11665 - The Formation Mechanisms of Extreme Horizontal Branch Stars

Cycle: 17, Proposal Category: GO

(Availability Mode: AVAILABLE)

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) NGC2808-POS1 (4) NGC2808-UIT1-OFFSET ANY	STIS/CCD STIS/FUV-MAMA WFC3/UVIS	3	01-Oct-2008 21:30:30.0	yes
02	(1) NGC2808-POS1 (4) NGC2808-UIT1-OFFSET ANY	STIS/CCD STIS/FUV-MAMA WFC3/IR WFC3/UVIS	2	01-Oct-2008 21:30:47.0	yes
03	(2) NGC2808-POS2 (4) NGC2808-UIT1-OFFSET ANY	STIS/CCD STIS/FUV-MAMA WFC3/UVIS	3	01-Oct-2008 21:31:05.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
04	(2) NGC2808-POS2 (4) NGC2808-UIT1-OFFSET ANY	STIS/CCD STIS/FUV-MAMA WFC3/IR WFC3/UVIS	2	01-Oct-2008 21:31:16.0	yes
05	(3) NGC2808-POS3 (4) NGC2808-UIT1-OFFSET ANY	STIS/CCD STIS/FUV-MAMA WFC3/UVIS	3	01-Oct-2008 21:31:33.0	yes
06	(3) NGC2808-POS3 (4) NGC2808-UIT1-OFFSET ANY	STIS/CCD STIS/FUV-MAMA WFC3/IR WFC3/UVIS	2	01-Oct-2008 21:31:44.0	yes

15 Total Orbits Used

ABSTRACT

Blue hook stars are a class of hot (~35,000 K) subluminous extreme horizontal branch (EHB) stars that have been recently discovered using HST ultraviolet images of the massive globular clusters omega Cen and NGC 2808. These stars occupy a region of the HR diagram that is unexplained by canonical stellar evolution theory. Using new theoretical evolutionary and atmospheric models, we have shown that the blue hook stars are very likely the progeny of stars that undergo extensive internal mixing during a late helium core flash on the white dwarf cooling curve. This "flash mixing" produces an enormous enhancement of the surface helium and carbon abundances (relative to the abundance pattern that existed on the main sequence), which suppresses the observed flux in the far-UV. Because stars born with a high helium abundance are more likely to evolve into hot horizontal branch stars, flash mixing is more likely to occur in those massive clusters capable of helium self-enrichment. However, a high initial helium abundance, by itself, is not sufficient to explain the presence of a blue hook population - flash mixing of the envelope is also required.

We propose far-UV spectroscopy of normal and subluminous EHB stars in NGC 2808 that will unambiguously test this new formation mechanism. These observations will easily detect the helium and carbon enhancements predicted by flash mixing and will therefore determine if flash mixing

represents a new evolutionary channel for populating the hot end of the EHB. More generally, our observations will help to clarify the role of helium self-enrichment in producing blue horizontal branch morphologies and multiple main sequences in massive globular clusters. Finally, these results will provide new insight into the origin and abundance anomalies of the hot helium-rich subdwarf B and O stars in the Galactic field.

OBSERVING DESCRIPTION

The spectra of approximately 30 HB stars will be obtained by placing the STIS 52x2 arcsec slit at 3 positions, with 5 orbits spent in each position. To help with scheduling, each position is observed in two visits of 2 and 3 orbits. Each 3-orbit visit consists of an ACQ on an offset star, an offset to one of these 3 positions, a brief CCD image through the slit to obtain accurate positions of the stars relative to the slit midline, and the G140L spectroscopy. The 2-orbit visit is similar but does not repeat the image through the slit. The 5 spectroscopic exposures taken at each position dither the slit to different positions parallel to the slit, to smooth the detector response and remove hot pixels in both the prime (STIS) and parallel (WFC3) data. This field has been imaged by STIS previously, and is safe for FUVQTZ imaging or spectroscopy.

In parallel, we will obtain 5-band WFC3 imaging in the UVIS (F390W, F555W, and F814W) and IR (F110W and F160W) channels. Exposure times have been staggered to increase dynamic range. Dithering options are limited by the prime science, but will be sufficient for data masking and PSF resampling in one axis.

Visit

Proposal 11665, Visit 01, implementation Thu Oct 02 01:31:48 GMT 2008

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 25.5D TO 25.5 D; ORIENT 205.5D TO 205.5 D

Fixed Targets

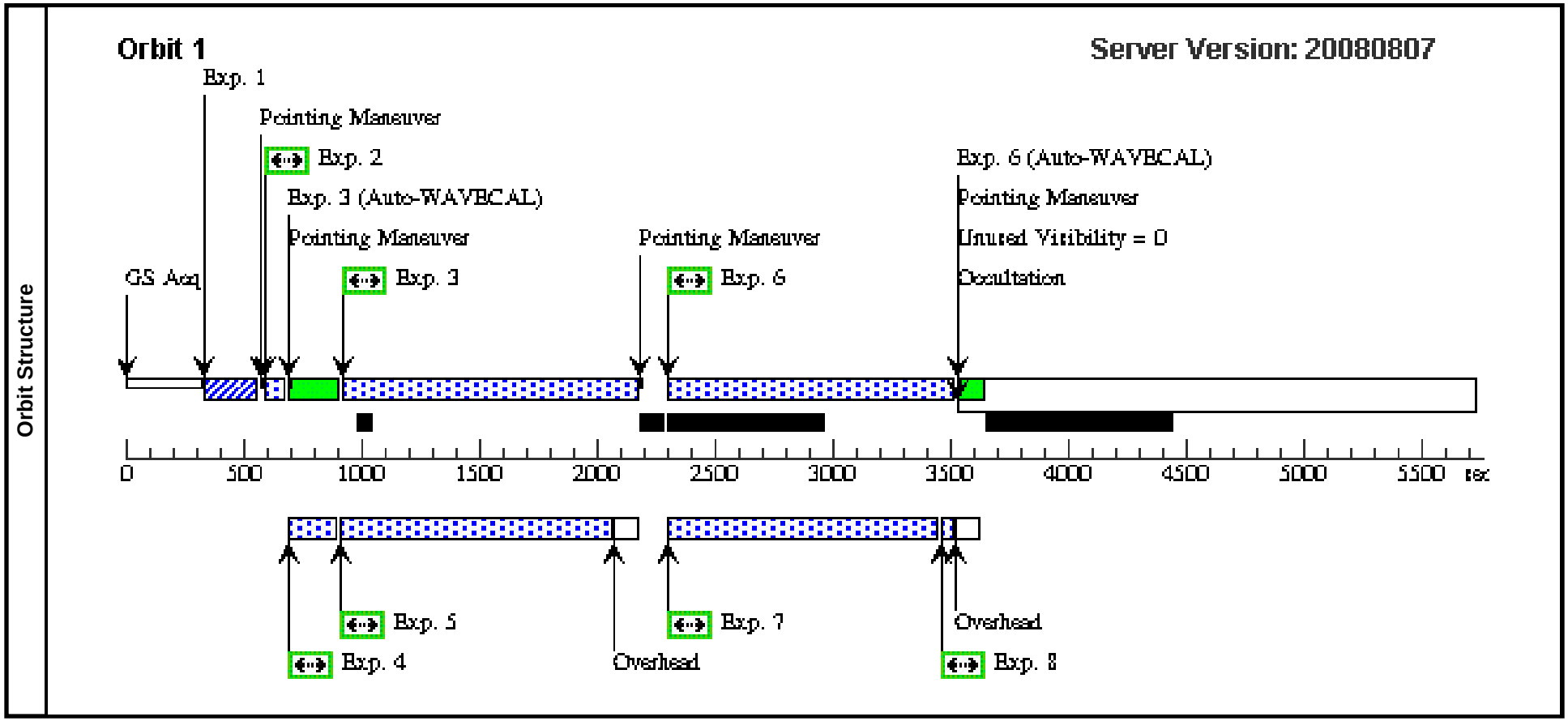
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC2808-POS1	RA: 09 12 3.9300 (138.0163750d) Dec: -64 51 37.64 (-64.86046d) Equinox: J2000		V=16.35+/-0.1 B-V=0.1, F-CONT(1425)=5E-14, E(B-V)=0.23	Reference Frame: ICRS
Comments: The V-mag and flux values are for the most UV-bright object in the field (NGC2808-UIT1), with previous UV imaging and spectroscopy by STIS. This object wil not be in the slit in this program. Orient of the slit for this target should be 25.5+/-180.					
(4)	NGC2808-UIT1-OFFSET	RA: 09 12 3.0700 (138.0127917d) Dec: -64 51 33.50 (-64.85931d) Equinox: J2000		V=13.17+/-0.1 B-V=1.74	Reference Frame: ICRS
Comments: This star was used as the acquisition object in an earlier program by Wayne Landsman (7436) to obtain STIS spectroscopy of the UV-bright post-AGB star NGC2808-UIT1.					

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(4) NGC2808-UIT1-OFFSET	STIS/CCD, ACQ, F28X50LP	MIRROR				0.2 Secs *[==>]*	 ***[1]***
2		(1) NGC2808-POS1	STIS/CCD, ACCUM, 52X2	MIRROR	CR-SPLIT=NO; GAIN=4			2 Secs *[==>]*	 ***[1]***
3		(1) NGC2808-POS1	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,3.031	Prime + Parallel Group 3-5	1200 Secs *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 3-5	50 Secs *[==>]*	 ***[1]***
5		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 3-5	1150 Secs *[==>]*	 ***[1]***
6		(1) NGC2808-POS1	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,2.969	Prime + Parallel Group 6-8	1200 Secs *[==>]*	 ***[1]***
7		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 6-8	1030 Secs *[==>]*	 ***[1]***
8		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 6-8	50 Secs *[==>]*	 ***[1]***
9		(1) NGC2808-POS1	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,3.031	Prime + Parallel Group 9-12	1610 Secs *[==>]*	 ***[2]***
10		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 9-12	50 Secs *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 9-12	620 Secs *[==>]*	 ***[2]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
12		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 9-12	620 Secs	
								[==>]	***[2]***
13		(1) NGC2808-POS1	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,2.969	Prime + Parallel Group 13-16	1610 Secs	
								[==>]	***[2]***
14		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 13-16	655 Secs	
								[==>]	***[2]***
15		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 13-16	655 Secs	
								[==>]	***[2]***
16		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 13-16	50 Secs	
								[==>]	***[2]***
17		(1) NGC2808-POS1	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,3.031	Prime + Parallel Group 17-20	1610 Secs	
								[==>]	***[3]***
18		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 17-20	0.5 Secs	
								[==>]	***[3]***
19		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 17-20	50 Secs	
								[==>]	***[3]***
20		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 17-20	1210 Secs	
								[==>]	***[3]***
21		(1) NGC2808-POS1	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,2.969	Prime + Parallel Group 21-24	1610 Secs	
								[==>]	***[3]***
22		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 21-24	50 Secs	
								[==>]	***[3]***
23		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 21-24	1195 Secs	
								[==>]	***[3]***
24		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 21-24	0.5 Secs	
								[==>]	***[3]***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Exp. 2
Exp. 3 (Auto-WAVECAL)
Pointing Maneuver
GS Acq
Exp. 3
Pointing Maneuver
Exp. 6
Exp. 6 (Auto-WAVECAL)
Pointing Maneuver
Unused Visibility = 0
Occultation
0
500
1000
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sec
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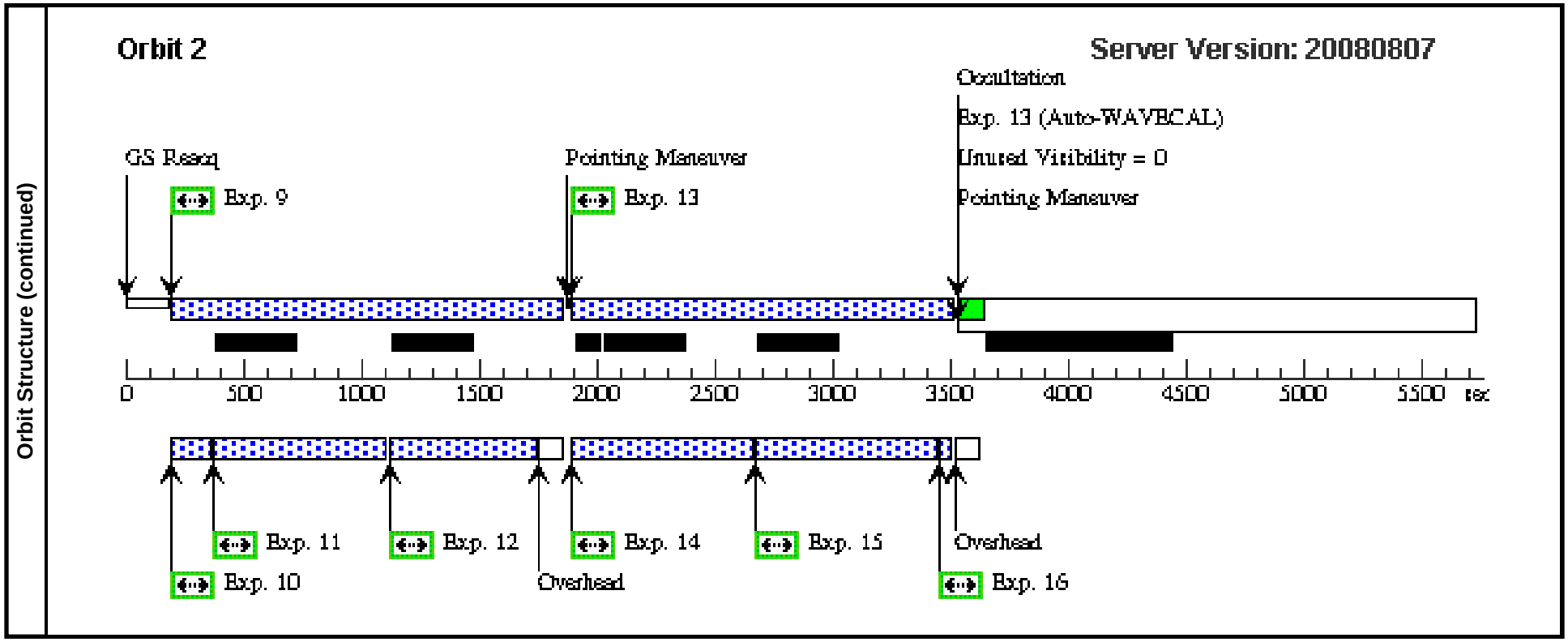
Exp. 4
Overhead
Exp. 7
Overhead
Exp. 8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Server Version: 20080807
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Pointing Maneuver
Exp. 9
Exp. 13
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1000
1500
2000
2500
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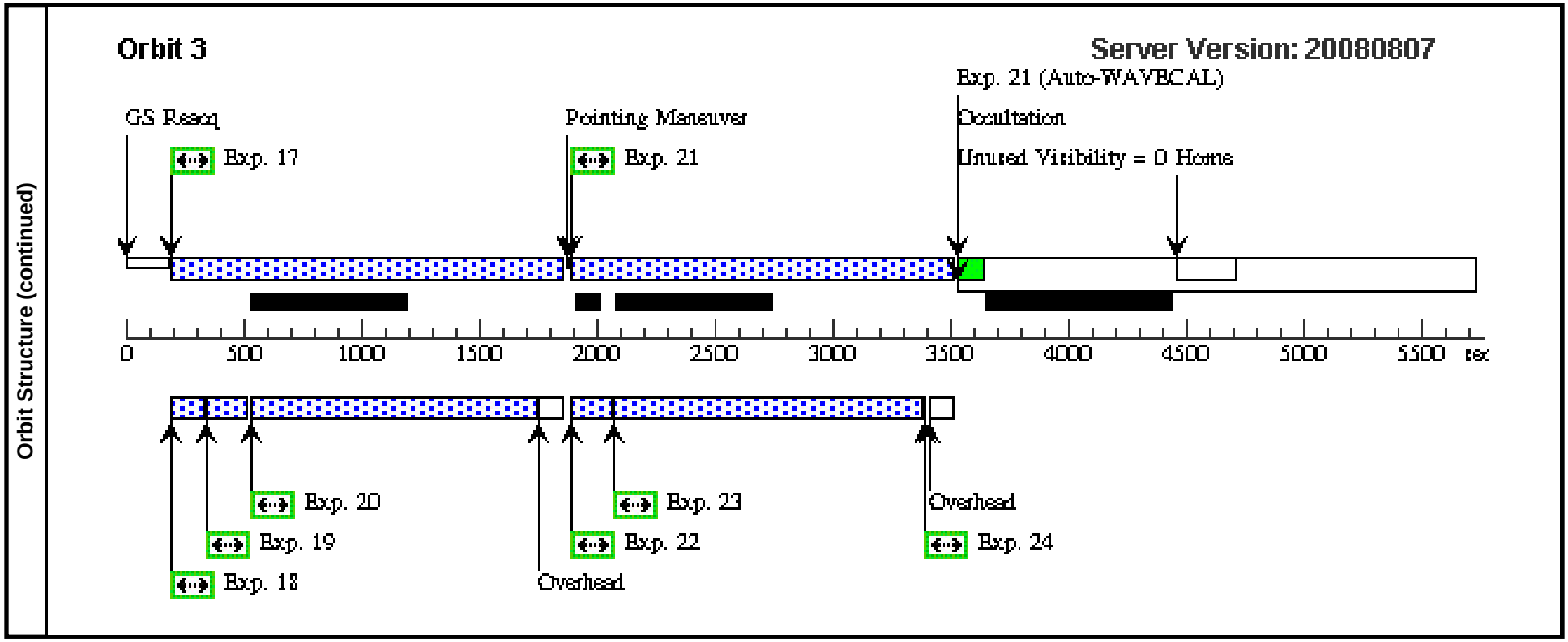
5500
sec
Exp. 11
Exp. 12
Exp. 14
Exp. 15
Overhead
Exp. 10
Overhead
Exp. 16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Server Version: 20080807
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Exp. 17
Pointing Maneuver
Exp. 21
Exp. 21 (Auto-WAVECAL)
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Unused Visibility = 0 Hems
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1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 20
Exp. 19
Exp. 18
Overhead
Exp. 23
Exp. 22
Overhead
Exp. 24

Visit

Proposal 11665, Visit 02, implementation Thu Oct 02 01:31:50 GMT 2008

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 25.5D TO 25.5 D; ORIENT 205.5D TO 205.5 D

