13177 - Spitzer UltRaFaint SUrvey (SURF'S Up): Cluster Lensing and Spitzer Extreme Imaging Reaching Out to z~7

Cycle: 20, 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?*
01	(1) RCS2-2327.4-0204 ANY	ACS/WFC WFC3/IR	3	15-Nov-2012 21:31:31.0	yes
02	(1) RCS2-2327.4-0204 ANY	ACS/WFC WFC3/IR	3	15-Nov-2012 21:32:08.0	yes
03	(1) RCS2-2327.4-0204 ANY	ACS/WFC WFC3/IR	3	15-Nov-2012 21:32:46.0	yes
04	(1) RCS2-2327.4-0204 ANY	ACS/WFC WFC3/IR	2	15-Nov-2012 21:33:10.0	yes
05	(1) RCS2-2327.4-0204 ANY	ACS/WFC WFC3/IR	2	15-Nov-2012 21:33:30.0	yes

13 Total Orbits Used

ABSTRACT

In spite of recent progress, the role of distant galaxies in cosmic reionization has been difficult to pin down. A powerful way to make progress is to move beyond counting high redshift sources and study the stellar properties of the population instead. Accurate knowledge of the average star formation density and its recent history in the universe at this epoch is necessary to determine whether these galaxies emit enough hard photons to reionize the Universe. This requires measuring rest frame optical light, which only Spitzer can probe at these redshifts, for a large enough sample of typical galaxies. At least 50 typical sources with Spitzer imaging are needed to determine the star formation rate (SFR) density directly from stellar mass measurement (rather than estimated from the luminosity function) to 25% accuracy. Unfortunately, the depth needed to reach typical z>~7 galaxies is impractical in a blank field survey. To address this cosmic puzzle, we will obtain ultradeep Spitzer imaging of the fields behind 10 of the most powerful and well calibrated cosmic telescopes. Clusterscale gravitational lenses acting as cosmic telescopes enable the study of intrinsically lower luminosity galaxies than would otherwise be possible. This will be a crucial Legacy complement to the existing IRAC deep surveys and shallower cluster studies, and will open up new parameter space parameter space by probing intrinsically fainter objects than existing cluster surveys and much improved sample variance over deep field surveys. It will allow us to study the properties (e.g. star formation rates and stellar masses) of a large number of galaxies (50 at z~7 and 10 at z~8) for the first time, thus meeting our goal of reconstructing the cosmic SFR with sufficient accuracy. Presence (or absence) of established stellar population will be measured by Spitzer for the largest sample to date. Together these findings will allow

us to identify the dominant sources of the bulk of ionizing photons necessary to drive reionization.

OBSERVING DESCRIPTION

HST 13 orbits for RCS22327.40204 (ACS/F814W 3 orbits,
WFC3/F098W 3 orbits, WFC3/F125W 3 orbits,
WFC3/F160W 4orbits)

Dither Pattern:
Cover chip gap in ACS
ACS-DITHER-LINE (default)+ACS-DITHER-BOX (within each orbit)

WFC3:
Here we use 4 different orientations (approximate relative rotations 0, 90, 180, 270deg), which allow us to cover a larger area with the parallels. We mix the IR-DITHER_UVIS pattern (only half of the positions because of the rotations) with an extension of the IR-DITHER-BOX-MIN (to which we added points at dx=1.5pix, dy=-3.5pix and dx=-3pix, dy=-1pix) creating the following points (offsets in arcsec):

1: -11.947 17.457
2: -12.150 17.760
3: -11.608 17.942
4: -11.405 17.639
5: -11.744 17.033
6: -12.354 17.336
7: 11.071 17.744
8: 10.868 18.047
9: 11.410 18.229
10: 11.613 17.926
11: 11.274 17.320
12: 10.665 17.623

Together with the different rotations this provides an approximately square area covered by the WFC3/IR observations. For optimal overlap and data quality we change filters during orbits.

The dithers were put in as pos-targ as otherwise orbit planner wouldn't allow efficient sampling.

The overall orientation is defined via the ACS observations, where the optimal orientation (~50-55deg) provides maximal overlap with existing data.

Visit

Proposal 13177, ACS/F814 (01), implementation Fri Nov 16 02:33:41 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: SCHED 100%; ORIENT 45D TO 60 D

Diagnostics

(ACS/F814 (01)) Warning (Orbit Planner): VISIBILITY OVERRUN

(ACS/F814 (01)) Warning (Orbit Planner): VISIBILITY OVERRUN

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(2)	Pattern Type=ACS-WFC-DITHER-BOX Purpose=DITHER Number Of Points=4 Point Spacing=0.265 Line Spacing=0.187	Coordinate Frame=POS-TARG Pattern Orientation=20.67 Angle Between Sides=69.05 Center Pattern=false		(1-2), (3-4), (5-6)

