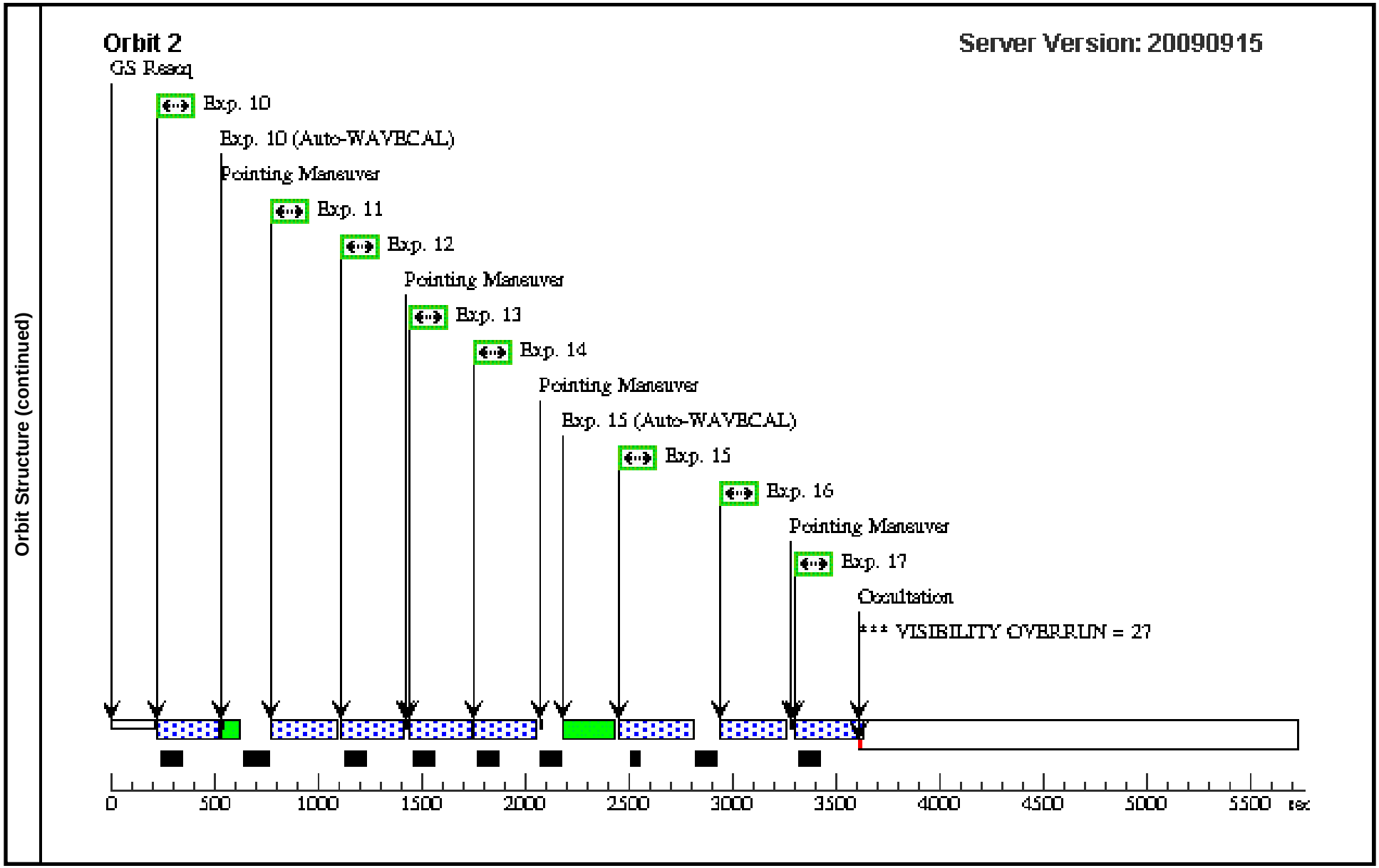
Exposures (continued)

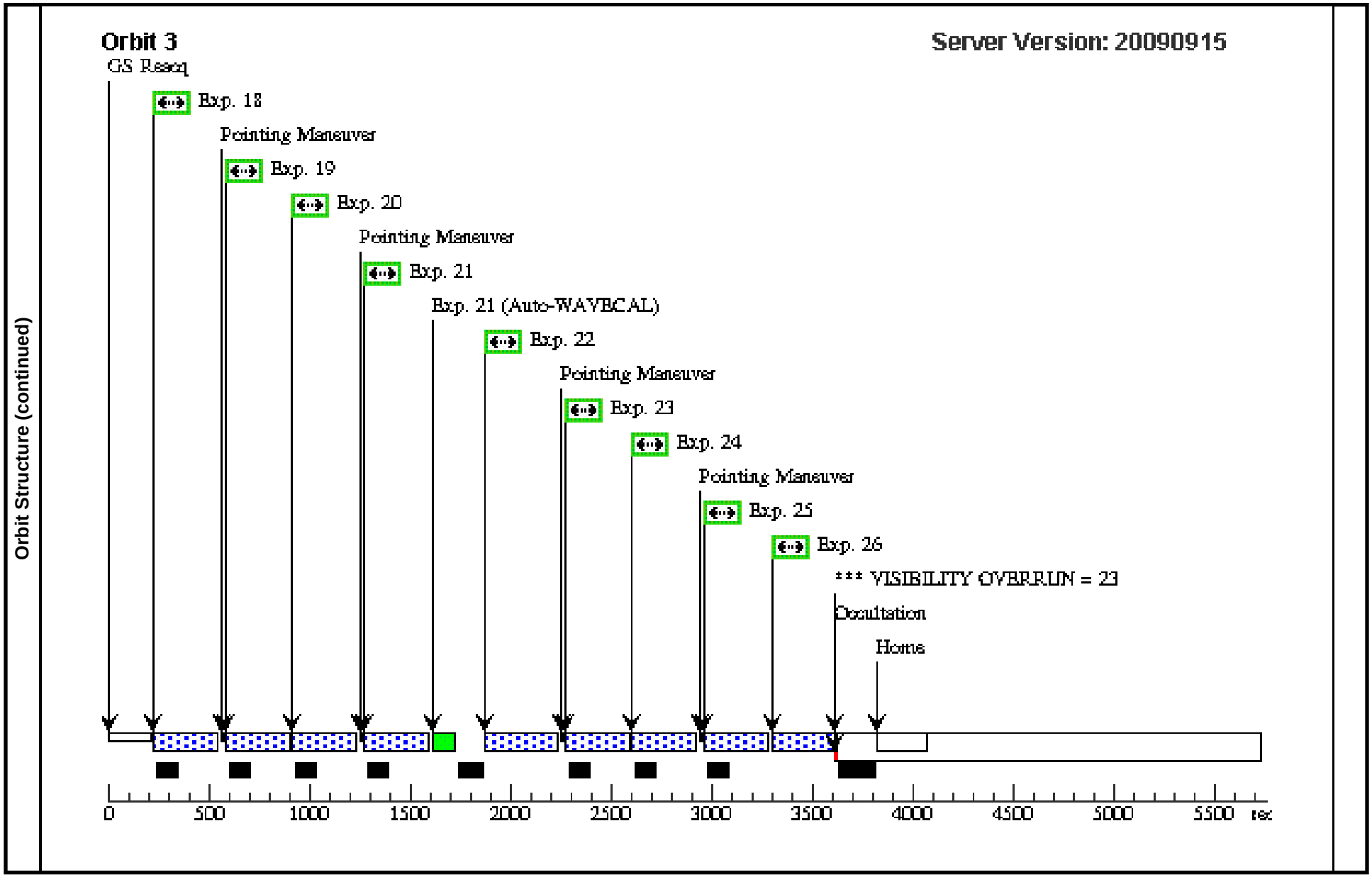
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
7		(3) SN-1987A-HOT SPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG -0.8976, 0.5071		300 Secs *[==>312.0 Secs]*	 ***[1]***
8		(3) SN-1987A-HOT SPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG -0.8976, 0.5071		300 Secs *[==>312.0 Secs]*	 ***[1]***
9		(3) SN-1987A-HOT SPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG 0.8976,0 .5071		300 Secs *[==>312.0 Secs]*	 ***[1]***
10		(3) SN-1987A-HOT SPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG 0.8976,0 .5071		275 Secs *[==>287.0 Secs]*	 ***[2]***
11		(3) SN-1987A-HOT SPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG 0.8976,0 .000		275 Secs *[==>287.0 Secs]*	 ***[2]***
12		(3) SN-1987A-HOT SPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG 0.8976,0 .000		275 Secs *[==>287.0 Secs]*	 ***[2]***
13		(3) SN-1987A-HOT SPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG 0.8976,-0.5071		275 Secs *[==>287.0 Secs]*	 ***[2]***
14		(3) SN-1987A-HOT SPOTS-52X2	STIS/NUV-MAMA, ACCUM, 52X2	G230L 2376 A		POS TARG 0.8976,-0.5071		275 Secs *[==>287.0 Secs]*	 ***[2]***
