13801 - Probing Structure in Cold Gas at z <~ 1 with Gravitationally Lensed Quasar Sightlines

Cycle: 22, Proposal Category: GO

(UV Initiative)

(Availability Mode: SUPPORTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) Q1017-207AB	STIS/CCD STIS/NUV-MAMA	4	11-Sep-2014 21:07:09.0	yes
02	(1) Q1017-207AB	STIS/CCD STIS/NUV-MAMA	3	11-Sep-2014 21:07:11.0	yes
03	(2) SDSSJ1054+2733AB	STIS/CCD STIS/NUV-MAMA	1	11-Sep-2014 21:07:13.0	yes
04	(3) SDSSJ1349+1227AB	STIS/CCD STIS/NUV-MAMA	1	11-Sep-2014 21:07:13.0	yes
05	(4) Q1355-2257AB	STIS/CCD STIS/NUV-MAMA	3	11-Sep-2014 21:07:15.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
06	(5) Q2237+030AC	STIS/CCD STIS/FUV-MAMA	1	11-Sep-2014 21:07:16.0	yes
07	(6) Q2237+030BD (7) Q2237+030BD-OFFSET	STIS/CCD STIS/FUV-MAMA	2	11-Sep-2014 21:07:17.0	yes
08	(5) Q2237+030AC	STIS/CCD STIS/NUV-MAMA	3	11-Sep-2014 21:07:19.0	yes

18 Total Orbits Used

ABSTRACT

Absorption lines in quasar spectra offer a powerful tool to study distant galaxies and intergalactic matter (IGM). The strongest of these absorbers, the damped Lyman-alpha (DLA) and sub-DLA absorbers constitute a large fraction of the neutral gas in galaxies. Galaxies located in front of gravitationally lensed quasars (GLQs) are probed by multiple sightlines; so DLA/sub-DLAs in these sightlines can probe the internal structure of interstellar material (ISM) and/or the environment of these galaxies. From the lens galaxy images, impact parameters of the absorbing regions from the galaxy centers can be obtained accurately. Unfortunately, very little information exists on the neutral gas and metal content of DLA/sub-DLAs located in front of GLQs with confirmed lens galaxies. This is because at low redshift where lens galaxies are well-imaged, the H I and key metal lines lie in the UV. Here we propose to study 6 GLQs with known lens redshifts and a total of 14 closely separated double or quadruple images, that show candidate DLA/sub-DLAs along multiple sightlines. Our goal is to measure H I Lyman-alpha absorption in these sightlines. Many of these absorbers are at the lens redshift, with impact parameters 0.6-5.8 kpc. Our observations will therefore allow us to constrain gradients in H I column density and metallicity (combining H I with ground-based metal line measurements) within these galaxies. Our data will also help to constrain the sizes of DLA/sub-DLA absorbing regions by increasing the existing sample of DLA/sub-DLAs probed at < 10 kpc separations by a factor of ~3. HST is essential because of the need for both UV coverage and high spatial resolution.

OBSERVING DESCRIPTION

For the doubly imaged GLQs, we will align the two images along the cross-dispersion direction of the 52"x0.2" STIS slit. For the quadruply imaged GLQ, we will obtain spatially resolved spectra of two images at a time. The target coordinates and magnitudes provided are for the brighter of the two targets in each pair. Depending on the foreground absorber redshift, we will use either G230L/NUV-MAMA or G140L/FUV-MAMA to cover the Ly-alpha absorption line.

We have calculated the slit orientations using the known RA and DEC separations of the lensed images, and verified them in APT using the "View in Aladdin" option. We have chosen ORIENT ranges of 2 degrees centered on the optimum value needed to line up both images in the 52"x0.2" slit. In cases where specifiying both the desired ORIENT ranges and their 180 degree rotated values leads to an increase in the visit schedulability, we have specified both sets of ranges. For Q1017-207AB, where the ORIENT constraints gave poor schedulability, we have used the special observation requirement "50% schedulability". (While doing so reduces a few minutes of our exposures, it makes the visit more schedulable.) We have checked with the visit planner that all visits are schedulable for at least about 6 weeks.

We have verified that there are no other brighter sources within the 5"x5" aperture from the brighter quasar image in each pair of sightlines. We request onboard target acquisitions for all doubly imaged GLQs and for Q2237+030AC. For Q2237+030BD, we request acquisition of image A (listed again as Q2237+030BD-OFFSET), followed by an offset to image B (listed as Q2237+030BD). The coordinates of Q2237+030BD are given in terms of offsets from Q2237+030BD-OFFSET. The coordinates of Q2237+030BD-OFFSET are in the ICRS format.

For each orbit, we request 2 spectroscopic exposures, corresponding to 2 positions of a STIS-ALONG-SLIT dither pattern. We use 4 dither patterns, each with 2 positions separated by 1.5", 2.0", 2.5", or 3.0", so as to prevent the spectra of the lensed images in different orbits from falling on the same part of the detector.

Visit

Proposal 13801, Visit1_Q1017-207AB (01), implementation Fri Sep 12 01:07:20 GMT 2014

Diagnostic Status: No Diagnostics

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

Special Requirements: SCHED 50%; ORIENT 316.4D TO 318.4 D; ORIENT 136.4D TO 138.4 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=1.5 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)
(2)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=2.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(3)
(3)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=2.5 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(4)
(4)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=3.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(5)