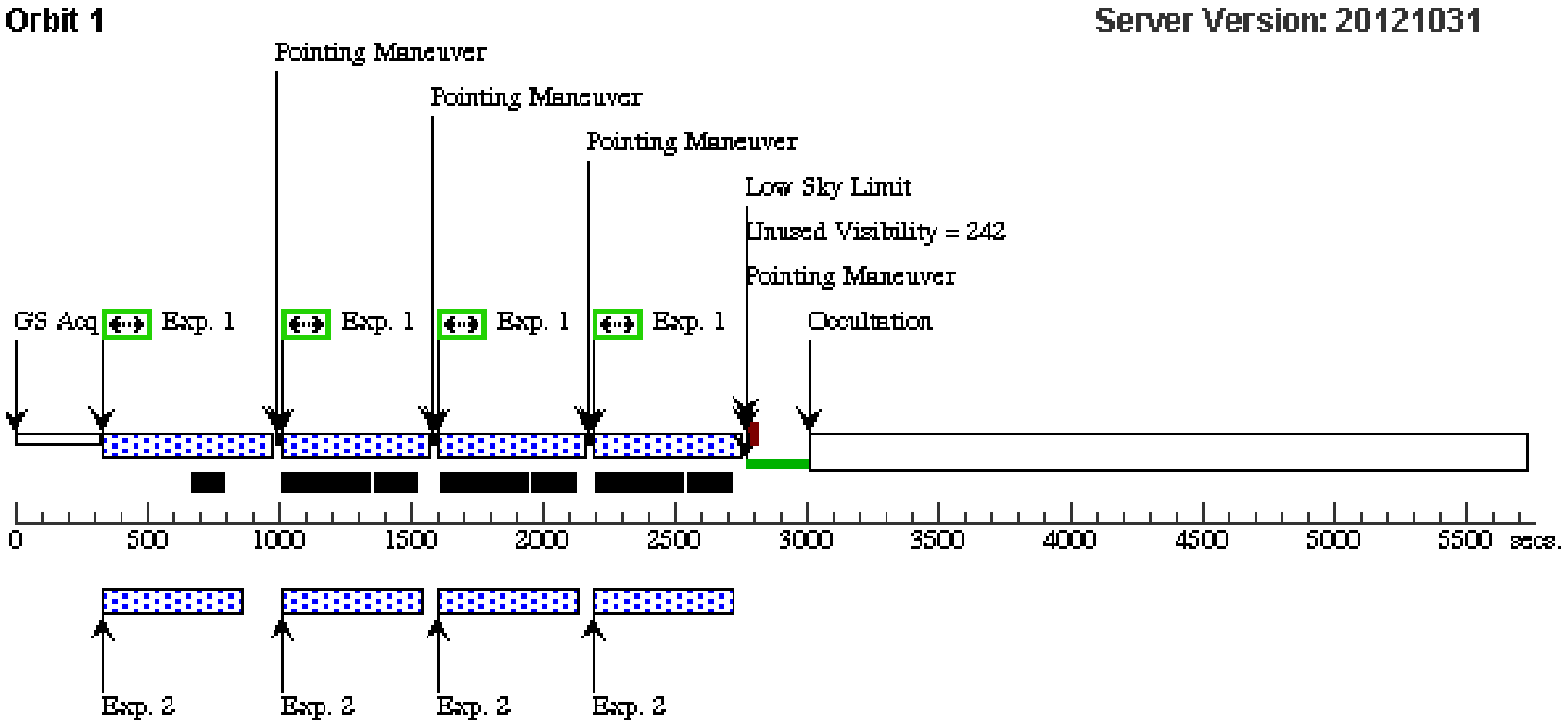
Fixed Targets

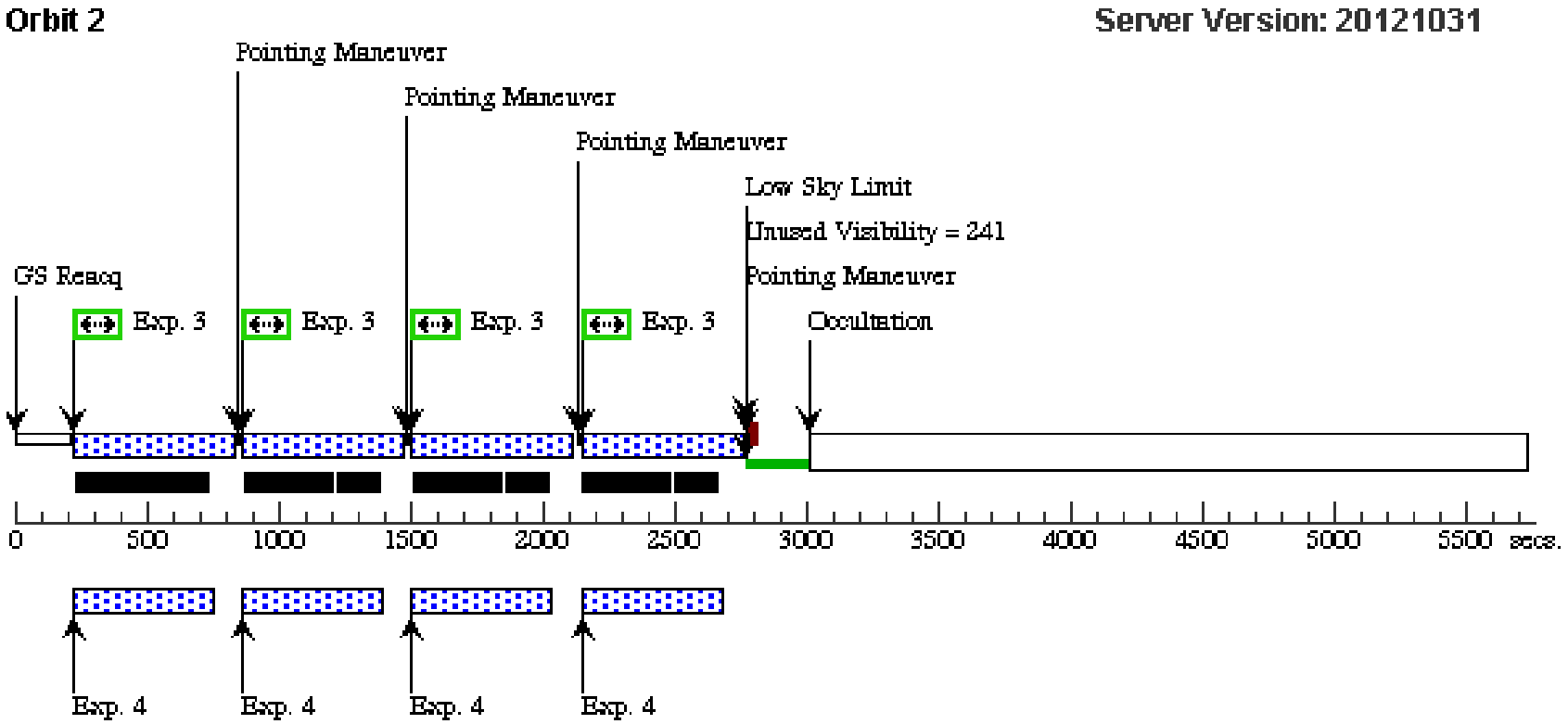
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RCS2-2327.4-0204	RA: 23 27 27.7410 (351.8655875d) Dec: -02 04 25.21 (-2.07367d) Equinox: J2000		V=20	Reference Frame: ICRS

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) RCS2-2327.4-0204	ACS/WFC, ACCUM, WFCENTER	F814W		LOW-SKY; GS ACQ SCENARIO BASE1B3	Pattern 2, Exps 1-2 in ACS/F814 (01) (2) Prime + Parallel Group 1-2 in Pattern 2, Exps 1-2 in ACS/F814 (01)	436 Secs *[==>437.0 Secs (Pattern 1)]* *[==>437.0 Secs (Pattern 2)]* *[==>436.0 Secs (Pattern 3)]* *[==>436.0 Secs (Pattern 4)]*	***[1]***
2		ANY	WFC3/IR, MULTIACCUM, IR-FIX	F098M	NSAMP=6; SAMP-SEQ=SPARS100		Pattern 2, Exps 1-2 in ACS/F814 (01) (2) Prime + Parallel Group 1-2 in Pattern 2, Exps 1-2 in ACS/F814 (01)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[1]***
3		(1) RCS2-2327.4-0204	ACS/WFC, ACCUM, WFCENTER	F814W		POS TARG -0.247,-2.984; LOW-SKY	Pattern 2, Exps 3-4 in ACS/F814 (01) (2) Prime + Parallel Group 3-4 in Pattern 2, Exps 3-4 in ACS/F814 (01)	485 Secs *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***
4		ANY	WFC3/IR, MULTIACCUM, IR-FIX	F125W	NSAMP=6; SAMP-SEQ=SPARS100		Pattern 2, Exps 3-4 in ACS/F814 (01) (2) Prime + Parallel Group 3-4 in Pattern 2, Exps 3-4 in ACS/F814 (01)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[2]***
5		(1) RCS2-2327.4-0204	ACS/WFC, ACCUM, WFCENTER	F814W		POS TARG -0.494,-5.968; LOW-SKY	Pattern 2, Exps 5-6 in ACS/F814 (01) (2) Prime + Parallel Group 5-6 in Pattern 2, Exps 5-6 in ACS/F814 (01)	485 Secs *[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[3]***
6		ANY	WFC3/IR, MULTIACCUM, IR-FIX	F160W	NSAMP=6; SAMP-SEQ=SPARS100		Pattern 2, Exps 5-6 in ACS/F814 (01) (2) Prime + Parallel Group 5-6 in Pattern 2, Exps 5-6 in ACS/F814 (01)	*[==>(Pattern 1)]* *[==>(Pattern 2)]* *[==>(Pattern 3)]* *[==>(Pattern 4)]*	***[3]***

Orbit Structure

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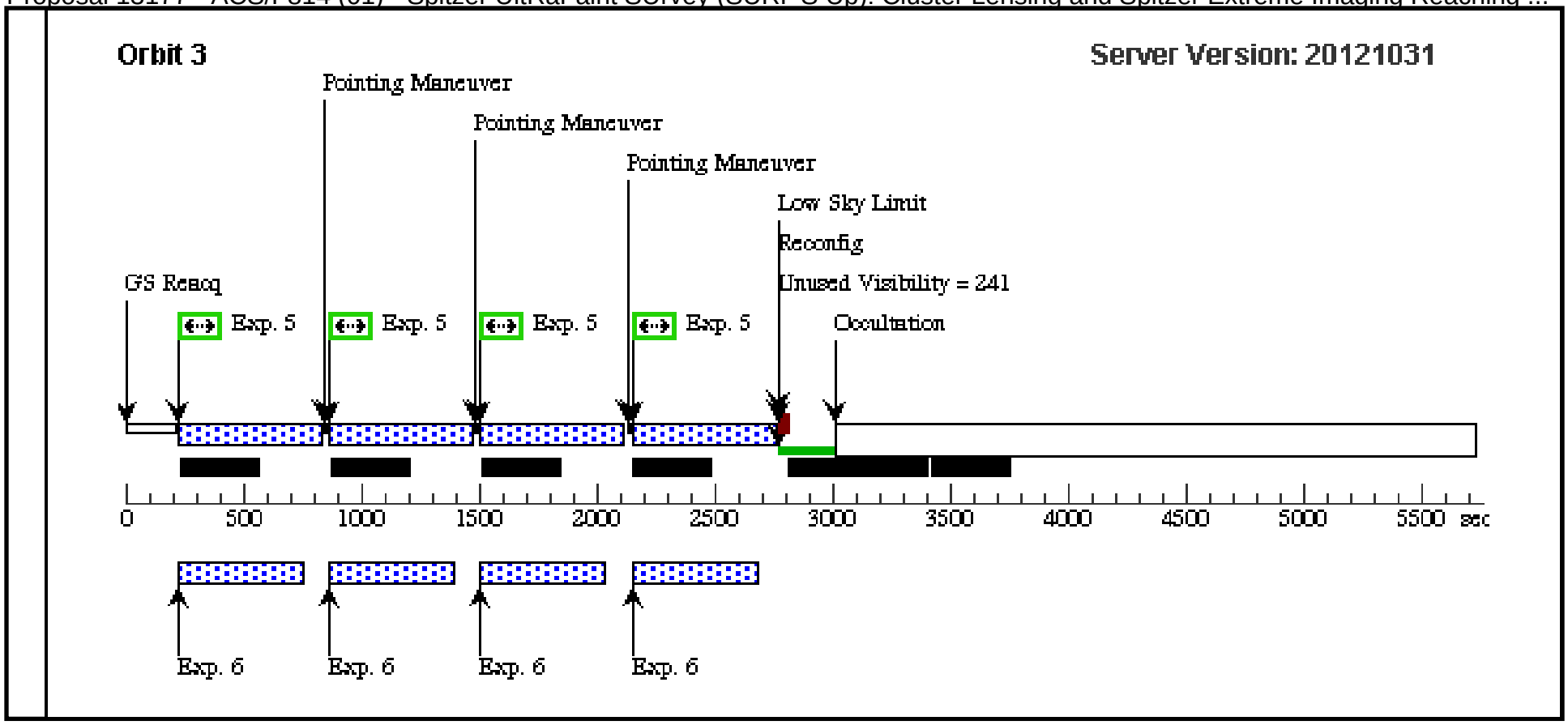
Server Version: 20121031
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Low Sky Limit
Unused Visibility = 241
Pointing Maneuver
GS Reacq
Exp. 3
Exp. 3
Exp. 3
Exp. 3
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Exp. 4
Exp. 4
Exp. 4
Exp. 4


Orbit 3
Server Version: 20121031
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Low Sky Limit
Reconfig
Unused Visibility = 241
GS Reacq
Exp. 5
Exp. 5
Exp. 5
Exp. 5
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 6
Exp. 6
Exp. 6
Exp. 6

Visit

Proposal 13177, WFC3/90 (02), implementation Fri Nov 16 02:33:45 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: SCHED 100%; ORIENT 40D TO 50D FROM 01

Diagnostics

(WFC3/90 (02)) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RCS2-2327.4-0204	RA: 23 27 27.7410 (351.8655875d) Dec: -02 04 25.21 (-2.07367d) Equinox: J2000		V=20	Reference Frame: ICRS

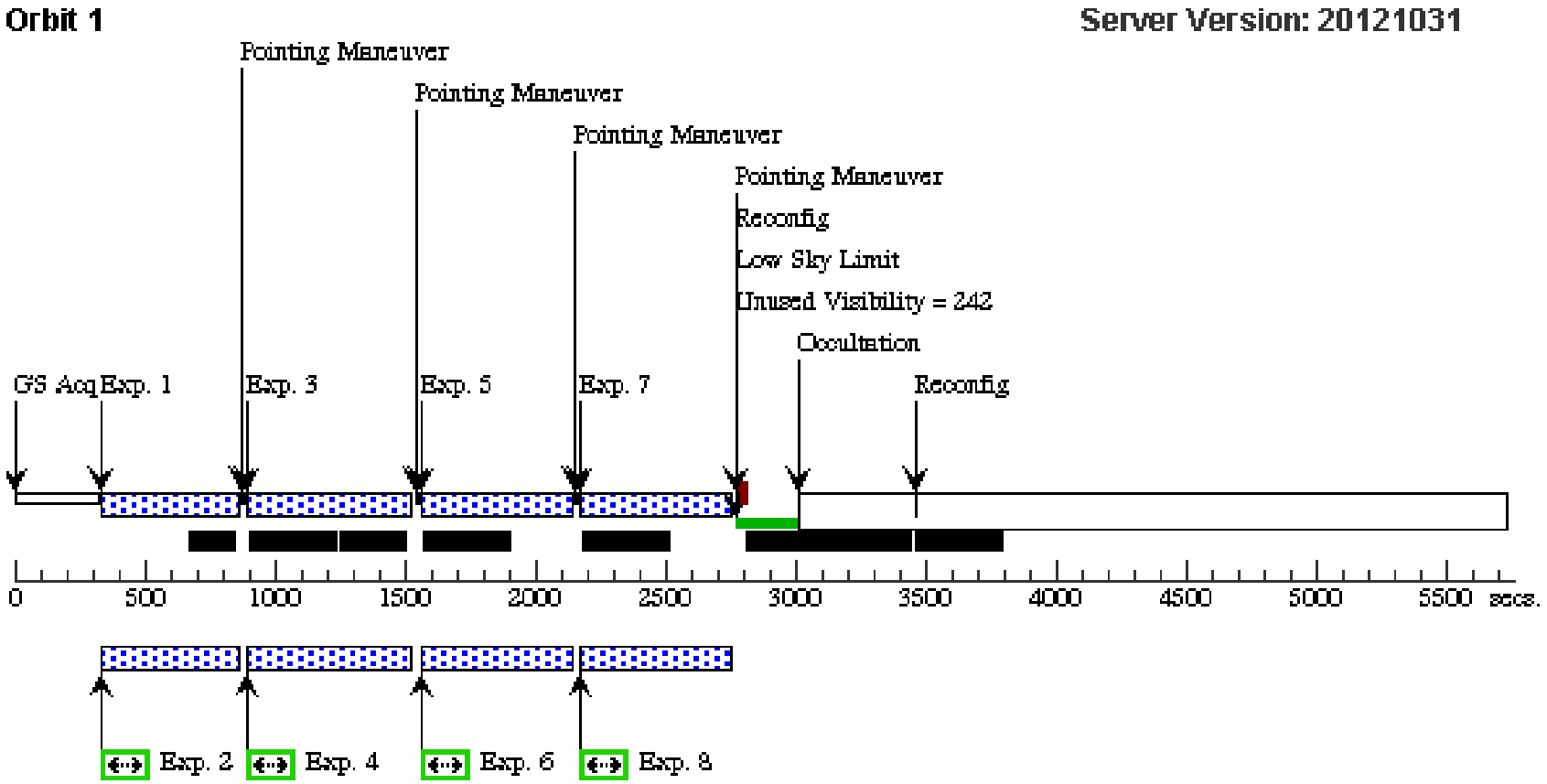
Exposures

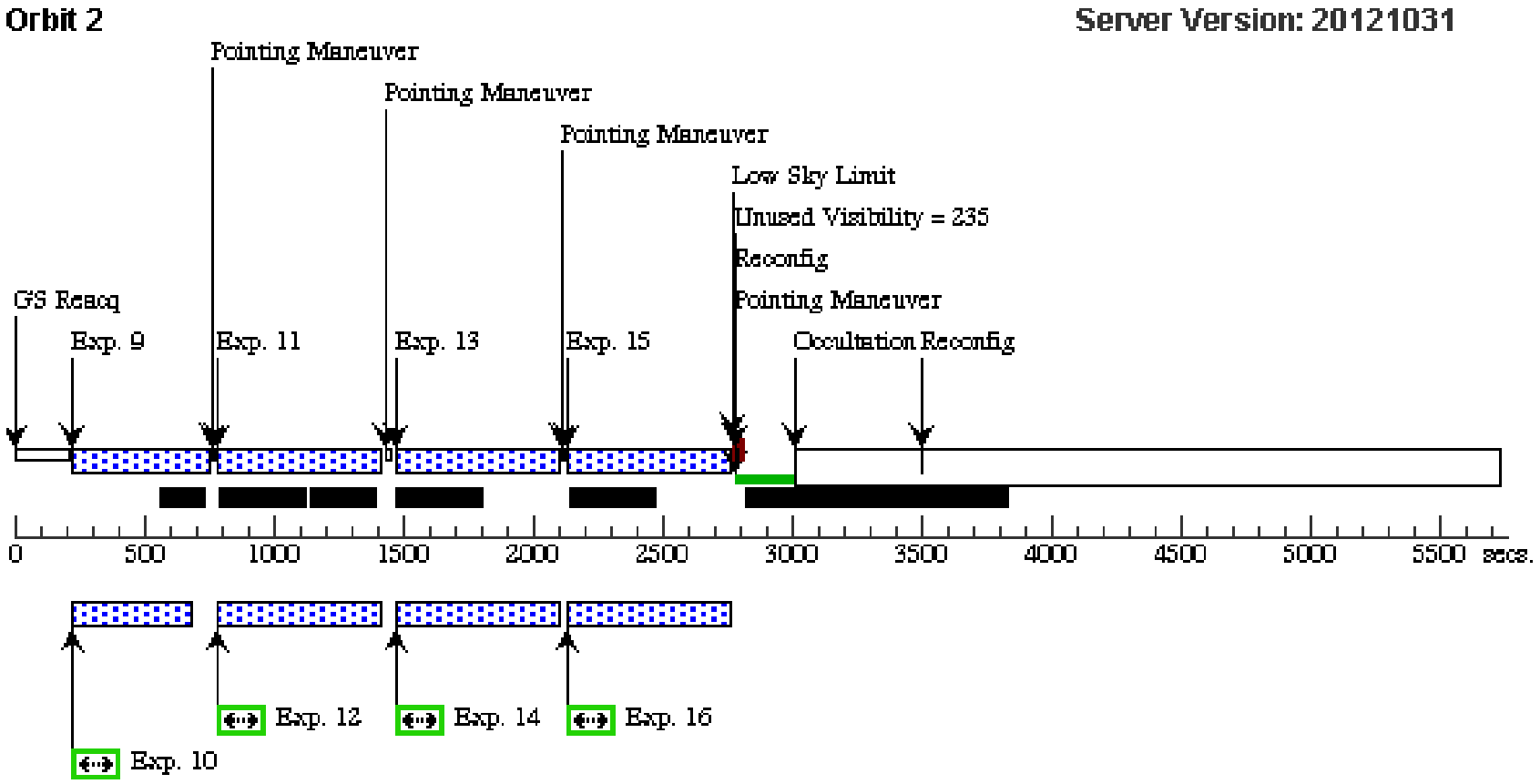
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F098M	SAMP-SEQ=SPARS50; NSAMP=11	POS TARG -11.947, 17.457; LOW-SKY; GS ACQ SCENARIO BASE1B3	Sequence 1-8 Non-Int in WFC3/90 (02) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in WFC3/90 (02)	*[==>]*	***[1]***
2		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/90 (02) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in WFC3/90 (02)	400 Secs *[==>325.0 Secs]*	***[1]***
3		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F098M	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG -12.150, 17.760; LOW-SKY	Sequence 1-8 Non-Int in WFC3/90 (02) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in WFC3/90 (02)	*[==>]*	***[1]***
4		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/90 (02) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in WFC3/90 (02)	400 Secs *[==>507.0 Secs]*	***[1]***
5		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F125W	SAMP-SEQ=SPARS50; NSAMP=12	POS TARG -11.608, 17.942; LOW-SKY	Sequence 1-8 Non-Int in WFC3/90 (02) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in WFC3/90 (02)	*[==>]*	***[1]***
6		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/90 (02) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in WFC3/90 (02)	400 Secs *[==>457.0 Secs]*	***[1]***
7		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F125W	SAMP-SEQ=SPARS50; NSAMP=12	POS TARG -11.405, 17.639; LOW-SKY	Sequence 1-8 Non-Int in WFC3/90 (02) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in WFC3/90 (02)	*[==>]*	***[1]***
8		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/90 (02) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in WFC3/90 (02)	400 Secs *[==>457.0 Secs]*	***[1]***
9		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS50; NSAMP=11	POS TARG -11.744, 17.033; LOW-SKY	Sequence 9-16 Non-Int in WFC3/90 (02) Prime + Parallel Group 9-10 in Sequence 9-16 Non-Int in WFC3/90 (02)	*[==>]*	***[2]***

