13287 - Late-Time UV Spectroscopic Signatures from Circumstellar Interaction in Type IIn Supernovae

Cycle: 21, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) SN-2009IP (6) SN-2009IP-OFFSET	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	3	20-Feb-2015 21:09:13.0	yes
02	(2) SN-2005IP	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	3	20-Feb-2015 21:09:17.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
03	(4) SN-2010JL (8) SN-2010JL-OFFSET	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	5	20-Feb-2015 21:09:22.0	yes
05	(8) SN-2010JL-OFFSET (9) SN-2010JL-2	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	5	20-Feb-2015 21:09:29.0	yes
04	(3) SN-2006GY (7) SN-2006GY-OFFSET CCDFLAT	STIS/CCD STIS/FUV-MAMA STIS/NUV-MAMA	5	20-Feb-2015 21:09:33.0	yes

21 Total Orbits Used

ABSTRACT

Type IIn supernovae (SNe IIn) are defined by their relatively narrow spectral features associated with a dense circumstellar medium (CSM) formed by the progenitor star. The nature of the progenitors and mass loss remains relatively unknown. Shock interaction with the dense CSM offers an important probe of the CSM characteristics, progenitor mass-loss history, and ultimately the progenitor itself. While most supernovae tend to be faint in the UV at late times (>200 days), shock interaction and dust formation in the dense CSM often result in significant emission ranging from X-ray to radio for many years post-explosion. Here we propose HST/STIS observations of 4 relatively bright, nearby SNe IIn that reflect the diversity and significance of the subclass. The SNe 2005ip, 2006gy, 20009ip, and 2010jl are some of the most well-studied SNe IIn, and our team has already compiled a comprehensive set of multi-wavelength data that has resulted in numerous publications, but the UV remains largely unexplored. Recent observations indicate these SNe are still detectable. UV observations will (1) constrain the CSM characteristics, including geometry and composition, (2) confirm shock interaction as the heating source for late-time emission from warm dust, and (3) explore the possible presence of a scattered-light echo in SN 2006gy. Coinciding with Cycle 21's UV Initiative, this program offers new insights regarding both the progenitor and explosion characteristics of the SN IIn subclass.

OBSERVING DESCRIPTION

We propose to obtain a single STIS-MAMA spectrum of SNe 2005ip, 2009ip, and 2010jl in both the G140 and G230L bandpasses. The goal is to detect UV signatures of CSM interaction to (1) constrain the CSM characteristics, including the geometry and composition, and (2) confirm emission

from CSM interaction as the heating source in the warm-dust model presented by Fox et al. (2011). We also plan a single STIS-CCD optical spectrum of SN 2006gy to (3) confirm the presence of a scattered-light echo and probe the original peak SN spectrum. A color from STIS-MAMA imaging will provide a basis for estimating exposure times for a UV spectrum of SN 2006gy in Cycle 22. We choose STIS over COS because, while COS is optimized for isolated faint point-sources, STIS offers spatially resolved spectra that exploit the intrinsically high resolution of HST over a large spectral range (accommodating both the C III] 1909 and Mg II 2800 lines). The long slit length will allow us to subtract contamination from zodiacal light, earthshine, the host galaxy, and H II regions.

Visit

Proposal 13287, STIS-SN2009ip (01), completed Sat Feb 21 02:09:35 GMT 2015

Diagnostic Status: Warning

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

Special Requirements: (none)

Comments: Offset from nearby star.

Diagnostics

(STIS-SN2009ip (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(STIS-SN2009ip (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(STIS-SN2009ip (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=STIS-ALONG-SLIT	Coordinate Frame=POS-TARG		(2), (3), (4)
	Purpose=DITHER	Pattern Orientation=90.0		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=1	Center Pattern=true		
	Line Spacing=			

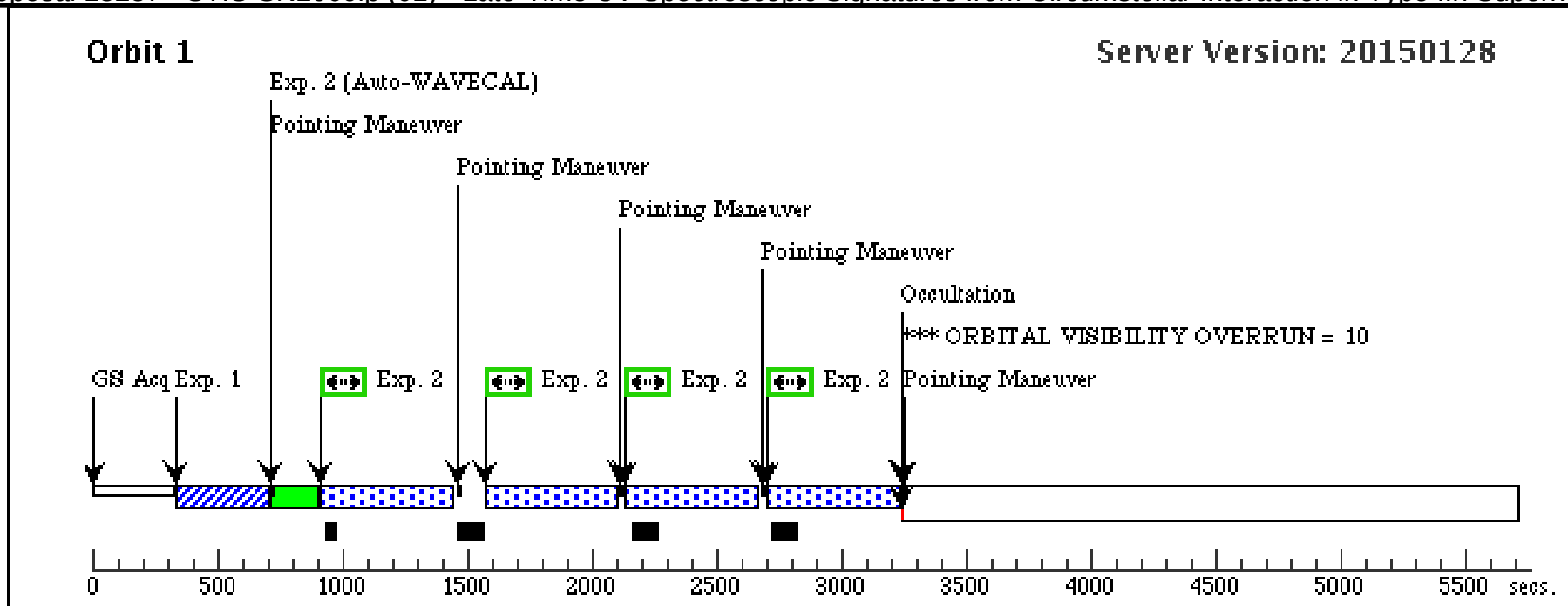
Fixed Targets

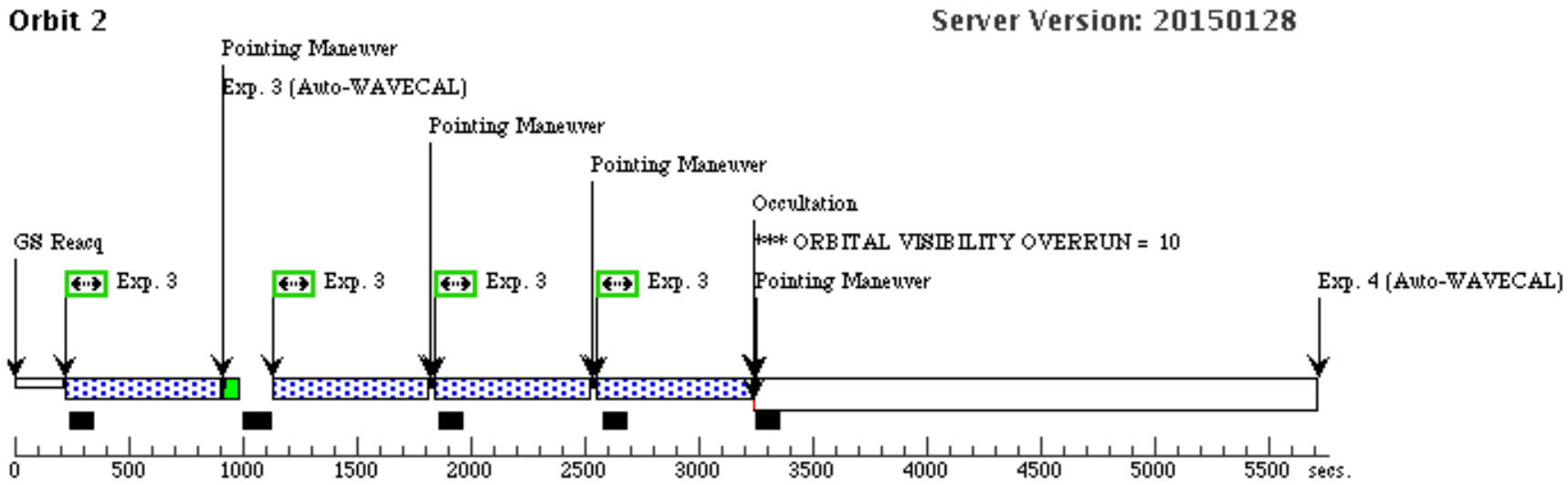
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SN-2009IP	Offset from SN-2009IP-OFFSET		V=19	Offset Position (SN-2009IP)
		RA Offset: -0.2135 Secs			
		Dec Offset: -4.396 Arcsec			
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.					
(6)	SN-2009IP-OFFSET	RA: 22 23 8.5000 (335.7854167d)		V=19	Reference Frame: ICRS
		Dec: -28 56 47.75 (-28.94660d)			
		Equinox: J2000			
Comments: V-mag estimated from USNO catalogue. Star type unknown. *This object was generated by the targetselector and retrieved from the SIMBAD database.*					