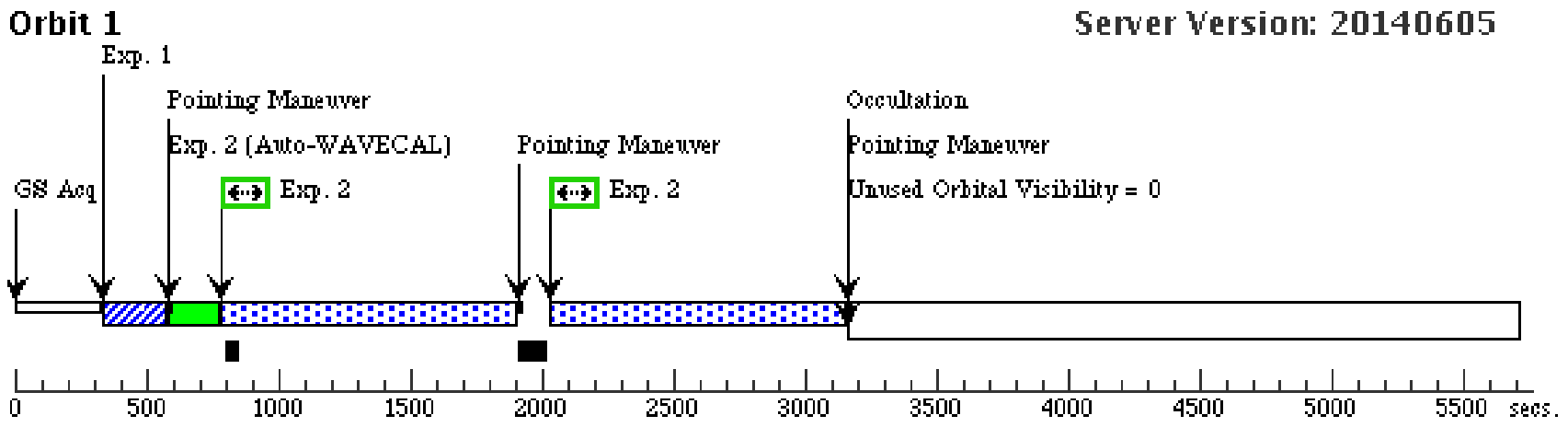
Fixed Targets

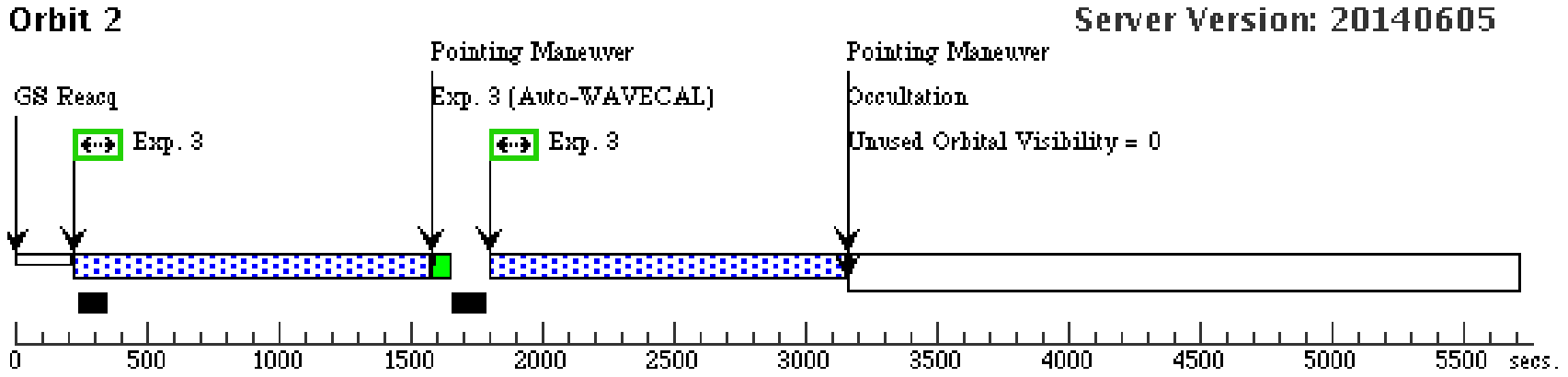
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	Q1017-207AB	RA: 10 17 23.9630 (154.3498458d) Dec: -20 46 58.43 (-20.78290d) Equinox: J2000	Epoch of Position: 2000.0 Redshift: 2.545	V=17.43 NUV=19.95	Reference Frame: ICRS

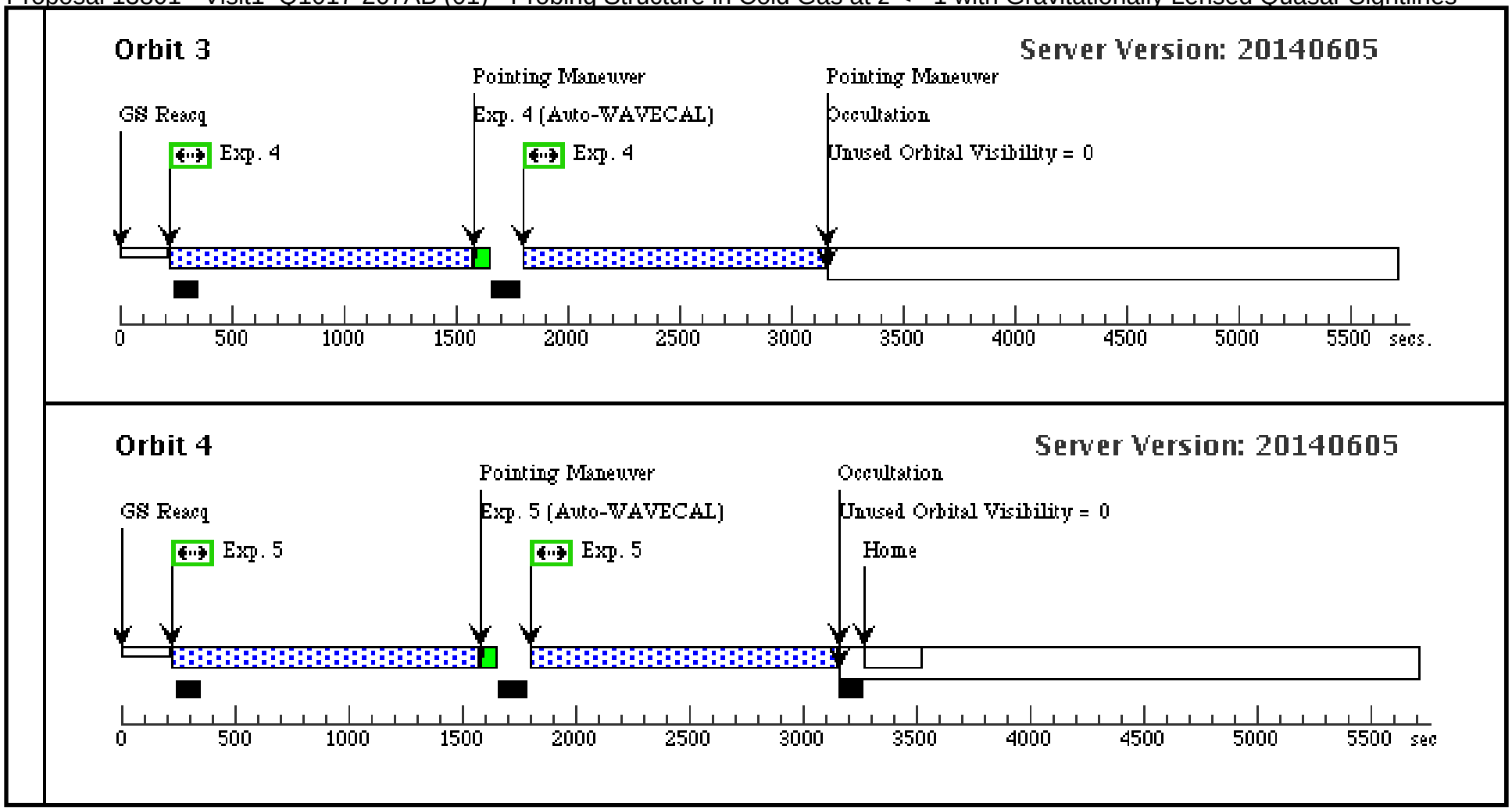
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.625 454)	(1) Q1017-207AB	STIS/CCD, ACQ, F28X50LP	MIRROR				3 Secs (3 Secs) *[==>]*	***[1]***
2	(STIS.sp.62 6121)	(1) Q1017-207AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 1, Exps 2-2 i n Visit1_Q1017-207 AB (01) (1)	1100 Secs (2208 Secs) *[==>1104.0 Secs (Pattern 1)]* *[==>1104.0 Secs (Pattern 2)]*	***[1]***
3	(STIS.sp.62 6125)	(1) Q1017-207AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 2, Exps 3-3 i n Visit1_Q1017-207 AB (01) (2)	1100 Secs (2668 Secs) *[==>1334.0 Secs (Pattern 1)]* *[==>1334.0 Secs (Pattern 2)]*	***[2]***
4	(STIS.sp.62 6125)	(1) Q1017-207AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 3, Exps 4-4 i n Visit1_Q1017-207 AB (01) (3)	1100 Secs (2668 Secs) *[==>1334 Secs (Pattern 1)]* *[==>1334 Secs (Pattern 2)]*	***[3]***
5	(STIS.sp.62 6125)	(1) Q1017-207AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 4, Exps 5-5 i n Visit1_Q1017-207 AB (01) (4)	1368 Secs (2668 Secs) *[==>1334 Secs (Pattern 1)]* *[==>1334 Secs (Pattern 2)]*	***[4]***

Orbit Structure






Orbit 3
Server Version: 20140605
GS Reacq
Exp. 4
Pointing Maneuver
Exp. 4 (Auto-WAVECAL)
Exp. 4
Pointing Maneuver
Occultation
Unused Orbital Visibility = 0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.
Orbit 4
Server Version: 20140605
GS Reacq
Exp. 5
Pointing Maneuver
Exp. 5 (Auto-WAVECAL)
Exp. 5
Occultation
Unused Orbital Visibility = 0
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13801, Visit2_Q1017-207AB (02), implementation Fri Sep 12 01:07:21 GMT 2014

Diagnostic Status: No Diagnostics

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

Special Requirements: SCHED 50%; ORIENT 316.4D TO 318.4 D; ORIENT 136.4D TO 138.4 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=1.5 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)
(2)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=2.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(3)
(3)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=2.5 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(4)

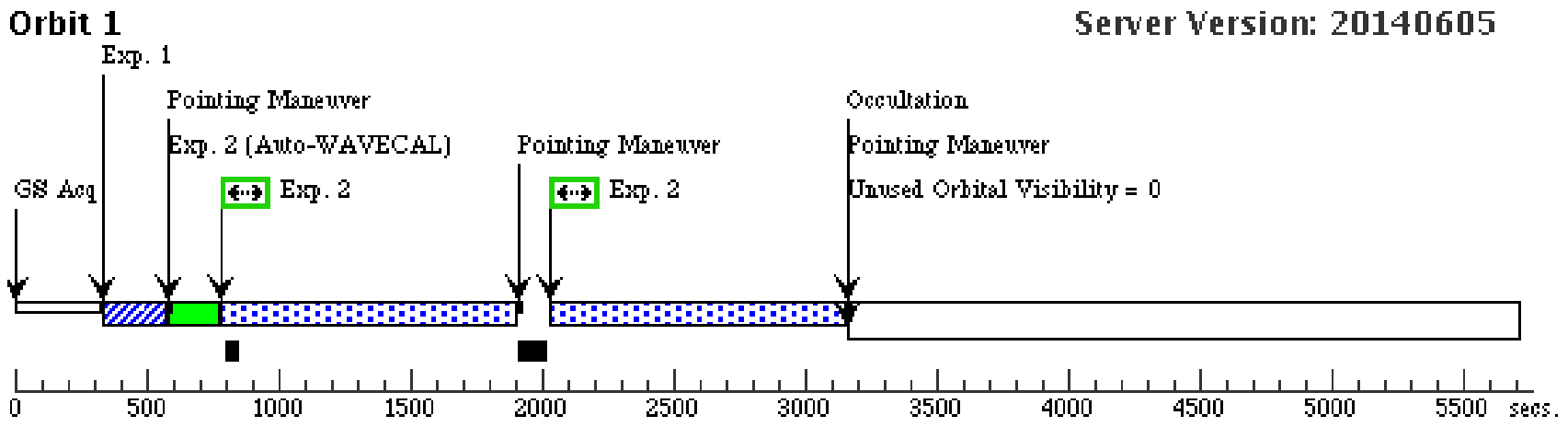
Fixed Targets

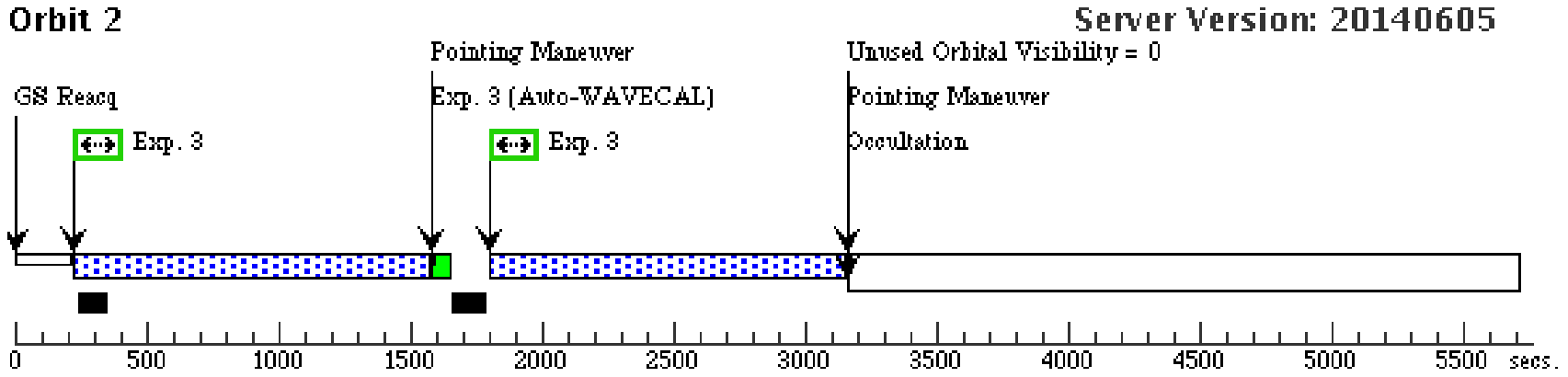
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	Q1017-207AB	RA: 10 17 23.9630 (154.3498458d) Dec: -20 46 58.43 (-20.78290d) Equinox: J2000	Epoch of Position: 2000.0 Redshift: 2.545	V=17.43 NUV=19.95	Reference Frame: ICRS

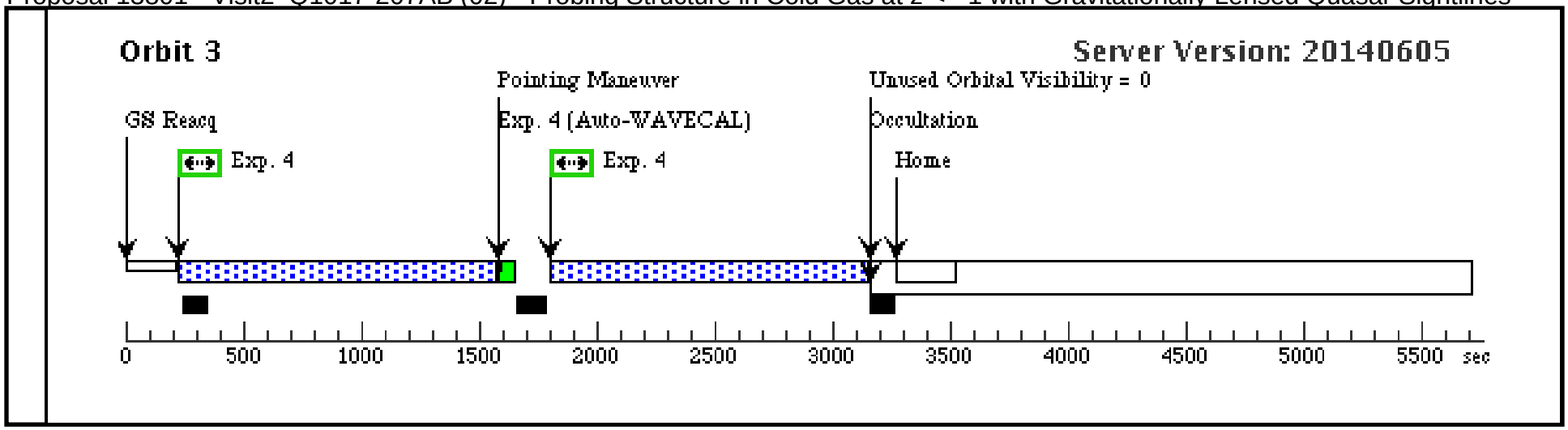
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(STIS.ta.625454)	(1) Q1017-207AB	STIS/CCD, ACQ, F28X50LP	MIRROR				3 Secs (3 Secs) *[==>]*	***[1]***
2	(STIS.sp.626121)	(1) Q1017-207AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 1, Exps 2-2 in Visit2_Q1017-207AB (02) (1)	1100 Secs (2208 Secs) *[==>1104.0 Secs (Pattern 1)]* *[==>1104.0 Secs (Pattern 2)]*	***[1]***
3	(STIS.sp.626125)	(1) Q1017-207AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 2, Exps 3-3 in Visit2_Q1017-207AB (02) (2)	1100 Secs (2668 Secs) *[==>1334 Secs (Pattern 1)]* *[==>1334 Secs (Pattern 2)]*	***[2]***
4	(STIS.sp.626125)	(1) Q1017-207AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 3, Exps 4-4 in Visit2_Q1017-207AB (02) (3)	1100 Secs (2668 Secs) *[==>1334 Secs (Pattern 1)]* *[==>1334 Secs (Pattern 2)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20140605
GS Reacq
Exp. 4
Pointing Maneuver
Exp. 4 (Auto-WAVECAL)
Exp. 4
Unused Orbital Visibility = 0
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13801, Visit3_Q1054+2733AB (03), implementation Fri Sep 12 01:07:21 GMT 2014

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 127.3D TO 129.3 D; ORIENT 305.8D TO 309.3 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT	Coordinate Frame=POS-TARG		(2)
	Purpose=DITHER	Pattern Orientation=90.0		
	Number Of Points=2	Angle Between Sides=		
	Point Spacing=1.5	Center Pattern=false		
	Line Spacing=			

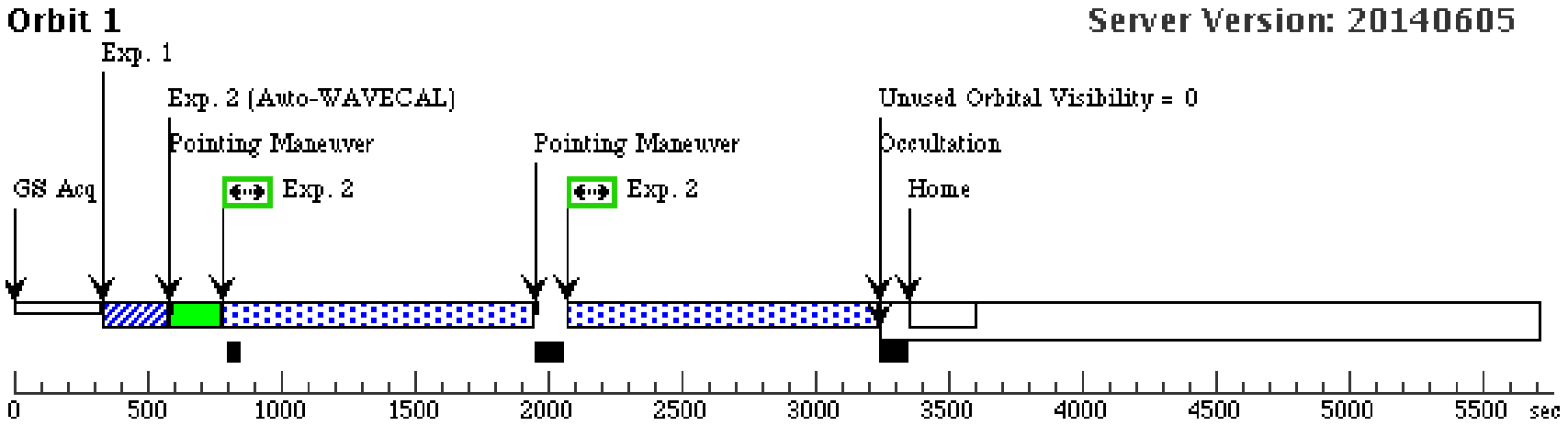
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	SDSSJ1054+2733AB	RA: 10 54 40.8300 (163.6701250d)	Epoch of Position: 2000.0	V=17.21	Reference Frame: ICRS
		Dec: +27 33 6.40 (27.55178d)	Redshift: 1.452	NUV=17.80	
		Equinox: J2000			

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Exposure 1 (Visit1_Q1054+2733AB) (STIS.ta.625461)	(2) SDSSJ1054+2733AB	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3		3 Secs (3 Secs) *[==>]*	*[1]*
2	(STIS.sp.626147)	(2) SDSSJ1054+2733AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 1, Exps 2-2 in Visit3_Q1054+2733AB (03) (1)	2200 Secs (2286 Secs) *[==>1143.0 Secs (Pattern 1)]* *[==>1143.0 Secs (Pattern 2)]*	*[1]*

Orbit Structure



Visit

Proposal 13801, Visit4_Q1349+1227AB (04), implementation Fri Sep 12 01:07:21 GMT 2014

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 95.1D TO 97.1 D; ORIENT 275.1D TO 277.1 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT	Coordinate Frame=POS-TARG		(2)
	Purpose=DITHER	Pattern Orientation=90.0		
	Number Of Points=2	Angle Between Sides=		
	Point Spacing=1.5	Center Pattern=false		
	Line Spacing=			

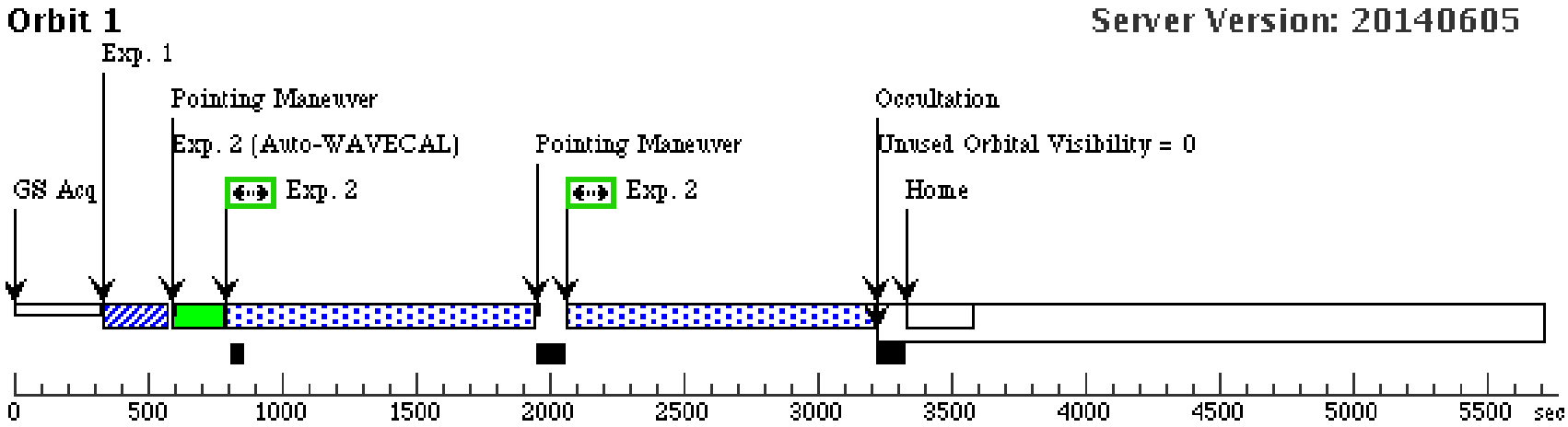
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	SDSSJ1349+1227AB	RA: 13 49 29.8400 (207.3743333d)	Epoch of Position: 2000.0	V=17.79	Reference Frame: ICRS
		Dec: +12 27 6.80 (12.45189d)	Redshift: 1.722	NUV=19.34	
		Equinox: J2000			

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Exposure 1 (Visit4_Q1349+1227AB) (STIS.ta.625448)	(3) SDSSJ1349+1227AB	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3		4 Secs (4 Secs) *[==>]*	*[1]*
2	Exposure 2 (Visit4_Q1349+1227AB) (STIS.sp.626171)	(3) SDSSJ1349+1227AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 1, Exps 2-2 in Visit4_Q1349+1227AB (04) (1)	2200 Secs (2267 Secs) *[==>1133.0 Secs (Pattern 1)]* *[==>1134.0 Secs (Pattern 2)]*	*[1]*

Orbit Structure



Visit

Proposal 13801, Visit5_Q1355-2257AB (05), implementation Fri Sep 12 01:07:21 GMT 2014

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 117.5D TO 119.5 D; ORIENT 297.5D TO 299.5 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=1.5 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)
(2)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=2.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(3)
(3)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=2.5 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(4)

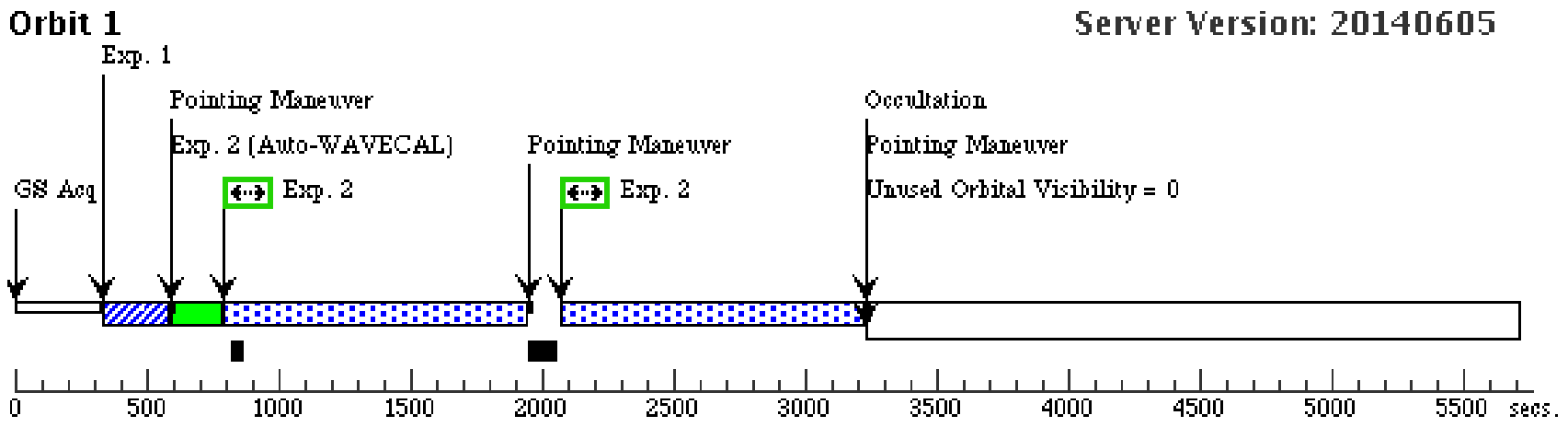
Fixed Targets

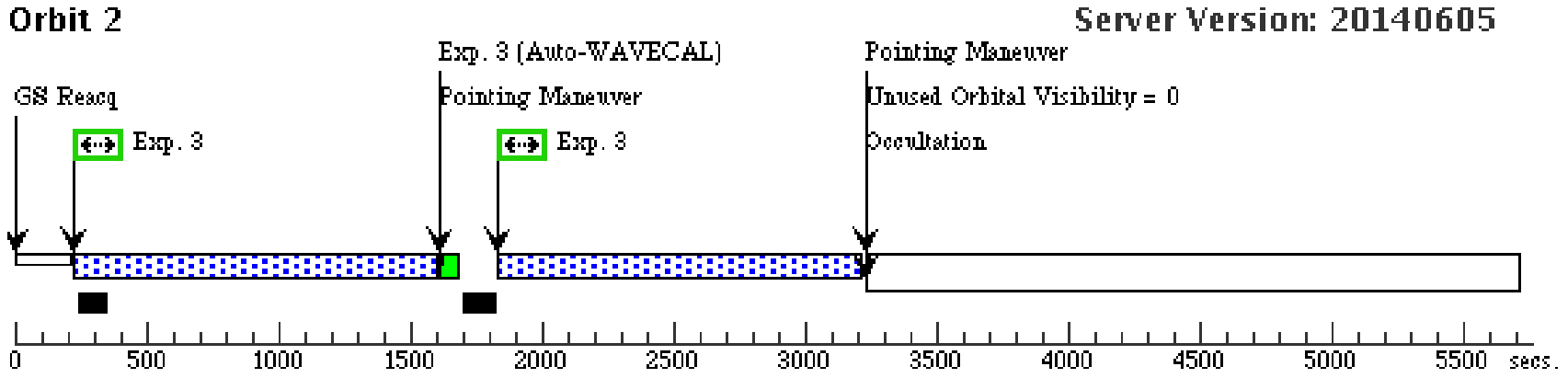
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	Q1355-2257AB	RA: 13 55 43.4300 (208.9309583d) Dec: -22 57 23.25 (-22.95646d) Equinox: J2000	Epoch of Position: 2000.0 Redshift: 1.373	V=18.2 NUV=18.36	Reference Frame: ICRS

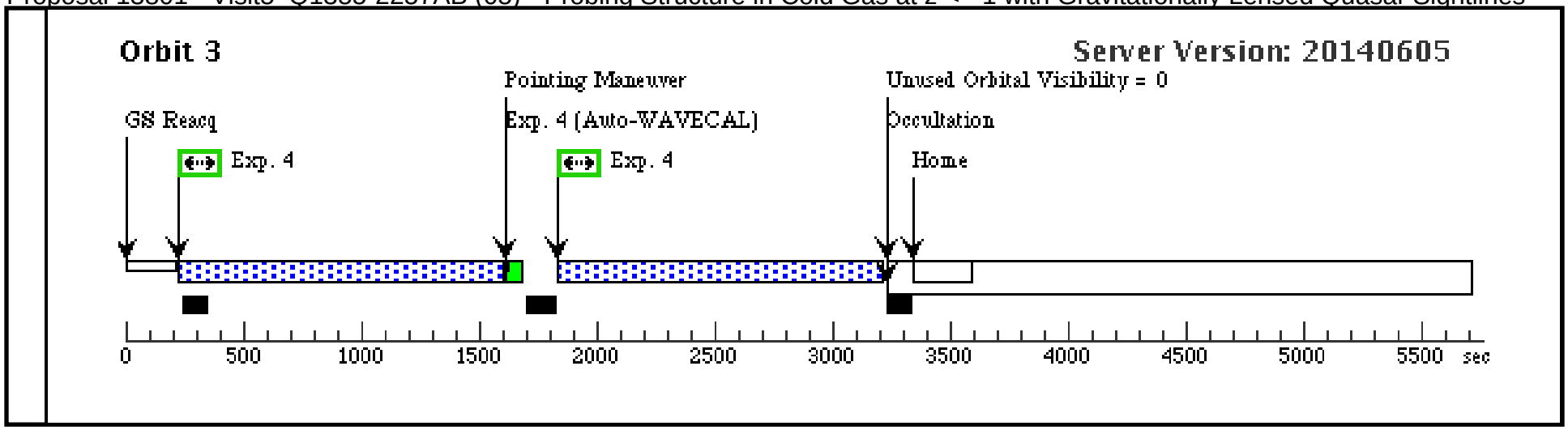
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Exposure 1 (Visit5_Q1355-2257AB) (STIS.ta.634853)	(4) Q1355-2257AB	STIS/CCD, ACQ, F28X50LP	MIRROR				6.1 Secs (6.1 Secs) *[==>]*	*[1]*
2	Exposure 2 (Visit5_Q1355-2257AB) (STIS.sp.626182)	(4) Q1355-2257AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 1, Exps 2-2 in Visit5_Q1355-2257AB (05) (1)	2200 Secs (2265 Secs) *[==>1132.0 Secs (Pattern 1)]* *[==>1133.0 Secs (Pattern 2)]*	*[1]*
3	Exposure 3 (Visit5_Q1355-2257AB) (STIS.sp.626183)	(4) Q1355-2257AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 2, Exps 3-3 in Visit5_Q1355-2257AB (05) (2)	1365 Secs (2737 Secs) *[==>1368.0 Secs (Pattern 1)]* *[==>1369.0 Secs (Pattern 2)]*	*[2]*
4	Exposure 4 (Visit5_Q1355-2257AB) (STIS.sp.626183)	(4) Q1355-2257AB	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 3, Exps 4-4 in Visit5_Q1355-2257AB (05) (3)	1365 Secs (2737 Secs) *[==>1368 Secs (Pattern 1)]* *[==>1369 Secs (Pattern 2)]*	*[3]*

Orbit Structure






Orbit 3
Server Version: 20140605
Pointing Maneuver
Unused Orbital Visibility = 0
GS Reacq
Exp. 4 (Auto-WAVECAL)
Occultation
Exp. 4
Exp. 4
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13801, Visit6_Q2237+030AC (06), implementation Fri Sep 12 01:07:21 GMT 2014

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 72.5D TO 74.5 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT	Coordinate Frame=POS-TARG		(2)
	Purpose=DITHER	Pattern Orientation=90.0		
	Number Of Points=2	Angle Between Sides=		
	Point Spacing=1.5	Center Pattern=false		
	Line Spacing=			

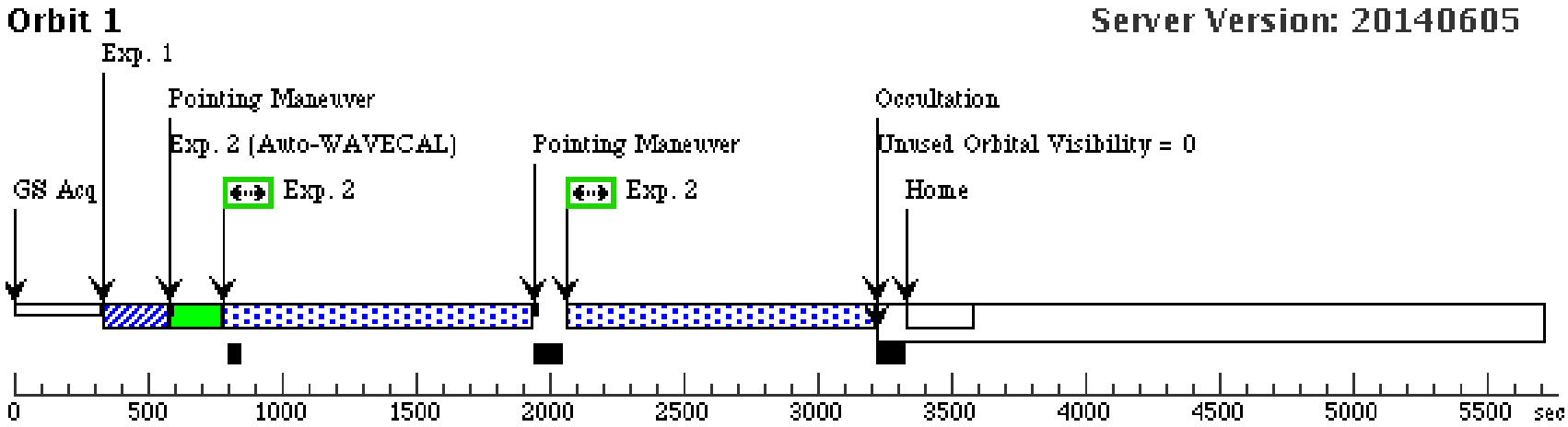
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	Q2237+030AC	RA: 22 40 30.2480 (340.1260333d)	Redshift: 1.695	V=17.35	Reference Frame: ICRS
		Dec: +03 21 30.15 (3.35838d)		FUV=20.34	
		Equinox: J2000			

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Exposure 1 (Visit6_Q2237+030AC) (STIS.ta.625468)	(5) Q2237+030AC	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3		3 Secs (3 Secs) *[==>]*	*[1]*
2	Exposure 2 (Visit6_Q2237+030AC) (STIS.sp.626190)	(5) Q2237+030AC	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 1, Exps 2-2 in Visit6_Q2237+030AC (06) (1)	2200 Secs (2267 Secs) *[==>1133.0 Secs (Pattern 1)]* *[==>1134.0 Secs (Pattern 2)]*	*[1]*

Orbit Structure



Visit

Proposal 13801, Visit7_Q2237+030BD (07), implementation Fri Sep 12 01:07:21 GMT 2014

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 52.75D TO 56.25 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=1.5 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(3)
(2)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=2.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(4)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	Q2237+030BD	Offset from Q2237+030BD-OFFSET RA Offset: -1.8694444444E-4 Degrees Dec Offset: 1.697 Arcsec	Redshift: 1.695	V=17.47 FUV=21.83	Offset Position (Q2237+030BD)

Comments: The offsets are given for image B with respect to image A (which is listed as Q2237+030BD-OFFSET) in this quaduply imaged gravitationally lensed quasar.

The RA offset is -0.00018694444444 degrees, i.e. -0.673 arcseconds.
The Dec offset is +1.697 arcseconds.