15		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG -0.8976, -0.5071		300 Secs *[==>312.0 Secs]*	 ***[2]***
16		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG -0.8976, -0.5071		300 Secs *[==>312.0 Secs]*	 ***[2]***
17		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG -0.8976, 0.000		300 Secs *[==>312.0 Secs]*	 ***[2]***
18		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG -0.8976, 0.000		300 Secs *[==>311.0 Secs]*	 ***[3]***
19		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG -0.8976, 0.5071		300 Secs *[==>311.0 Secs]*	 ***[3]***
20		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG -0.8976, 0.5071		300 Secs *[==>311.0 Secs]*	 ***[3]***
21		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0.8976,0 .5071		300 Secs *[==>311.0 Secs]*	 ***[3]***
22		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0.8976,0 .5071		300 Secs *[==>311.0 Secs]*	 ***[3]***
23		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0.8976,0 .000		300 Secs *[==>311.0 Secs]*	 ***[3]***
24		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0.8976,0 .000		300 Secs *[==>311.0 Secs]*	 ***[3]***
25		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0.8976,-0.5071		300 Secs *[==>311.0 Secs]*	 ***[3]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
26		(3) SN-1987A-HOT SPOTS-52X2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0.8976,-0.5071		300 Secs *[==>311.0 Secs]*	***[3]***


Orbit 1
Server Version: 20090915
Orbit Structure
Exp. 1
Pointing Maneuver
Exp. 2, split 1
Exp. 2, split 2
Pointing Maneuver
Exp. 3 (Auto-WAVECAL)
Exp. 3
Exp. 4
Pointing Maneuver
Exp. 5
Exp. 6
Pointing Maneuver
Exp. 7
Exp. 8
Pointing Maneuver
Exp. 9
Unused Visibility = 6
Occultation
GS Acq
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec


Orbit Structure (continued)
Orbit 2
Server Version: 20090915
GS Reacq
Exp. 10
Exp. 10 (Auto-WAVECAL)
Pointing Maneuver
Exp. 11
Exp. 12
Pointing Maneuver
Exp. 13
Exp. 14
Pointing Maneuver
Exp. 15 (Auto-WAVECAL)
Exp. 15
Exp. 16
Pointing Maneuver
Exp. 17
Occultation
*** VISIBILITY OVERRUN = 27
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec


Orbit Structure (continued)
Orbit 3
Server Version: 20090915
GS Reacq
Exp. 18
Pointing Maneuver
Exp. 19
Exp. 20
Pointing Maneuver
Exp. 21
Exp. 21 (Auto-WAVECAL)
Exp. 22
Pointing Maneuver
Exp. 23
Exp. 24
Pointing Maneuver
Exp. 25
Exp. 26
*** VISIBILITY OVERRUN = 23
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec