14230 - The Ultimate Emission Line Diagnostics Study at z=1.4

Cycle: 23, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. Jane R. Rigby (PI) (Contact)	**NASA Goddard Space Flight Center**	**jane.r.rigby@nasa.gov**
Prof. Michael D. Gladders (CoI)	University of Chicago	gladders@oddjob.uchicago.edu
Prof. Keren Sharon (CoI)	University of Michigan	kerens@umich.edu
Dr. Lisa Kewley (CoI)	Australian National University	kewley@ifa.hawaii.edu
Dr. Matthew Bayliss (CoI)	Colby College	mbbayliss@gmail.com
Dr. Eva Wuyts (CoI) (ESA Member)	Max-Planck-Institut fur extraterrestrische Physik	evawuyts@mpe.mpg.de
Mr. Michael Florian (CoI)	University of Chicago	mflorian@uchicago.edu
Ms. Traci Lin Johnson (CoI)	University of Michigan	tljohn@umich.edu
Dr. Ivelina G Momcheva (CoI)	Space Telescope Science Institute	imomcheva@stsci.edu
Dr. Katherine E. Whitaker (CoI)	University of Massachusetts - Amherst	kwhitaker@astro.umass.edu
Dr. Haakon Dahle (CoI) (ESA Member)	University of Oslo	hdahle@astro.uio.no
Dr. Chun Ly (CoI)	NASA Goddard Space Flight Center	chun.ly@nasa.gov
Dr. Gabriel Brammer (CoI) (ESA Member)	Space Telescope Science Institute - ESA	brammer@stsci.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(12) SDSSJ2340+2947	WFC3/UVIS	2	05-Jan-2016 21:05:07.0	yes
02	(11) SDSSJ1723+3411	WFC3/IR	2	05-Jan-2016 21:05:09.0	yes
03	(11) SDSSJ1723+3411	WFC3/IR	2	05-Jan-2016 21:05:10.0	yes
04	(11) SDSSJ1723+3411	WFC3/IR	2	05-Jan-2016 21:05:12.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
05	(11) SDSSJ1723+3411	WFC3/IR	2	05-Jan-2016 21:05:13.0	yes
06	(12) SDSSJ2340+2947	WFC3/IR	3	05-Jan-2016 21:05:15.0	yes
07	(12) SDSSJ2340+2947	WFC3/IR	3	05-Jan-2016 21:05:18.0	yes
08	(12) SDSSJ2340+2947	WFC3/IR	2	05-Jan-2016 21:05:19.0	yes
09	(12) SDSSJ2340+2947	WFC3/IR	2	05-Jan-2016 21:05:21.0	yes

20 Total Orbits Used

ABSTRACT

We propose the ultimate WFC3 grism spectroscopy, in terms of spatial resolution, signal-to-noise ratio, and diagnostic emission line coverage, at z=1.4. The targets are two extremely bright lensed galaxies at redshifts of 1.329 and 1.420. These redshifts place all of rest-frame optical diagnostic emission lines, from [O II] 3727 to [S II] 6731 A, in the WFC3 G102 and G141 grisms. On spatial scales down to 100~pc, we will map the star formation rate, metallicity, extinction, and excitation across these two galaxies, and thereby measure not only the physical conditions of star formation, but how those conditions vary spatially. For the target that currently lacks HST and Spitzer imaging, we propose 2 orbits of WFC3/UVIS imaging to enable creation of a lensing map, and 1~hr of Spitzer to obtain a stellar mass estimate. This program will be a legacy for HST, the most rigorous in situ test yet of strong-line nebular line diagnostics in the distant universe, and will establish a benchmark for far larger grism surveys in which HST has invested some 700 orbits.

OBSERVING DESCRIPTION

UVIS:

The UVIS imaging of SDSSJ2340+2947 is designed to mirror already existing HST imaging of SDSSJ1723+3411 from a previous program (GO13003, PI Gladders). The same dither pattern has been used here - A UVIS MOS LINe dither with 2 instead of three main step points, and a sub pixel ditehr at each point (4 images in total).

A POSTARG offset has been used in both orbits (1 filter per orbit) in order to:

a) move the target slightly closer the readout registers, helping to ameliorate CTE losses, and

b) the move a bright star (14th magnitude) off the imaging FOV of the instrument.

Regarding point b) - the roll angles for the visit have also been constrained in order to keep this bright star out of the FOV; however the broad contraints (60-120 degrees) sample the vast bulk of the available window anyway, and do very little to the overall observable window, which is 6/7 October through to 14/15 January.

WFC3:
We adapt the strategy of 3D-HST. We adopt the 3D-HST four-point dithering strategy to enable 2x2 interlacing, using POS TARG to specify the dither offsets. For the 3 orbit grism observations, we repeat the first 2 dither positions but with a one pixel offset in each of x and y, for increased robustness to bad pixels. We choose two orients for each target to work around contamination from cluster galaxies. The ORIENTS are highly constrained, because the lensed galaxies are extended, we want to maximize the resolution by dispersing perpendicular to the long axis, and we have to avoid dispersed emission from cluster galaxies. This results in tight scheduling constraints, but these observations *are schedulable*. To compenstate, the visits are only 2 or 3 orbits long.

On the advice of co-I Brammer, we have grouped each orbit into an "non-interruptible" group, so that each orbit cannot be split up into smaller units. This is needed to ensure that each grism observation is paired with its "clear" image.

Each of the grism dither positions is accompanied by a "clear" image, F140M paired with G141, and F105W paired with G102. These are fairly shallow observations, to maximize the grism observation. *PLEASE TELL US* the expert opinion from STScI: are these "clear" images adequate, or too short to ensure good calibration?

Here is a simple table showing the layout of the program:
visit orbits target mode ORIENT
1 2 S2340 UVIS E
2 2 S1723 G141 A
3 2 S1723 G141 B
4 2 S1723 G102 A
5 2 S1723 G102 B
6 3 S2340 G141 C
7 3 S2340 G141 D

8 2 S2340 G102 C

9 2 S2340 G102 D

Visit

Proposal 14230, Visit 01, implementation Wed Jan 06 02:05:22 GMT 2016

Diagnostic Status: Warning

Scientific Instruments: WFC3/UVIS

Special Requirements: ORIENT 60D TO 120 D

Diagnostics

(Exposure 1 (Pattern 1, Exps 1-1 in Visit 01) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

(Exposure 2 (Pattern 1, Exps 2-2 in Visit 01) special requirements) Warning (Form): Be very careful mixing POS TARG and Center_Pattern = Yes

Patterns

#	Primary Pattern		Secondary Pattern		Exposures
(1)	Pattern Type=WFC3-UVIS-MOS-DITH-LINE Purpose=MOSAIC Number Of Points=2 Point Spacing=2.4 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=85.754 Angle Between Sides= Center Pattern=true	Pattern Type=WFC3-UVIS-MOS-DITH-LINE Purpose=DITHER Number Of Points=2 Point Spacing=0.119 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=33.606 Angle Between Sides= Center Pattern=false	(1), (2)

Fixed Targets

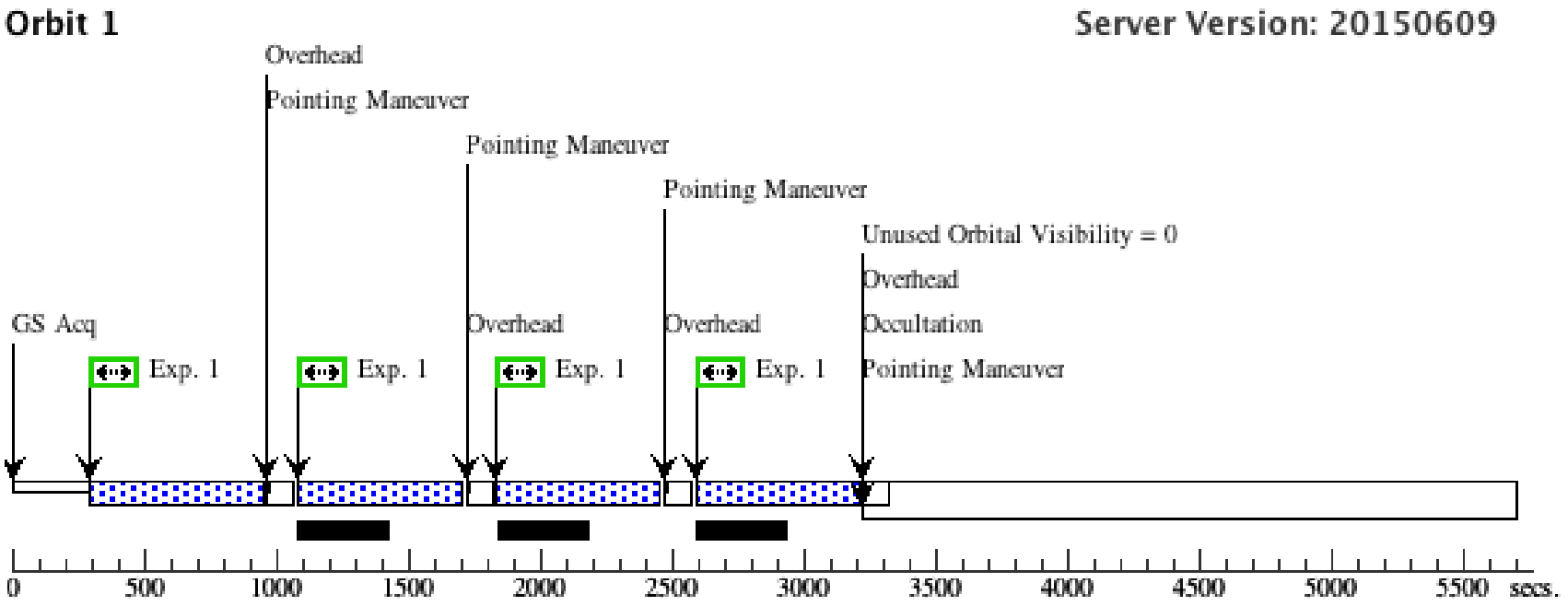
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	SDSSJ2340+2947	RA: 23 40 28.6000 (355.1191667d) Dec: +29 47 47.40 (29.79650d) Equinox: J2000		V=21	Reference Frame: ICRS

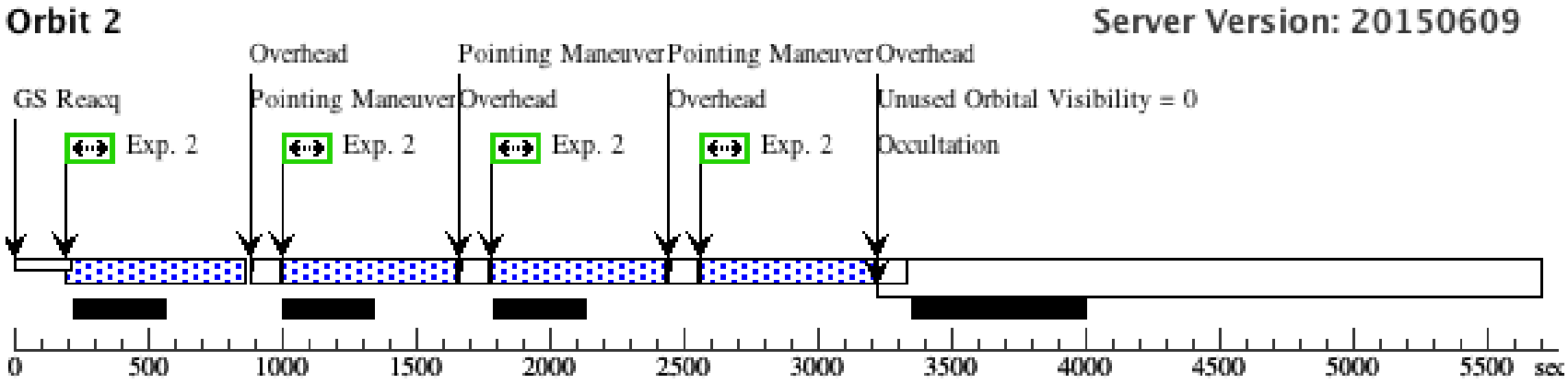
Comments: Extended=YES

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(12) SDSSJ2340+2947	WFC3/UVIS, ACCUM, UVIS1	F814W		POS TARG 0,10	Pattern 1, Exps 1-1 in Visit 01 (1)	626 Secs (2504 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[1]***
2		(12) SDSSJ2340+2947	WFC3/UVIS, ACCUM, UVIS1	F390W	FLASH=6	POS TARG null,10	Pattern 1, Exps 2-2 in Visit 01 (1)	650 Secs (2600 Secs) *[==>(Pattern 1,1)]* *[==>(Pattern 1,2)]* *[==>(Pattern 2,1)]* *[==>(Pattern 2,2)]*	***[2]***

Orbit Structure





Visit

Proposal 14230, Visit 02, implementation Wed Jan 06 02:05:23 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 128.1D TO 128.1 D

Fixed Targets

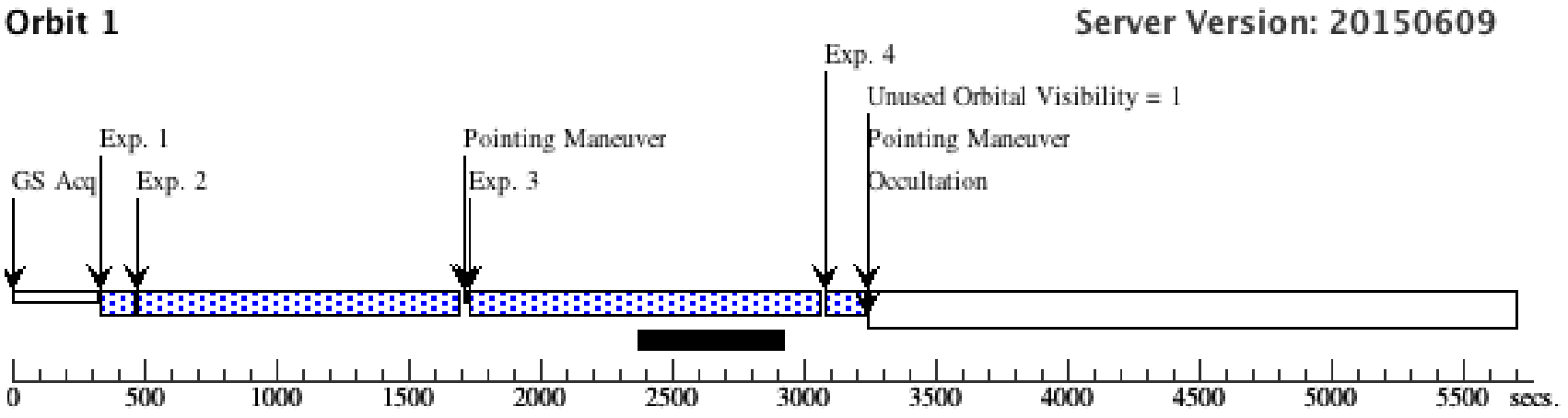
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	SDSSJ1723+3411	RA: 17 23 36.1580 (260.9006583d) Dec: +34 11 58.00 (34.19944d) Equinox: J2000		V=20.5	Reference Frame: ICRS

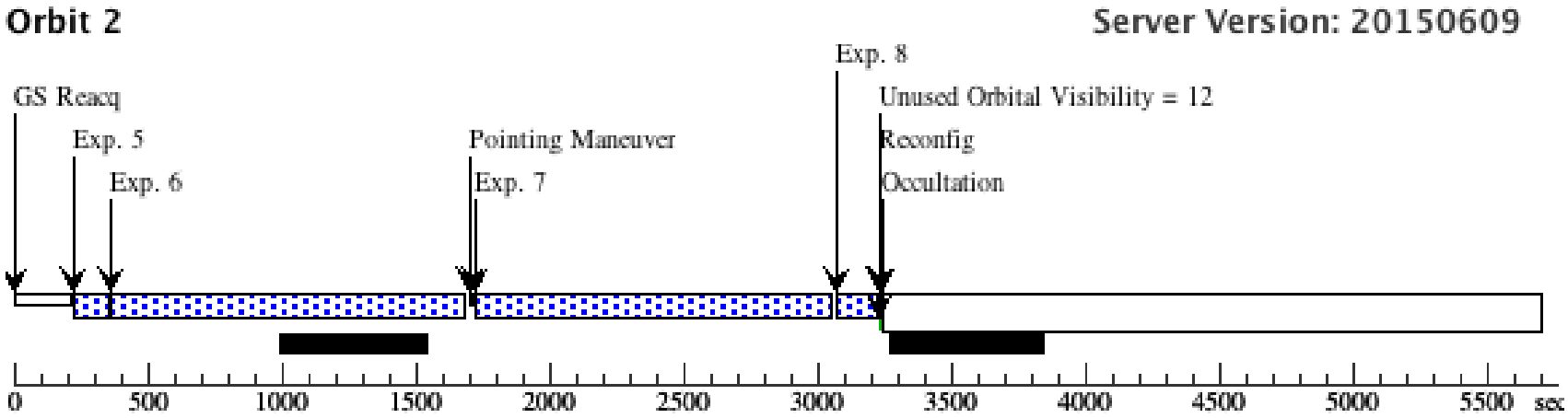
Comments: Extended=YES

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 02	102.934351 Secs (102.934 Secs) *[==>]*	*[1]*
2		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 02	1202.936167 Secs (1202.936 Secs) *[==>]*	*[1]*
3		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 02	1302.93649 Secs (1302.936 Secs) *[==>]*	*[1]*
4		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 02	127.934866 Secs (127.935 Secs) *[==>]*	*[1]*
5		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 02	102.934351 Secs (102.934 Secs) *[==>]*	*[2]*
6		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 02	1302.93649 Secs (1302.936 Secs) *[==>]*	*[2]*
7		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 02	1302.93649 Secs (1302.936 Secs) *[==>]*	*[2]*
8		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 02	127.934866 Secs (127.935 Secs) *[==>]*	*[2]*

Orbit Structure





Visit

Proposal 14230, Visit 03, implementation Wed Jan 06 02:05:23 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 319.1D TO 319.1 D; ORIENT 139.1D TO 139.1 D

Fixed Targets

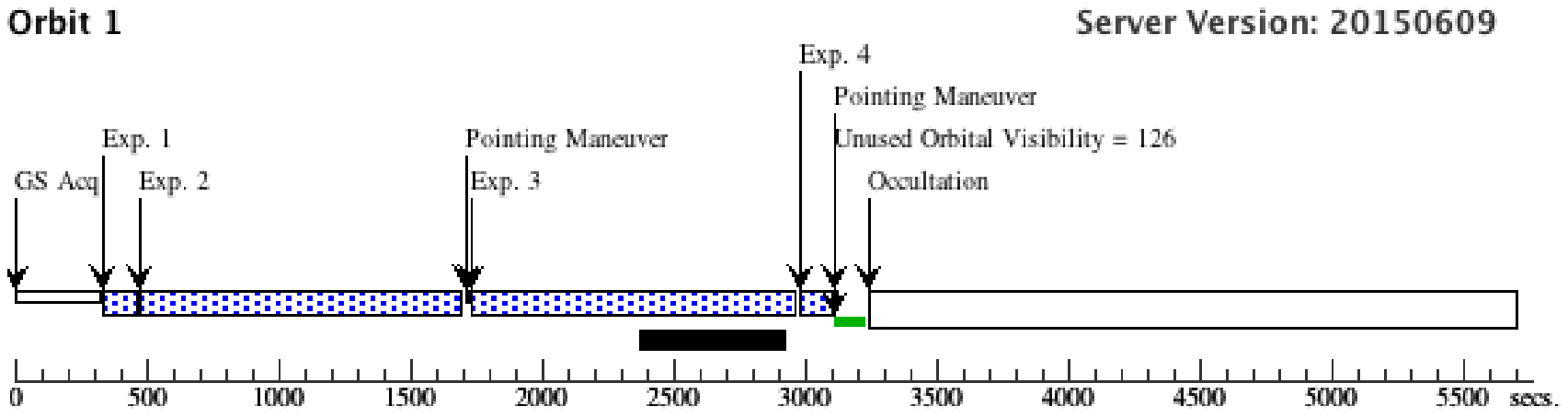
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	SDSSJ1723+3411	RA: 17 23 36.1580 (260.9006583d) Dec: +34 11 58.00 (34.19944d) Equinox: J2000		V=20.5	Reference Frame: ICRS