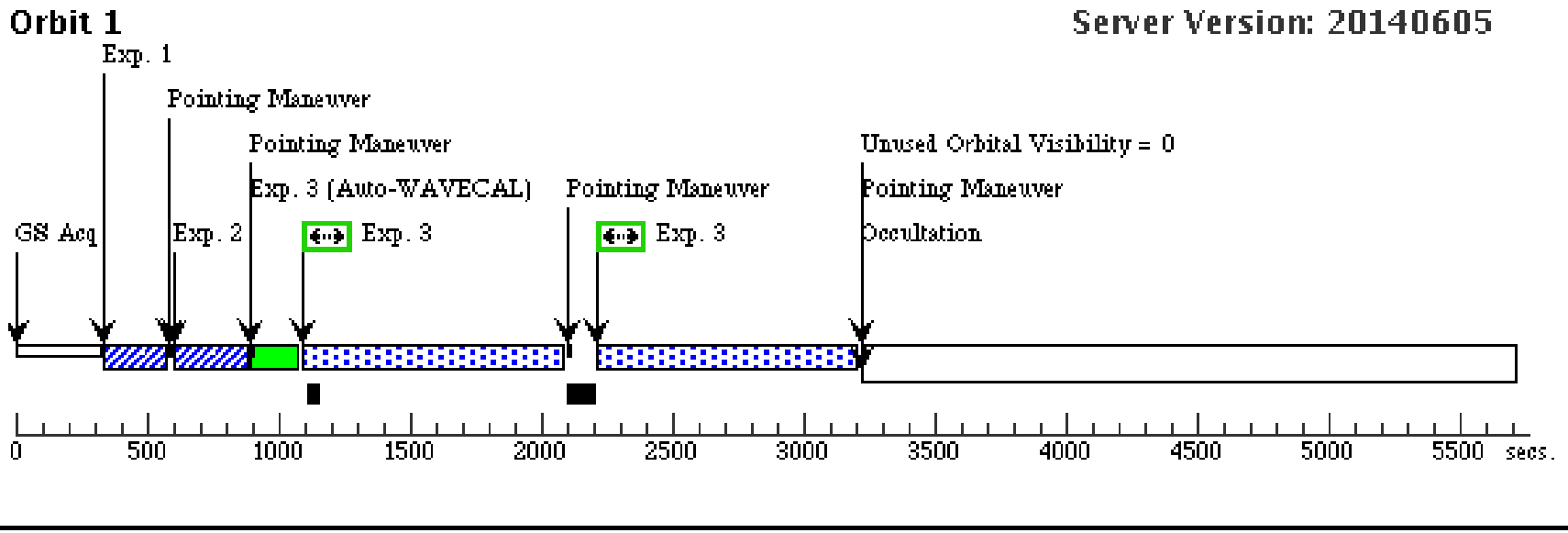
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	Q2237+030BD-OFFSET	RA: 22 40 30.2480 (340.1260333d) Dec: +03 21 30.15 (3.35838d) Equinox: J2000	Redshift: 1.695	V=17.35 FUV=20.34	Reference Frame: ICRS

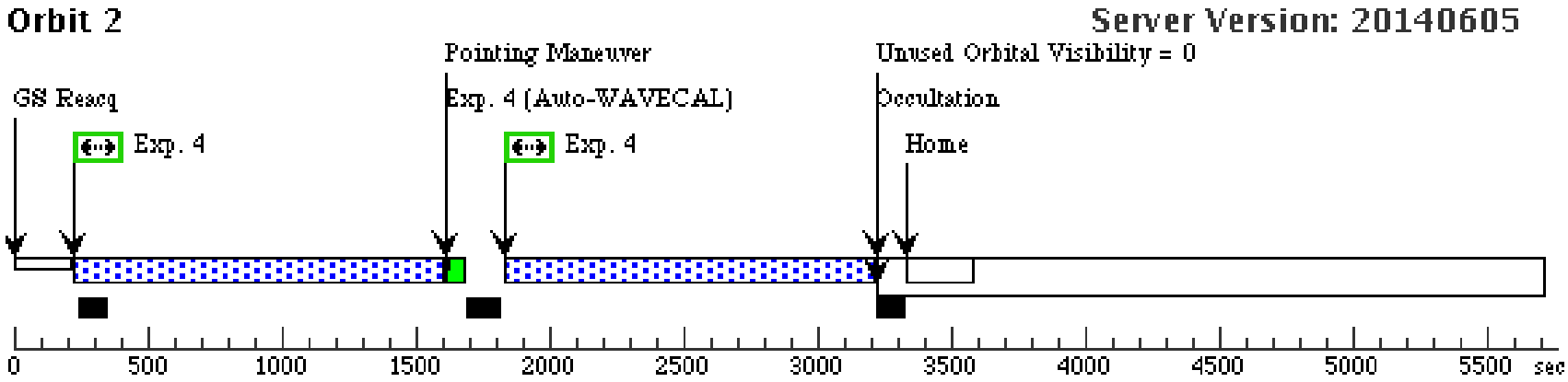
Comments: This is actually image A in Q2237+030, which is the brightest object within 5"x5" in this region. We will first acquire this target as a reference and then offset to image B (listed as Q2237+030BD).

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Exposure 1 (Visit7_Q2237+030BD) (STIS.ta.625468)	(7) Q2237+030BD-OFFSET	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3		3 Secs (3 Secs) *[==>]*	*[1]*
Comments: This is the first step in the acquisition, i.e. the acquisition of image A.									
2	(STIS.ta.626267)	(6) Q2237+030BD	STIS/CCD, ACQ/PEAK, 52X0.1	MIRROR				5 Secs (5 Secs) *[==>]*	*[1]*
Comments: This is the second stage of the acquisition, i.e. a peak-up acquisition on image B (whose coordinates are listed earlier as Q2237+030BD and are defined as offset from Q2237+030BD-OFFSET).									
3	Exposure 3 (Visit7_Q2237+030BD) (STIS.sp.626279)	(6) Q2237+030BD	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 1, Exps 3-3 in Visit7_Q2237+030BD (07) (1)	2200 Secs (1959 Secs) *[==>979.0 Secs (Pattern 1)]* *[==>980.0 Secs (Pattern 2)]*	*[1]*
4	Exposure 4 (Visit7_Q2237+030BD) (STIS.sp.626200)	(6) Q2237+030BD	STIS/FUV-MAMA, ACCUM, 52X0.2	G140L 1425 A			Pattern 2, Exps 4-4 in Visit7_Q2237+030BD (07) (2)	2200 Secs (2727 Secs) *[==>1363.0 Secs (Pattern 1)]* *[==>1364.0 Secs (Pattern 2)]*	*[2]*

Orbit Structure





Visit

Proposal 13801, Visit8_Q2237+030AC (08), implementation Fri Sep 12 01:07:21 GMT 2014

Diagnostic Status: No Diagnostics

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

Special Requirements: ORIENT 72.5D TO 74.5 D

Patterns

#	Primary Pattern		Secondary Pattern	Exposures
(1)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=1.5 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(2)
(2)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=2.0 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(3)
(3)	Pattern Type=STIS-ALONG-SLIT Purpose=DITHER Number Of Points=2 Point Spacing=2.5 Line Spacing=	Coordinate Frame=POS-TARG Pattern Orientation=90.0 Angle Between Sides= Center Pattern=false		(4)

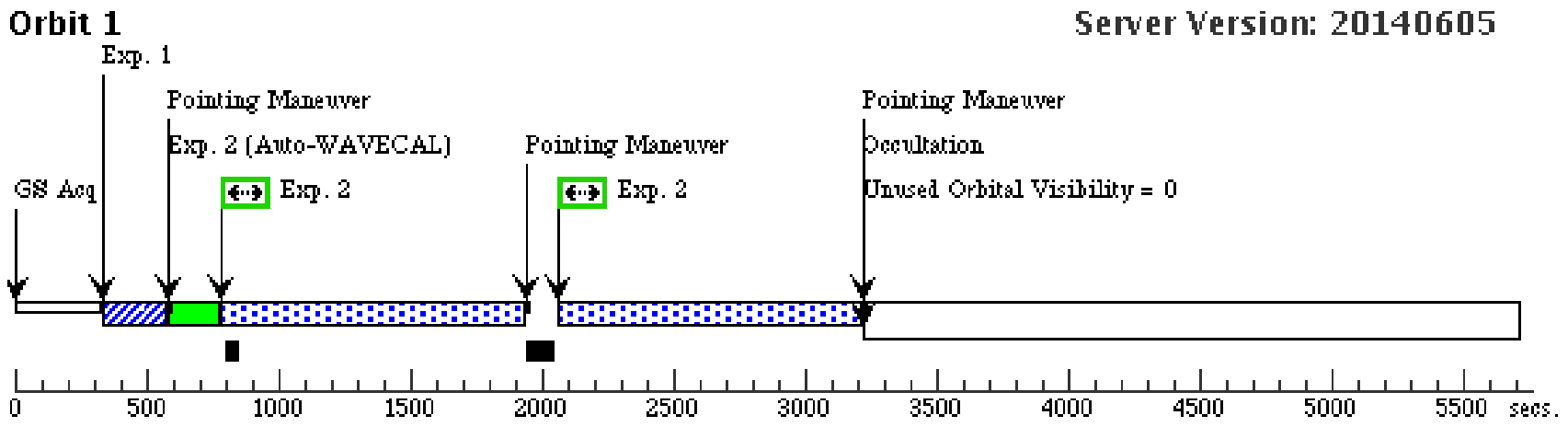
Fixed Targets

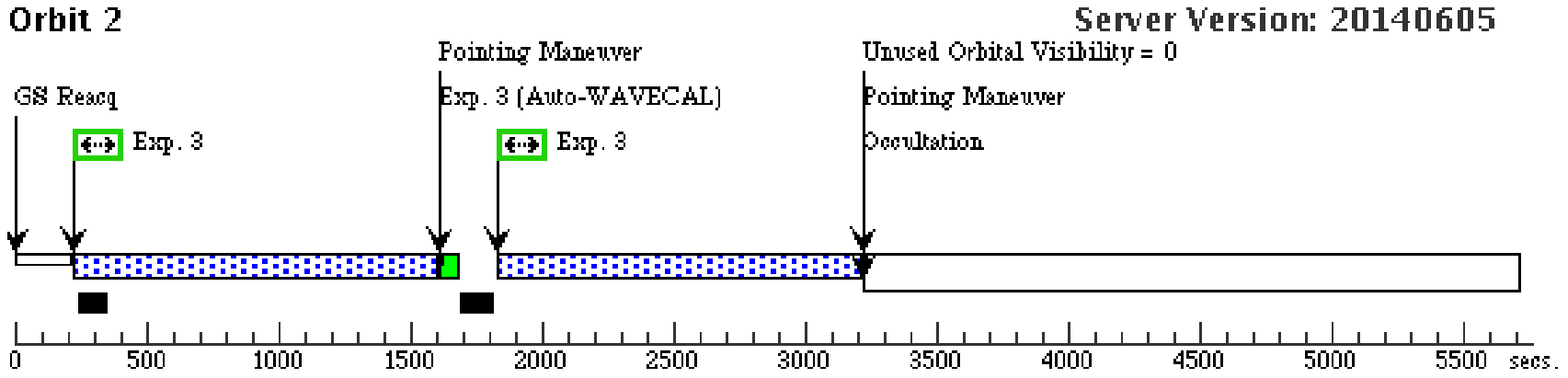
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	Q2237+030AC	RA: 22 40 30.2480 (340.1260333d) Dec: +03 21 30.15 (3.35838d) Equinox: J2000	Redshift: 1.695	V=17.35 FUV=20.34	Reference Frame: ICRS

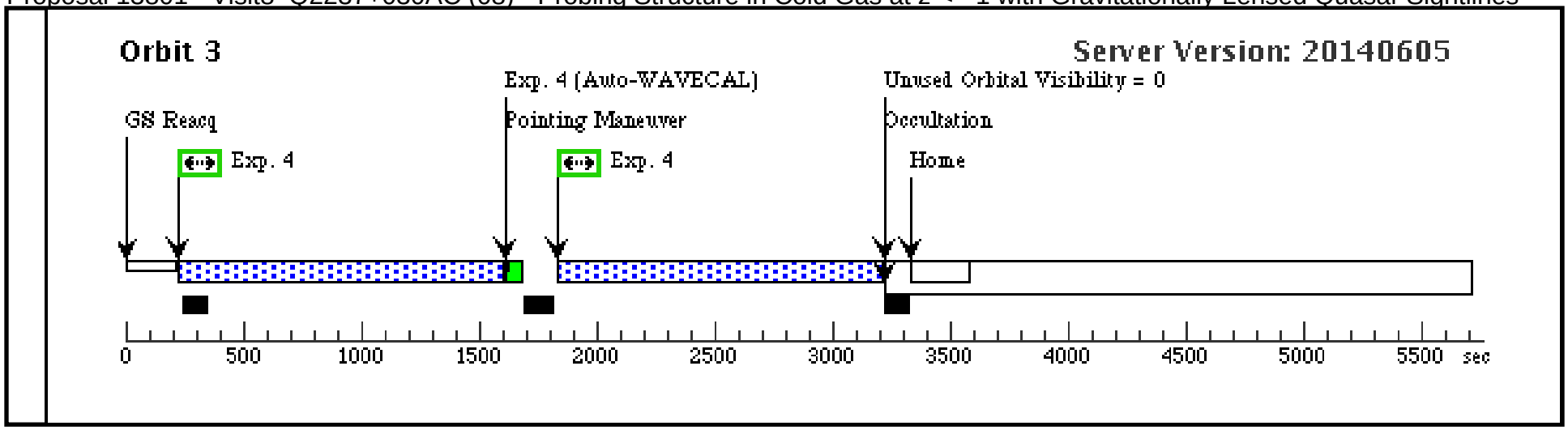
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Exposure 1 (Visit8_Q2237+030AC) (STIS.ta.625468)	(5) Q2237+030AC	STIS/CCD, ACQ, F28X50LP	MIRROR		GS ACQ SCENARIO BASE1B3		3 Secs (3 Secs) *[==>]*	*[1]*
2	Exposure 2 (Visit8_Q2237+030AC) (STIS.sp.626207)	(5) Q2237+030AC	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 1, Exps 2-2 in Visit8_Q2237+030AC (08) (1)	2200 Secs (2267 Secs) *[==>1133.0 Secs (Pattern 1)]* *[==>1134.0 Secs (Pattern 2)]*	*[1]*
3	Exposure 3 (Visit8_Q2237+030AC) (STIS.sp.626210)	(5) Q2237+030AC	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 2, Exps 3-3 in Visit8_Q2237+030AC (08) (2)	2200 Secs (2727 Secs) *[==>1363 Secs (Pattern 1)]* *[==>1364 Secs (Pattern 2)]*	*[2]*
4	Exposure 4 (Visit8_Q2237+030AC) (STIS.sp.626210)	(5) Q2237+030AC	STIS/NUV-MAMA, ACCUM, 52X0.2	G230L 2376 A			Pattern 3, Exps 4-4 in Visit8_Q2237+030AC (08) (3)	2200 Secs (2727 Secs) *[==>1363 Secs (Pattern 1)]* *[==>1364 Secs (Pattern 2)]*	*[3]*

Orbit Structure



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