Fixed Targets

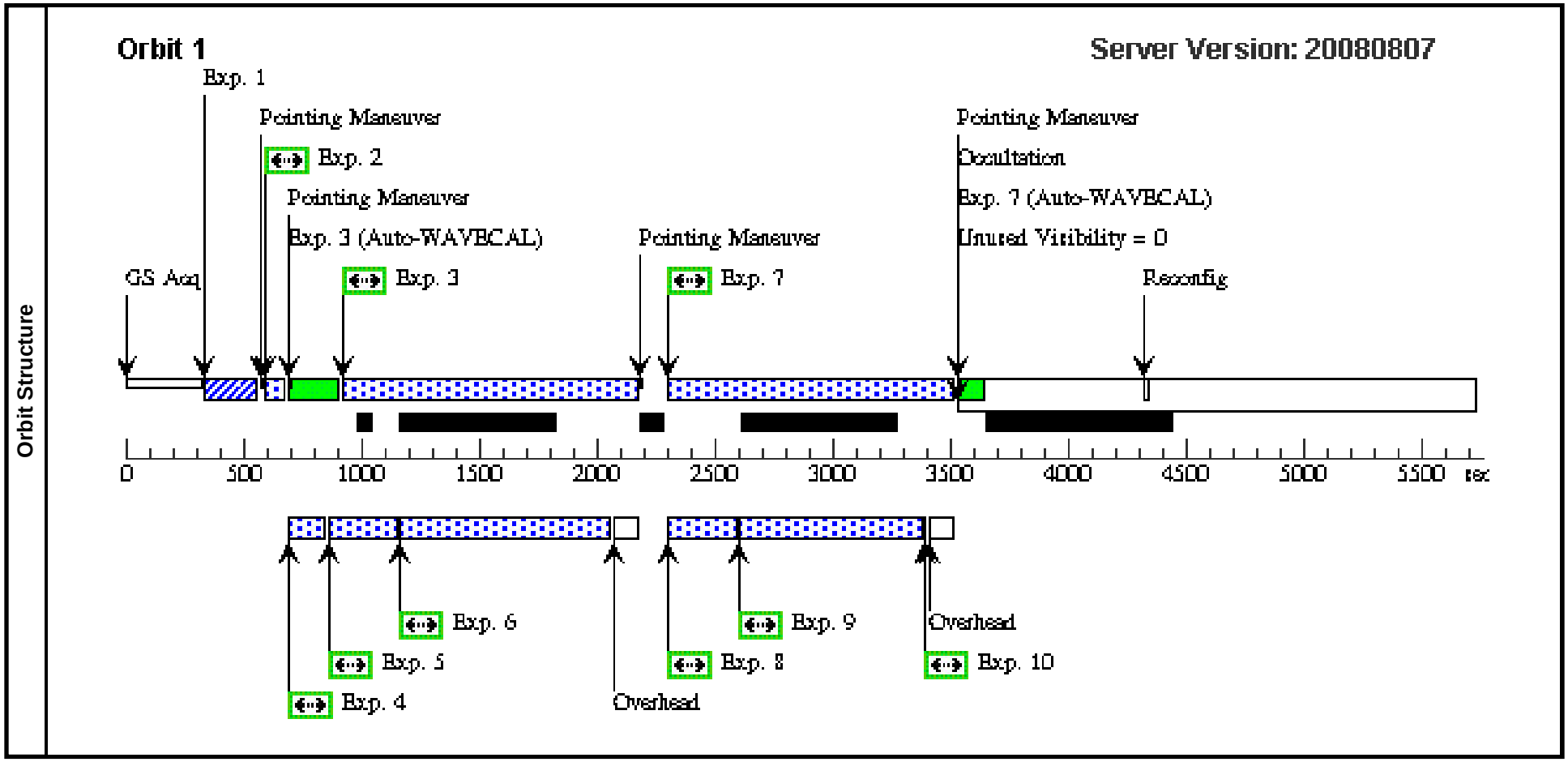
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	NGC2808-POS1	RA: 09 12 3.9300 (138.0163750d) Dec: -64 51 37.64 (-64.86046d) Equinox: J2000		V=16.35+/-0.1 B-V=0.1, F-CONT(1425)=5E-14, E(B-V)=0.23	Reference Frame: ICRS
Comments: The V-mag and flux values are for the most UV-bright object in the field (NGC2808-UIT1), with previous UV imaging and spectroscopy by STIS. This object wil not be in the slit in this program. Orient of the slit for this target should be 25.5+/-180.					
(4)	NGC2808-UIT1-OFFSET	RA: 09 12 3.0700 (138.0127917d) Dec: -64 51 33.50 (-64.85931d) Equinox: J2000		V=13.17+/-0.1 B-V=1.74	Reference Frame: ICRS
Comments: This star was used as the acquisition object in an earlier program by Wayne Landsman (7436) to obtain STIS spectroscopy of the UV-bright post-AGB star NGC2808-UIT1.					

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(4) NGC2808-UIT1-OFFSET	STIS/CCD, ACQ, F28X50LP	MIRROR				0.2 Secs *[==>]*	 ***[1]***
2		(1) NGC2808-POS1	STIS/CCD, ACCUM, 52X2	MIRROR	CR-SPLIT=NO; GAIN=4			2 Secs *[==>]*	 ***[1]***
3		(1) NGC2808-POS1	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,3.031	Prime + Parallel Group 3-6	1200 Secs *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 3-6	1 Secs *[==>]*	 ***[1]***
5		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 3-6	170 Secs *[==>]*	 ***[1]***
6		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 3-6	895 Secs *[==>]*	 ***[1]***
7		(1) NGC2808-POS1	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,2.969	Prime + Parallel Group 7-10	1200 Secs *[==>]*	 ***[1]***
8		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 7-10	170 Secs *[==>]*	 ***[1]***
9		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 7-10	665 Secs *[==>]*	 ***[1]***
10		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 7-10	1 Secs *[==>]*	 ***[1]***
11		(1) NGC2808-POS1	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,3.098	Prime + Parallel Group 11-13	1610 Secs *[==>]*	 ***[2]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
12		ANY	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=13; SAMP-SEQ=STEP100		Prime + Parallel Group 11-13	*[==>]*	***[2]***
13		ANY	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=15; SAMP-SEQ=STEP100		Prime + Parallel Group 11-13	*[==>]*	***[2]***
14		(1) NGC2808-POS1	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,2.902	Prime + Parallel Group 14-16	1610 Secs *[==>]*	 ***[2]***
15		ANY	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=13; SAMP-SEQ=STEP100		Prime + Parallel Group 14-16	*[==>]*	***[2]***
16		ANY	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=14; SAMP-SEQ=STEP100		Prime + Parallel Group 14-16	*[==>]*	***[2]***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Exp. 2
Pointing Maneuver
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GS Acq
Exp. 3
Pointing Maneuver
Exp. 7
Pointing Maneuver
Occultation
Exp. 7 (Auto-WAVECAL)
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Reconfig
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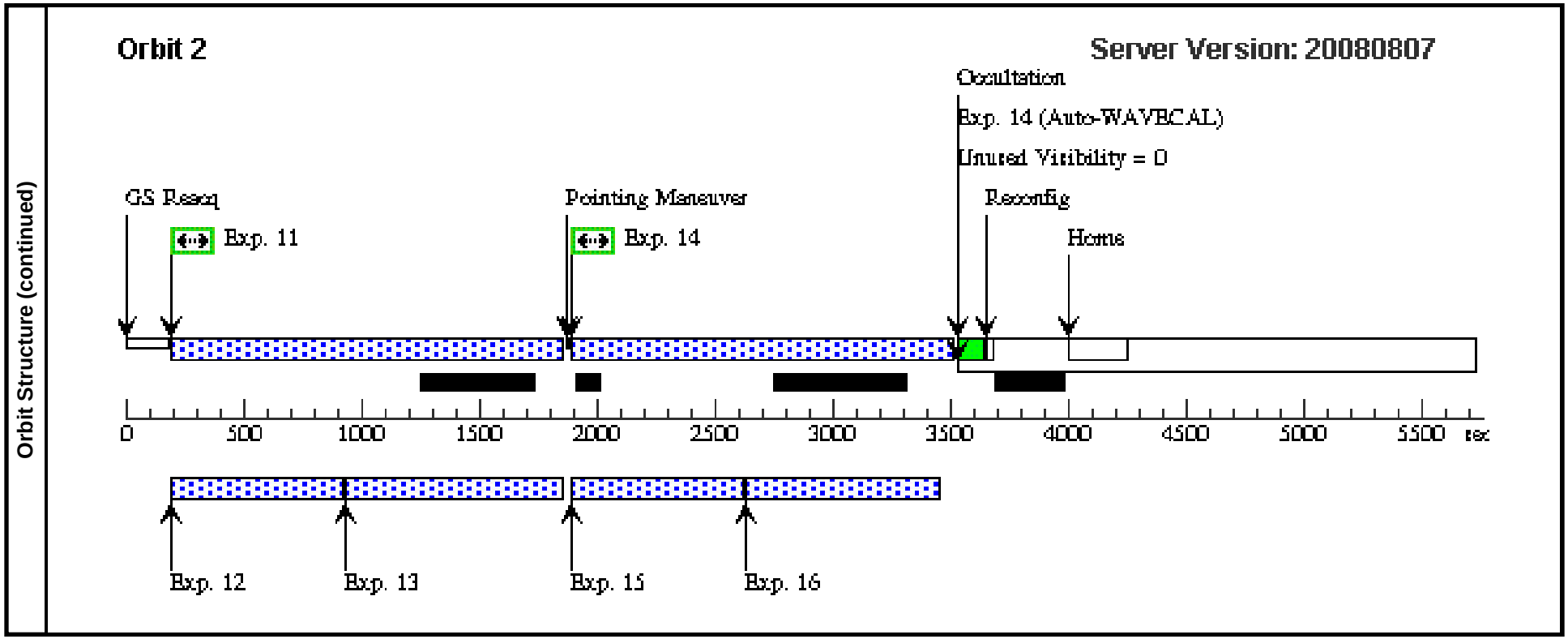
Overhead
Exp. 10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Orbit 2
Server Version: 20080807
Occultation
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Unused Visibility = 0
GS Reacq
Exp. 11
Pointing Maneuver
Exp. 14
Reconfig
Home
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3500
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sec
Exp. 12
Exp. 13
Exp. 15
Exp. 16

Visit

Proposal 11665, Visit 03, implementation Thu Oct 02 01:31:51 GMT 2008

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 325.5D TO 325.5 D; ORIENT 145.5D TO 145.5 D

Fixed Targets

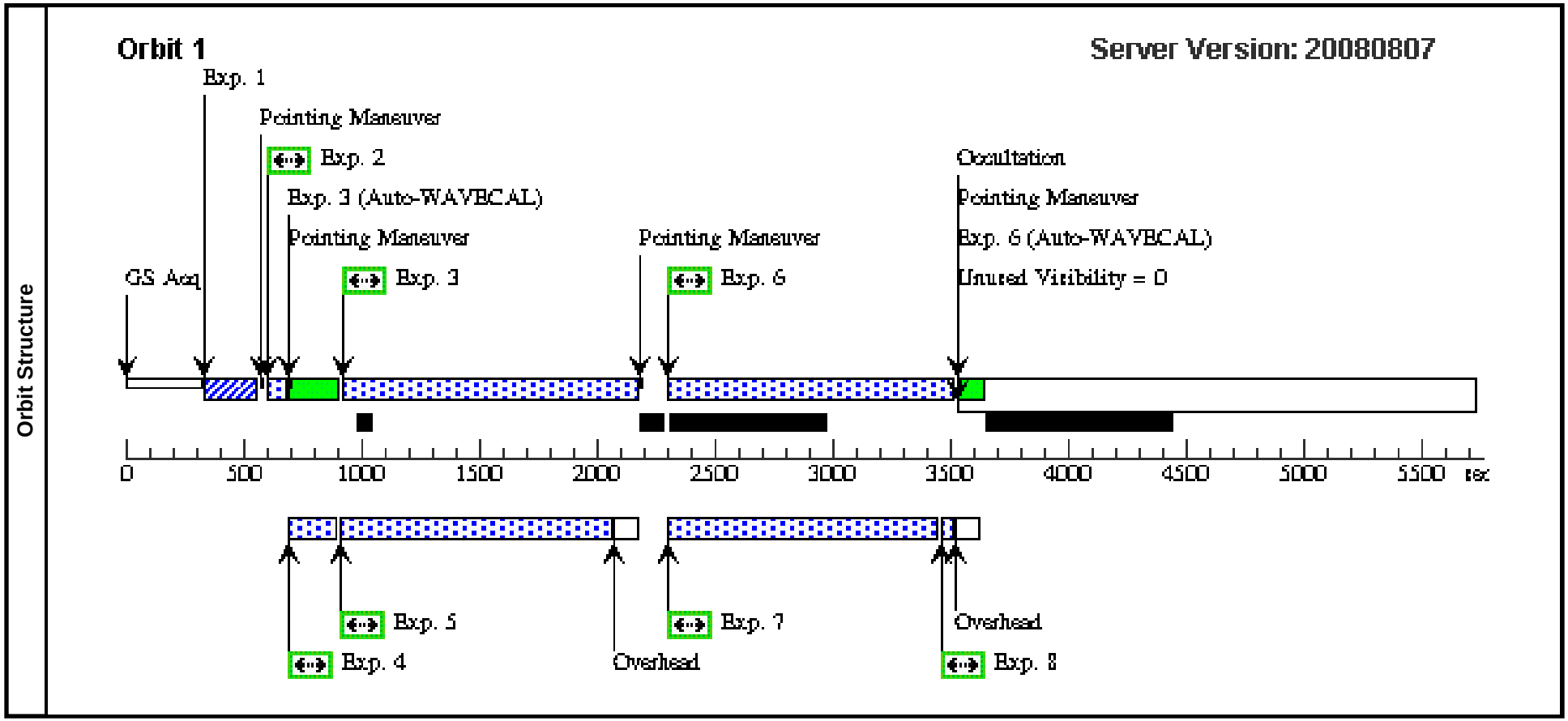
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	NGC2808-POS2	RA: 09 12 3.2200 (138.0134167d) Dec: -64 51 41.89 (-64.86164d) Equinox: J2000		V=16.35+/-0.1 B-V=0.1, F-CONT(1425)=5E-14, E(B-V)=0.23	Reference Frame: ICRS
Comments: The V-mag and flux values are for the most UV-bright object in the field (NGC2808-UIT1), with previous UV imaging and spectroscopy by STIS. This object wil not be in the slit in this program. Orient of the slit for this target should be 325.5+/-180.					
(4)	NGC2808-UIT1-OFFSET	RA: 09 12 3.0700 (138.0127917d) Dec: -64 51 33.50 (-64.85931d) Equinox: J2000		V=13.17+/-0.1 B-V=1.74	Reference Frame: ICRS
Comments: This star was used as the acquisition object in an earlier program by Wayne Landsman (7436) to obtain STIS spectroscopy of the UV-bright post-AGB star NGC2808-UIT1.					

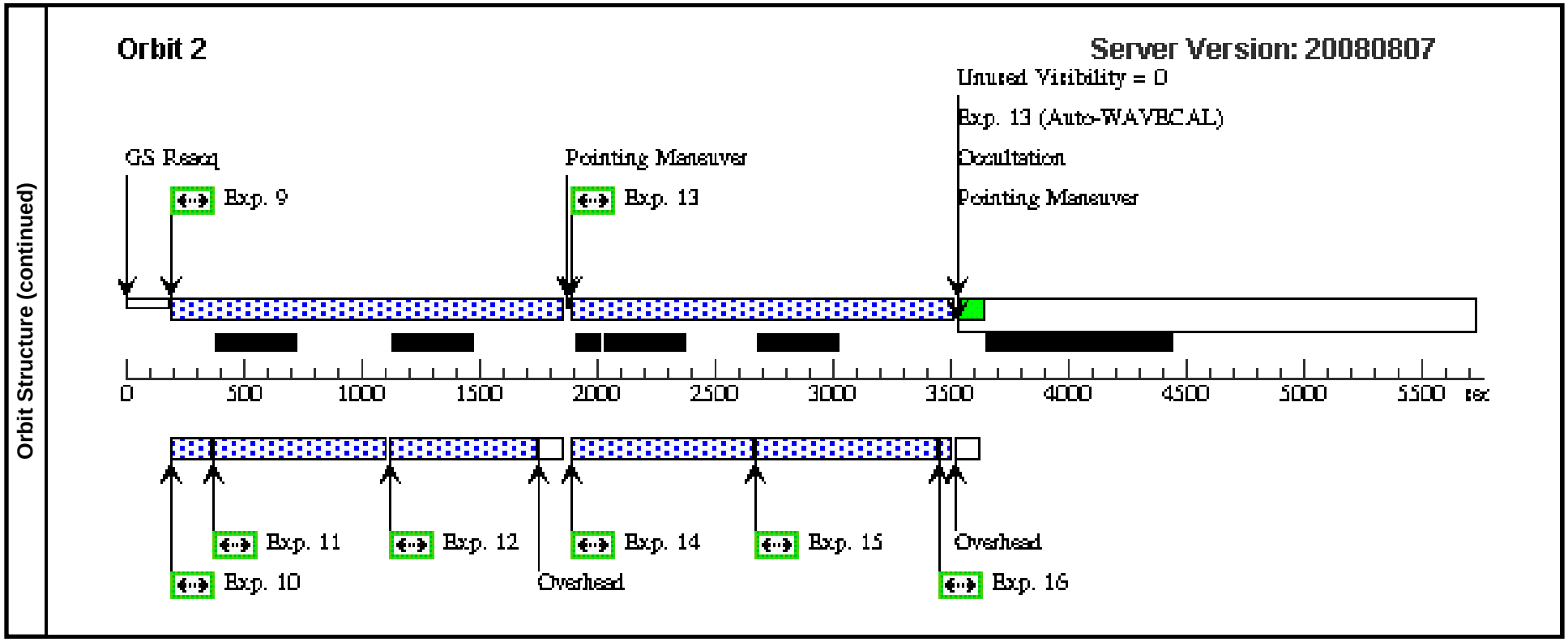
Exposures

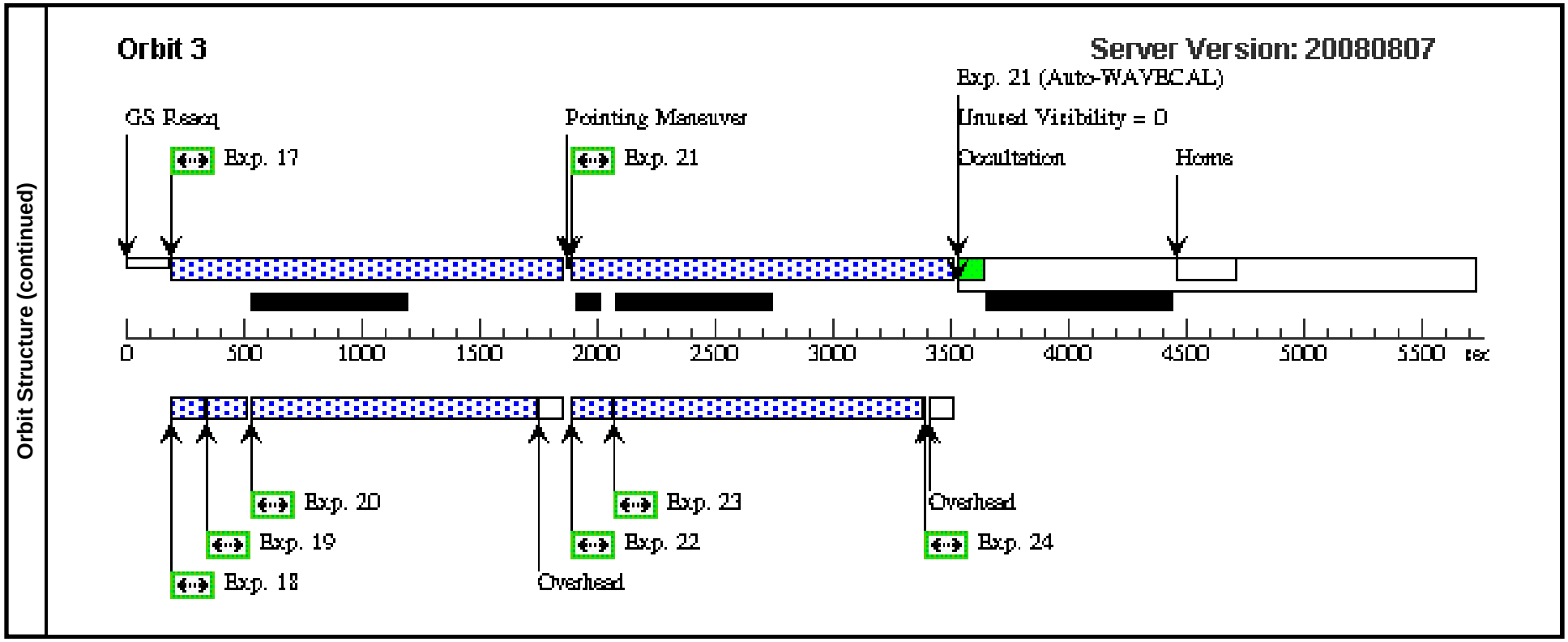
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(4) NGC2808-UIT1-OFFSET	STIS/CCD, ACQ, F28X50LP	MIRROR				0.2 Secs *[==>]*	 ***[1]***
2		(2) NGC2808-POS2	STIS/CCD, ACCUM, 52X2	MIRROR	CR-SPLIT=NO; GAIN=4			2 Secs *[==>]*	 ***[1]***
3		(2) NGC2808-POS2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,3.031	Prime + Parallel Group 3-5	1200 Secs *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 3-5	50 Secs *[==>]*	 ***[1]***
5		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 3-5	1150 Secs *[==>]*	 ***[1]***
6		(2) NGC2808-POS2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,2.969	Prime + Parallel Group 6-8	1199 Secs *[==>]*	 ***[1]***
7		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 6-8	1030 Secs *[==>]*	 ***[1]***
8		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 6-8	50 Secs *[==>]*	 ***[1]***
9		(2) NGC2808-POS2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,3.031	Prime + Parallel Group 9-12	1610 Secs *[==>]*	 ***[2]***
10		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 9-12	50 Secs *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 9-12	620 Secs *[==>]*	 ***[2]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
12		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 9-12	620 Secs	
								[==>]	***[2]***
13		(2) NGC2808-POS2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,2.969	Prime + Parallel Group 13-16	1610 Secs	
								[==>]	***[2]***
14		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 13-16	655 Secs	
								[==>]	***[2]***
15		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 13-16	655 Secs	
								[==>]	***[2]***
16		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 13-16	50 Secs	
								[==>]	***[2]***
17		(2) NGC2808-POS2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,3.031	Prime + Parallel Group 17-20	1610 Secs	
								[==>]	***[3]***
18		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 17-20	0.5 Secs	
								[==>]	***[3]***
19		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 17-20	50 Secs	
								[==>]	***[3]***
20		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 17-20	1210 Secs	
								[==>]	***[3]***
21		(2) NGC2808-POS2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,2.969	Prime + Parallel Group 21-24	1610 Secs	
								[==>]	***[3]***
22		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 21-24	50 Secs	
								[==>]	***[3]***
23		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 21-24	1195 Secs	
								[==>]	***[3]***
24		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 21-24	0.5 Secs	
								[==>]	***[3]***


Orbit Structure
Orbit 1
Server Version: 20080807
Exp. 1
Pointing Maneuver
Exp. 2
Exp. 3 (Auto-WAVECAL)
Pointing Maneuver
GS Acq
Exp. 3
Pointing Maneuver
Exp. 6
Occultation
Pointing Maneuver
Exp. 6 (Auto-WAVECAL)
Unused Visibility = 0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 5
Exp. 4
Overhead
Exp. 7
Overhead
Exp. 8


Orbit Structure (continued)
Orbit 2
Server Version: 20080807
Unused Visibility = 0
Exp. 13 (Auto-WAVECAL)
Occultation
Pointing Maneuver
GS Reacq
Pointing Maneuver
Exp. 9
Exp. 13
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 11
Exp. 12
Exp. 14
Exp. 15
Overhead
Exp. 10
Overhead
Exp. 16


Orbit Structure (continued)
Orbit 3
Server Version: 20080807
Exp. 21 (Auto-WAVECAL)
GS Reacq
Pointing Maneuver
Unused Visibility = 0
Exp. 17
Exp. 21
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 20
Exp. 23
Overhead
Exp. 19
Exp. 22
Exp. 24
Exp. 18
Overhead

Visit

Proposal 11665, Visit 04, implementation Thu Oct 02 01:31:53 GMT 2008

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 325.5D TO 325.5 D; ORIENT 145.5D TO 145.5 D

Fixed Targets

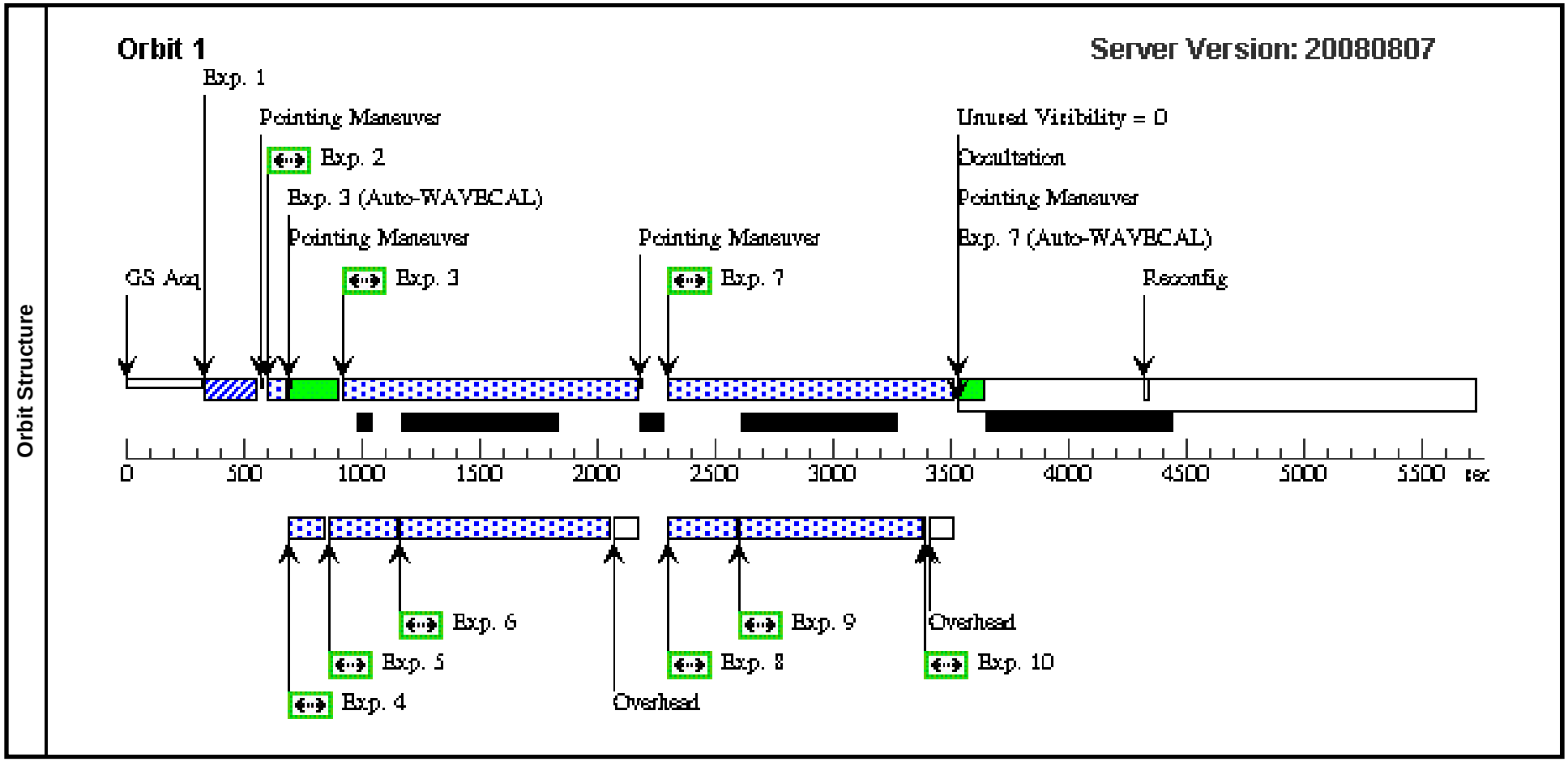
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	NGC2808-POS2	RA: 09 12 3.2200 (138.0134167d) Dec: -64 51 41.89 (-64.86164d) Equinox: J2000		V=16.35+/-0.1 B-V=0.1, F-CONT(1425)=5E-14, E(B-V)=0.23	Reference Frame: ICRS
Comments: The V-mag and flux values are for the most UV-bright object in the field (NGC2808-UIT1), with previous UV imaging and spectroscopy by STIS. This object wil not be in the slit in this program. Orient of the slit for this target should be 325.5+/-180.					
(4)	NGC2808-UIT1-OFFSET	RA: 09 12 3.0700 (138.0127917d) Dec: -64 51 33.50 (-64.85931d) Equinox: J2000		V=13.17+/-0.1 B-V=1.74	Reference Frame: ICRS
Comments: This star was used as the acquisition object in an earlier program by Wayne Landsman (7436) to obtain STIS spectroscopy of the UV-bright post-AGB star NGC2808-UIT1.					

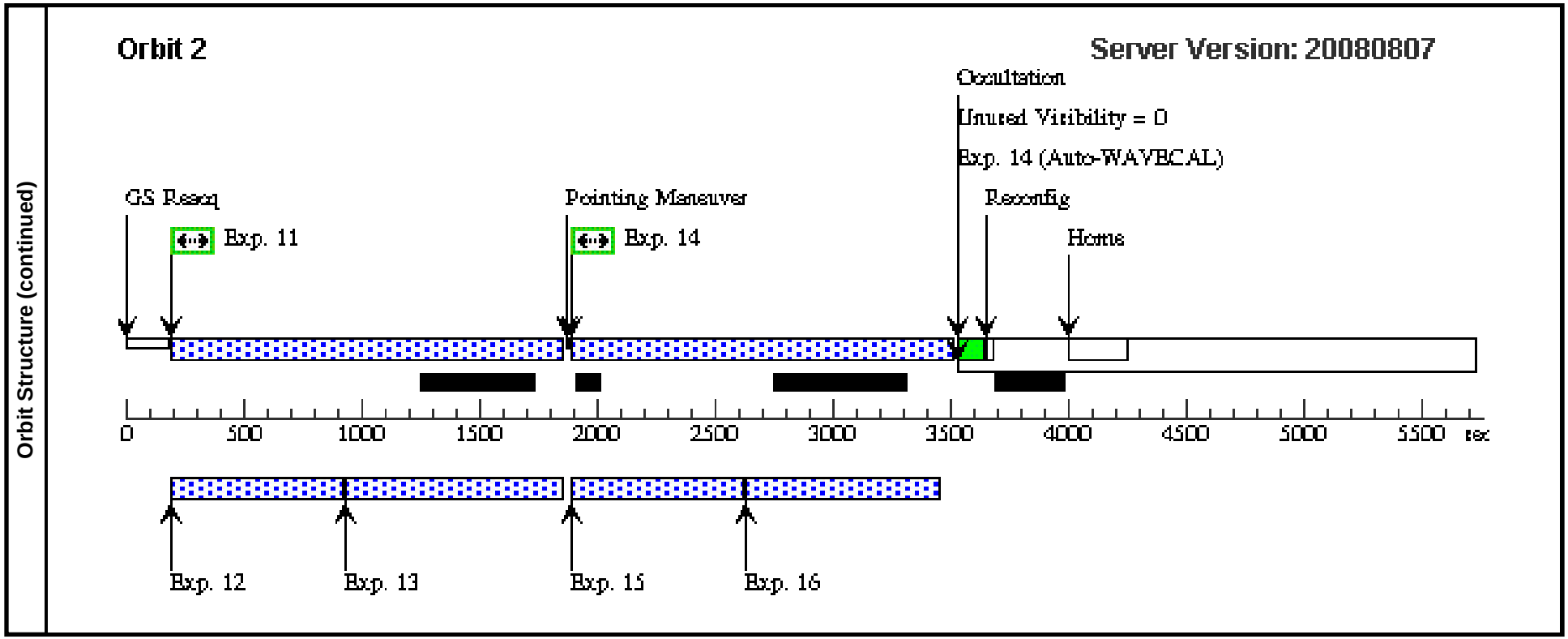
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(4) NGC2808-UIT1-OFFSET	STIS/CCD, ACQ, F28X50LP	MIRROR				0.2 Secs *[==>]*	 ***[1]***
2		(2) NGC2808-POS2	STIS/CCD, ACCUM, 52X2	MIRROR	CR-SPLIT=NO; GAIN=4			2 Secs *[==>]*	 ***[1]***
3		(2) NGC2808-POS2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,3.031	Prime + Parallel Group 3-6	1200 Secs *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 3-6	1 Secs *[==>]*	 ***[1]***
5		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 3-6	170 Secs *[==>]*	 ***[1]***
6		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 3-6	895 Secs *[==>]*	 ***[1]***
7		(2) NGC2808-POS2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,2.969	Prime + Parallel Group 7-10	1199 Secs *[==>]*	 ***[1]***
8		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 7-10	170 Secs *[==>]*	 ***[1]***
9		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 7-10	665 Secs *[==>]*	 ***[1]***
10		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 7-10	1 Secs *[==>]*	 ***[1]***
11		(2) NGC2808-POS2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,3.098	Prime + Parallel Group 11-13	1610 Secs *[==>]*	 ***[2]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
12		ANY	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=13; SAMP-SEQ=STEP100		Prime + Parallel Group 11-13	*[==>]*	***[2]***
13		ANY	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=15; SAMP-SEQ=STEP100		Prime + Parallel Group 11-13	*[==>]*	***[2]***
14		(2) NGC2808-POS2	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,2.902	Prime + Parallel Group 14-16	1610 Secs *[==>]*	 ***[2]***
15		ANY	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=13; SAMP-SEQ=STEP100		Prime + Parallel Group 14-16	*[==>]*	***[2]***
16		ANY	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=14; SAMP-SEQ=STEP100		Prime + Parallel Group 14-16	*[==>]*	***[2]***


Orbit Structure
Orbit 1
Server Version: 20080807
Exp. 1
Pointing Maneuver
Exp. 2
Exp. 3 (Auto-WAVECAL)
Pointing Maneuver
GS Acq
Exp. 3
Pointing Maneuver
Exp. 7
Unused Visibility = 0
Occultation
Pointing Maneuver
Exp. 7 (Auto-WAVECAL)
Reconfig
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 6
Exp. 5
Exp. 4
Overhead
Exp. 9
Exp. 8
Overhead
Exp. 10


Orbit Structure (continued)
Orbit 2
Server Version: 20080807
Occultation
Unused Visibility = 0
Exp. 14 (Auto-WAVECAL)
GS Reacq
Exp. 11
Pointing Maneuver
Exp. 14
Reconfig
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 12
Exp. 13
Exp. 15
Exp. 16

Visit

Proposal 11665, Visit 05, implementation Thu Oct 02 01:31:53 GMT 2008

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 14.8D TO 14.8 D; ORIENT 194.8D TO 194.8 D

Fixed Targets

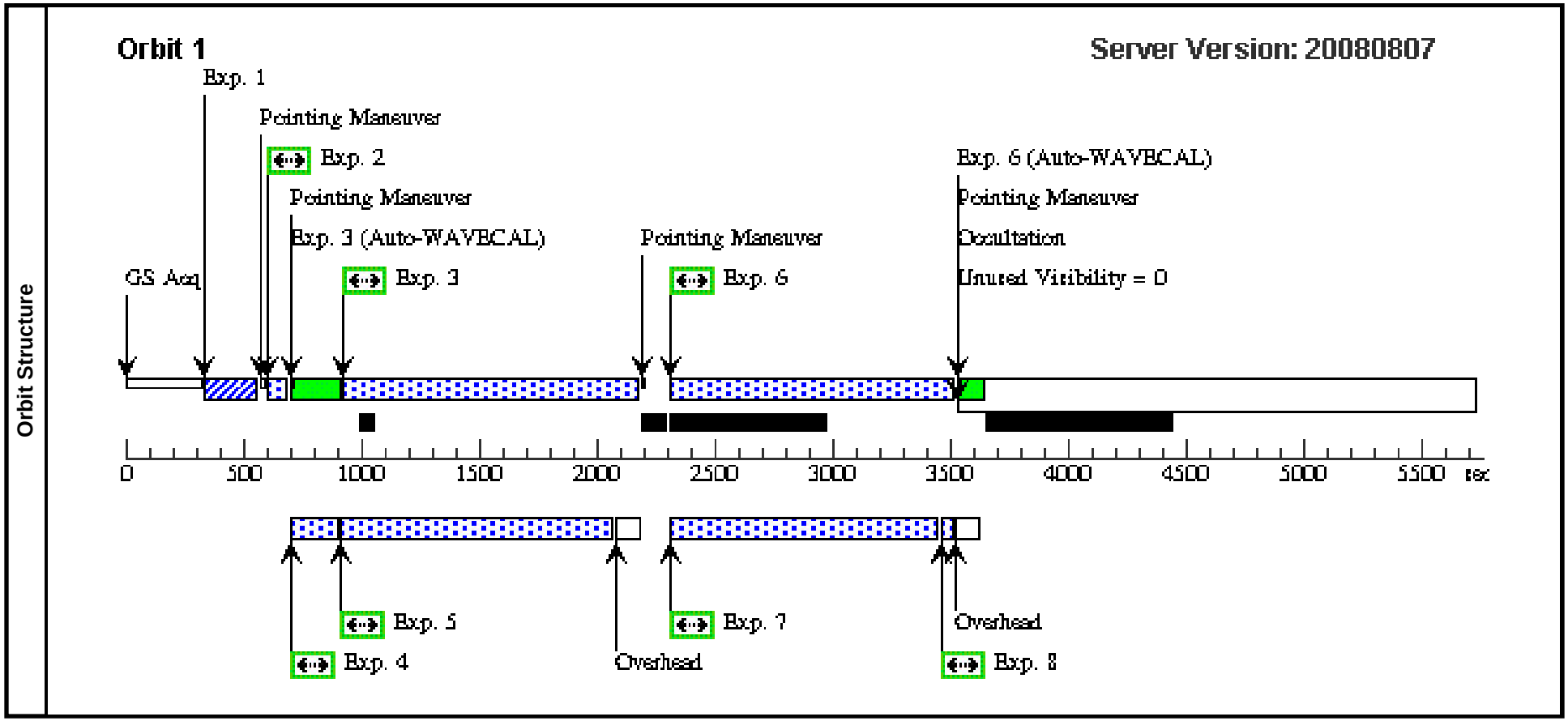
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	NGC2808-POS3	RA: 09 12 3.2300 (138.0134583d) Dec: -64 51 54.90 (-64.86525d) Equinox: J2000		V=16.35+/-0.1 B-V=0.1, F-CONT(1425)=5E-14, E(B-V)=0.23	Reference Frame: ICRS
		Comments: The V-mag and flux values are for the most UV-bright object in the field (NGC2808-UIT1), with previous UV imaging and spectroscopy by STIS. This object wil not be in the slit in this program. Orient of the slit for this target should be 14.8+/-180.			
(4)	NGC2808-UIT1-OFFSET	RA: 09 12 3.0700 (138.0127917d) Dec: -64 51 33.50 (-64.85931d) Equinox: J2000		V=13.17+/-0.1 B-V=1.74	Reference Frame: ICRS
		Comments: This star was used as the acquisition object in an earlier program by Wayne Landsman (7436) to obtain STIS spectroscopy of the UV-bright post-AGB star NGC2808-UIT1.			

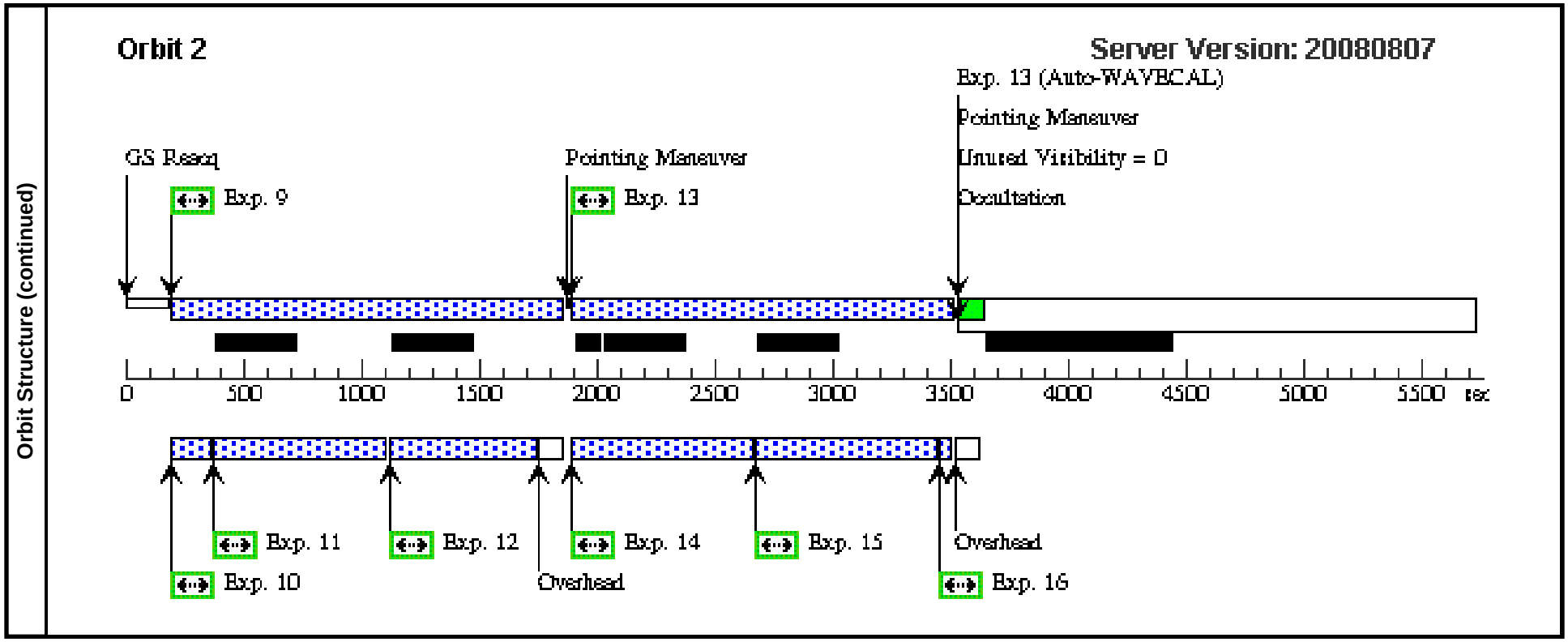
Exposures

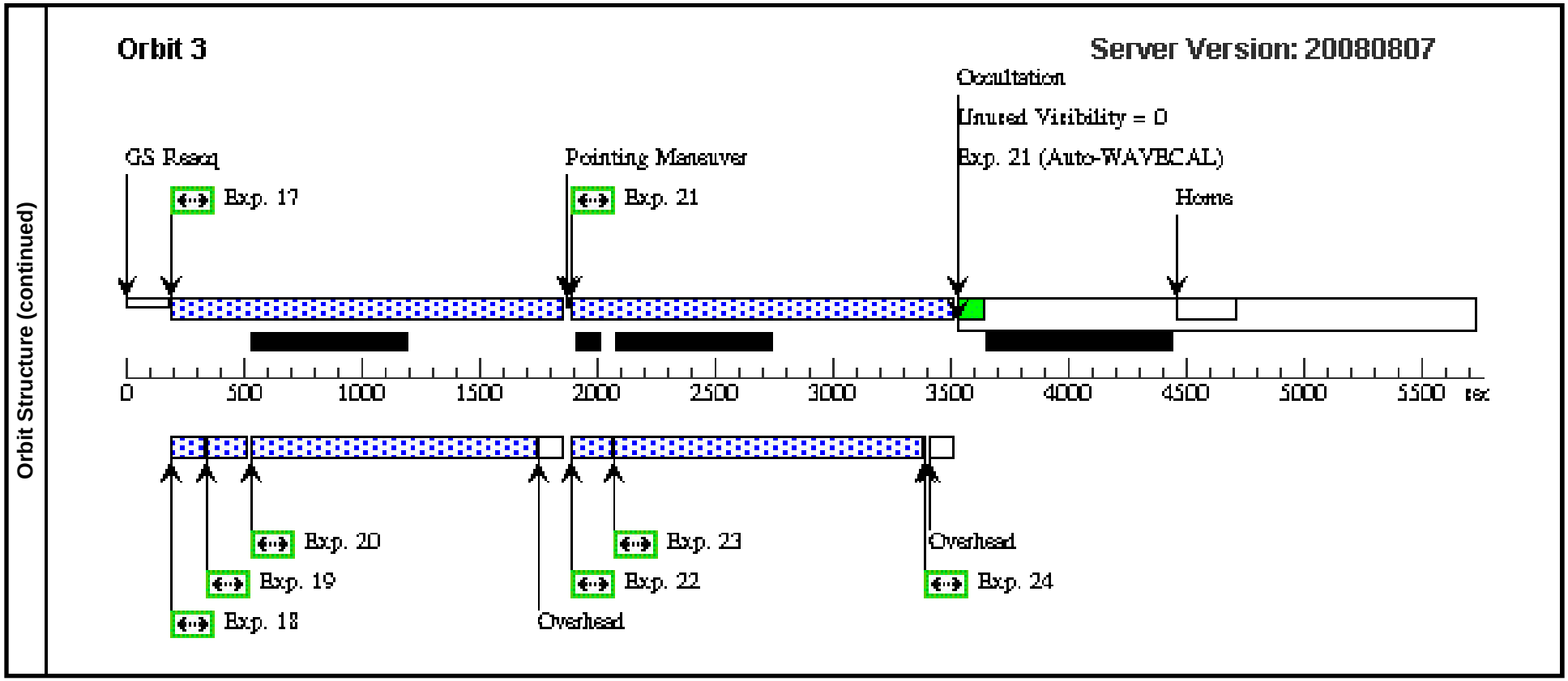
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(4) NGC2808-UIT1-OFFSET	STIS/CCD, ACQ, F28X50LP	MIRROR				0.2 Secs *[==>]*	 ***[1]***
2		(3) NGC2808-POS3	STIS/CCD, ACCUM, 52X2	MIRROR	CR-SPLIT=NO; GAIN=4			2 Secs *[==>]*	 ***[1]***
3		(3) NGC2808-POS3	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,3.031	Prime + Parallel Group 3-5	1200 Secs *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 3-5	50 Secs *[==>]*	 ***[1]***
5		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 3-5	1150 Secs *[==>]*	 ***[1]***
6		(3) NGC2808-POS3	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,2.969	Prime + Parallel Group 6-8	1191 Secs *[==>]*	 ***[1]***
7		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 6-8	1020 Secs *[==>]*	 ***[1]***
8		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 6-8	50 Secs *[==>]*	 ***[1]***
9		(3) NGC2808-POS3	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,3.031	Prime + Parallel Group 9-12	1610 Secs *[==>]*	 ***[2]***
10		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 9-12	50 Secs *[==>]*	 ***[2]***
11		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 9-12	620 Secs *[==>]*	 ***[2]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
12		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 9-12	620 Secs	
								[==>]	***[2]***
13		(3) NGC2808-POS3	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,2.969	Prime + Parallel Group 13-16	1610 Secs	
								[==>]	***[2]***
14		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 13-16	655 Secs	
								[==>]	***[2]***
15		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 13-16	655 Secs	
								[==>]	***[2]***
16		ANY	WFC3/UVIS, ACCUM, UVIS	F390W	CR-SPLIT=NO		Prime + Parallel Group 13-16	50 Secs	
								[==>]	***[2]***
17		(3) NGC2808-POS3	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,3.031	Prime + Parallel Group 17-20	1610 Secs	
								[==>]	***[3]***
18		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 17-20	0.5 Secs	
								[==>]	***[3]***
19		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 17-20	50 Secs	
								[==>]	***[3]***
20		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 17-20	1210 Secs	
								[==>]	***[3]***
21		(3) NGC2808-POS3	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,2.969	Prime + Parallel Group 21-24	1610 Secs	
								[==>]	***[3]***
22		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 21-24	50 Secs	
								[==>]	***[3]***
23		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 21-24	1195 Secs	
								[==>]	***[3]***
24		ANY	WFC3/UVIS, ACCUM, UVIS	F814W	CR-SPLIT=NO		Prime + Parallel Group 21-24	0.5 Secs	
								[==>]	***[3]***


Orbit Structure
Orbit 1
Server Version: 20080807
Exp. 1
Pointing Maneuver
Exp. 2
Pointing Maneuver
Exp. 3 (Auto-WAVECAL)
GS Acq
Exp. 3
Pointing Maneuver
Exp. 6
Exp. 6 (Auto-WAVECAL)
Pointing Maneuver
Occultation
Unused Visibility = 0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 5
Exp. 4
Overhead
Exp. 7
Overhead
Exp. 8


Orbit Structure (continued)
Orbit 2
Server Version: 20080807
Exp. 13 (Auto-WAVECAL)
Pointing Maneuver
Unused Visibility = 0
Occultation
GS Reacq
Exp. 9
Pointing Maneuver
Exp. 13
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 11
Exp. 12
Exp. 14
Exp. 15
Overhead
Exp. 10
Overhead
Exp. 16


Orbit Structure (continued)
Orbit 3
Server Version: 20080807
Occultation
Unused Visibility = 0
Exp. 21 (Auto-WAVECAL)
GS Reacq
Pointing Maneuver
Home
Exp. 17
Exp. 21
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 20
Exp. 19
Exp. 18
Overhead
Exp. 23
Exp. 22
Overhead
Exp. 24

Visit

Proposal 11665, Visit 06, implementation Thu Oct 02 01:31:55 GMT 2008

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 14.8D TO 14.8 D; ORIENT 194.8D TO 194.8 D

Fixed Targets

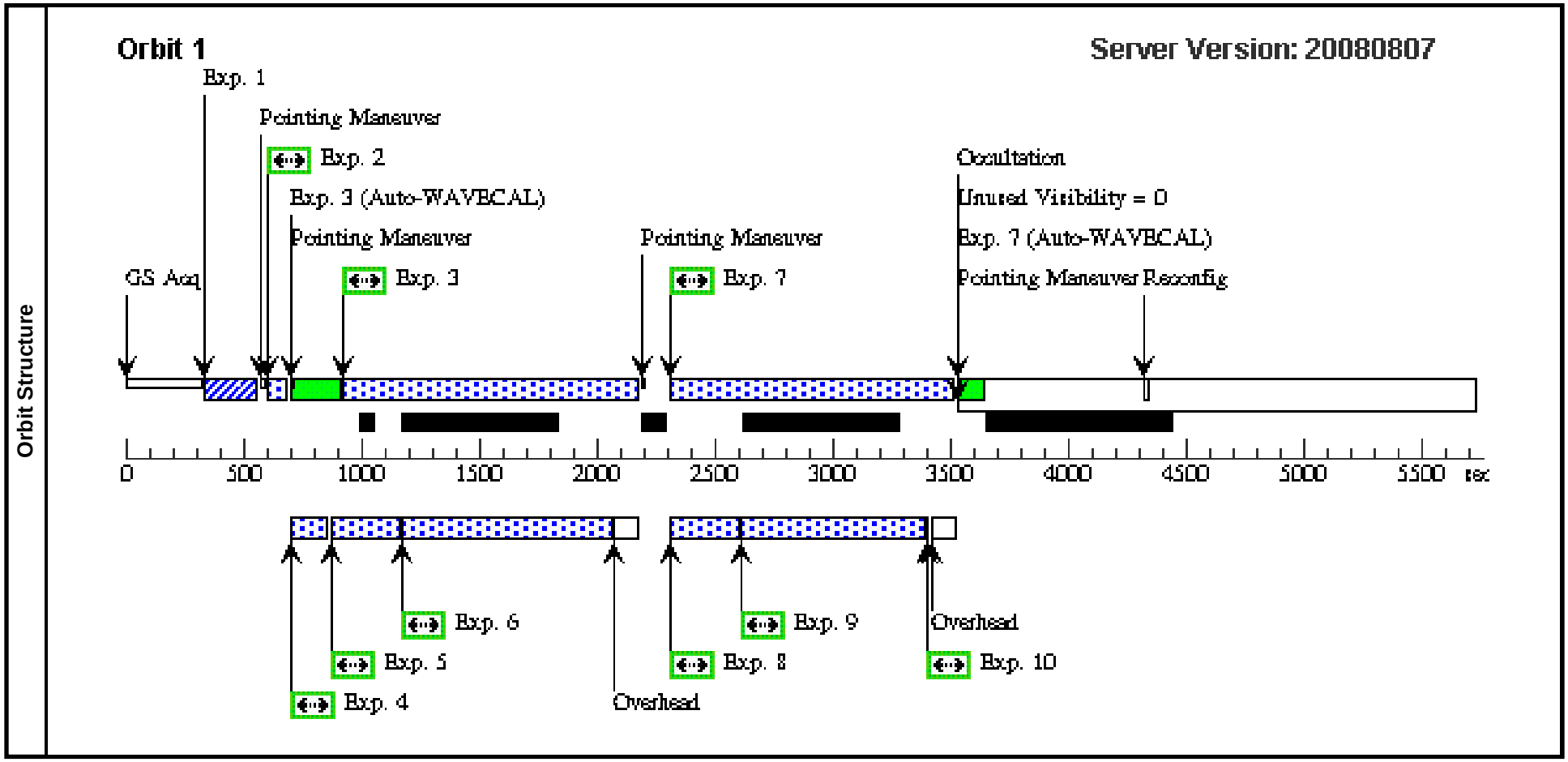
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	NGC2808-POS3	RA: 09 12 3.2300 (138.0134583d) Dec: -64 51 54.90 (-64.86525d) Equinox: J2000		V=16.35+/-0.1 B-V=0.1, F-CONT(1425)=5E-14, E(B-V)=0.23	Reference Frame: ICRS
Comments: The V-mag and flux values are for the most UV-bright object in the field (NGC2808-UIT1), with previous UV imaging and spectroscopy by STIS. This object wil not be in the slit in this program. Orient of the slit for this target should be 14.8+/-180.					
(4)	NGC2808-UIT1-OFFSET	RA: 09 12 3.0700 (138.0127917d) Dec: -64 51 33.50 (-64.85931d) Equinox: J2000		V=13.17+/-0.1 B-V=1.74	Reference Frame: ICRS
Comments: This star was used as the acquisition object in an earlier program by Wayne Landsman (7436) to obtain STIS spectroscopy of the UV-bright post-AGB star NGC2808-UIT1.					

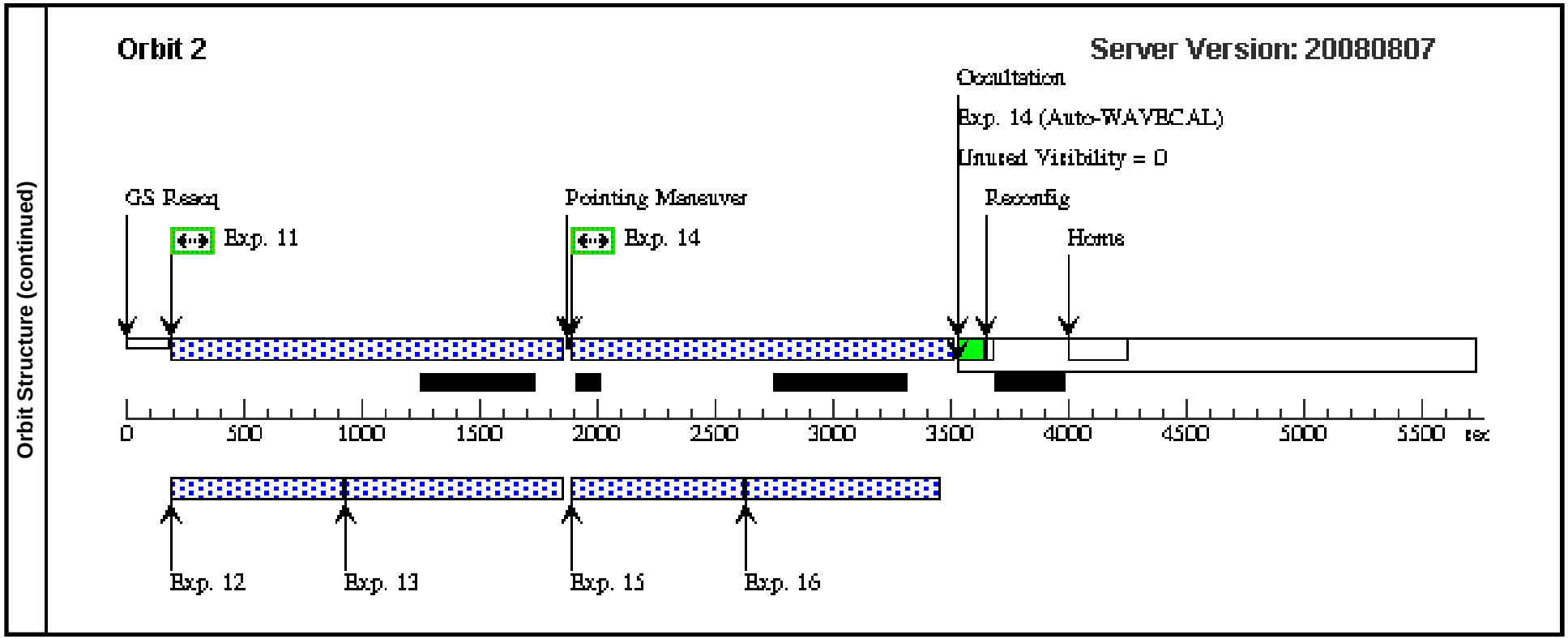
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(4) NGC2808-UIT1-OFFSET	STIS/CCD, ACQ, F28X50LP	MIRROR				0.2 Secs *[==>]*	 ***[1]***
2		(3) NGC2808-POS3	STIS/CCD, ACCUM, 52X2	MIRROR	CR-SPLIT=NO; GAIN=4			2 Secs *[==>]*	 ***[1]***
3		(3) NGC2808-POS3	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,3.031	Prime + Parallel Group 3-6	1200 Secs *[==>]*	 ***[1]***
4		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 3-6	1 Secs *[==>]*	 ***[1]***
5		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 3-6	170 Secs *[==>]*	 ***[1]***
6		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 3-6	895 Secs *[==>]*	 ***[1]***
7		(3) NGC2808-POS3	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,2.969	Prime + Parallel Group 7-10	1191 Secs *[==>]*	 ***[1]***
8		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 7-10	170 Secs *[==>]*	 ***[1]***
9		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 7-10	665 Secs *[==>]*	 ***[1]***
10		ANY	WFC3/UVIS, ACCUM, UVIS	F555W	CR-SPLIT=NO		Prime + Parallel Group 7-10	1 Secs *[==>]*	 ***[1]***
11		(3) NGC2808-POS3	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,3.098	Prime + Parallel Group 11-13	1610 Secs *[==>]*	 ***[2]***

Exposures (continued)

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
12		ANY	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=13; SAMP-SEQ=STEP100		Prime + Parallel Group 11-13	*[==>]*	***[2]***
13		ANY	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=15; SAMP-SEQ=STEP100		Prime + Parallel Group 11-13	*[==>]*	***[2]***
14		(3) NGC2808-POS3	STIS/FUV-MAMA, ACCUM, 52X2	G140L 1425 A		POS TARG 0,2.902	Prime + Parallel Group 14-16	1610 Secs *[==>]*	 ***[2]***
15		ANY	WFC3/IR, MULTIACCUM, IR	F110W	NSAMP=13; SAMP-SEQ=STEP100		Prime + Parallel Group 14-16	*[==>]*	***[2]***
16		ANY	WFC3/IR, MULTIACCUM, IR	F160W	NSAMP=14; SAMP-SEQ=STEP100		Prime + Parallel Group 14-16	*[==>]*	***[2]***


Orbit Structure
Orbit 1
Server Version: 20080807
Exp. 1
Pointing Maneuver
Exp. 2
Exp. 3 (Auto-WAVECAL)
Pointing Maneuver
GS Acq
Exp. 3
Pointing Maneuver
Exp. 7
Occultation
Unused Visibility = 0
Exp. 7 (Auto-WAVECAL)
Pointing Maneuver Reconfig
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 6
Exp. 5
Exp. 4
Overhead
Exp. 9
Exp. 8
Overhead
Exp. 10


Orbit Structure (continued)
Orbit 2
Server Version: 20080807
Occultation
Exp. 14 (Auto-WAVECAL)
Unused Visibility = 0
GS Reacq
Exp. 11
Pointing Maneuver
Exp. 14
Reconfig
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 12
Exp. 13
Exp. 15
Exp. 16