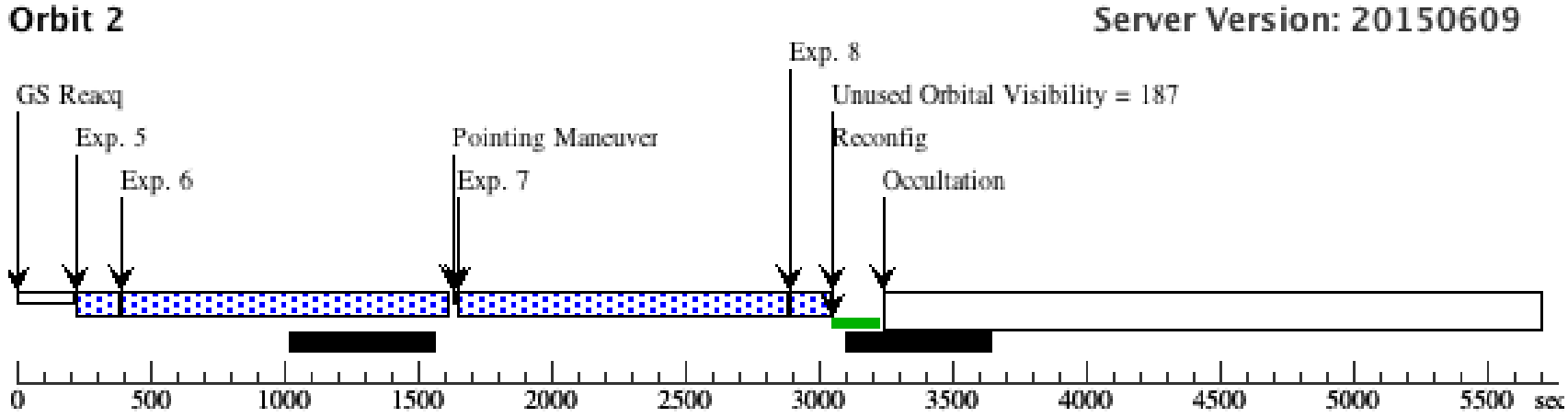
Comments: Extended=YES

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 03	102.934351 Secs (102.934 Secs) *[==>]*	*[1]*
2		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 03	1202.936167 Secs (1202.936 Secs) *[==>]*	*[1]*
3		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 03	1202.936167 Secs (1202.936 Secs) *[==>]*	*[1]*
4		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 03	102.934351 Secs (102.934 Secs) *[==>]*	*[1]*
5		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 03	127.934866 Secs (127.935 Secs) *[==>]*	*[2]*
6		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 03	1202.936167 Secs (1202.936 Secs) *[==>]*	*[2]*
7		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 03	1202.936167 Secs (1202.936 Secs) *[==>]*	*[2]*
8		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 03	127.934866 Secs (127.935 Secs) *[==>]*	*[2]*

Orbit Structure





Visit

Proposal 14230, Visit 04, implementation Wed Jan 06 02:05:23 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 128.1D TO 128.1 D

Fixed Targets

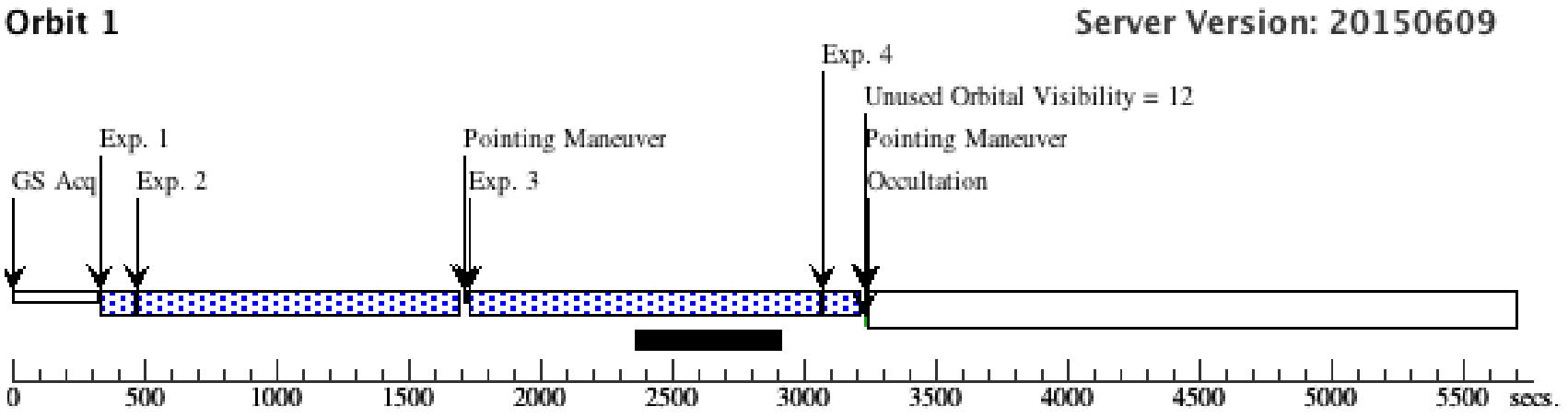
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	SDSSJ1723+3411	RA: 17 23 36.1580 (260.9006583d) Dec: +34 11 58.00 (34.19944d) Equinox: J2000		V=20.5	Reference Frame: ICRS

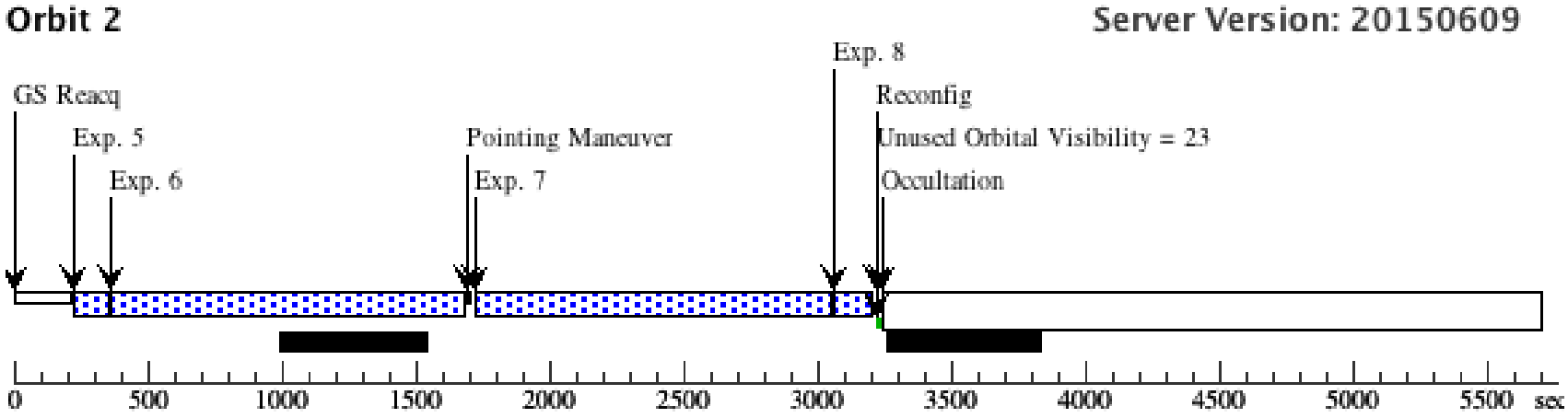
Comments: Extended=YES

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 04	102.934351 Secs (102.934 Secs) *[==>]*	*[1]*
2		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 04	1202.936167 Secs (1202.936 Secs) *[==>]*	*[1]*
3		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 04	1302.93649 Secs (1302.936 Secs) *[==>]*	*[1]*
4		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 04	127.934866 Secs (127.935 Secs) *[==>]*	*[1]*
5		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 04	102.934351 Secs (102.934 Secs) *[==>]*	*[2]*
6		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 04	1302.93649 Secs (1302.936 Secs) *[==>]*	*[2]*
7		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 04	1302.93649 Secs (1302.936 Secs) *[==>]*	*[2]*
8		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 04	127.934866 Secs (127.935 Secs) *[==>]*	*[2]*

Orbit Structure





Visit

Proposal 14230, Visit 05, implementation Wed Jan 06 02:05:23 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 319.1D TO 319.1 D; ORIENT 139.1D TO 139.1 D

Fixed Targets

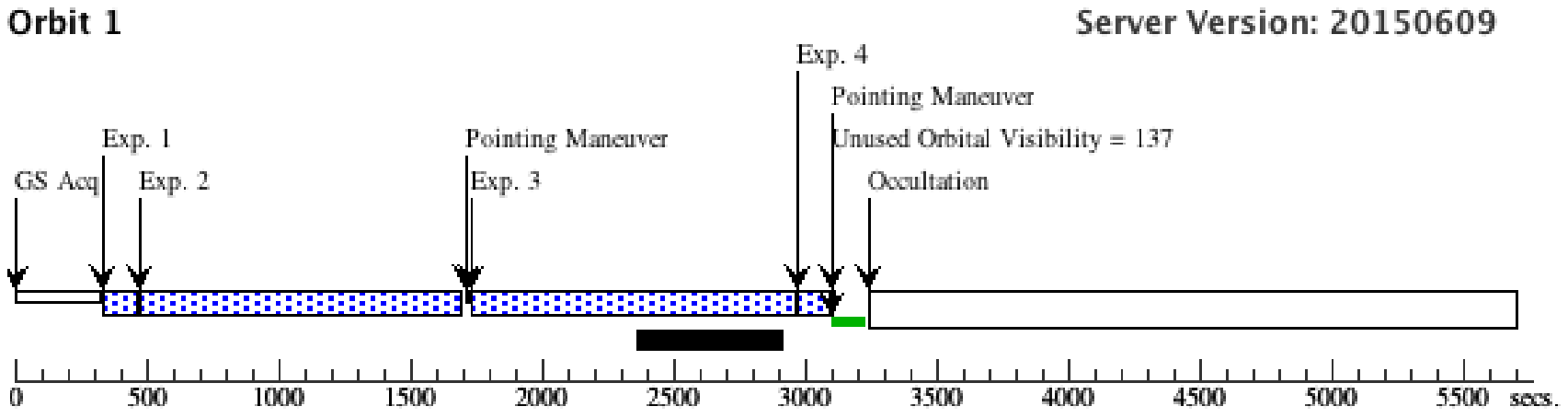
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	SDSSJ1723+3411	RA: 17 23 36.1580 (260.9006583d) Dec: +34 11 58.00 (34.19944d) Equinox: J2000		V=20.5	Reference Frame: ICRS

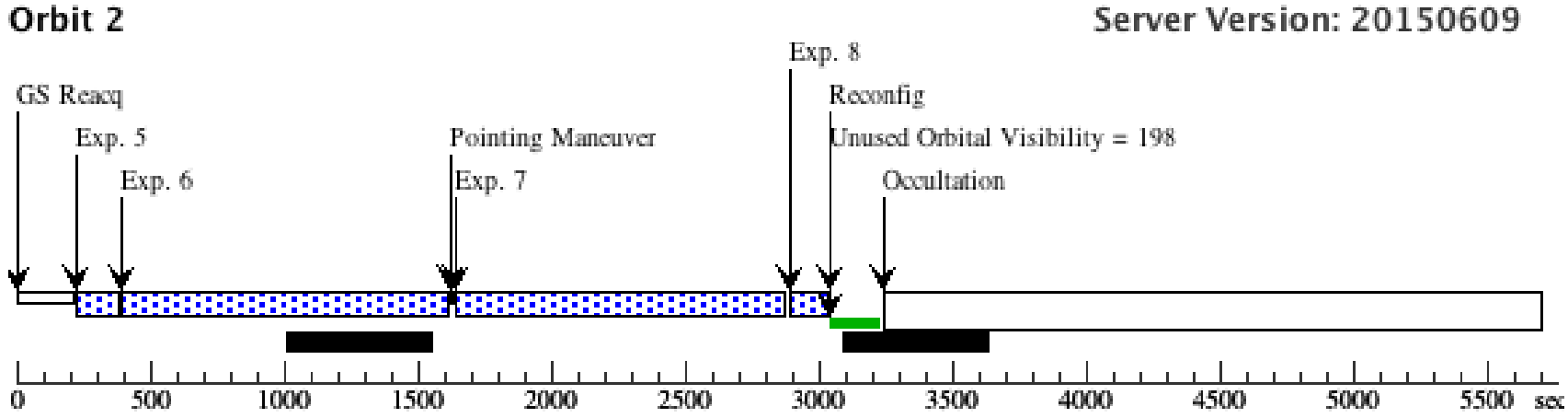
Comments: Extended=YES

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 05	102.934351 Secs (102.934 Secs) *[==>]*	*[1]*
2		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 05	1202.936167 Secs (1202.936 Secs) *[==>]*	*[1]*
3		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 05	1202.936167 Secs (1202.936 Secs) *[==>]*	*[1]*
4		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 05	102.934351 Secs (102.934 Secs) *[==>]*	*[1]*
5		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 05	127.934866 Secs (127.935 Secs) *[==>]*	*[2]*
6		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 05	1202.936167 Secs (1202.936 Secs) *[==>]*	*[2]*
7		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 05	1202.936167 Secs (1202.936 Secs) *[==>]*	*[2]*
8		(11) SDSSJ1723+3411	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 05	127.934866 Secs (127.935 Secs) *[==>]*	*[2]*

Orbit Structure





Visit

Proposal 14230, Visit 06, implementation Wed Jan 06 02:05:23 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 223.1D TO 223.1 D

Fixed Targets

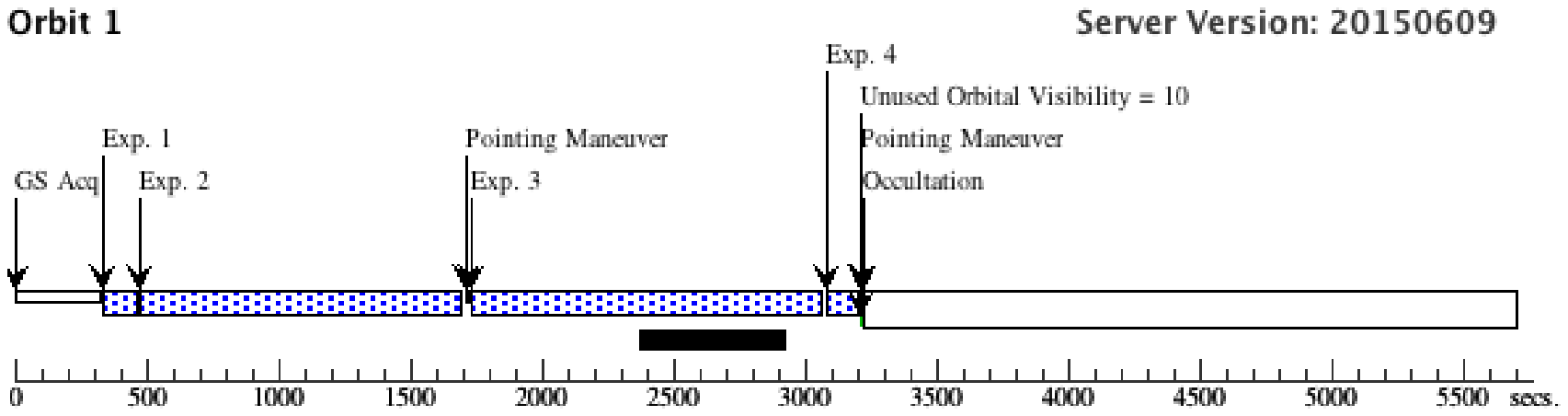
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	SDSSJ2340+2947	RA: 23 40 28.6000 (355.1191667d) Dec: +29 47 47.40 (29.79650d) Equinox: J2000		V=21	Reference Frame: ICRS

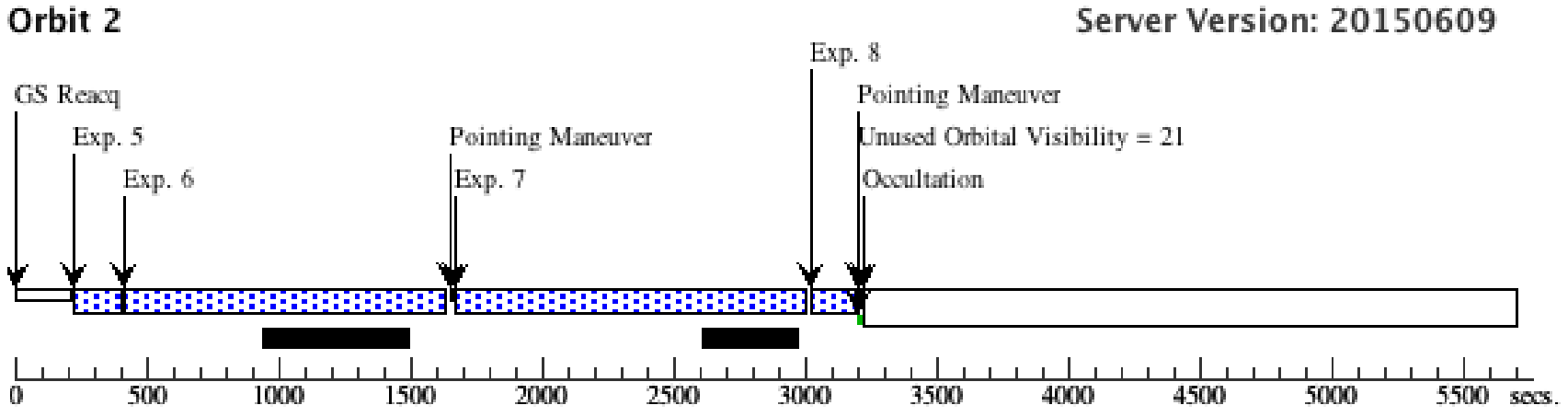
Comments: Extended=YES

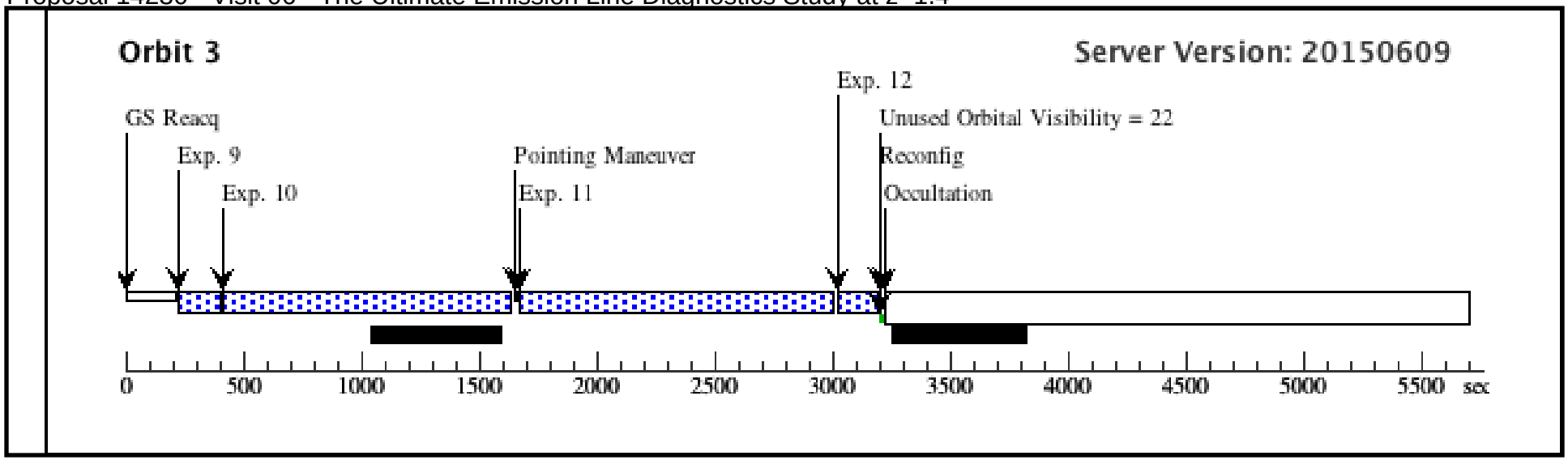
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 06	102.934351 Secs (102.934 Secs) *[==>]*	*[1]*
2		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 06	1202.936167 Secs (1202.936 Secs) *[==>]*	*[1]*
3		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 06	1302.93649 Secs (1302.936 Secs) *[==>]*	*[1]*
4		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 06	102.934351 Secs (102.934 Secs) *[==>]*	*[1]*
5		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=7; SAMP-SEQ=SPARS25	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 06	152.935381 Secs (152.935 Secs) *[==>]*	*[2]*
6		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 06	1202.936167 Secs (1202.936 Secs) *[==>]*	*[2]*
7		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 06	1302.93649 Secs (1302.936 Secs) *[==>]*	*[2]*
8		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=7; SAMP-SEQ=SPARS25	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 06	152.935381 Secs (152.935 Secs) *[==>]*	*[2]*
9		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=7; SAMP-SEQ=SPARS25	POS TARG 0.136,0.1214	Sequence 9-12 Non-Int in Visit 06	152.935381 Secs (152.935 Secs) *[==>]*	*[3]*
10		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 0.136,0.1214	Sequence 9-12 Non-Int in Visit 06	1202.936167 Secs (1202.936 Secs) *[==>]*	*[3]*
11		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG 1.2195,0.3035	Sequence 9-12 Non-Int in Visit 06	1302.93649 Secs (1302.936 Secs) *[==>]*	*[3]*
12		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=7; SAMP-SEQ=SPARS25	POS TARG 1.2195,0.3035	Sequence 9-12 Non-Int in Visit 06	152.935381 Secs (152.935 Secs) *[==>]*	*[3]*

Orbit Structure






Orbit 3
Server Version: 20150609
GS Reacq
Exp. 9
Exp. 10
Pointing Maneuver
Exp. 11
Exp. 12
Unused Orbital Visibility = 22
Reconfig
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14230, Visit 07, implementation Wed Jan 06 02:05:23 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 147.1D TO 147.1 D

Fixed Targets

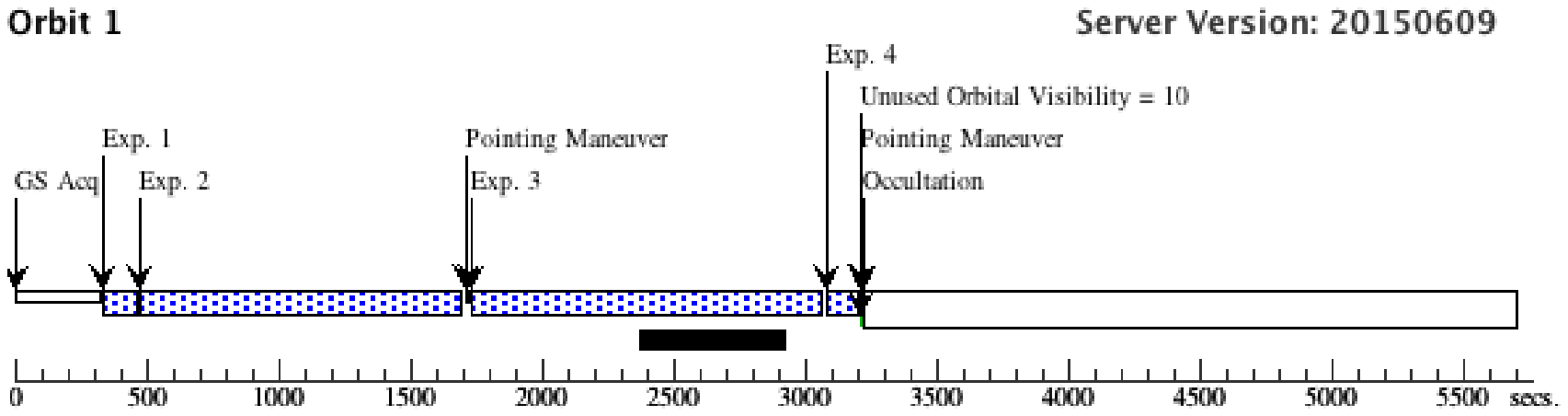
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	SDSSJ2340+2947	RA: 23 40 28.6000 (355.1191667d) Dec: +29 47 47.40 (29.79650d) Equinox: J2000		V=21	Reference Frame: ICRS

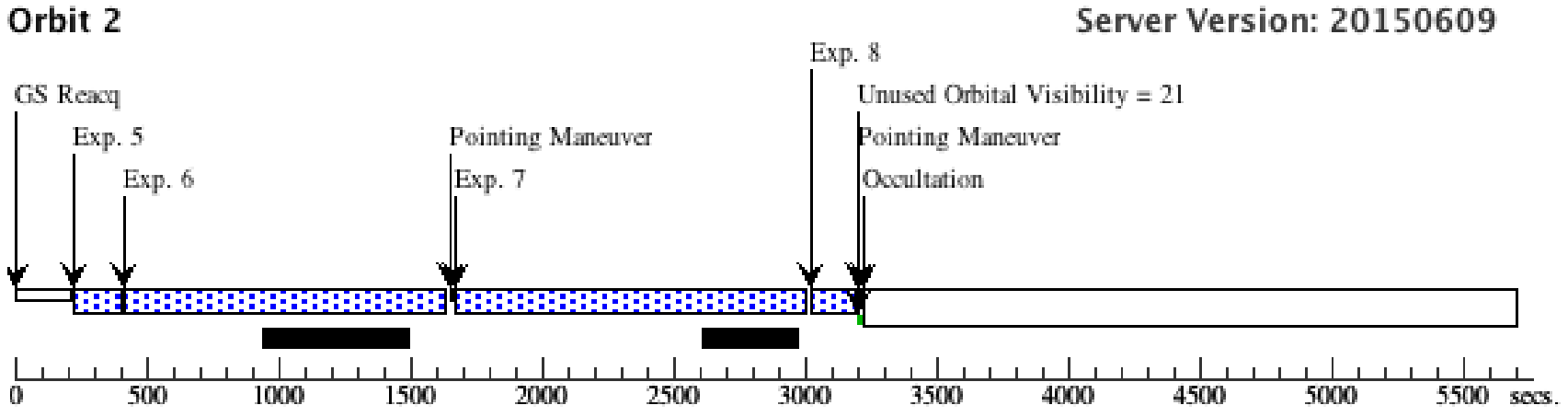
Comments: Extended=YES

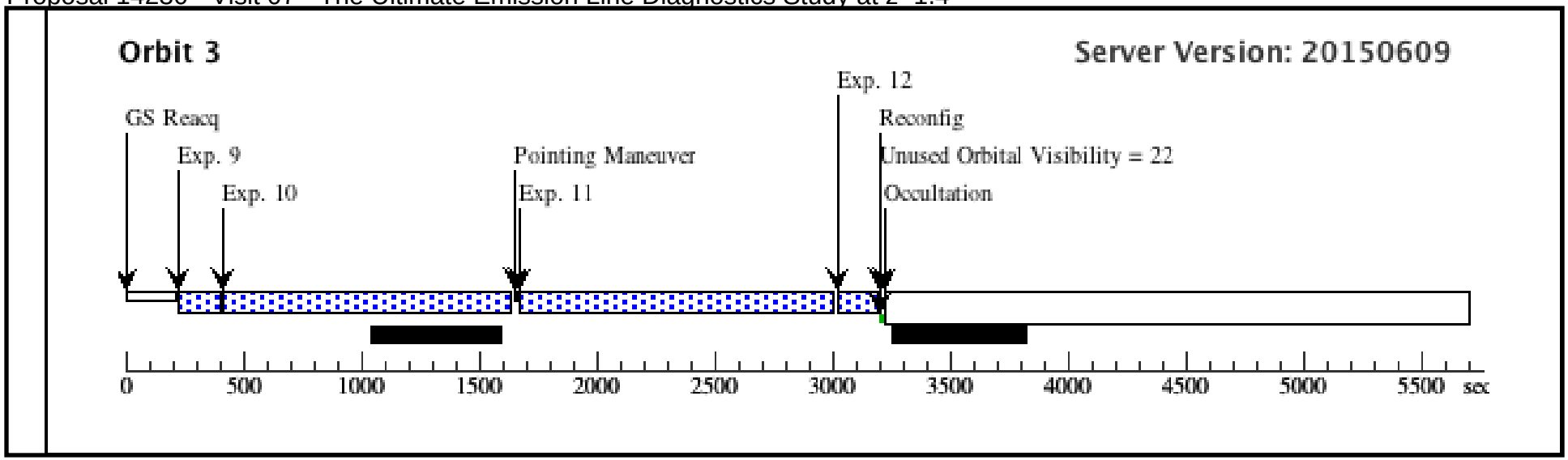
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 07	102.934351 Secs (102.934 Secs) *[==>]*	*[1]*
2		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 07	1202.936167 Secs (1202.936 Secs) *[==>]*	*[1]*
3		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 07	1302.93649 Secs (1302.936 Secs) *[==>]*	*[1]*
4		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 07	102.934351 Secs (102.934 Secs) *[==>]*	*[1]*
5		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=7; SAMP-SEQ=SPARS25	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 07	152.935381 Secs (152.935 Secs) *[==>]*	*[2]*
6		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 07	1202.936167 Secs (1202.936 Secs) *[==>]*	*[2]*
7		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 07	1302.93649 Secs (1302.936 Secs) *[==>]*	*[2]*
8		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=7; SAMP-SEQ=SPARS25	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 07	152.935381 Secs (152.935 Secs) *[==>]*	*[2]*
9		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=7; SAMP-SEQ=SPARS25	POS TARG 0.136,0.1214	Sequence 9-12 Non-Int in Visit 07	152.935381 Secs (152.935 Secs) *[==>]*	*[3]*
10		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 0.136,0.1214	Sequence 9-12 Non-Int in Visit 07	1202.936167 Secs (1202.936 Secs) *[==>]*	*[3]*
11		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G141	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG 1.2195,0.3035	Sequence 9-12 Non-Int in Visit 07	1302.93649 Secs (1302.936 Secs) *[==>]*	*[3]*
12		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F140W	NSAMP=7; SAMP-SEQ=SPARS25	POS TARG 1.2195,0.3035	Sequence 9-12 Non-Int in Visit 07	152.935381 Secs (152.935 Secs) *[==>]*	*[3]*

Orbit Structure






Orbit 3
Server Version: 20150609
GS Reacq
Exp. 9
Exp. 10
Pointing Maneuver
Exp. 11
Exp. 12
Reconfig
Unused Orbital Visibility = 22
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14230, Visit 08, implementation Wed Jan 06 02:05:23 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 223.1D TO 223.1 D

Fixed Targets

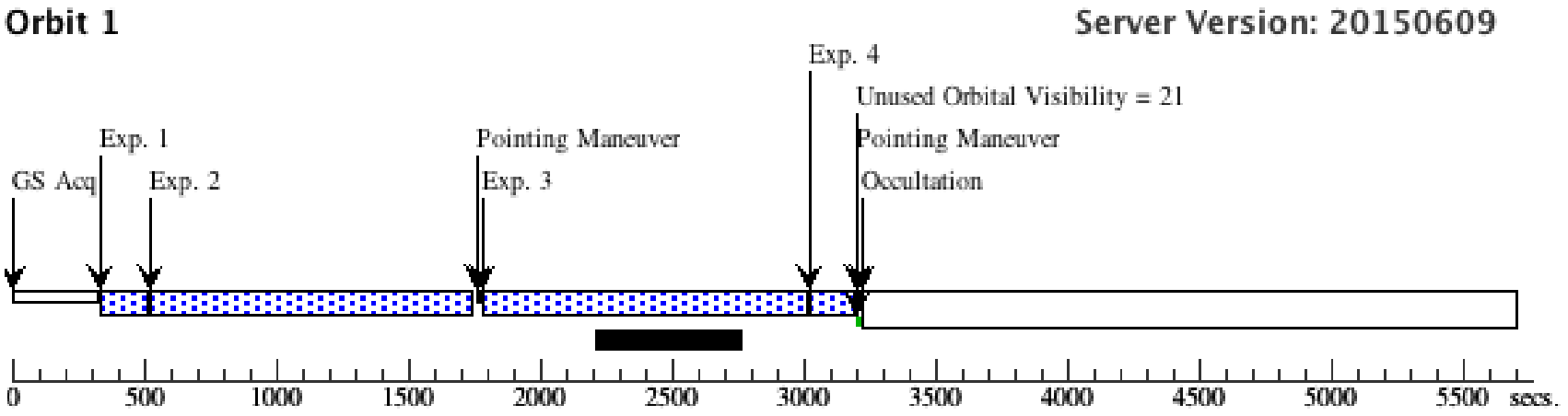
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	SDSSJ2340+2947	RA: 23 40 28.6000 (355.1191667d) Dec: +29 47 47.40 (29.79650d) Equinox: J2000		V=21	Reference Frame: ICRS

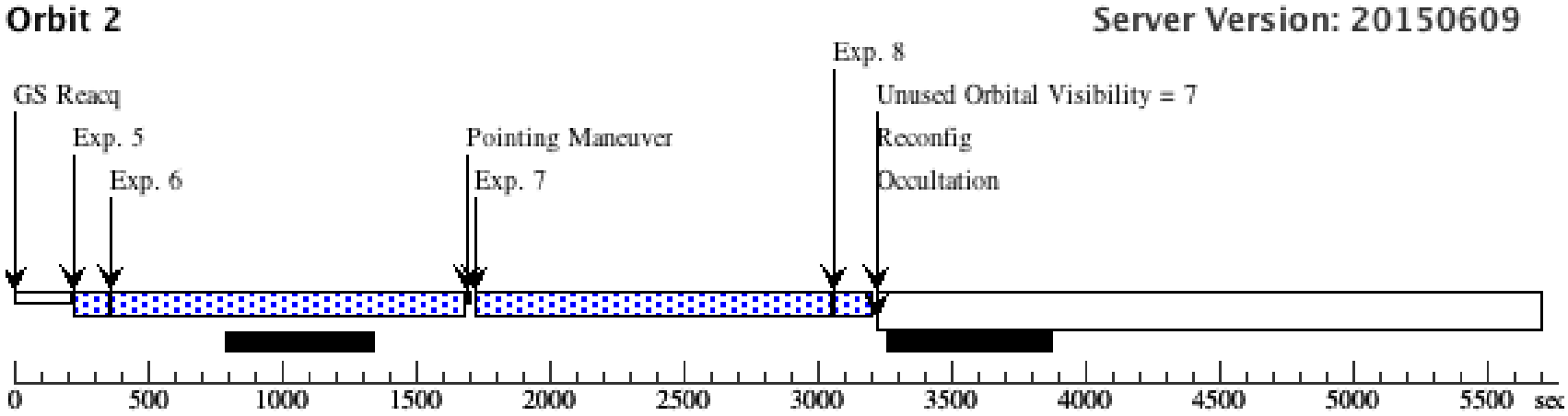
Comments: Extended=YES

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=7; SAMP-SEQ=SPARS25	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 08	152.935381 Secs (152.935 Secs) *[==>]*	*[1]*
2		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 08	1202.936167 Secs (1202.936 Secs) *[==>]*	*[1]*
3		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 08	1202.936167 Secs (1202.936 Secs) *[==>]*	*[1]*
4		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=7; SAMP-SEQ=SPARS25	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 08	152.935381 Secs (152.935 Secs) *[==>]*	*[1]*
5		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 08	102.934351 Secs (102.934 Secs) *[==>]*	*[2]*
6		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 08	1302.93649 Secs (1302.936 Secs) *[==>]*	*[2]*
7		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 08	1302.93649 Secs (1302.936 Secs) *[==>]*	*[2]*
8		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 08	127.934866 Secs (127.935 Secs) *[==>]*	*[2]*

Orbit Structure





Visit

Proposal 14230, Visit 09, implementation Wed Jan 06 02:05:23 GMT 2016

Diagnostic Status: No Diagnostics

Scientific Instruments: WFC3/IR

Special Requirements: ORIENT 147.1D TO 147.1 D

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	SDSSJ2340+2947	RA: 23 40 28.6000 (355.1191667d) Dec: +29 47 47.40 (29.79650d) Equinox: J2000		V=21	Reference Frame: ICRS

Comments: Extended=YES

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 09	102.934351 Secs (102.934 Secs) *[==>]*	*[1]*
2		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=13; SAMP-SEQ=SPARS100	POS TARG 0.0,0.0	Sequence 1-4 Non-Int in Visit 09	1202.936167 Secs (1202.936 Secs) *[==>]*	*[1]*
3		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 09	1302.93649 Secs (1302.936 Secs) *[==>]*	*[1]*
4		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 1.355,0.424	Sequence 1-4 Non-Int in Visit 09	102.934351 Secs (102.934 Secs) *[==>]*	*[1]*
5		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=5; SAMP-SEQ=SPARS25	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 09	102.934351 Secs (102.934 Secs) *[==>]*	*[2]*
6		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG 0.881,1.212	Sequence 5-8 Non-Int in Visit 09	1302.93649 Secs (1302.936 Secs) *[==>]*	*[2]*
7		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	G102	NSAMP=14; SAMP-SEQ=SPARS100	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 09	1302.93649 Secs (1302.936 Secs) *[==>]*	*[2]*
8		(12) SDSSJ2340+2947	WFC3/IR, MULTIACCUM, GRISM1024	F105W	NSAMP=6; SAMP-SEQ=SPARS25	POS TARG -0.474,0.788	Sequence 5-8 Non-Int in Visit 09	127.934866 Secs (127.935 Secs) *[==>]*	*[2]*

Orbit Structure