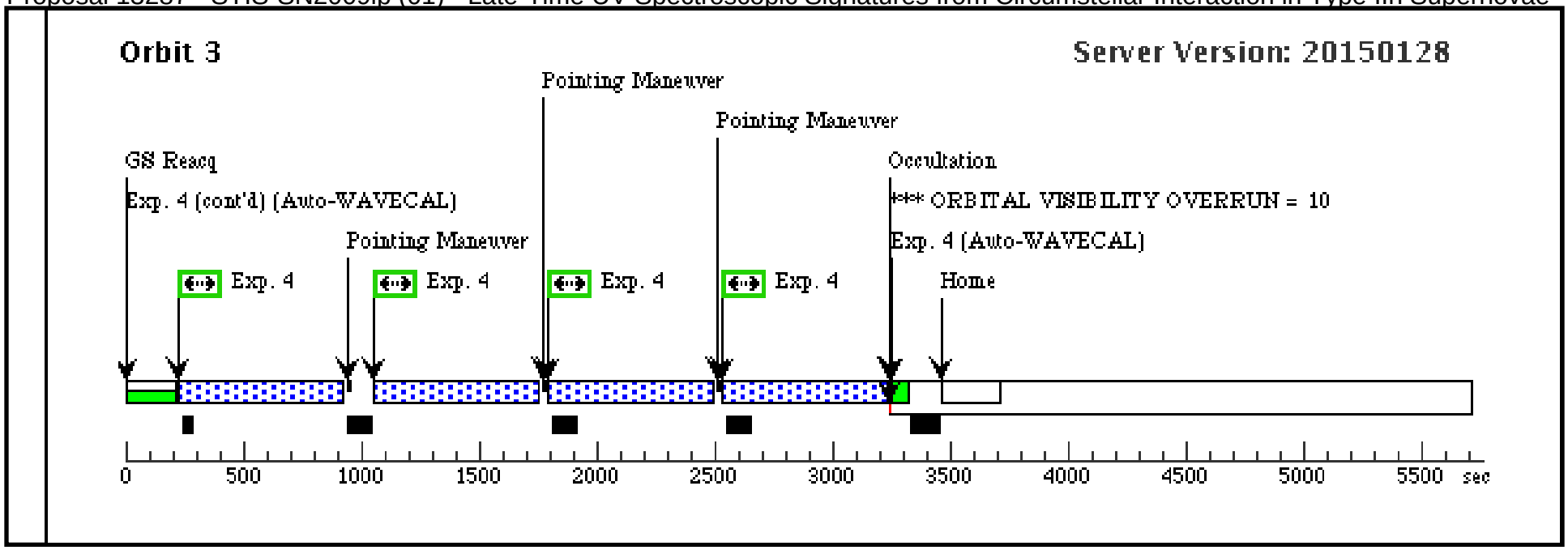
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.ta.520446)	(6) SN-2009IP-OFFSET	STIS/CCD, ACQ, F28X50LP	MIRROR				35 Secs (35 Secs) *[==>]*	***[1]***
Comments: V-mag estimated from USNO catalogue. Star type unknown. *Exposure time set Feige110 template scaled to V mag = 19. Plus an extra 15 seconds to account for potentially redder source.*									
2	STIS/FUV Exp1 (STIS.sp.508429)	(1) SN-2009IP	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 2-2 in STIS-SN2009ip (01) (2)	350 Secs (2072 Secs) *[==>518.0 Secs (Pattern 1)]* *[==>518.0 Secs (Pattern 2)]* *[==>518.0 Secs (Pattern 3)]* *[==>518.0 Secs (Pattern 4)]*	***[1]***
3	STIS/FUV Exp2 (STIS.sp.508429)	(1) SN-2009IP	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 3-3 in STIS-SN2009ip (01) (2)	650 Secs (2660 Secs) *[==>665.0 Secs (Pattern 1)]* *[==>665.0 Secs (Pattern 2)]* *[==>665.0 Secs (Pattern 3)]* *[==>665.0 Secs (Pattern 4)]*	***[2]***
4	STIS/NUV Exp1 (STIS.sp.517595)	(1) SN-2009IP	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 2, Exps 4-4 in STIS-SN2009ip (01) (2)	675 Secs (2764 Secs) *[==>691.0 Secs (Pattern 1)]* *[==>691.0 Secs (Pattern 2)]* *[==>691.0 Secs (Pattern 3)]* *[==>691.0 Secs (Pattern 4)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20150128
Pointing Maneuver
Pointing Maneuver
GS Reacq
Occultation
Exp. 4 (cont'd) (Auto-WAVECAL)
*** ORBITAL VISIBILITY OVERRUN = 10
Pointing Maneuver
Exp. 4 (Auto-WAVECAL)
Exp. 4
Exp. 4
Exp. 4
Exp. 4
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13287, STIS-SN2005ip (02), completed Sat Feb 21 02:09:36 GMT 2015

Diagnostic Status: Warning

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

Special Requirements: (none)

Comments: Normal ACQ.

Diagnostics

(STIS-SN2005ip (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(STIS-SN2005ip (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(STIS-SN2005ip (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=STIS-ALONG-SLIT	Coordinate Frame=POS-TARG		(2), (3), (4)
	Purpose=DITHER	Pattern Orientation=90.0		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=1	Center Pattern=true		
	Line Spacing=			

Fixed Targets

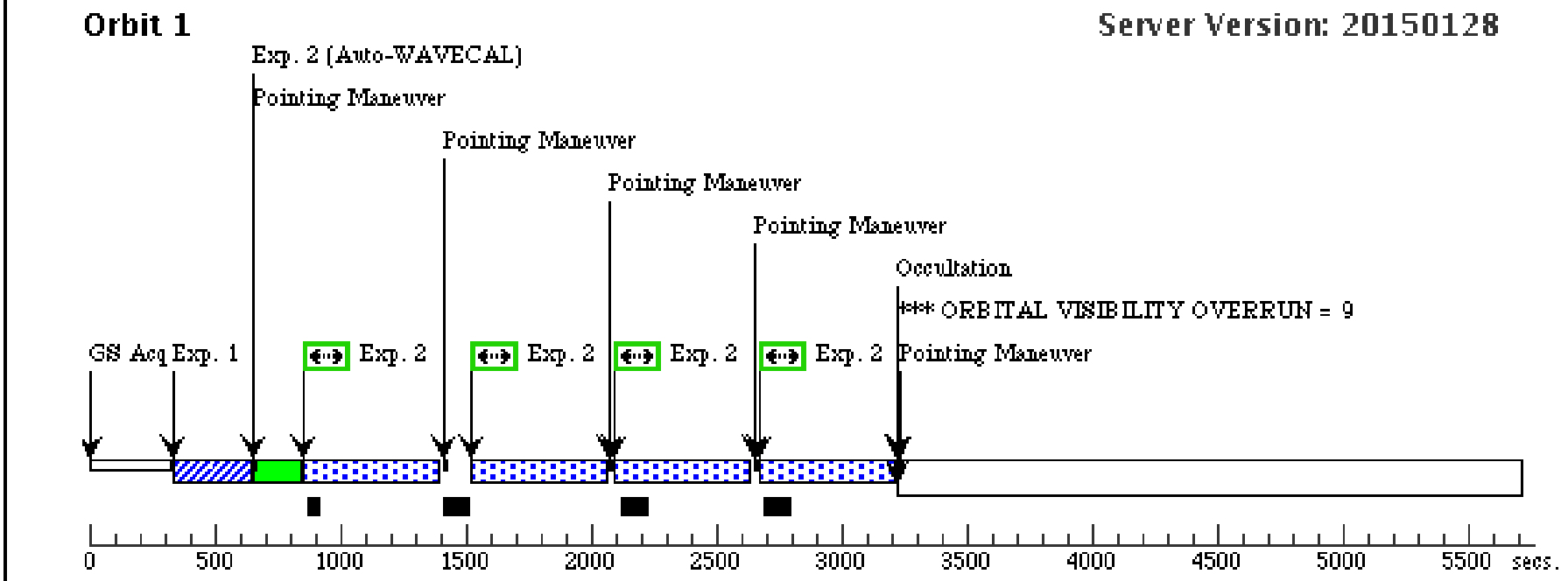
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SN-2005IP	RA: 09 32 6.4200 (143.0267500d) Dec: +08 26 44.40 (8.44567d) Equinox: J2000		V=19	Reference Frame: ICRS

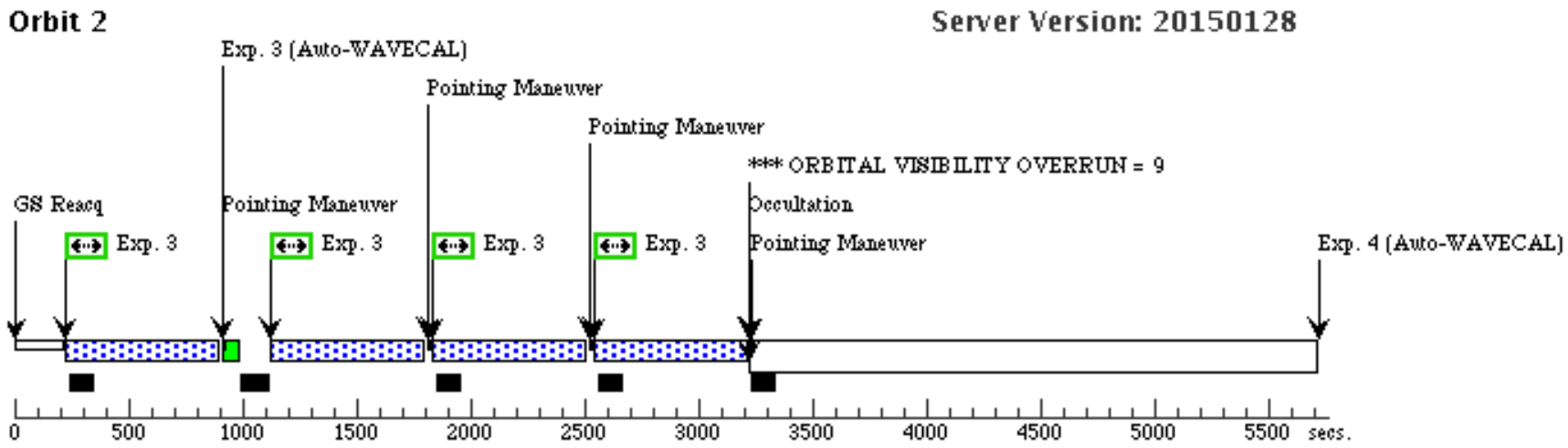
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

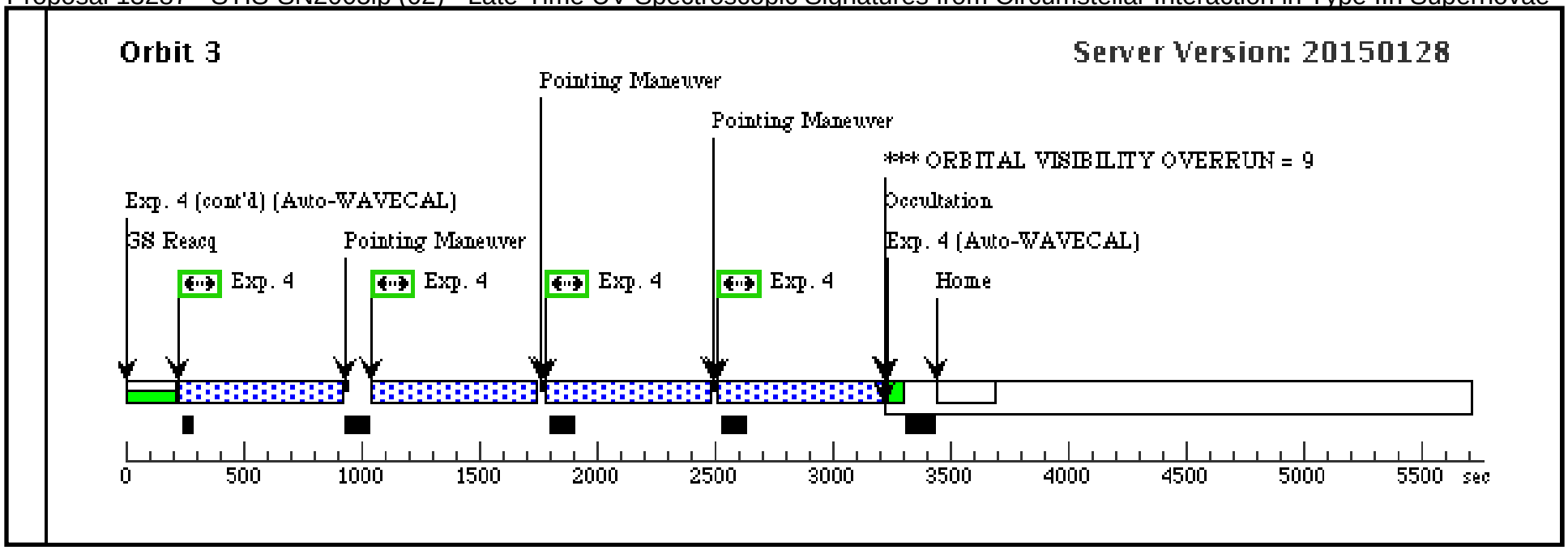
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.ta.517514)	(2) SN-2005IP	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3		20 Secs (20 Secs) *[==>]*	***[1]***
Comments: Exposure time set for 20121115 spectrum of 05ip scaled to V mag = 19. Plus an extra 10 seconds to account for potential fading.									
2	STIS/FUV Exp1 (STIS.sp.508430)	(2) SN-2005IP	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 2-2 in STIS-SN2005ip (02) (2)	530 Secs (2112 Secs) *[==>528.0 Secs (Pattern 1)]* *[==>528.0 Secs (Pattern 2)]* *[==>528.0 Secs (Pattern 3)]* *[==>528.0 Secs (Pattern 4)]*	***[1]***
3	STIS/FUV Exp2 (STIS.sp.508430)	(2) SN-2005IP	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 3-3 in STIS-SN2005ip (02) (2)	650 Secs (2640 Secs) *[==>660.0 Secs (Pattern 1)]* *[==>660.0 Secs (Pattern 2)]* *[==>660.0 Secs (Pattern 3)]* *[==>660.0 Secs (Pattern 4)]*	***[2]***
4	STIS/NUV Exp1 (STIS.sp.517595)	(2) SN-2005IP	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 2, Exps 4-4 in STIS-SN2005ip (02) (2)	650 Secs (2744 Secs) *[==>686.0 Secs (Pattern 1)]* *[==>686.0 Secs (Pattern 2)]* *[==>686.0 Secs (Pattern 3)]* *[==>686.0 Secs (Pattern 4)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20150128
Pointing Maneuver
Pointing Maneuver
*** ORBITAL VISIBILITY OVERRUN = 9
Occultation
Exp. 4 (cont'd) (Auto-WAVECAL)
38 Reacq
Pointing Maneuver
Exp. 4 (Auto-WAVECAL)
Exp. 4
Exp. 4
Exp. 4
Exp. 4
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13287, STIS-SN2010jl (03), failed Sat Feb 21 02:09:36 GMT 2015

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 261.616D TO 261.616 D; ORIENT 81.616D TO 81.616 D

Comments: Requires an offset >30 arcseconds aways.
Use fixed slit orientation to encompass two possible SN positions.
PA takes into account the 45.35 degree rotation for the 52x0.2" slit given by Table 11.2 in the STIS handbook.

The BOT identifies 3 stars Unknown stars. The origin of these detections is unclear to me, as they don't appear in the DSDD-DR9 or USNO catalogues. I thereby append the nearest catlog mags available.

Object Nearst Mags
N6VY000279 SDSS-DS9 umag=16.298, gmag=15.335, rmag=15.171,imag=15.125
N6VY003757 USNO-B1 Bmag=16.79, Imag=16.92
N6VY003758 SDSS-DS9 umag=16.298, gmag=15.335, rmag=15.171,imag=15.125

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=STIS-ALONG-SLIT	Coordinate Frame=POS-TARG		(2), (3), (4), (5), (6)
	Purpose=DITHER	Pattern Orientation=90.0		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=1	Center Pattern=true		
	Line Spacing=			

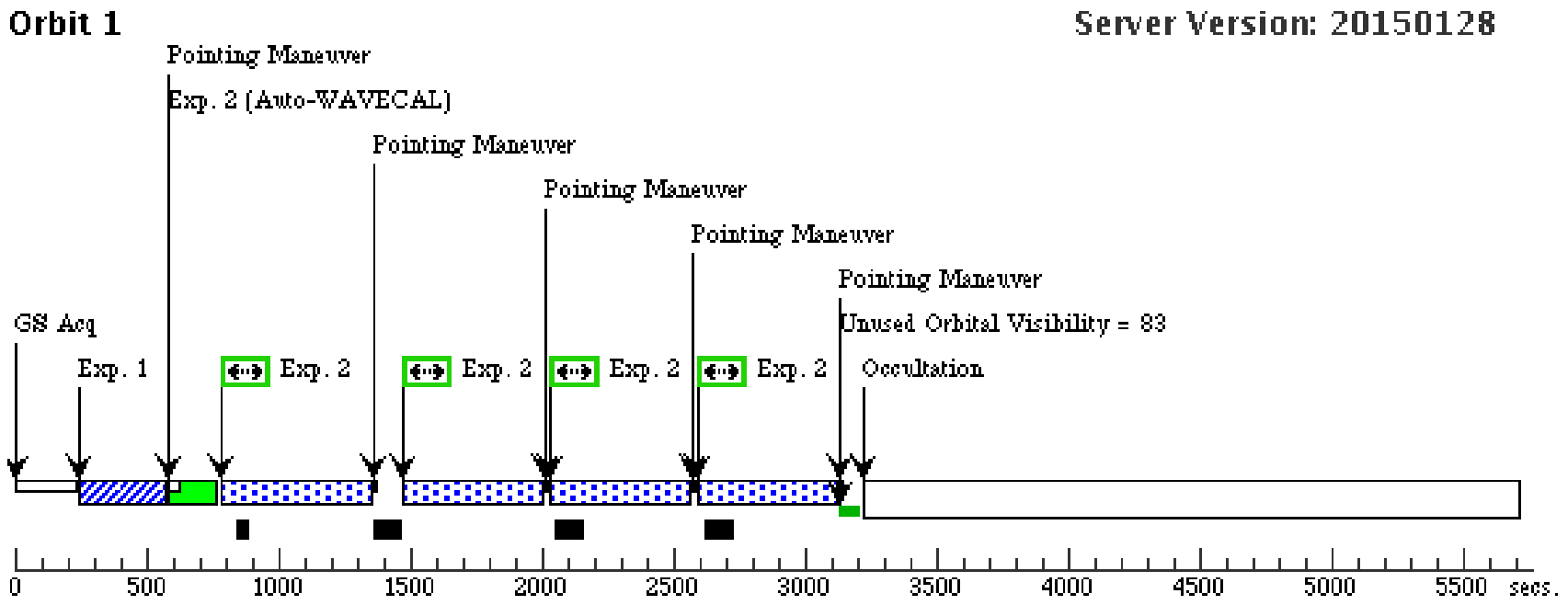
Fixed Targets

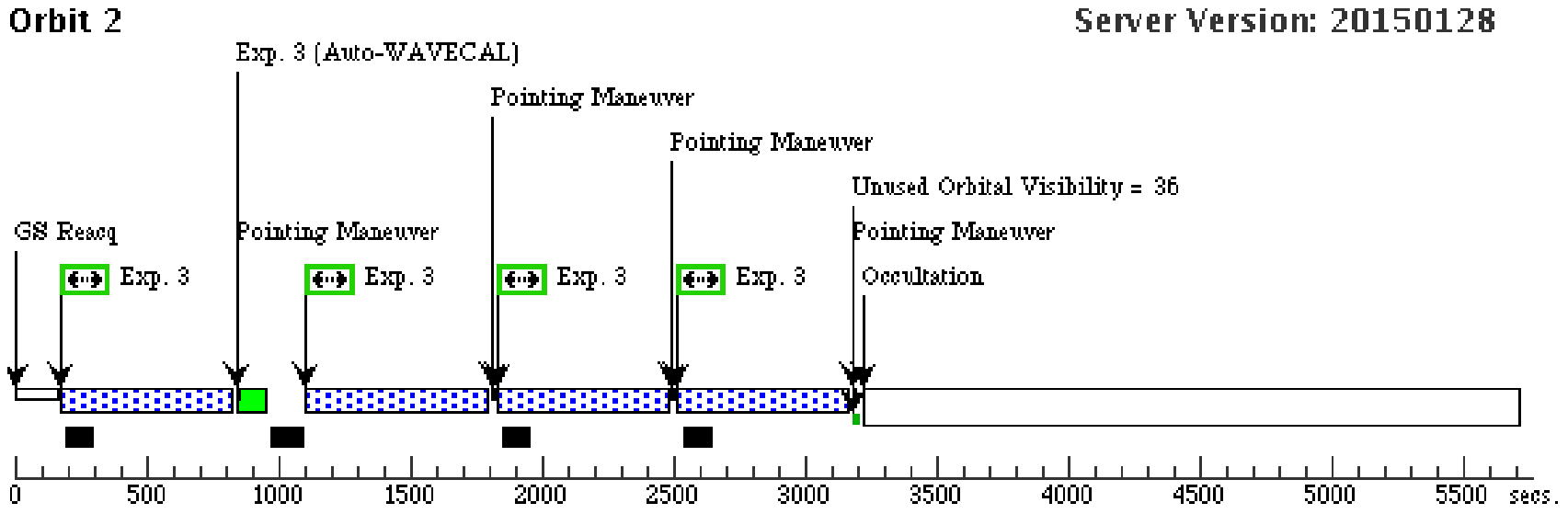
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	SN-2010JL	Offset from SN-2010JL-OFFSET		V=21	Offset Position (SN-2010JL)
		RA Offset: -2.4019 Secs			
		Dec Offset: 46.964 Arcsec			
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.					
(8)	SN-2010JL-OFFSET	RA: 09 42 55.7340 (145.7322250d)		V=18	Reference Frame: ICRS
		Dec: +09 28 55.21 (9.48200d)			
		Equinox: J2000			
Comments: V-mag estimated from SDSS catalogue. Star type unknown. *This object was generated by the targetselector and retrieved from the SIMBAD database.*					

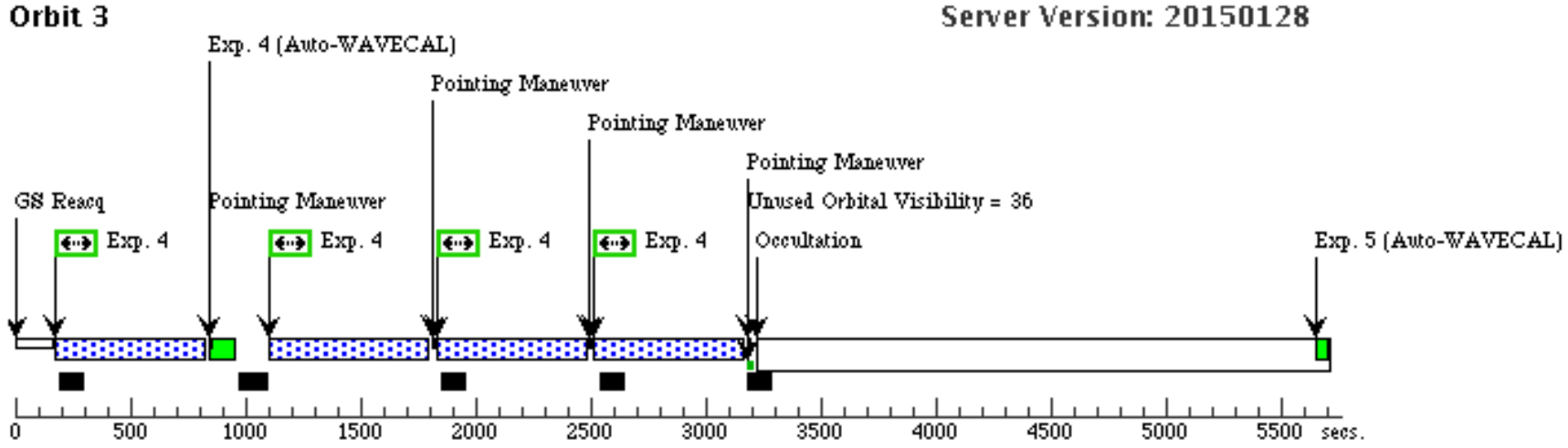
Exposures

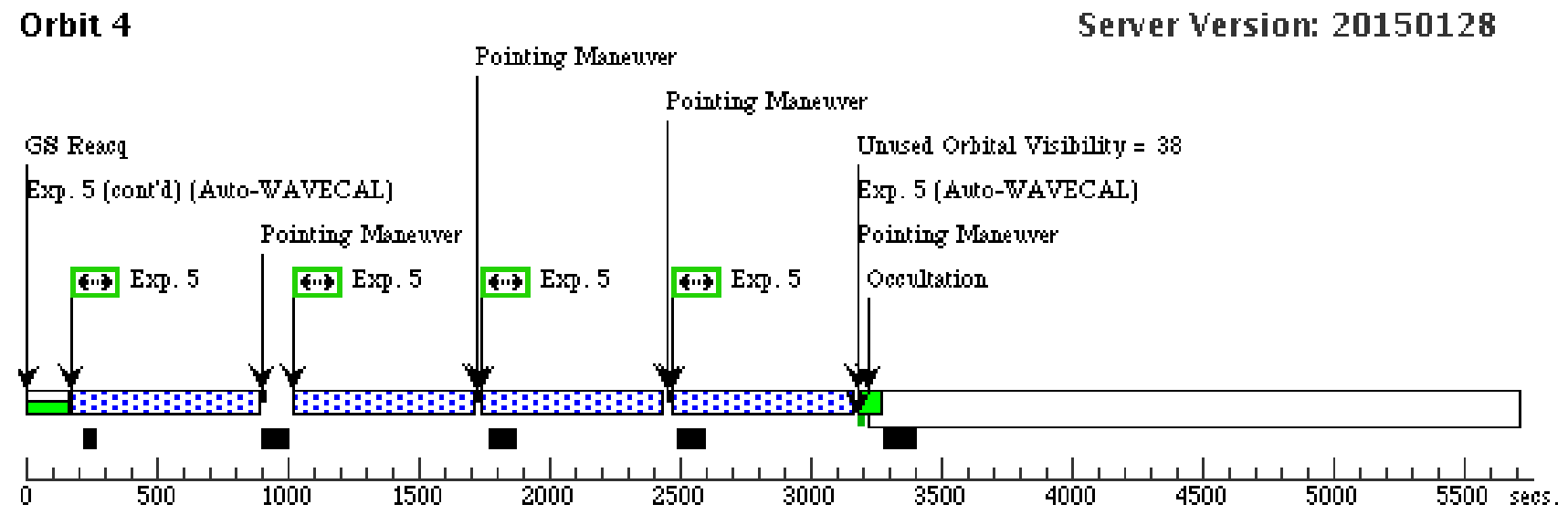
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.tSTIS.ta.520447a.517517)	(8) SN-2010JL-OFFSET	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO SINGLE		25 Secs (25 Secs) *[==>]*	***[1]***
	Comments: V-mag estimated from SDSS catalogue. Star type unknown. *Exposure time set Feige110 template scaled to V mag = 18. Plus an extra 15 seconds to account for potentially redder source.*								
2	STIS/FUV Exp1 (STIS.sp.517606)	(4) SN-2010JL	STIS/FUV-MAMA, ACCUM, 52X0.5	G140L 1425 A			Pattern 2, Exps 2-2 in STIS-SN2010jl (03) (2)	300 Secs (2052 Secs) *[==>513.0 Secs (Pattern 1)]* *[==>513.0 Secs (Pattern 2)]* *[==>513.0 Secs (Pattern 3)]* *[==>513.0 Secs (Pattern 4)]*	***[1]***
3	STIS/FUV Exp2 (STIS.sp.517606)	(4) SN-2010JL	STIS/FUV-MAMA, ACCUM, 52X0.5	G140L 1425 A			Pattern 2, Exps 3-3 in STIS-SN2010jl (03) (2)	650 Secs (2556 Secs) *[==>639.0 Secs (Pattern 1)]* *[==>639.0 Secs (Pattern 2)]* *[==>639.0 Secs (Pattern 3)]* *[==>639.0 Secs (Pattern 4)]*	***[2]***
4	STIS/FUV Exp3 (STIS.sp.517606)	(4) SN-2010JL	STIS/FUV-MAMA, ACCUM, 52X0.5	G140L 1425 A			Pattern 2, Exps 4-4 in STIS-SN2010jl (03) (2)	650 Secs (2556 Secs) *[==>639.0 Secs (Pattern 1)]* *[==>639.0 Secs (Pattern 2)]* *[==>639.0 Secs (Pattern 3)]* *[==>639.0 Secs (Pattern 4)]*	***[3]***
5	STIS/NUV Exp1 (STIS.sp.517611)	(4) SN-2010JL	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A			Pattern 2, Exps 5-5 in STIS-SN2010jl (03) (2)	650 Secs (2720 Secs) *[==>680.0 Secs (Pattern 1)]* *[==>680.0 Secs (Pattern 2)]* *[==>680.0 Secs (Pattern 3)]* *[==>680.0 Secs (Pattern 4)]*	***[4]***
6	STIS/NUV Exp2 (STIS.sp.517611)	(4) SN-2010JL	STIS/NUV-MAMA, ACCUM, 52X0.5	G230L 2376 A			Pattern 2, Exps 6-6 in STIS-SN2010jl (03) (2)	650 Secs (2815 Secs) *[==>644.0 Secs (Pattern 1)]* *[==>644.0 Secs (Pattern 2)]* *[==>644.0 Secs (Pattern 3)]* *[==>883.0 Secs (Pattern 4)]*	***[5]***

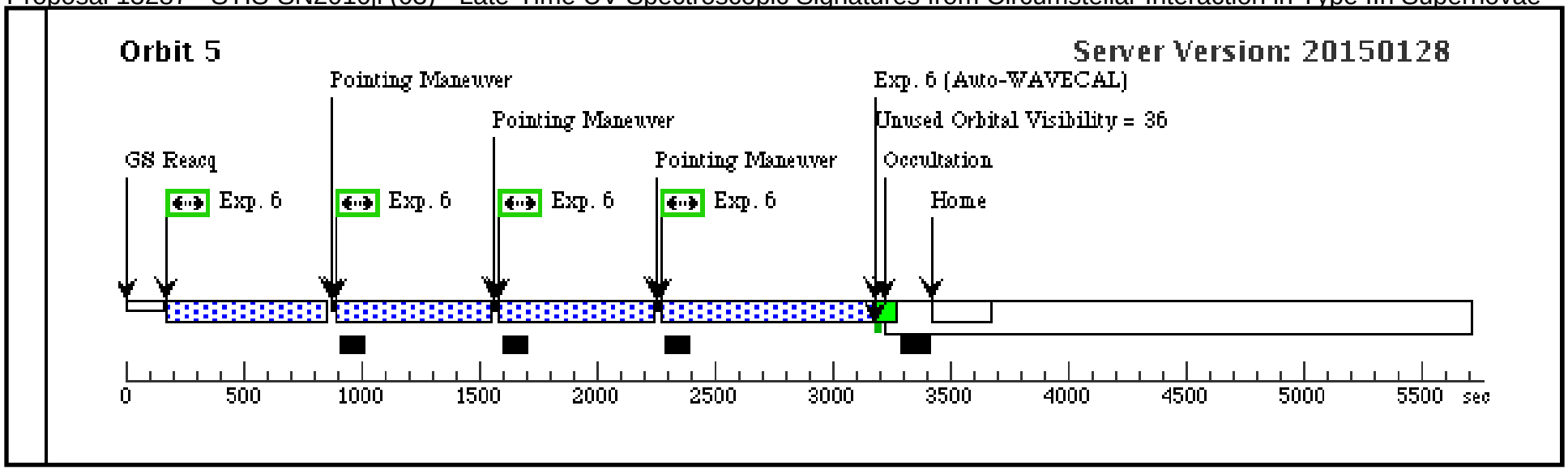
Orbit Structure






Orbit 3
Server Version: 20150128
Exp. 4 (Auto-WAVECAL)
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
GS Reacq
Pointing Maneuver
Unused Orbital Visibility = 36
Exp. 4
Exp. 4
Exp. 4
Exp. 4
Occultation
Exp. 5 (Auto-WAVECAL)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 4
Server Version: 20150128
Pointing Maneuver
Pointing Maneuver
GS Reacq
Unused Orbital Visibility = 38
Exp. 5 (cont'd) (Auto-WAVECAL)
Exp. 5 (Auto-WAVECAL)
Pointing Maneuver
Pointing Maneuver
Exp. 5
Exp. 5
Exp. 5
Exp. 5
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 5
Server Version: 20150128
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Exp. 6 (Auto-WAVECAL)
Unused Orbital Visibility = 36
GS Reacq
Exp. 6
Exp. 6
Exp. 6
Exp. 6
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13287, STIS-SN2010jl-2 (05), implementation Sat Feb 21 02:09:36 GMT 2015

Diagnostic Status: Warning

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

Special Requirements: (none)

Comments: Requires an offset >30 arcseconds aways.

We have precisely located the position of SN 2010jl in the latest WFC3 image that our team triggered in November. The offset ACQ star, however, is only located in a pre-SN image of the galaxy taken with WFPC2 F300W. We've matched the astrometry in these two images and identified the precise SN position in the WFPC2 image to calculate the offset from the ACQ star.

Unlike the previous set of observations, we now know the precise offset, so we are not limited to a single rotation angle. This means we are also not limited to only a single guide star. Therefore, we don't need to accomodate for any drift.

We have therefore implemented 2 major changes from our previous Phase 2.
1) 0.5" slit -> 0.2" slit.
2) No limit on the rotation angle.

The BOT identifies 3 stars Unknown stars. The origin of these detections is unclear to me, as they don't appear in the DSDD-DR9 or USNO catalogues. I thereby append the nearest catlog mags available.

Object Nearst Mags
N6VY000279 SDSS-DS9 umag=16.298, gmag=15.335, rmag=15.171,imag=15.125
N6VY003757 USNO-B1 Bmag=16.79, Imag=16.92
N6VY003758 SDSS-DS9 umag=16.298, gmag=15.335, rmag=15.171,imag=15.125

Diagnostics

(STIS-SN2010jl-2 (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(STIS-SN2010jl-2 (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(STIS-SN2010jl-2 (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(STIS-SN2010jl-2 (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(STIS-SN2010jl-2 (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=STIS-ALONG-SLIT	Coordinate Frame=POS-TARG		(2), (3), (4), (5), (6)
	Purpose=DITHER	Pattern Orientation=90.0		
	Number Of Points=4	Angle Between Sides=		
	Point Spacing=1	Center Pattern=true		
	Line Spacing=			

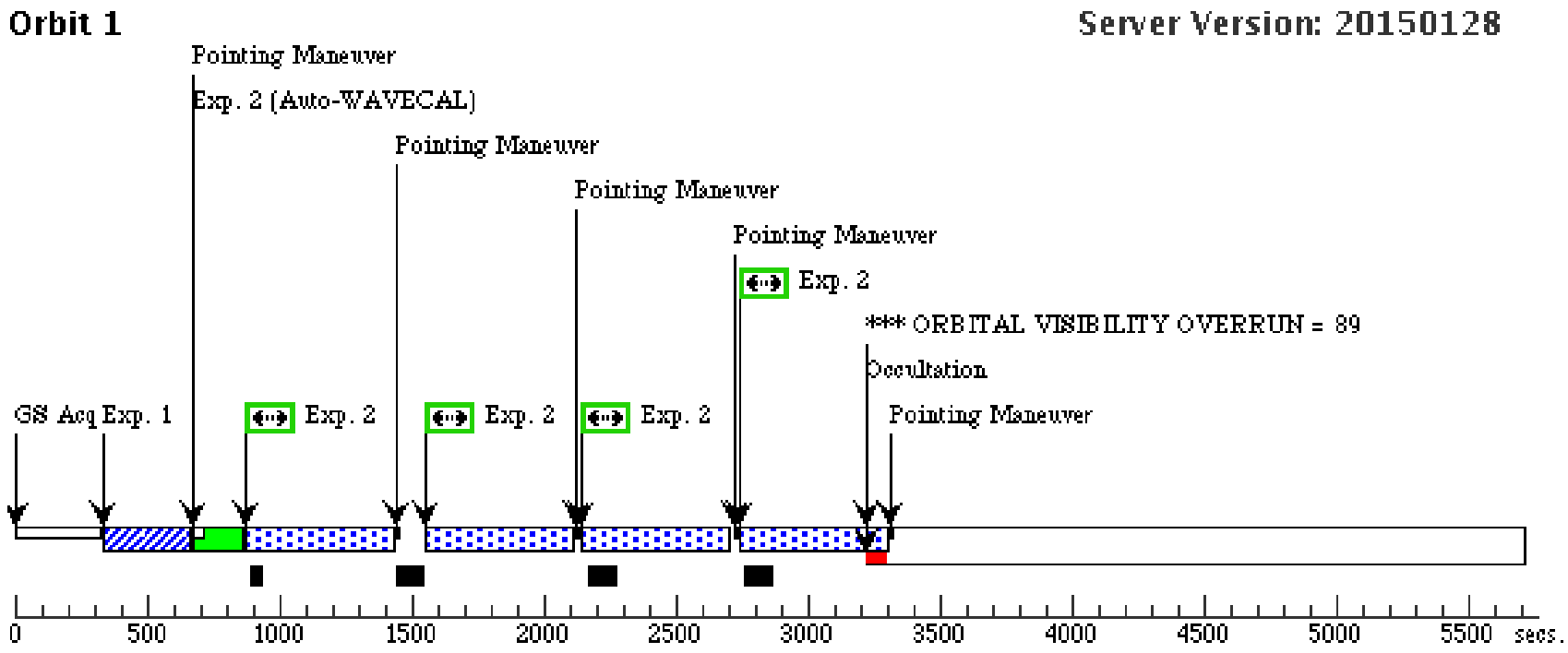
Fixed Targets

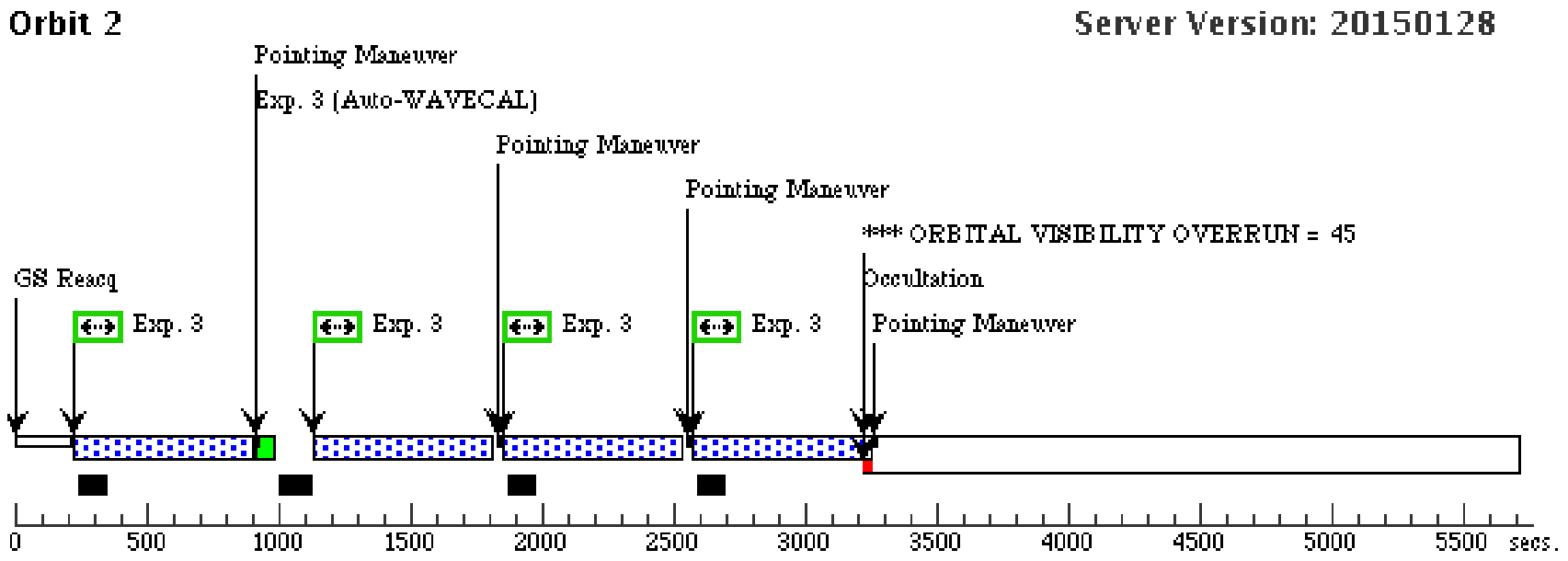
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	SN-2010JL-OFFSET	RA: 09 42 55.7340 (145.7322250d)		V=18	Reference Frame: ICRS
		Dec: +09 28 55.21 (9.48200d)			
		Equinox: J2000			
Comments: V-mag estimated from SDSS catalogue. Star type unknown. *This object was generated by the targetselector and retrieved from the SIMBAD database.*					
(9)	SN-2010JL-2	Offset from SN-2010JL-OFFSET		V=21	Offset Position (SN-2010JL-2)
		RA Offset: -2.404 Secs			
		Dec Offset: 46.911621 Arcsec			
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.					

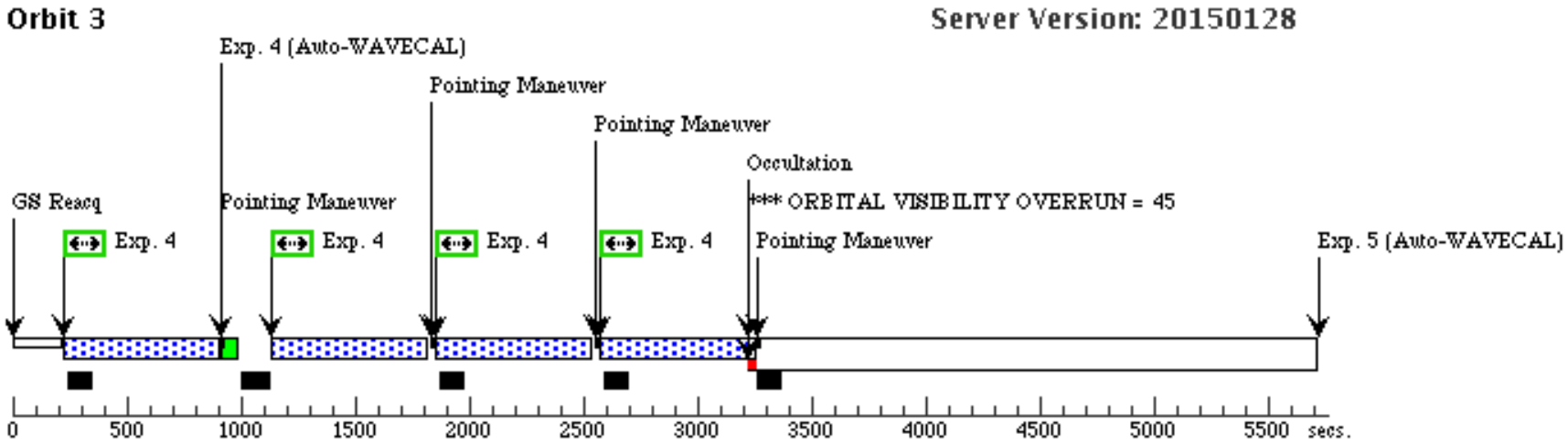
Exposures

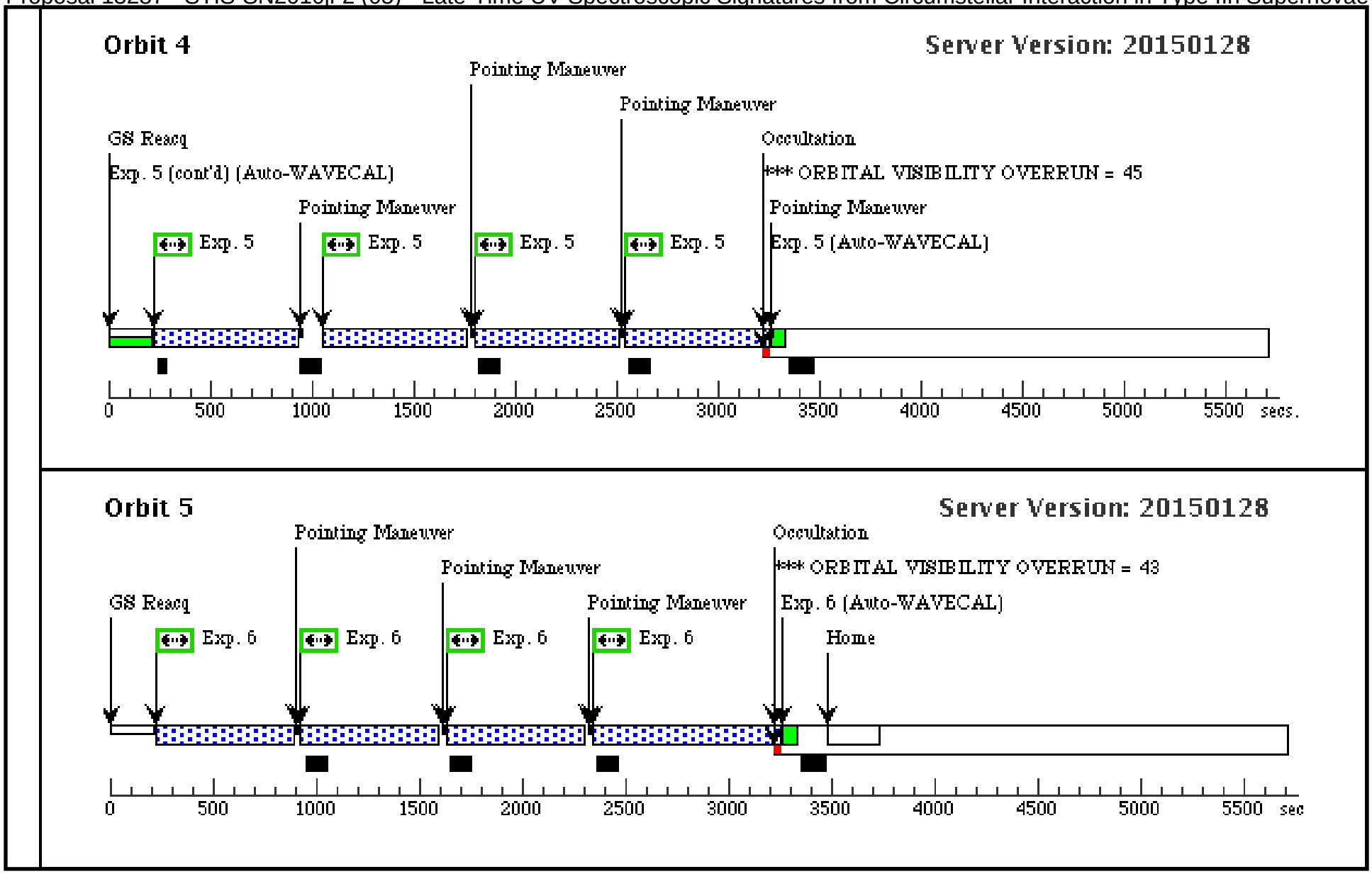
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.tSTIS.ta.520447a.517517)	(8) SN-2010JL-OFFSET	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3		25 Secs (25 Secs) *[==>]*	***[1]***
	Comments: V-mag estimated from SDSS catalogue. Star type unknown. *Exposure time set Feige110 template scaled to V mag = 18. Plus an extra 15 seconds to account for potentially redder source.*								
2	STIS/FUV Exp1 (STIS.sp.517606)	(9) SN-2010JL-2	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 2-2 in STIS-SN2010jl-2 (05) (2)	300 Secs (2172 Secs) *[==>543.0 Secs (Pattern 1)]* *[==>543.0 Secs (Pattern 2)]* *[==>543.0 Secs (Pattern 3)]* *[==>543.0 Secs (Pattern 4)]*	***[1]***
3	STIS/FUV Exp2 (STIS.sp.517606)	(9) SN-2010JL-2	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 3-3 in STIS-SN2010jl-2 (05) (2)	650 Secs (2676 Secs) *[==>669.0 Secs (Pattern 1)]* *[==>669.0 Secs (Pattern 2)]* *[==>669.0 Secs (Pattern 3)]* *[==>669.0 Secs (Pattern 4)]*	***[2]***
4	STIS/FUV Exp3 (STIS.sp.517606)	(9) SN-2010JL-2	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 4-4 in STIS-SN2010jl-2 (05) (2)	650 Secs (2676 Secs) *[==>669.0 Secs (Pattern 1)]* *[==>669.0 Secs (Pattern 2)]* *[==>669.0 Secs (Pattern 3)]* *[==>669.0 Secs (Pattern 4)]*	***[3]***
5	STIS/NUV Exp1 (STIS.sp.517611)	(9) SN-2010JL-2	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 2, Exps 5-5 in STIS-SN2010jl-2 (05) (2)	650 Secs (2780 Secs) *[==>695.0 Secs (Pattern 1)]* *[==>695.0 Secs (Pattern 2)]* *[==>695.0 Secs (Pattern 3)]* *[==>695.0 Secs (Pattern 4)]*	***[4]***
6	STIS/NUV Exp2 (STIS.sp.517611)	(9) SN-2010JL-2	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 2, Exps 6-6 in STIS-SN2010jl-2 (05) (2)	650 Secs (2871 Secs) *[==>658.0 Secs (Pattern 1)]* *[==>658.0 Secs (Pattern 2)]* *[==>658.0 Secs (Pattern 3)]* *[==>897.0 Secs (Pattern 4)]*	***[5]***

Orbit Structure




Orbit 2
Server Version: 20150128
Pointing Maneuver
Exp. 3 (Auto-WAVECAL)
Pointing Maneuver
Pointing Maneuver
*** ORBITAL VISIBILITY OVERRUN = 45
GS Reacq
Occultation
Exp. 3
Exp. 3
Exp. 3
Exp. 3
Pointing Maneuver
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 3
Server Version: 20150128
Exp. 4 (Auto-WAVECAL)
Pointing Maneuver
Pointing Maneuver
Occultation
GS Reacq
Pointing Maneuver
*** ORBITAL VISIBILITY OVERRUN = 45
Exp. 4
Exp. 4
Exp. 4
Exp. 4
Pointing Maneuver
Exp. 5 (Auto-WAVECAL)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 4
Server Version: 20150128
Pointing Maneuver
Pointing Maneuver
GS Reacq
Occultation
Exp. 5 (cont'd) (Auto-WAVECAL)
*** ORBITAL VISIBILITY OVERRUN = 45
Pointing Maneuver
Pointing Maneuver
Exp. 5
Exp. 5
Exp. 5
Exp. 5
Exp. 5 (Auto-WAVECAL)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 5
Server Version: 20150128
Pointing Maneuver
Occultation
Pointing Maneuver
*** ORBITAL VISIBILITY OVERRUN = 43
GS Reacq
Pointing Maneuver
Exp. 6 (Auto-WAVECAL)
Exp. 6
Exp. 6
Exp. 6
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13287, STIS-SN2006gy (04), completed Sat Feb 21 02:09:37 GMT 2015

Diagnostic Status: Warning

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

Special Requirements: ORIENT 332.434D TO 332.434 D; ORIENT 152.434D TO 152.434 D

Comments: Offset from nearby star. Use fixed slit orientation to include galaxy nucleus.
PA takes into account the 45.35 degree rotation for the 52x0.2" slit given by Table 11.2 in the STIS handbook.