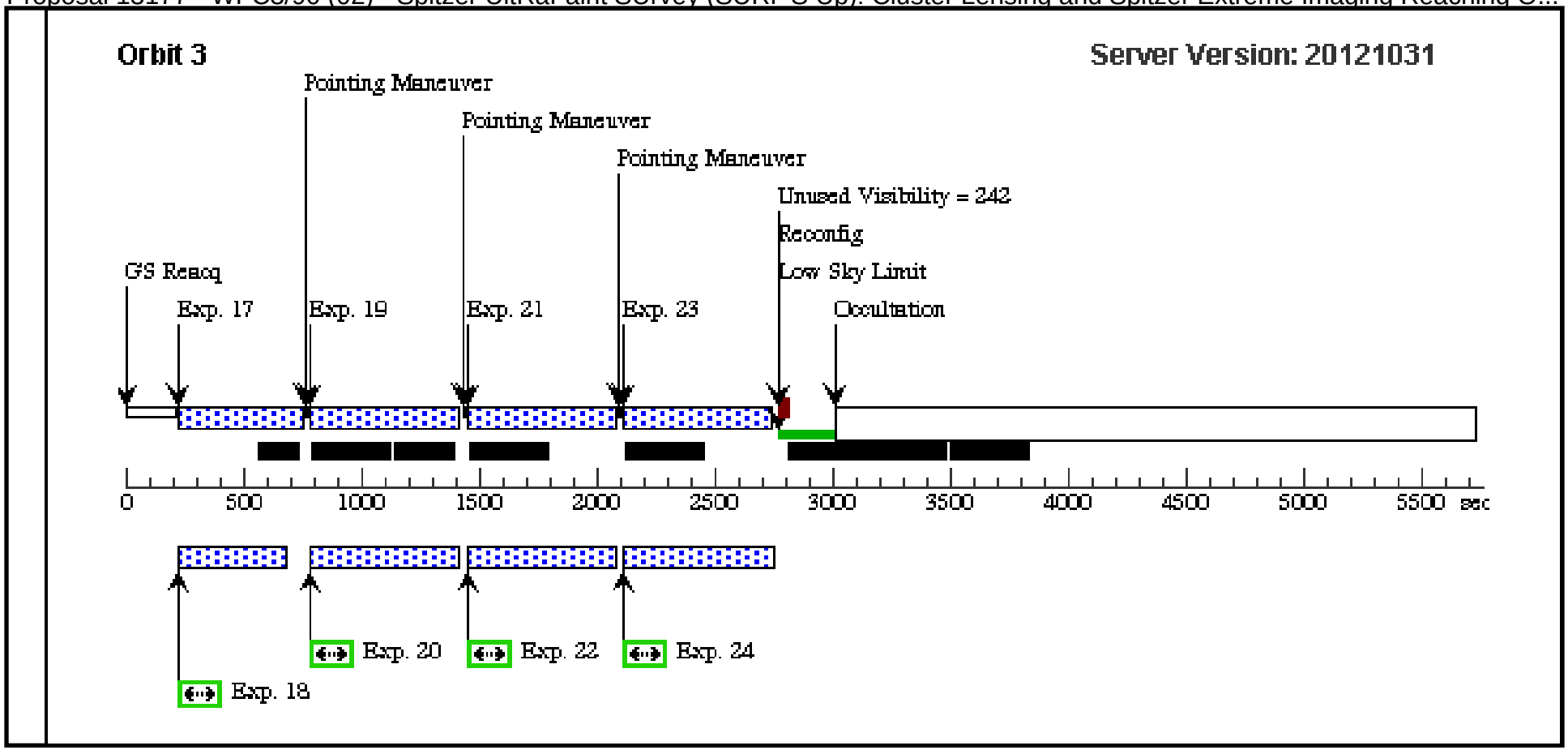
	10	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/90 (02) Prime + Parallel Group 9-10 in Sequence 9-16 Non-Int in WFC3/90 (02)	400 Secs *[==>336.0 Secs]*	***[2]***
	11	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG -12.354, 17.336; LOW-SKY	Sequence 9-16 Non-Int in WFC3/90 (02) Prime + Parallel Group 11-12 in Sequence 9-16 Non-Int in WFC3/90 (02)	*[==>]*	***[2]***
	12	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/90 (02) Prime + Parallel Group 11-12 in Sequence 9-16 Non-Int in WFC3/90 (02)	400 Secs *[==>507.0 Secs]*	***[2]***
	13	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG 11.071,17.744; LOW-SKY	Sequence 9-16 Non-Int in WFC3/90 (02) Prime + Parallel Group 13-14 in Sequence 9-16 Non-Int in WFC3/90 (02)	*[==>]*	***[2]***
	14	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/90 (02) Prime + Parallel Group 13-14 in Sequence 9-16 Non-Int in WFC3/90 (02)	400 Secs *[==>507.0 Secs]*	***[2]***
	15	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG 10.868,18.047; LOW-SKY	Sequence 9-16 Non-Int in WFC3/90 (02) Prime + Parallel Group 15-16 in Sequence 9-16 Non-Int in WFC3/90 (02)	*[==>]*	***[2]***
	16	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/90 (02) Prime + Parallel Group 15-16 in Sequence 9-16 Non-Int in WFC3/90 (02)	400 Secs *[==>507.0 Secs]*	***[2]***
	17	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F098M	SAMP-SEQ=SPARS50; NSAMP=11	POS TARG 11.410,18.229; LOW-SKY	Sequence 17-24 Non-Int in WFC3/90 (02) Prime + Parallel Group 17-18 in Sequence 17-24 Non-Int in WFC3/90 (02)	*[==>]*	***[3]***
	18	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 17-24 Non-Int in WFC3/90 (02) Prime + Parallel Group 17-18 in Sequence 17-24 Non-Int in WFC3/90 (02)	400 Secs *[==>336.0 Secs]*	***[3]***

	19	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F098M	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG 11.613,17.926; LOW-SKY	Sequence 17-24 Non-Int in WFC3/90 (02) Prime + Parallel Group 19-20 in Sequence 17-24 Non-Int in WFC3/90 (02)	*[==>]*	***[3]***
	20	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 17-24 Non-Int in WFC3/90 (02) Prime + Parallel Group 19-20 in Sequence 17-24 Non-Int in WFC3/90 (02)	400 Secs *[==>507.0 Secs]*	***[3]***
	21	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F125W	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG 11.274,17.320; LOW-SKY	Sequence 17-24 Non-Int in WFC3/90 (02) Prime + Parallel Group 21-22 in Sequence 17-24 Non-Int in WFC3/90 (02)	*[==>]*	***[3]***
	22	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 17-24 Non-Int in WFC3/90 (02) Prime + Parallel Group 21-22 in Sequence 17-24 Non-Int in WFC3/90 (02)	400 Secs *[==>507.0 Secs]*	***[3]***
	23	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F125W	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG 10.665,17.623; LOW-SKY	Sequence 17-24 Non-Int in WFC3/90 (02) Prime + Parallel Group 23-24 in Sequence 17-24 Non-Int in WFC3/90 (02)	*[==>]*	***[3]***
	24	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 17-24 Non-Int in WFC3/90 (02) Prime + Parallel Group 23-24 in Sequence 17-24 Non-Int in WFC3/90 (02)	400 Secs *[==>518.0 Secs]*	***[3]***

Orbit Structure




Orbit 2
Server Version: 20121031
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Low Sky Limit
Unused Visibility = 235
Reconfig
Pointing Maneuver
GS Reacq
Exp. 9
Exp. 11
Exp. 13
Exp. 15
Occultation Reconfig
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Exp. 12
Exp. 14
Exp. 16
Exp. 10


Orbit 3
Server Version: 20121031
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Unused Visibility = 242
Reconfig
Low Sky Limit
GS Reacq
Exp. 17
Exp. 19
Exp. 21
Exp. 23
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 20
Exp. 22
Exp. 24
Exp. 18

Visit

Proposal 13177, WFC3/270 (03), implementation Fri Nov 16 02:33:49 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: SCHED 100%; ORIENT -140D TO -130D FROM 01

Diagnostics

(WFC3/270 (03)) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RCS2-2327.4-0204	RA: 23 27 27.7410 (351.8655875d) Dec: -02 04 25.21 (-2.07367d) Equinox: J2000		V=20	Reference Frame: ICRS

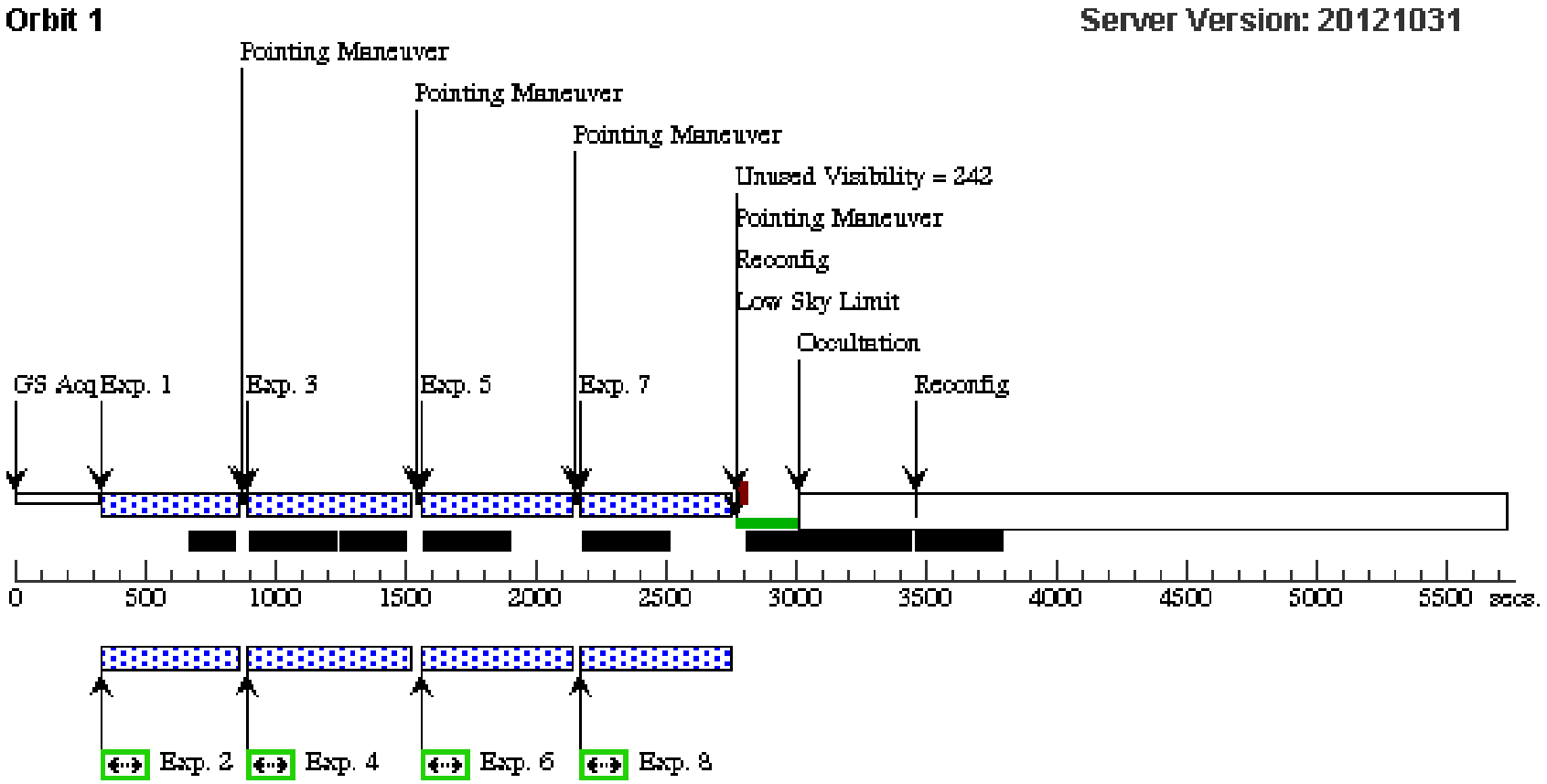
Exposures

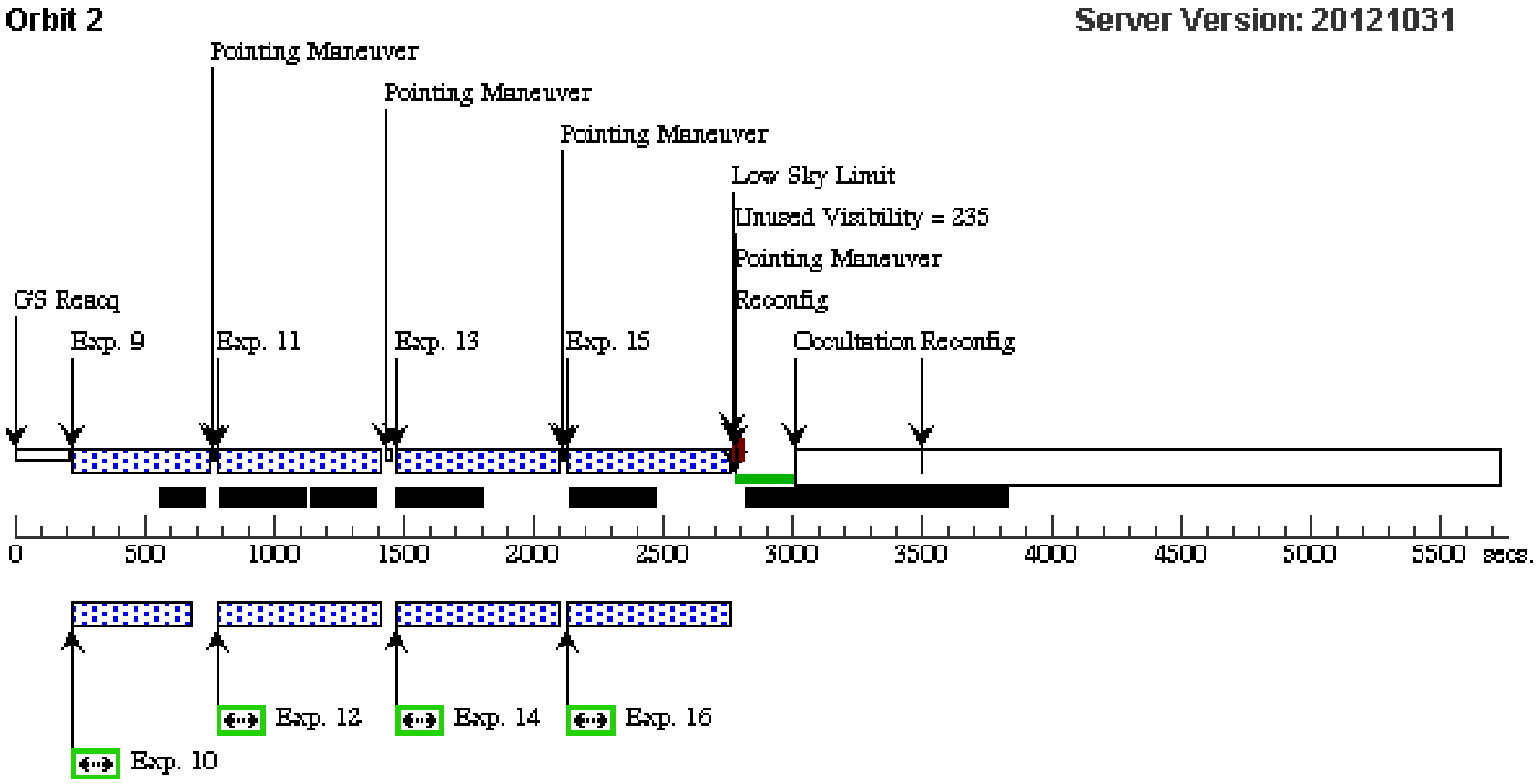
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F098M	SAMP-SEQ=SPARS50; NSAMP=11	POS TARG -11.947, 17.457; LOW-SKY; GS ACQ SCENARIO BASE1B3	Sequence 1-8 Non-Int in WFC3/270 (03) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in WFC3/270 (03)	*[==>]*	***[1]***
2		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/270 (03) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in WFC3/270 (03)	400 Secs *[==>325.0 Secs]*	***[1]***
3		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F098M	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG -12.150, 17.760; LOW-SKY	Sequence 1-8 Non-Int in WFC3/270 (03) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in WFC3/270 (03)	*[==>]*	***[1]***
4		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/270 (03) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in WFC3/270 (03)	400 Secs *[==>507.0 Secs]*	***[1]***
5		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F125W	SAMP-SEQ=SPARS50; NSAMP=12	POS TARG -11.608, 17.942; LOW-SKY	Sequence 1-8 Non-Int in WFC3/270 (03) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in WFC3/270 (03)	*[==>]*	***[1]***
6		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/270 (03) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in WFC3/270 (03)	400 Secs *[==>457.0 Secs]*	***[1]***
7		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F125W	SAMP-SEQ=SPARS50; NSAMP=12	POS TARG -11.405, 17.639; LOW-SKY	Sequence 1-8 Non-Int in WFC3/270 (03) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in WFC3/270 (03)	*[==>]*	***[1]***
8		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/270 (03) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in WFC3/270 (03)	400 Secs *[==>457.0 Secs]*	***[1]***
9		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS50; NSAMP=11	POS TARG -11.744, 17.033; LOW-SKY	Sequence 9-16 Non-Int in WFC3/270 (03) Prime + Parallel Group 9-10 in Sequence 9-16 Non-Int in WFC3/270 (03)	*[==>]*	***[2]***

10	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/270 (03) Prime + Parallel Group 9-10 in Sequence 9-16 Non-Int in WFC3/270 (03)	400 Secs *[==>336.0 Secs]*	***[2]***
11	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG -12.354, 17.336; LOW-SKY	Sequence 9-16 Non-Int in WFC3/270 (03) Prime + Parallel Group 11-12 in Sequence 9-16 Non-Int in WFC3/270 (03)	*[==>]*	***[2]***
12	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/270 (03) Prime + Parallel Group 11-12 in Sequence 9-16 Non-Int in WFC3/270 (03)	400 Secs *[==>507.0 Secs]*	***[2]***
13	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG 11.071,17.744; LOW-SKY	Sequence 9-16 Non-Int in WFC3/270 (03) Prime + Parallel Group 13-14 in Sequence 9-16 Non-Int in WFC3/270 (03)	*[==>]*	***[2]***
14	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/270 (03) Prime + Parallel Group 13-14 in Sequence 9-16 Non-Int in WFC3/270 (03)	400 Secs *[==>507.0 Secs]*	***[2]***
15	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG 10.868,18.047; LOW-SKY	Sequence 9-16 Non-Int in WFC3/270 (03) Prime + Parallel Group 15-16 in Sequence 9-16 Non-Int in WFC3/270 (03)	*[==>]*	***[2]***
16	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/270 (03) Prime + Parallel Group 15-16 in Sequence 9-16 Non-Int in WFC3/270 (03)	400 Secs *[==>507.0 Secs]*	***[2]***
17	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F098M	SAMP-SEQ=SPARS50; NSAMP=11	POS TARG 11.410,18.229; LOW-SKY	Sequence 17-24 Non-Int in WFC3/270 (03) Prime + Parallel Group 17-18 in Sequence 17-24 Non-Int in WFC3/270 (03)	*[==>]*	***[3]***
18	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 17-24 Non-Int in WFC3/270 (03) Prime + Parallel Group 17-18 in Sequence 17-24 Non-Int in WFC3/270 (03)	400 Secs *[==>336.0 Secs]*	***[3]***

19	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F098M	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG 11.613,17.926; LOW-SKY	Sequence 17-24 Non-Int in WFC3/270 (03) Prime + Parallel Group 19-20 in Sequence 17-24 Non-Int in WFC3/270 (03)	*[==>]*	***[3]***
20	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 17-24 Non-Int in WFC3/270 (03) Prime + Parallel Group 19-20 in Sequence 17-24 Non-Int in WFC3/270 (03)	400 Secs *[==>507.0 Secs]*	***[3]***
21	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F125W	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG 11.274,17.320; LOW-SKY	Sequence 17-24 Non-Int in WFC3/270 (03) Prime + Parallel Group 21-22 in Sequence 17-24 Non-Int in WFC3/270 (03)	*[==>]*	***[3]***
22	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 17-24 Non-Int in WFC3/270 (03) Prime + Parallel Group 21-22 in Sequence 17-24 Non-Int in WFC3/270 (03)	400 Secs *[==>507.0 Secs]*	***[3]***
23	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F125W	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG 10.665,17.623; LOW-SKY	Sequence 17-24 Non-Int in WFC3/270 (03) Prime + Parallel Group 23-24 in Sequence 17-24 Non-Int in WFC3/270 (03)	*[==>]*	***[3]***
24	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 17-24 Non-Int in WFC3/270 (03) Prime + Parallel Group 23-24 in Sequence 17-24 Non-Int in WFC3/270 (03)	400 Secs *[==>518.0 Secs]*	***[3]***

Orbit Structure

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Pointing Maneuver
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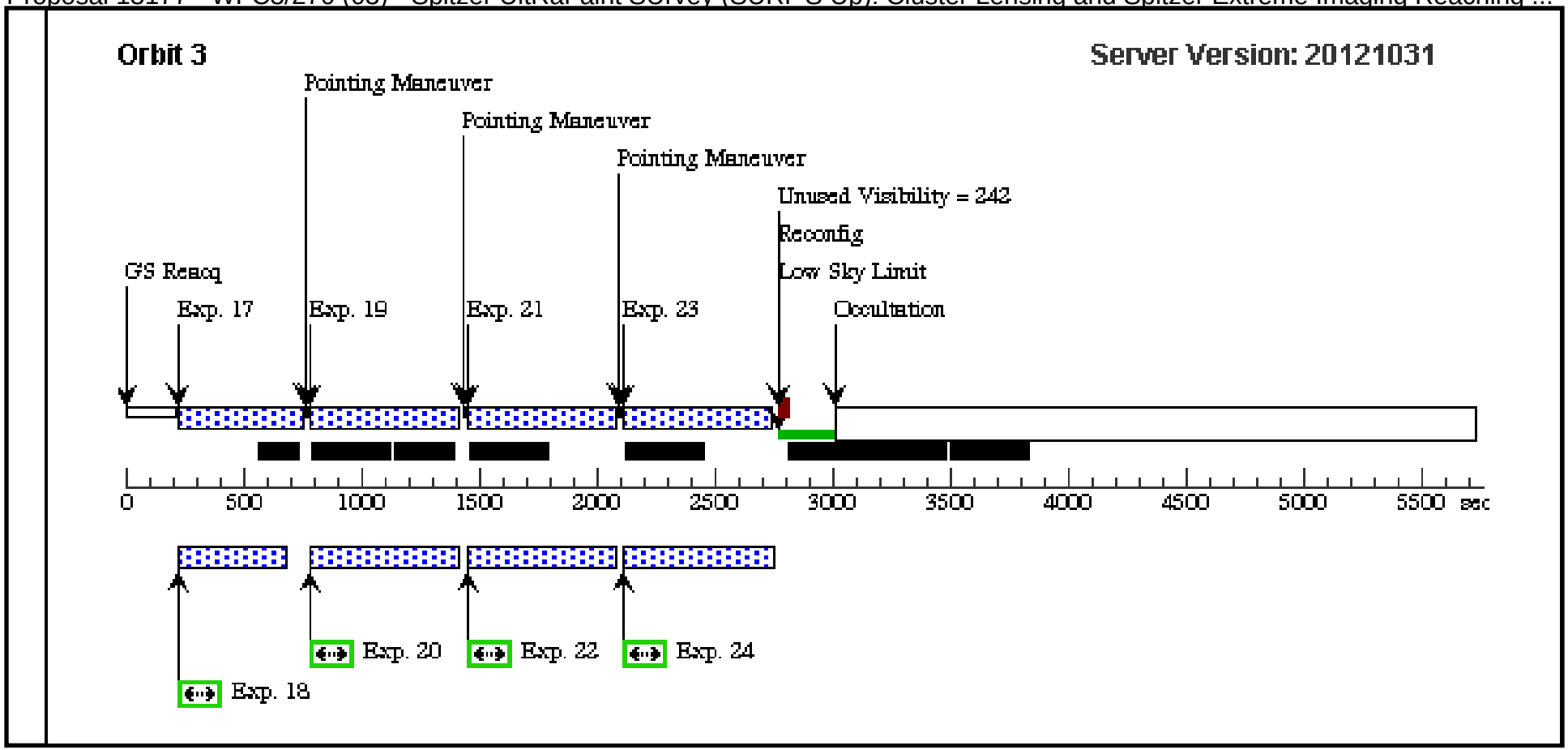
Pointing Maneuver
Low Sky Limit
Unused Visibility = 235
Pointing Maneuver
Reconfig
GS Reacq
Exp. 9
Exp. 11
Exp. 13
Exp. 15
Occultation Reconfig
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Exp. 12
Exp. 14
Exp. 16
Exp. 10


Orbit 3
Server Version: 20121031
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Unused Visibility = 242
Reconfig
Low Sky Limit
GS Reacq
Exp. 17
Exp. 19
Exp. 21
Exp. 23
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 20
Exp. 22
Exp. 24
Exp. 18

Visit

Proposal 13177, WFC3/180 (04), implementation Fri Nov 16 02:33:53 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: SCHED 100%; ORIENT 130D TO 140D FROM 01

Fixed Targets

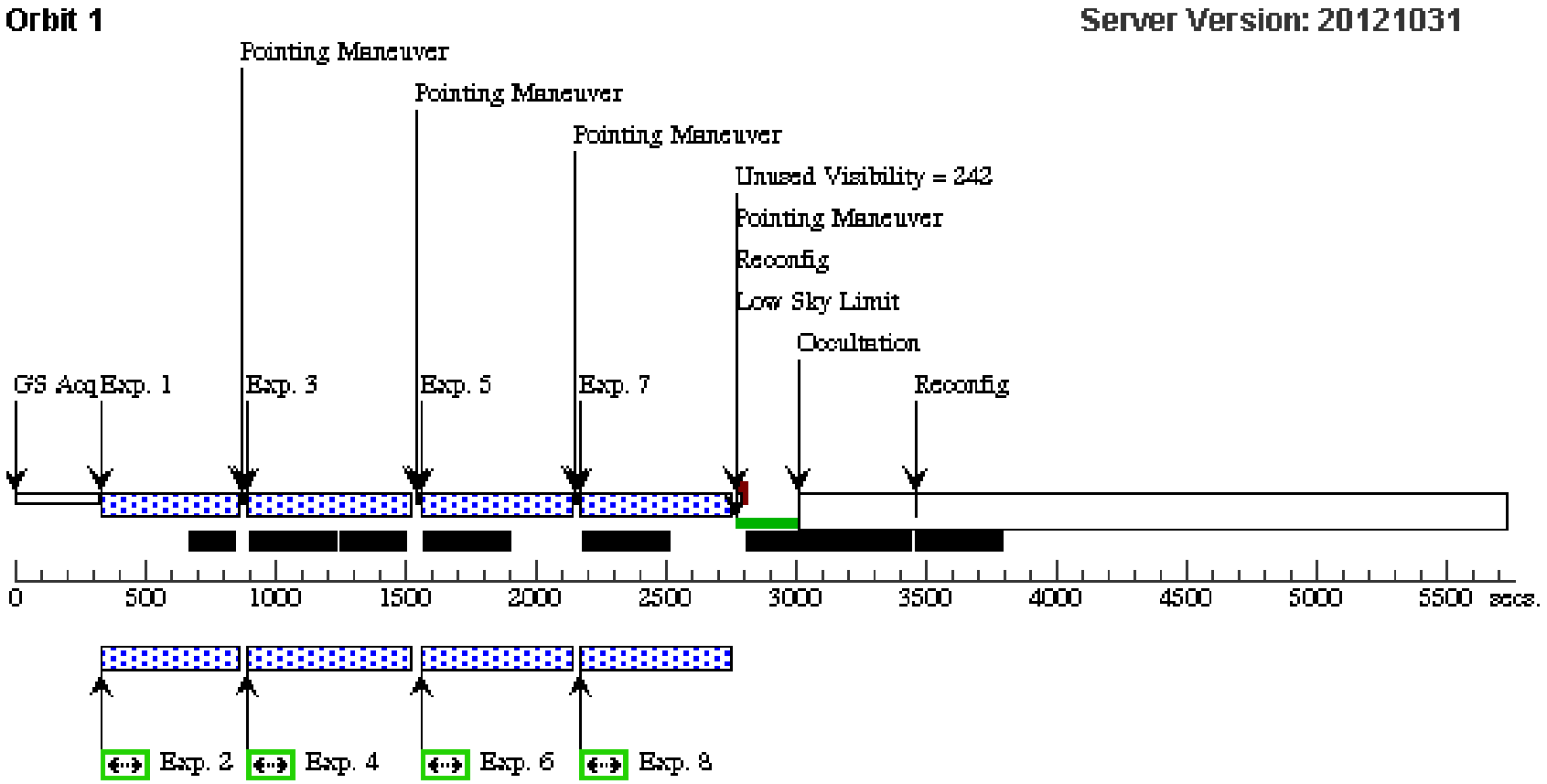
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RCS2-2327.4-0204	RA: 23 27 27.7410 (351.8655875d) Dec: -02 04 25.21 (-2.07367d) Equinox: J2000		V=20	Reference Frame: ICRS

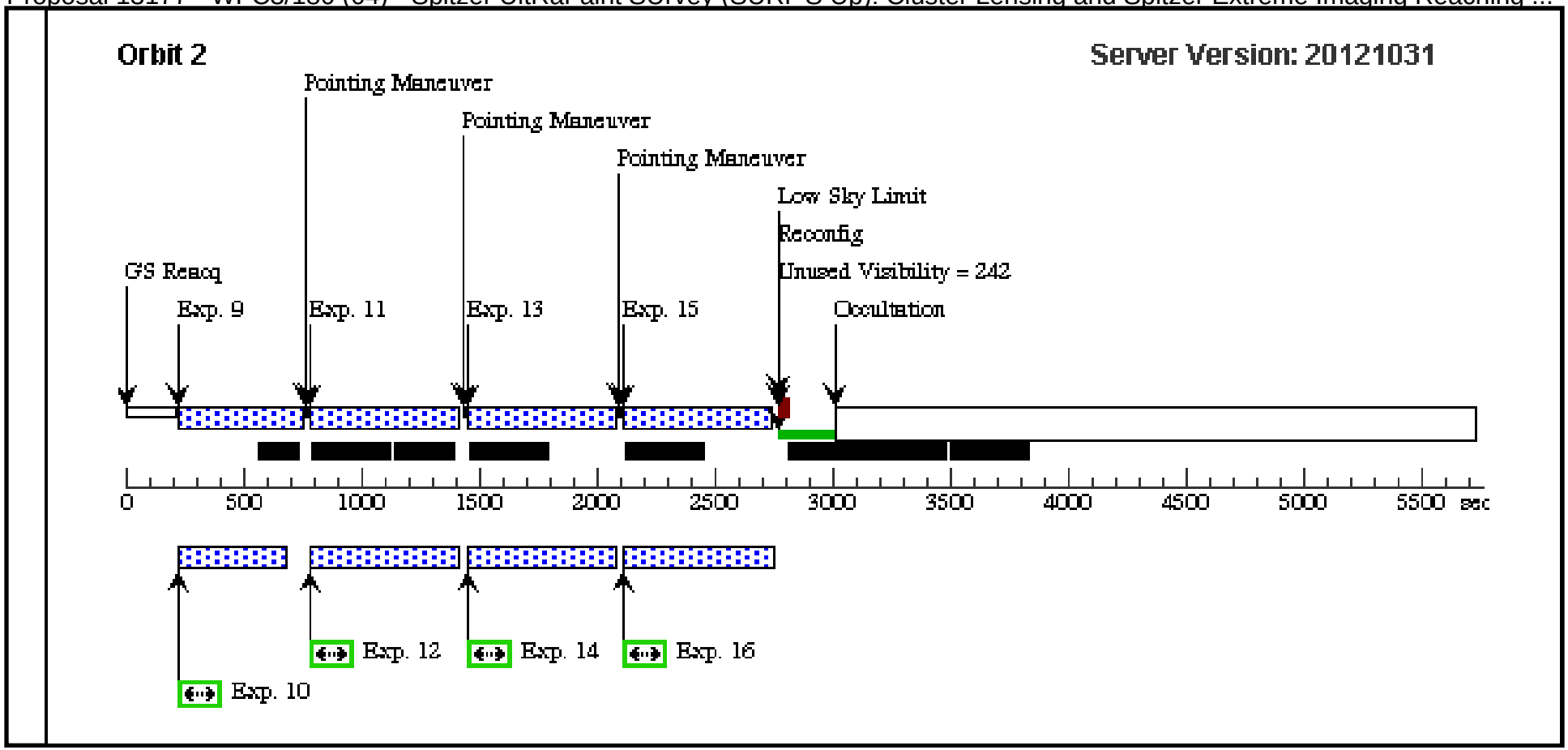
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F125W	SAMP-SEQ=SPARS50; NSAMP=11	POS TARG -11.947, 17.457; LOW-SKY; GS ACQ SCENARIO BASE1B3	Sequence 1-8 Non-Int in WFC3/180 (04) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in WFC3/180 (04)	*[==>]*	***[1]***
2		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/180 (04) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in WFC3/180 (04)	400 Secs *[==>325 Secs]*	***[1]***
3		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F098M	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG -12.150, 17.760; LOW-SKY	Sequence 1-8 Non-Int in WFC3/180 (04) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in WFC3/180 (04)	*[==>]*	***[1]***
4		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/180 (04) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in WFC3/180 (04)	400 Secs *[==>507 Secs]*	***[1]***
5		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS50; NSAMP=12	POS TARG -11.608, 17.942; LOW-SKY	Sequence 1-8 Non-Int in WFC3/180 (04) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in WFC3/180 (04)	*[==>]*	***[1]***
6		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/180 (04) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in WFC3/180 (04)	400 Secs *[==>457 Secs]*	***[1]***
7		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS50; NSAMP=12	POS TARG -11.405, 17.639; LOW-SKY	Sequence 1-8 Non-Int in WFC3/180 (04) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in WFC3/180 (04)	*[==>]*	***[1]***
8		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/180 (04) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in WFC3/180 (04)	400 Secs *[==>457 Secs]*	***[1]***
9		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F125W	SAMP-SEQ=SPARS50; NSAMP=11	POS TARG 11.410,18.229; LOW-SKY	Sequence 9-16 Non-Int in WFC3/180 (04) Prime + Parallel Group 9-10 in Sequence 9-16 Non-Int in WFC3/180 (04)	*[==>]*	***[2]***

	10	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/180 (04) Prime + Parallel Group 9-10 in Sequence 9-16 Non-Int in WFC3/180 (04)	400 Secs *[==>336.0 Secs]*	***[2]***
	11	(1) RCS2-2327.4-02 04	WFC3/IR, MULTIACCUM, IR-FIX	F098M	SAMP-SEQ=SPARS 50; NSAMP=13	POS TARG 11.613,17.926; LOW-SKY	Sequence 9-16 Non-Int in WFC3/180 (04) Prime + Parallel Group 11-12 in Sequence 9-16 Non-Int in WFC3/180 (04)	*[==>]*	***[2]***
	12	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/180 (04) Prime + Parallel Group 11-12 in Sequence 9-16 Non-Int in WFC3/180 (04)	400 Secs *[==>507.0 Secs]*	***[2]***
	13	(1) RCS2-2327.4-02 04	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS 50; NSAMP=13	POS TARG 11.274,17.320; LOW-SKY	Sequence 9-16 Non-Int in WFC3/180 (04) Prime + Parallel Group 13-14 in Sequence 9-16 Non-Int in WFC3/180 (04)	*[==>]*	***[2]***
	14	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/180 (04) Prime + Parallel Group 13-14 in Sequence 9-16 Non-Int in WFC3/180 (04)	400 Secs *[==>507.0 Secs]*	***[2]***
	15	(1) RCS2-2327.4-02 04	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS 50; NSAMP=13	POS TARG 10.665,17.623; LOW-SKY	Sequence 9-16 Non-Int in WFC3/180 (04) Prime + Parallel Group 15-16 in Sequence 9-16 Non-Int in WFC3/180 (04)	*[==>]*	***[2]***
	16	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/180 (04) Prime + Parallel Group 15-16 in Sequence 9-16 Non-Int in WFC3/180 (04)	400 Secs *[==>518.0 Secs]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20121031
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Low Sky Limit
Reconfig
Unused Visibility = 242
GS Reacq
Exp. 9
Exp. 11
Exp. 13
Exp. 15
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec
Exp. 12
Exp. 14
Exp. 16
Exp. 10

Visit

Proposal 13177, WFC3/0 (05), implementation Fri Nov 16 02:33:55 GMT 2012

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR, ACS/WFC

Special Requirements: SCHED 100%; ORIENT -50D TO -40D FROM 01

Fixed Targets

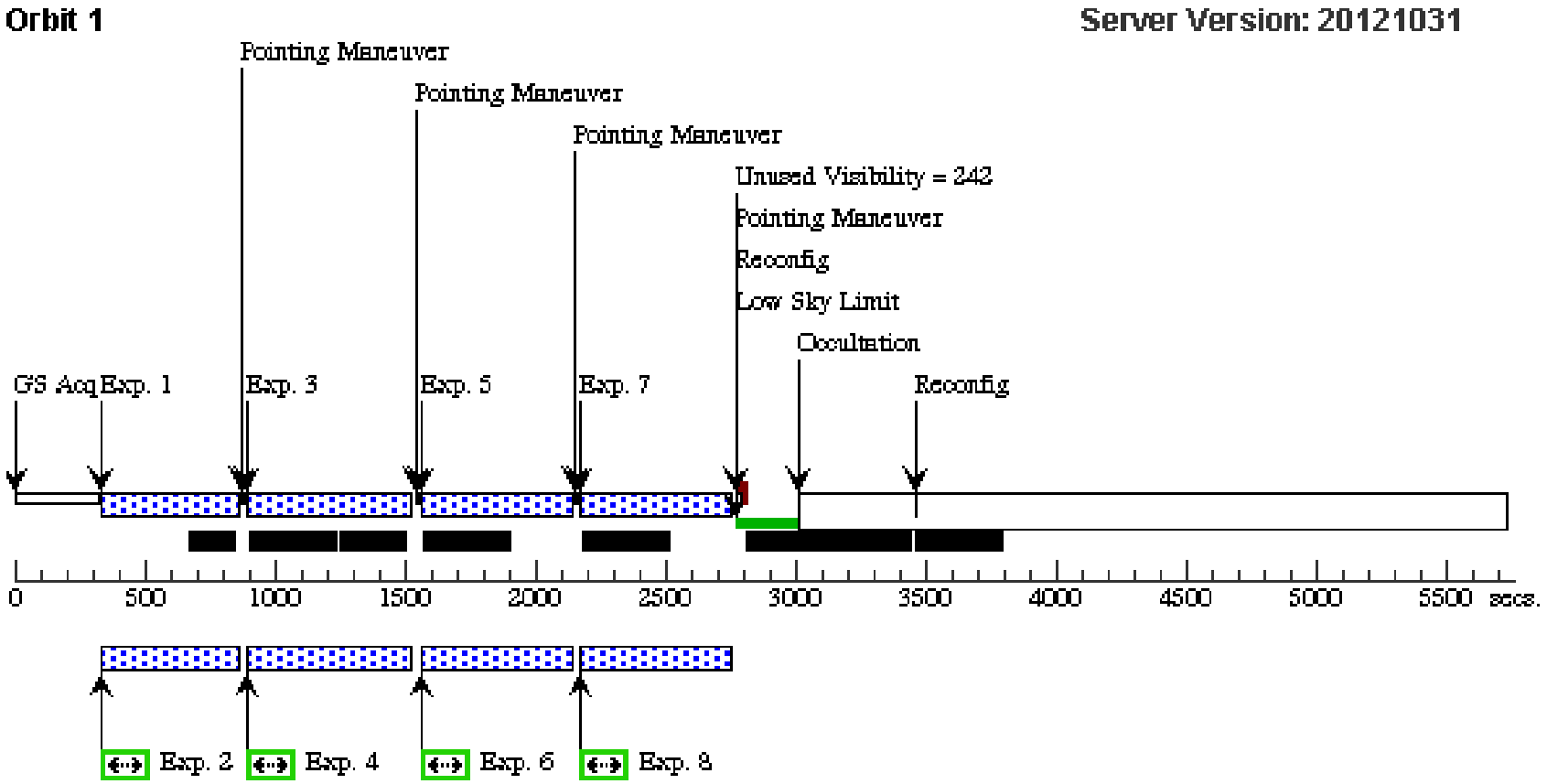
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	RCS2-2327.4-0204	RA: 23 27 27.7410 (351.8655875d) Dec: -02 04 25.21 (-2.07367d) Equinox: J2000		V=20	Reference Frame: ICRS

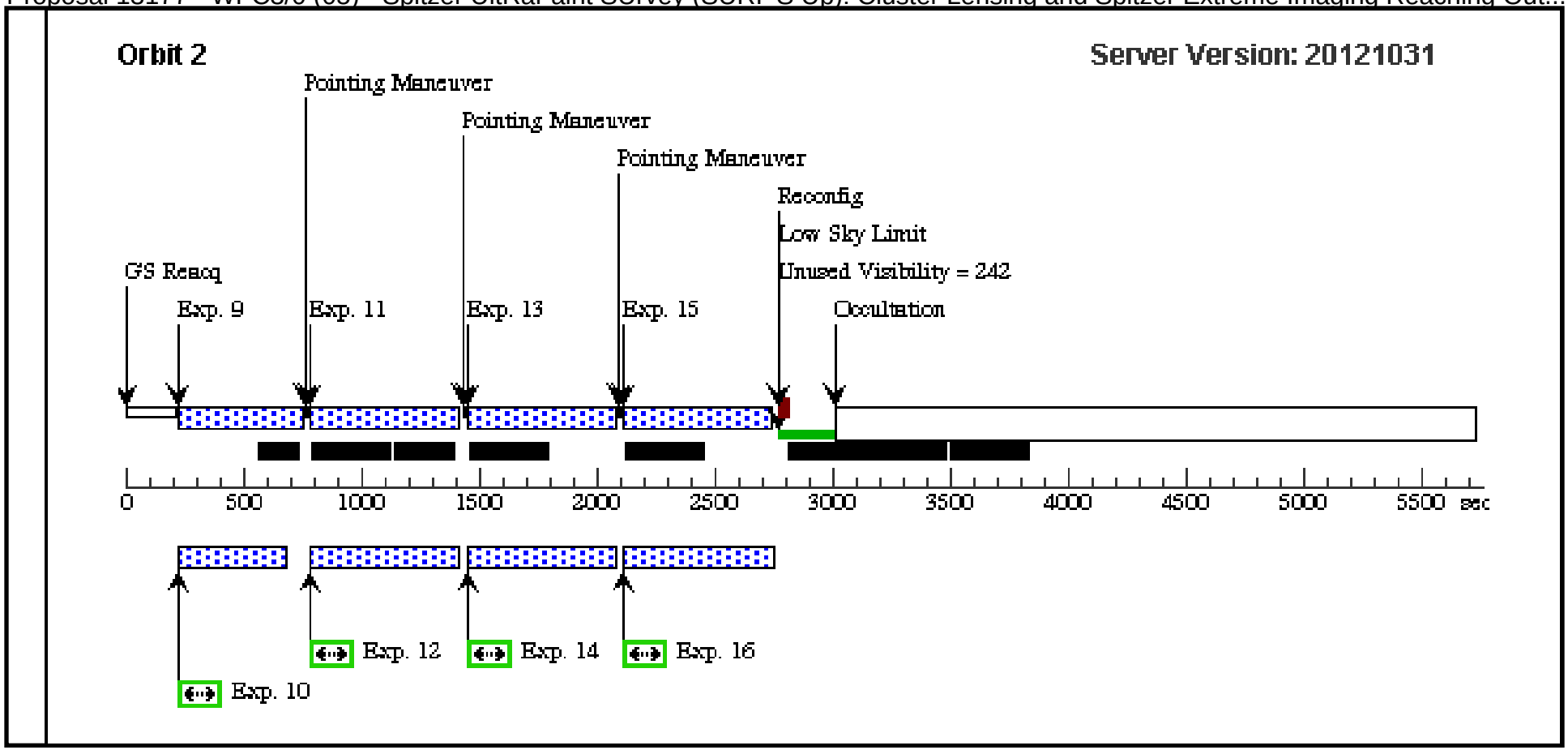
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F125W	SAMP-SEQ=SPARS50; NSAMP=11	POS TARG -11.947, 17.457; LOW-SKY; GS ACQ SCENARIO BASE1B3	Sequence 1-8 Non-Int in WFC3/0 (05) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in WFC3/0 (05)	*[==>]*	***[1]***
2		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/0 (05) Prime + Parallel Group 1-2 in Sequence 1-8 Non-Int in WFC3/0 (05)	400 Secs *[==>325 Secs]*	***[1]***
3		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F098M	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG -12.150, 17.760; LOW-SKY	Sequence 1-8 Non-Int in WFC3/0 (05) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in WFC3/0 (05)	*[==>]*	***[1]***
4		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/0 (05) Prime + Parallel Group 3-4 in Sequence 1-8 Non-Int in WFC3/0 (05)	400 Secs *[==>507 Secs]*	***[1]***
5		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS50; NSAMP=12	POS TARG -11.608, 17.942; LOW-SKY	Sequence 1-8 Non-Int in WFC3/0 (05) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in WFC3/0 (05)	*[==>]*	***[1]***
6		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/0 (05) Prime + Parallel Group 5-6 in Sequence 1-8 Non-Int in WFC3/0 (05)	400 Secs *[==>457 Secs]*	***[1]***
7		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS50; NSAMP=12	POS TARG -11.405, 17.639; LOW-SKY	Sequence 1-8 Non-Int in WFC3/0 (05) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in WFC3/0 (05)	*[==>]*	***[1]***
8		ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 1-8 Non-Int in WFC3/0 (05) Prime + Parallel Group 7-8 in Sequence 1-8 Non-Int in WFC3/0 (05)	400 Secs *[==>457 Secs]*	***[1]***
9		(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F125W	SAMP-SEQ=SPARS50; NSAMP=11	POS TARG 11.410,18.229; LOW-SKY	Sequence 9-16 Non-Int in WFC3/0 (05) Prime + Parallel Group 9-10 in Sequence 9-16 Non-Int in WFC3/0 (05)	*[==>]*	***[2]***

	10	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/0 (05) Prime + Parallel Group 9-10 in Sequence 9-16 Non-Int in WFC3/0 (05)	400 Secs *[==>336.0 Secs]*	***[2]***
	11	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F098M	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG 11.613,17.926; LOW-SKY	Sequence 9-16 Non-Int in WFC3/0 (05) Prime + Parallel Group 11-12 in Sequence 9-16 Non-Int in WFC3/0 (05)	*[==>]*	***[2]***
	12	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/0 (05) Prime + Parallel Group 11-12 in Sequence 9-16 Non-Int in WFC3/0 (05)	400 Secs *[==>507.0 Secs]*	***[2]***
	13	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG 11.274,17.320; LOW-SKY	Sequence 9-16 Non-Int in WFC3/0 (05) Prime + Parallel Group 13-14 in Sequence 9-16 Non-Int in WFC3/0 (05)	*[==>]*	***[2]***
	14	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/0 (05) Prime + Parallel Group 13-14 in Sequence 9-16 Non-Int in WFC3/0 (05)	400 Secs *[==>507.0 Secs]*	***[2]***
	15	(1) RCS2-2327.4-0204	WFC3/IR, MULTIACCUM, IR-FIX	F160W	SAMP-SEQ=SPARS50; NSAMP=13	POS TARG 10.665,17.623; LOW-SKY	Sequence 9-16 Non-Int in WFC3/0 (05) Prime + Parallel Group 15-16 in Sequence 9-16 Non-Int in WFC3/0 (05)	*[==>]*	***[2]***
	16	ANY	ACS/WFC, ACCUM, WFC	F814W			Sequence 9-16 Non-Int in WFC3/0 (05) Prime + Parallel Group 15-16 in Sequence 9-16 Non-Int in WFC3/0 (05)	400 Secs *[==>518.0 Secs]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20121031
Pointing Maneuver
Pointing Maneuver
Pointing Maneuver
Reconfig
Low Sky Limit
Unused Visibility = 242
GS Reacq
Exp. 9
Exp. 11
Exp. 13
Exp. 15
Occultation
0
500
1000
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sec
Exp. 12
Exp. 14
Exp. 16
Exp. 10