****
The BOT identifies 1 red warning. I believe this is due to the fact that no GALEX data exist.
Object Nearst Mags
NCIX025643 SDSS-DR9 umag=19.403, gmag=18.063, rmag=17.862, imag=17.786
Swift observations exist for this field, but I could not find available photometry.

*****
The BOT identifies 4 stars Unknown stars. The origin of these detections is unclear to me, as they don't appear in the DSDD-DR9 or USNO catalogues. I thereby append the nearest catlog mags available.

Object Nearst Mags
NCIX001164 (Host Galaxy Center) USNO-A2 Bmag=10.8, Rmag=8.9; USNO-B1 Bmag=11.13, Rmag=9.08,
Also, nearby Bmag = 9.62, Rmage=9.08
NCIX043914 SDSS-DS9 umag=24.630, gmag=23.874, rmag=22.510,imag=21.796
NCIX043905 No nearby stars observed
NCIX043906 No nearby stars observed

Diagnostics

(STIS-SN2006gy (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(STIS-SN2006gy (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(STIS-SN2006gy (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(STIS-SN2006gy (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(STIS-SN2006gy (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

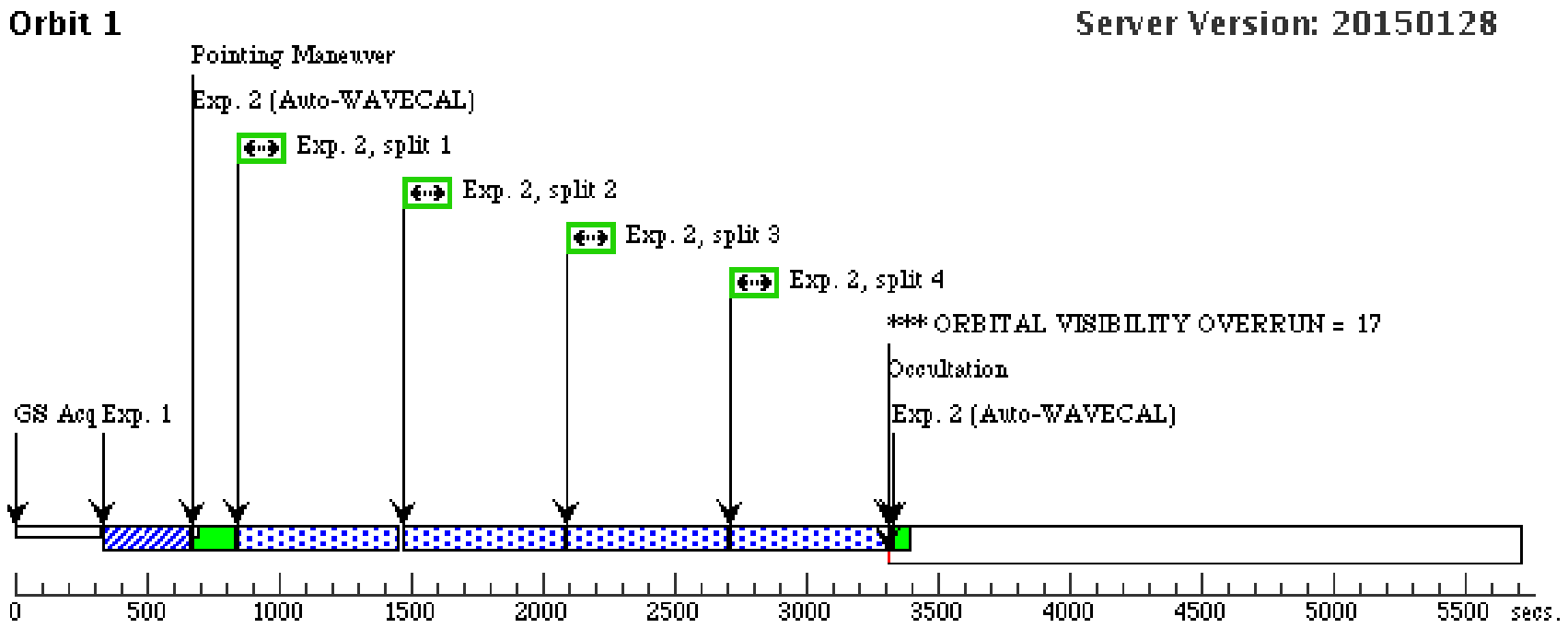
Fixed Targets

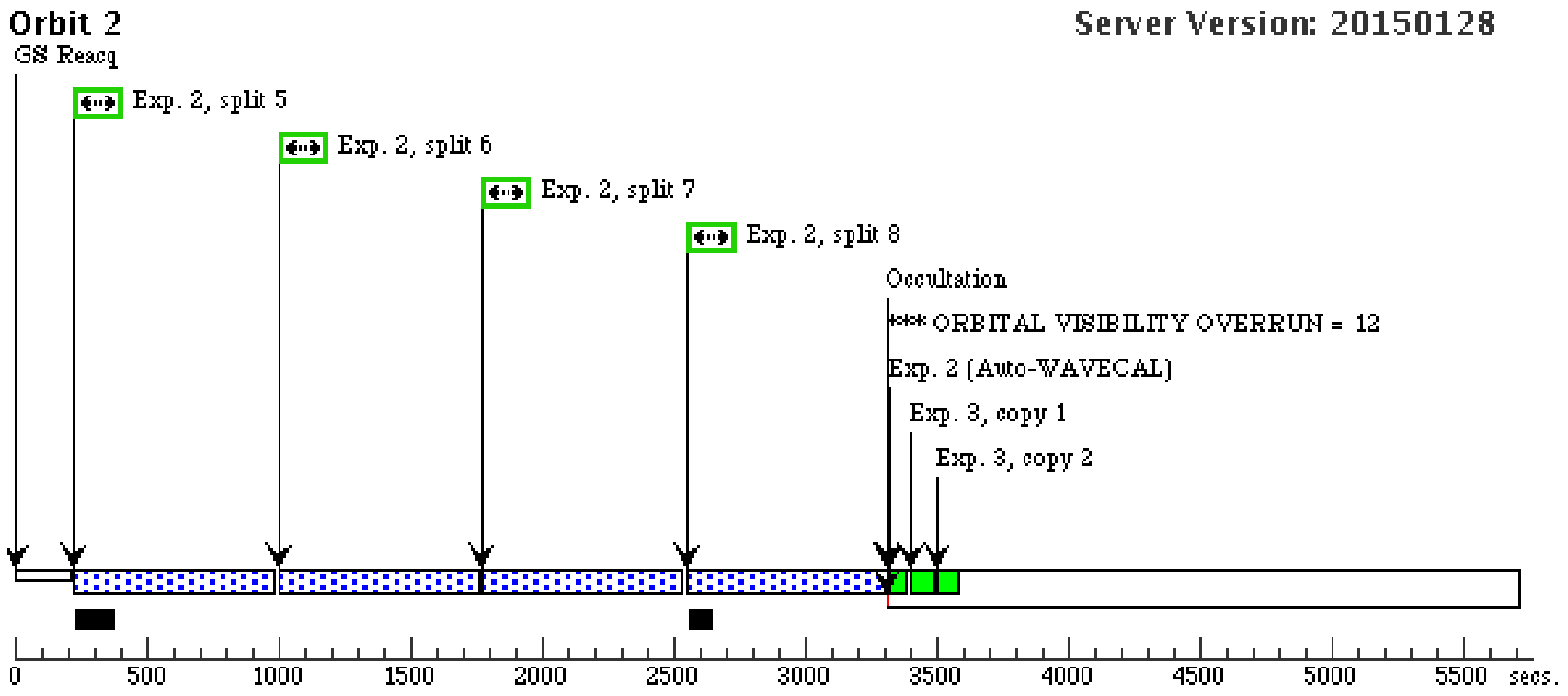
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	SN-2006GY	Offset from SN-2006GY-OFFSET		V=21.5	Offset Position (SN-2006GY)
		RA Offset: 0.9474 Secs			
		Dec Offset: -11.034 Arcsec			
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.					
(7)	SN-2006GY-OFFSET	RA: 03 17 26.1970 (49.3591542d)		V=18	Reference Frame: ICRS
		Dec: +41 24 29.81 (41.40828d)			
		Equinox: J2000			
Comments: V-mag estimated from SDSS catalogue. Star type unknown. *This object was generated by the targetselector and retrieved from the SIMBAD database.*					

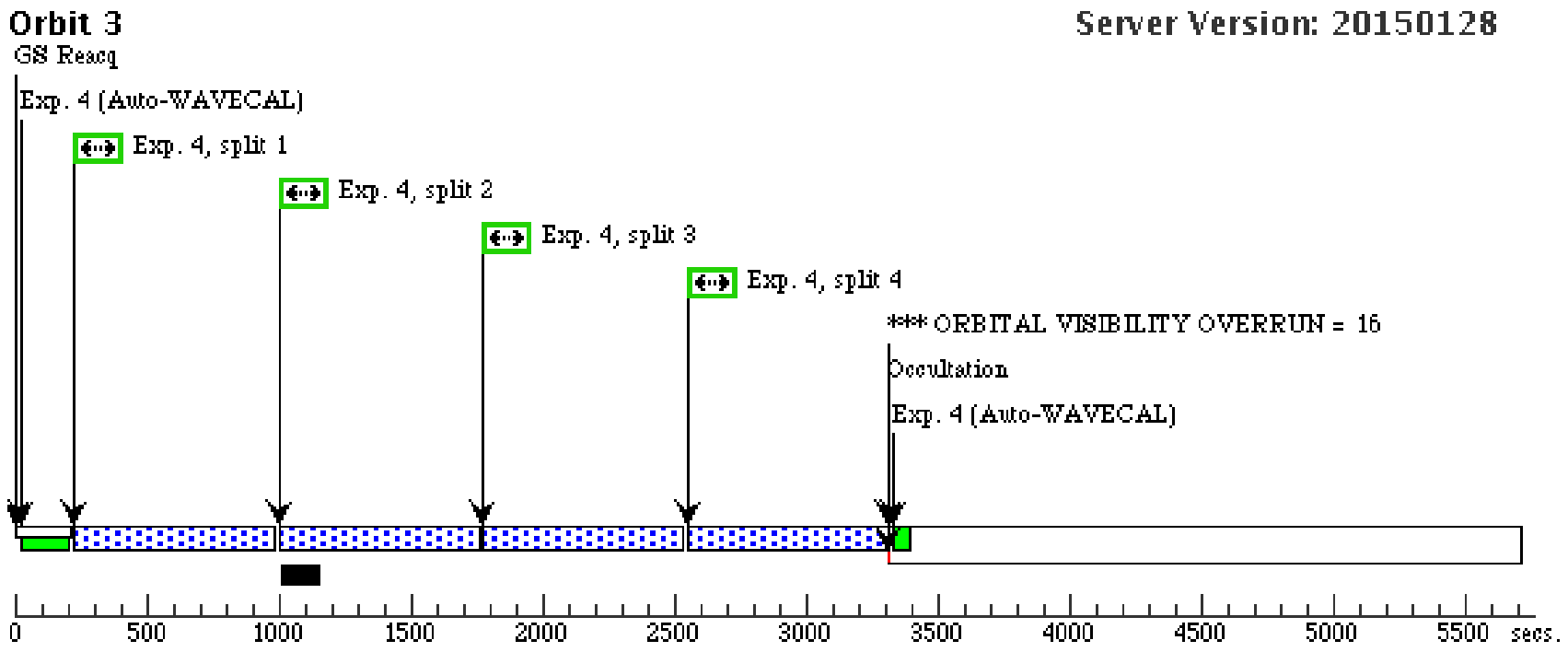
Exposures

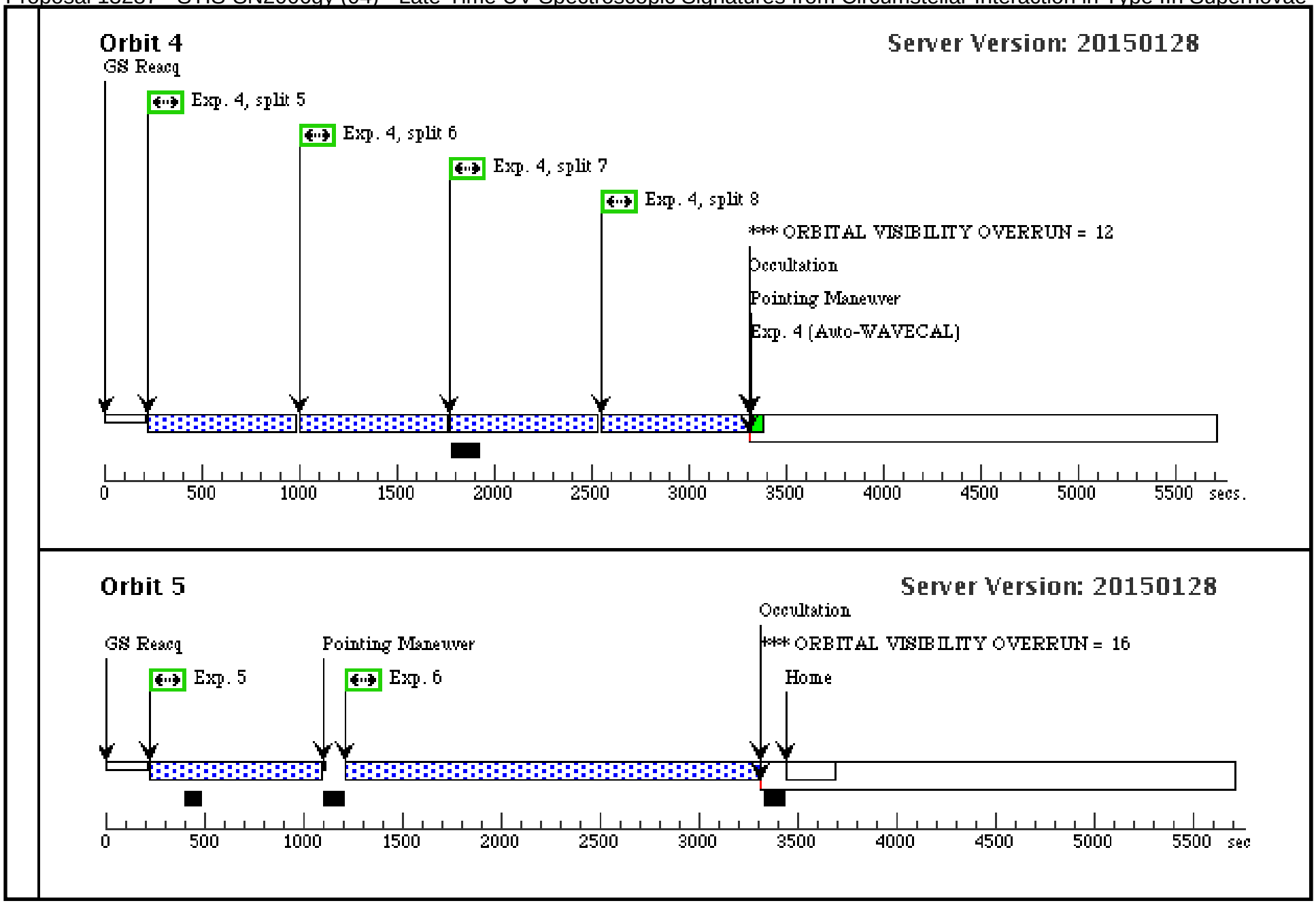
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ (STIS.ta.520447)	(7) SN-2006GY-OFFSET	STIS/CCD, ACQ, F28X50LP	MIRROR				25 Secs (25 Secs) *[==>]*	***[1]***
Comments: V-mag estimated from SDSS catalogue. Star type unknown. *Exposure time set Feige110 template scaled to V mag = 18. Plus an extra 15 seconds to account for potentially redder source.*									
2	STIS/CCD G750L (STIS.sp.508463)	(3) SN-2006GY	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A	CR-SPLIT=8			4400 Secs (5228 Secs) *[==>576.0 Secs (Split 1)]* *[==>576.0 Secs (Split 2)]* *[==>576.0 Secs (Split 3)]* *[==>576.0 Secs (Split 4)]* *[==>731.0 Secs (Split 5)]* *[==>731.0 Secs (Split 6)]* *[==>731.0 Secs (Split 7)]* *[==>731.0 Secs (Split 8)]*	***[1]*** ***[2]***
3	Fringe Flat	CCDFLAT	STIS/CCD, ACCUM, 52X0.2	G750L 7751 A				*[==>(Copy 1)]* *[==>(Copy 2)]*	***[2]***
4	STIS/CCD G430L (STIS.sp.508462)	(3) SN-2006GY	STIS/CCD, ACCUM, 52X0.2	G430L 4300 A	CR-SPLIT=8			5500 Secs (5848 Secs) *[==>731.5 Secs (Split 1)]* *[==>731.5 Secs (Split 2)]* *[==>731.5 Secs (Split 3)]* *[==>731.5 Secs (Split 4)]* *[==>730.5 Secs (Split 5)]* *[==>730.5 Secs (Split 6)]* *[==>730.5 Secs (Split 7)]* *[==>730.5 Secs (Split 8)]*	***[3]*** ***[4]***
5	STIS/NUV Imaging (STIS.im.508461)	(3) SN-2006GY	STIS/NUV-MAMA, ACCUM, F25SRF2	MIRROR				740 Secs (697 Secs) *[==>697.0 Secs]*	***[5]***
6	STIS/FUV Imaging (STIS.im.508460)	(3) SN-2006GY	STIS/FUV-MAMA, ACCUM, F25SRF2	MIRROR				2000 Secs (1957 Secs) *[==>1957.0 Secs]*	***[5]***

Orbit Structure




Orbit 2
Server Version: 20150128
GS Reacq
Exp. 2, split 5
Exp. 2, split 6
Exp. 2, split 7
Exp. 2, split 8
Occultation
*** ORBITAL VISIBILITY OVERRUN = 12
Exp. 2 (Auto-WAVECAL)
Exp. 3, copy 1
Exp. 3, copy 2
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 3
Server Version: 20150128
GS Reacq
Exp. 4 (Auto-WAVECAL)
Exp. 4, split 1
Exp. 4, split 2
Exp. 4, split 3
Exp. 4, split 4
*** ORBITAL VISIBILITY OVERRUN = 16
Occultation
Exp. 4 (Auto-WAVECAL)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 4
Server Version: 20150128
GS Reacq
Exp. 4, split 5
Exp. 4, split 6
Exp. 4, split 7
Exp. 4, split 8
*** ORBITAL VISIBILITY OVERRUN = 12
Occultation
Pointing Maneuver
Exp. 4 (Auto-WAVECAL)
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 5
Server Version: 20150128
Occultation
GS Reacq
Pointing Maneuver
*** ORBITAL VISIBILITY OVERRUN = 16
Exp. 5
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec