13852 - How Galaxy Mergers Affect Their Environment: Mapping the Multiphase Circumgalactic Medium of Close Kinematic Pairs

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	(6) ICRF-J122011.8+020342	COS/FUV COS/NUV	2	24-Jul-2014 22:02:12.0	yes
02	(7) VV2006-J140658.8+144238	COS/FUV COS/NUV	2	24-Jul-2014 22:02:14.0	yes
03	(2) QSO-B0952+457	COS/FUV COS/NUV	3	24-Jul-2014 22:02:16.0	yes
04	(4) QSO-B1139+305	COS/FUV COS/NUV	3	24-Jul-2014 22:02:18.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
05	(1) VV2006-J092542.3+344108	COS/FUV COS/NUV	4	24-Jul-2014 22:02:20.0	yes
06	(5) VV2006-J115412.1+463552	COS/FUV COS/NUV	3	24-Jul-2014 22:02:21.0	yes
07	(5) VV2006-J115412.1+463552	COS/FUV COS/NUV	3	24-Jul-2014 22:02:22.0	yes
08	(8) VV2006-J222836.3-095009	COS/FUV COS/NUV	3	24-Jul-2014 22:02:23.0	yes
09	(8) VV2006-J222836.3-095009	COS/FUV COS/NUV	4	24-Jul-2014 22:02:25.0	yes
10	(3) VV2006-J101541.1+594445	COS/FUV COS/NUV	3	24-Jul-2014 22:02:26.0	yes
11	(3) VV2006-J101541.1+594445	COS/FUV COS/NUV	4	24-Jul-2014 22:02:27.0	yes

34 Total Orbits Used

ABSTRACT

Galaxy mergers are an important route through which galaxy transformations take place. The interplay of gas between the merging galaxies and their circumgalactic medium (CGM) likely plays a crucial part in this process. Despite its importance, no systematic study has been carried out to study the physical properties of this CGM gas and how it is affected by the merger process. We propose a carefully controlled absorption-line experiment to study the CGM around spectroscopically-identified close kinematic pairs. We plan to obtain COS observations of the CGM around a sample of 11 close kinematic pairs using 8 new QSO sight lines and three archival ones, all within 150 kpc of the interacting galaxy pairs. We will probe the multiphase CGM, using the C IV line to probe the warm gas and H I and other lower ionization metal species, C II Si II/III, to probe the cooler, more dense gas. We will combine these new observations with the complementary COS-Halos and COS-Dwarfs programs, which primarily probe the CGM around isolated galaxies. Using the isolated galaxies as a control sample will allow us to study the effects of the merging process on the CGM gas. Moreover, armed with spectroscopic and morphological information on the kinematic pairs, we will investigate how merger activities such as tidal interactions, affect the CGM of these galaxies. SDSS and COS provide the only means of probing the CGM of a controlled sample of mergers in the local Universe.

OBSERVING DESCRIPTION

Our strategic goal is to build a sample of QSO/interacting galaxy pairs with rho < 150 kpc to study multi-phase gas in galactic halos and its dependence on galaxy properties. Together, G130M and G160M range over 1150 - 1750 A, which gives us access to a host of important ionization, density, and metallicity diagnostics, most importantly the C IV doublet, 1548/1550 A, which is a sensitive tracer of highly ionized gas. The galaxy redshifts range from z ~ 0.006 - 0.07, where these ions will be covered on at least one of the grating settings.

Exposure times: Most of our target QSOs are newly discovered by SDSS, and so have not been observed spectroscopically in the UV before. To ensure sufficient flux in the G130M/G160M bands we have cross-referenced our QSO catalog with the GALEX DR4 all-sky survey (AIS) and selected only QSOs with a significant detection in the GALEX FUV band (~ 1500 \AA). Measured GALEX FUV magnitudes for our sample range from 16.10 to 18.60. The redshifts range from z = 0.24 - 1.0. Note that if we assume the FOS composite QSO in the ETC, QSOs in this range of redshift and magnitude are always well below the bright limits of COS for both FUV spectroscopic exposures and NUV imaging target acquisitions with MIRRORB (and MIRRORA for two targets).

We use the COS online ETC to calculate that we will achieve S/N = 8-12 per resolution element over 1150 - 1750 A with 2-7 orbit exposures for our target objects. The exposure time is roughly equally divided between the two gratings. Use of the GALEX fluxes means that we do not need to correct for interstellar extinction, which in any case is E(B-V) <~ 0.1 for these high-latitude targets. Each visit has one central wavelength per grating packed for maximim efficiency, with the central wavelengths chosen to detect the absorption lines of interest. Based on our experience with the ETC for QSOs in this range of redshift and magnitude and with our ~90 similar objects observed in Cycle 17-18, we know that these spectra always have their brightest pixel at the position of geocoronal Lyman alpha emission, not from the QSO source. These objects never get close to the bright limits, whatever the magnitude, redshift, or central wavelength setting.

Notes on Acquisitions:

Our coordinates are all from SDSS, with astrometry good to 100 mas, so we adopt NUV imaging (ACQ/IMAGE) for all targets. Our experience in Cycle 17/18 is that IMAGE acqisitions are working well for these targets. We compute the exposure times for each target using the COS Imaging Target acquisition ETC. We use MIRRORB for all cases except VV2006-J101541.1+594445 and VV2006-J222836.3-095009, where the targets are faint enough to use MIRRORA for acquisition (ETC COS.ta.623560), (ETC COS.ta.625115).

As anticipated for these targets selected from SDSS+GALEX, the BOT returns no health-and-safety issues for the targets or their fields.

We divide our visits to 2, 3 and 4 orbit visits respectively. Three targets with 6 and 7 orbits of observations are divided into two visits with (3+3 orbits) and (3+4 orbits) respectively. The Targets and their orbits are tabulated below.

ICRF-J122011.8+020342 (2-orbit, Visit 01)
cenwave 1291 for G130M
cenwave 1600 for G160M

VV2006-J140658.8+144238 (2-orbit, Visit 02)
cenwave 1291 for G130M
cenwave 1611 for G160M

QSO-B0952+457 (3-orbit, Visit 03)
cenwave 1291 for G130M
cenwave 1600 for G160M

QSO-B01139+305 (3-orbit, Visit 04)
cenwave1589 for G160M

VV2006-J092542.3+344108 (4-orbit, Visit 05)
cenwave 1291 for G130M
cenwave 1611 for G160M

VV2006-J115412.1+463552 (First visit =3 orbit out of 6, Visit 06)
cenwave 1300 for G130M

VV2006-J115412.1+463552 (Second visit =3 orbit out of 6, Visit 07)
cenwave 1600 for G160M

VV2006-J222836.3-095009 (First visit =3 orbit out of 7, Visit 08)
cenwave 1291 for G130M

VV2006-J222836.3-095009 (Second visit =4 orbit out of 7, Visit 09)
cenwave 1611 for G160M

VV2006-J101541.1+594445 (First visit =3 orbit out of 7, Visit 10)
cenwave 1291 for G130M

VV2006-J101541.1+594445 (Second visit =4 orbit out of 7, Visit 11)
cenwave 1611 for G160M

The central wavelengths are set to optimally cover the interesting absorption lines from the galaxies of interest (mainly Lya and C IV). Thus almost every cenwave setting allowed for COS used for one target or another. The representative ETCs show that geocoronal Lya is always the brightest spot in G130M regardless of the cenwave, but is still well below the limits (0.1 cts at Lya vs. 0.67 cts limit), and the targets tend to be at least an order of magnitude fainter. Since the FOS template spectrum is relatively flat (see the representative cases) the global count rate is almost invariant with cenwave and never gets close to the limits.

Visit

Proposal 13852, ICRF-J122011.8+020342 (01), implementation Fri Jul 25 02:02:29 GMT 2014

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Comments: 2-orbit Visit
cenwave 1291 for G130M
cenwave 1600 for G160M

Fixed Targets

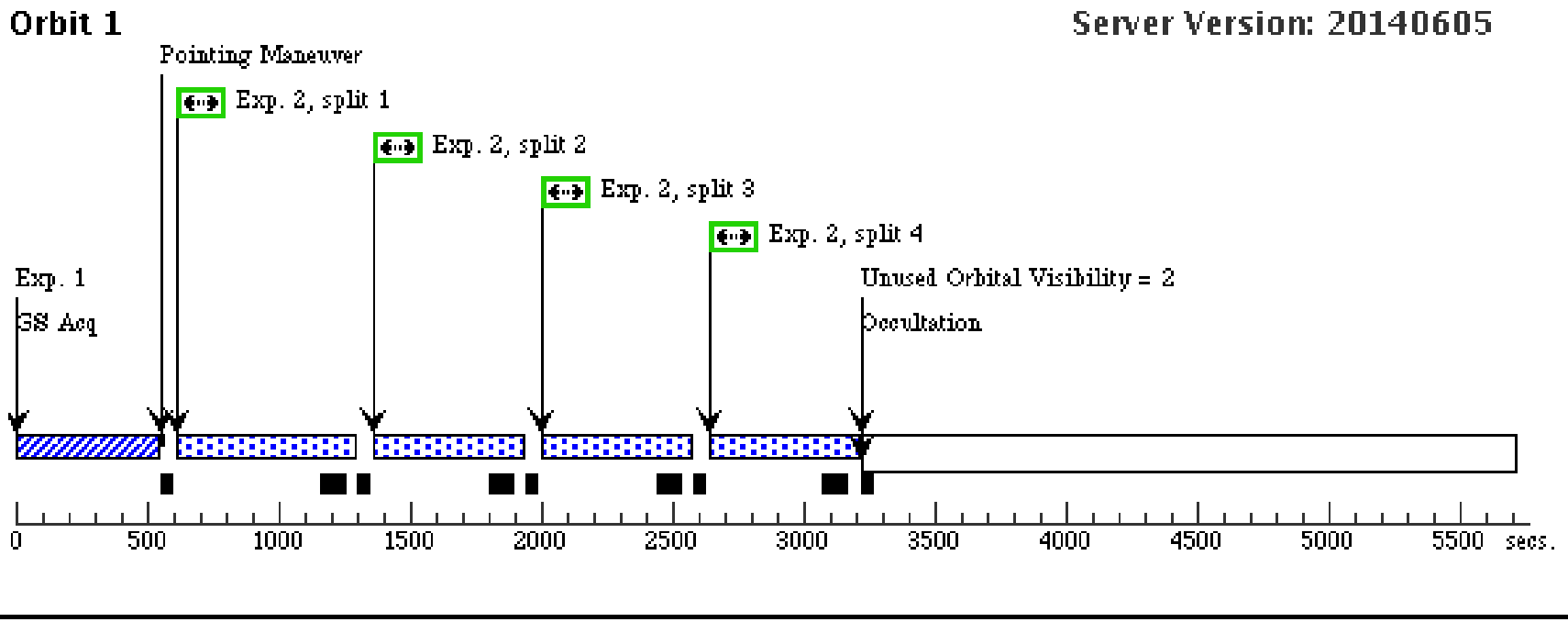
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	ICRF-J122011.8+020342	RA: 12 20 11.8851 (185.0495212d) Dec: +02 03 42.22 (2.06173d) Equinox: J2000		V=15.97+/-0.1 FUV=16.10	Reference Frame: ICRS

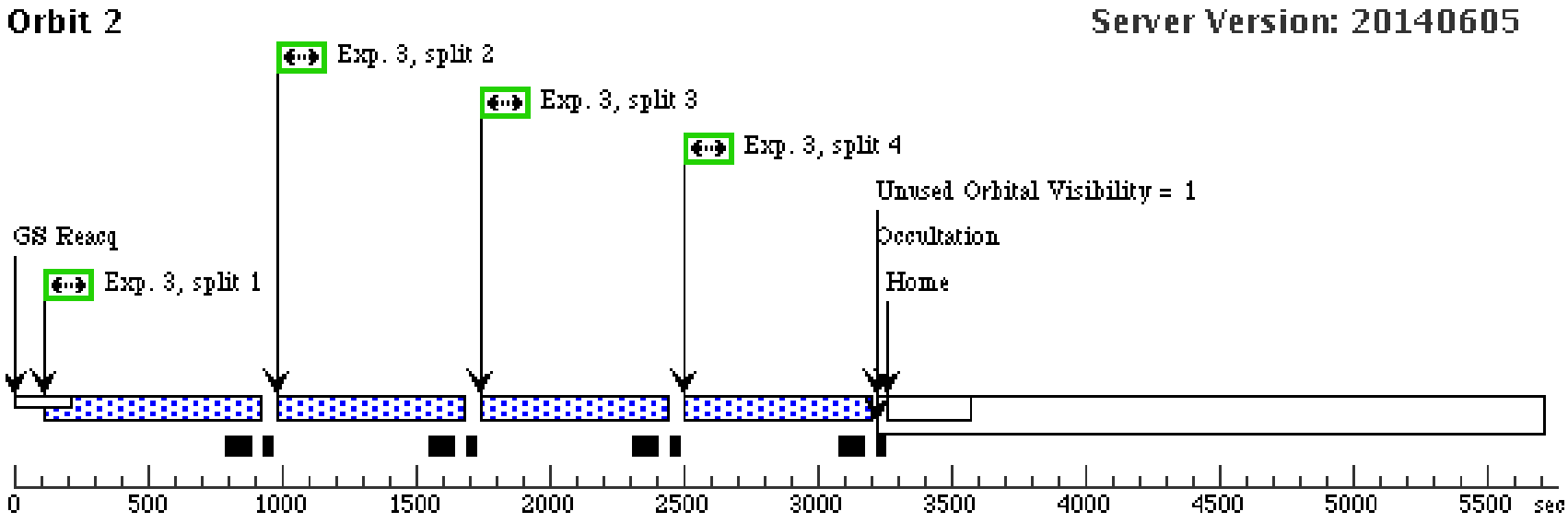
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Target Acq (COS.ta.622443)	(6) ICRF-J122011.8+020342	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				60.0 Secs (60 Secs) *[==>]*	 ***[1]***
2	(COS.sp.622445)	(6) ICRF-J122011.8+020342	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=403; FLASH=YES; FP-POS=ALL			513 Secs (2052 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	 ***[1]***
3	(COS.sp.622448)	(6) ICRF-J122011.8+020342	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=537; FLASH=YES; FP-POS=ALL			647 Secs (2588 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	 ***[2]***

Orbit Structure





Visit

Proposal 13852, VV2006-J140658.8+144238 (02), implementation Fri Jul 25 02:02:29 GMT 2014

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Comments: 2-orbit Visit
cenwave 1291 for G130M
cenwave 1611 for G160M

Fixed Targets

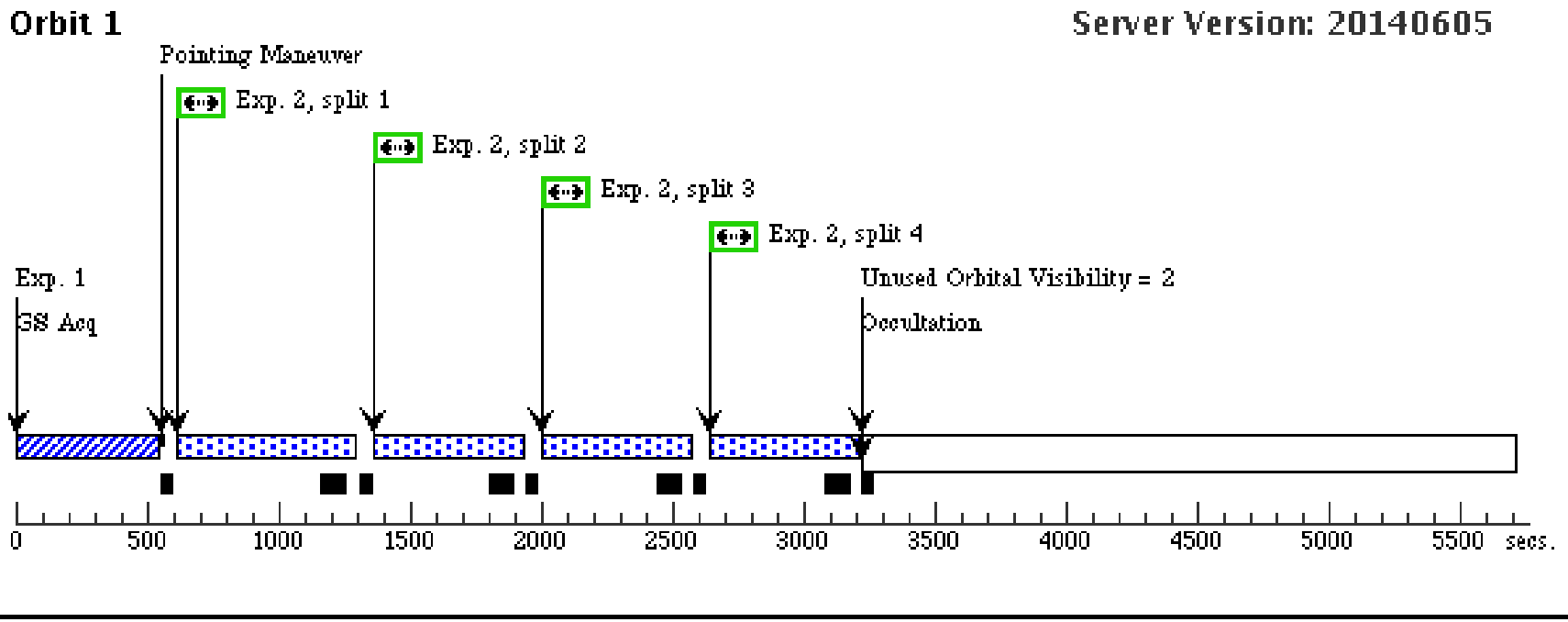
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	VV2006-J140658.8+144238	RA: 14 06 58.7141 (211.7446421d) Dec: +14 42 38.53 (14.71070d) Equinox: J2000		V=16.42+/-0.1 FUV=16.77	Reference Frame: ICRS

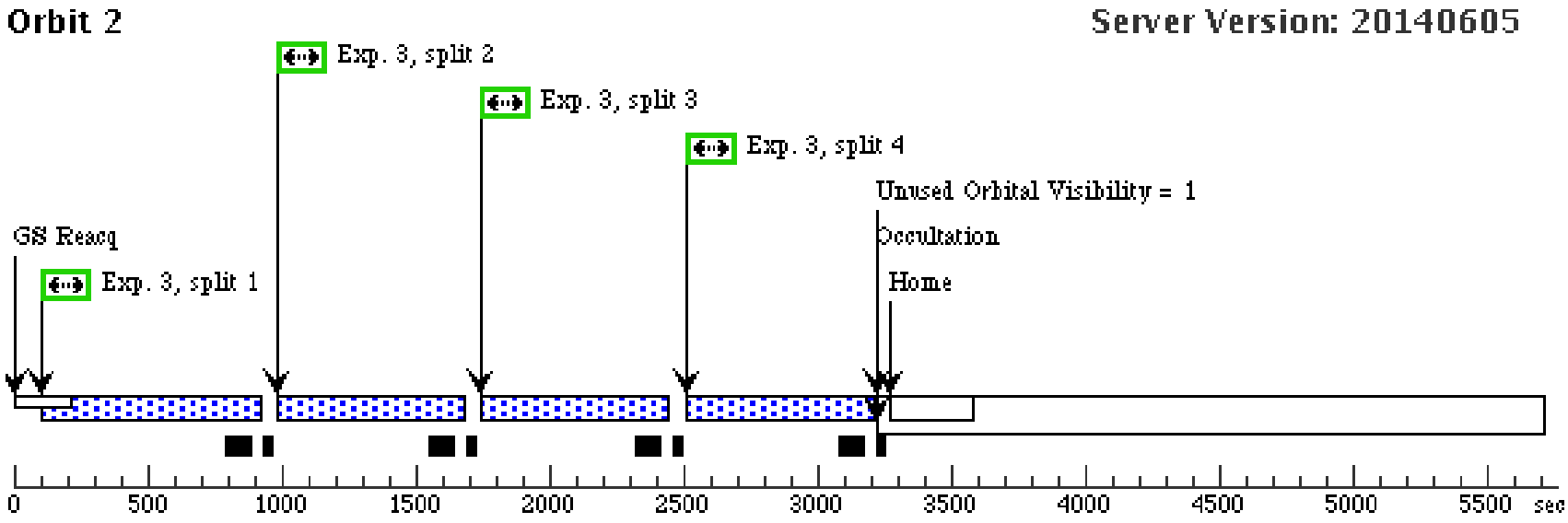
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Target Acq (COS.ta.622460)	(7) VV2006-J140658.8+144238	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				60.0 Secs (60 Secs) *[==>]*	 ***[1]***
2	(COS.sp.622463)	(7) VV2006-J140658.8+144238	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=404; FLASH=YES; FP-POS=ALL			514 Secs (2056 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	 ***[1]***
3	(COS.sp.622466)	(7) VV2006-J140658.8+144238	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=538; FLASH=YES; FP-POS=ALL			648 Secs (2592 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	 ***[2]***

Orbit Structure





Visit

Proposal 13852, QSO-B0952+457 (03), implementation Fri Jul 25 02:02:30 GMT 2014

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Comments: 3-orbit Visit
cenwave 1291 for G130M
cenwave 1600 for G160M

Fixed Targets

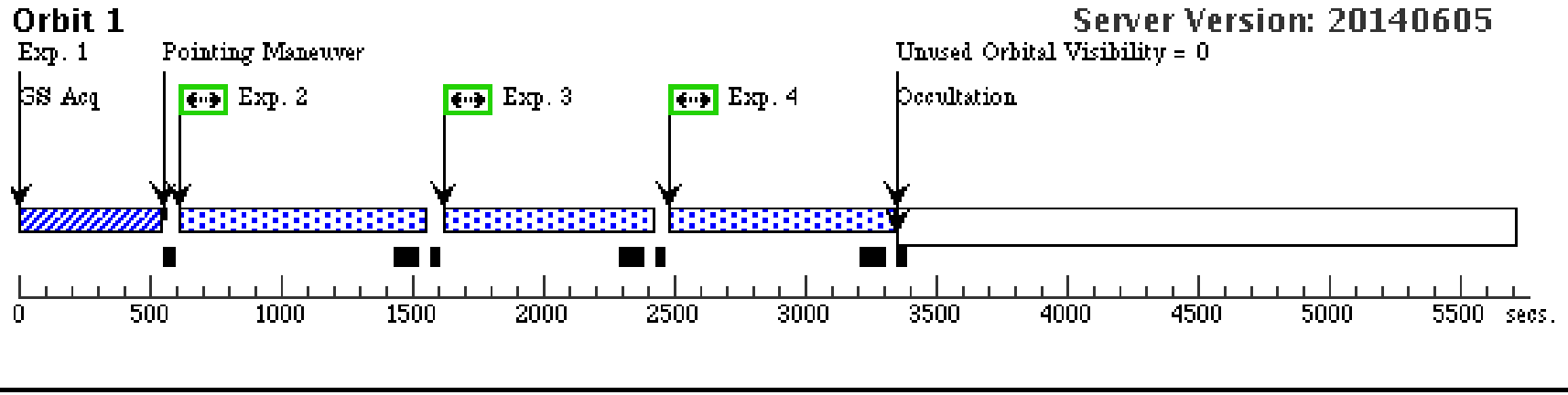
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	QSO-B0952+457	RA: 09 55 39.8226 (148.9159275d)		V=16.91+/-0.1	Reference Frame: ICRS
		Dec: +45 32 16.96 (45.53804d)		FUV=17.45	
		Equinox: J2000			

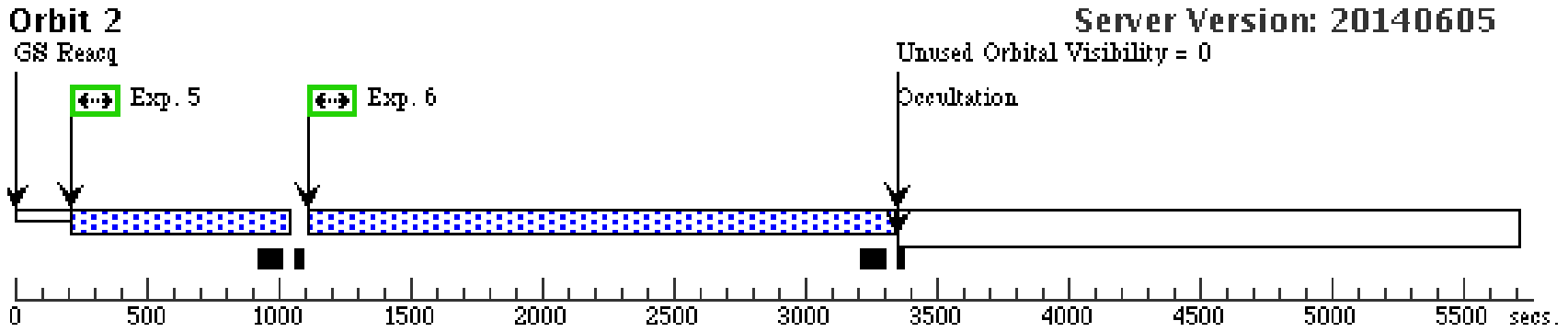
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

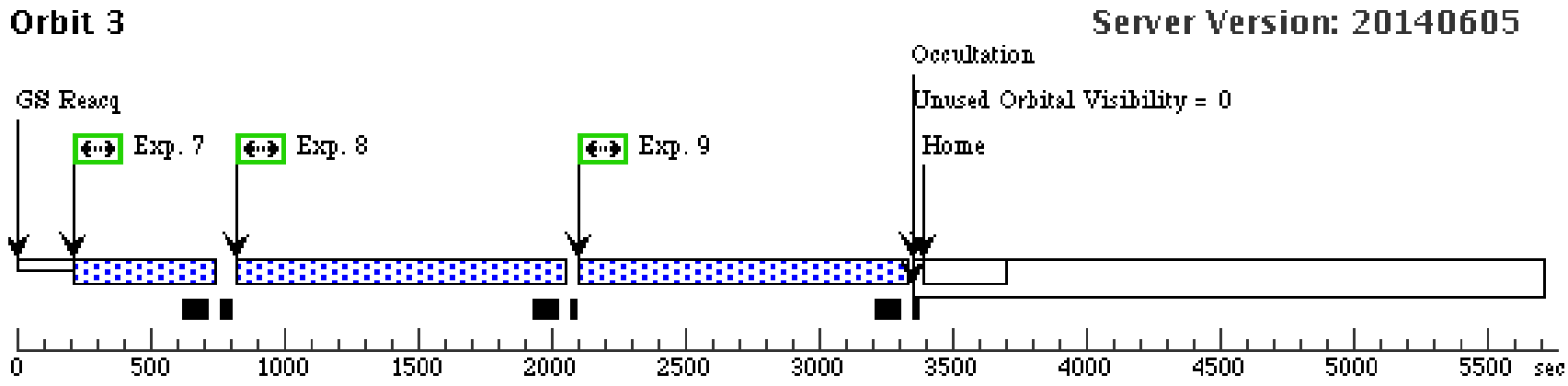
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Target Acq (COS.ta.623270)	(2) QSO-B0952+457	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				60. Secs (60 Secs) *[==>]*	*[1]*
2	(COS.sp.623271)	(2) QSO-B0952+457	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=668; FLASH=YES; FP-POS=1			778 Secs (778 Secs) *[==>]*	*[1]*
3	(COS.sp.623272)	(2) QSO-B0952+457	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=635; FLASH=YES; FP-POS=2			745. Secs (745 Secs) *[==>]*	*[1]*
4	(COS.sp.623273)	(2) QSO-B0952+457	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=699; FLASH=YES; FP-POS=3			809 Secs (809 Secs) *[==>]*	*[1]*
5	(COS.sp.623274)	(2) QSO-B0952+457	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=671; FLASH=YES; FP-POS=4			781 Secs (781 Secs) *[==>]*	*[2]*
6	(COS.sp.623276)	(2) QSO-B0952+457	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=1955; FLASH=YES; FP-POS=1			2065.0 Secs (2065 Secs) *[==>]*	*[2]*
7	(COS.sp.623284)	(2) QSO-B0952+457	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=369; FLASH=YES; FP-POS=2			479 Secs (479 Secs) *[==>]*	*[3]*
8	(COS.sp.623278)	(2) QSO-B0952+457	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=1072; FLASH=YES; FP-POS=3			1182 Secs (1182 Secs) *[==>]*	*[3]*
9	(COS.sp.623278)	(2) QSO-B0952+457	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=1072; FLASH=YES; FP-POS=4			1182 Secs (1182 Secs) *[==>]*	*[3]*

Orbit Structure







Visit

Proposal 13852, QSO-B01139+305 (04), implementation Fri Jul 25 02:02:30 GMT 2014

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Comments: 3-orbit Visit
cenwave1589 for G160M.

Fixed Targets

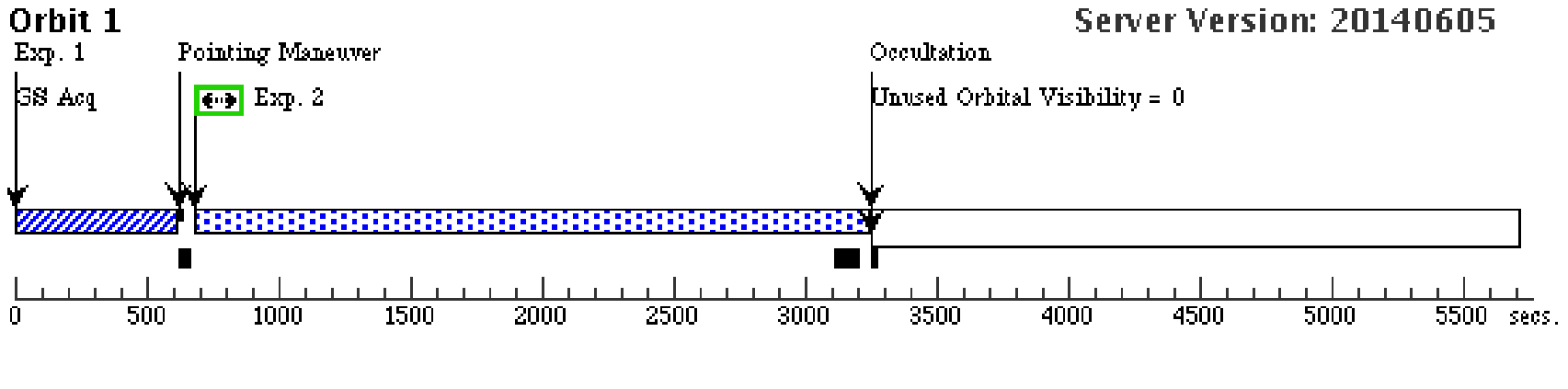
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	QSO-B1139+305	RA: 11 42 12.3062 (175.5512758d) Dec: +30 16 13.16 (30.27032d) Equinox: J2000		V=17.31+/-0.1 FUV=18.36	Reference Frame: ICRS

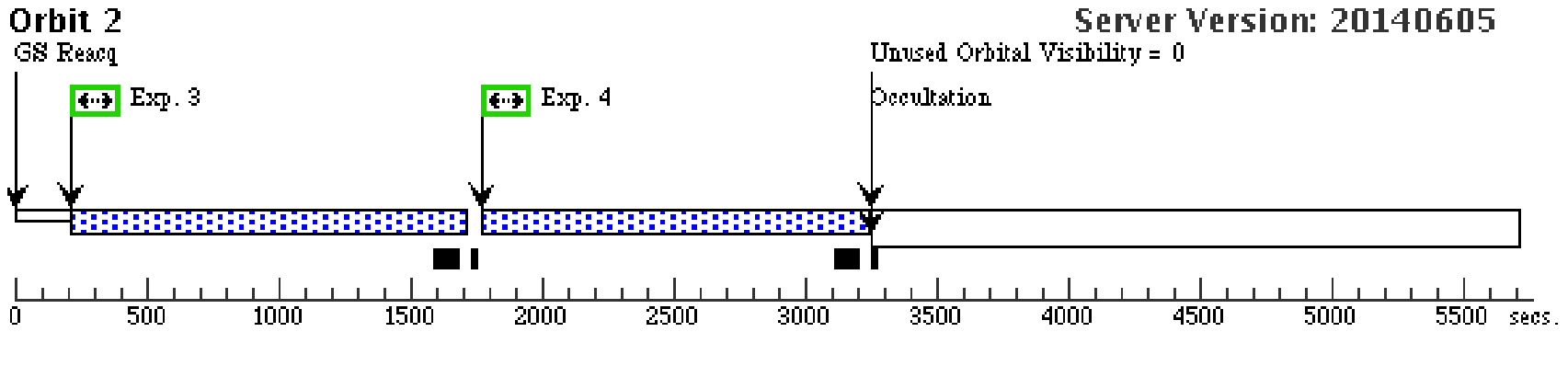
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

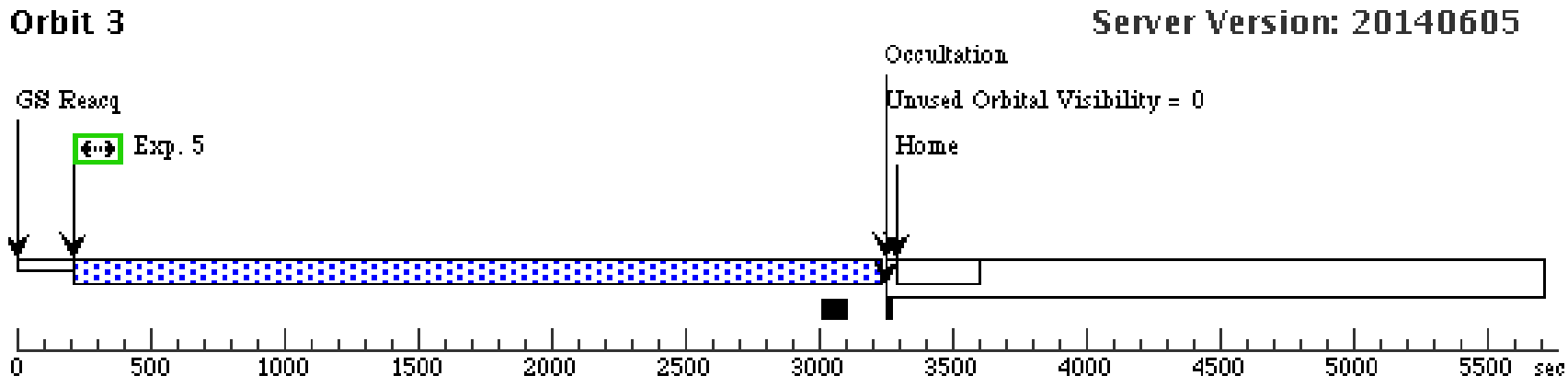
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Target Acq (COS.ta.622485)	(4) QSO-B1139+305	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				93.0 Secs (93 Secs) *[==>]*	***[1]***
2	(COS.sp.623239)	(4) QSO-B1139+305	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=2242; FLASH=YES; FP-POS=1			2352 Secs (2352 Secs) *[==>]*	***[1]***
3	(COS.sp.623242)	(4) QSO-B1139+305	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=1340; FLASH=YES; FP-POS=2			1450. Secs (1450 Secs) *[==>]*	***[2]***
4	(COS.sp.623243)	(4) QSO-B1139+305	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=1306; FLASH=YES; FP-POS=3			1416 Secs (1416 Secs) *[==>]*	***[2]***
5	(COS.sp.623245)	(4) QSO-B1139+305	COS/FUV, TIME-TAG, PSA	G160M 1589 A	BUFFER-TIME=2761; FLASH=YES; FP-POS=4			2971 Secs (2971 Secs) *[==>]*	***[3]***

Orbit Structure







Visit

Proposal 13852, VV2006-J092542.3+344108 (05), implementation Fri Jul 25 02:02:30 GMT 2014

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Comments: 4-orbit Visit
cenwave 1291 for G130M
cenwave 1611 for G160M

Fixed Targets

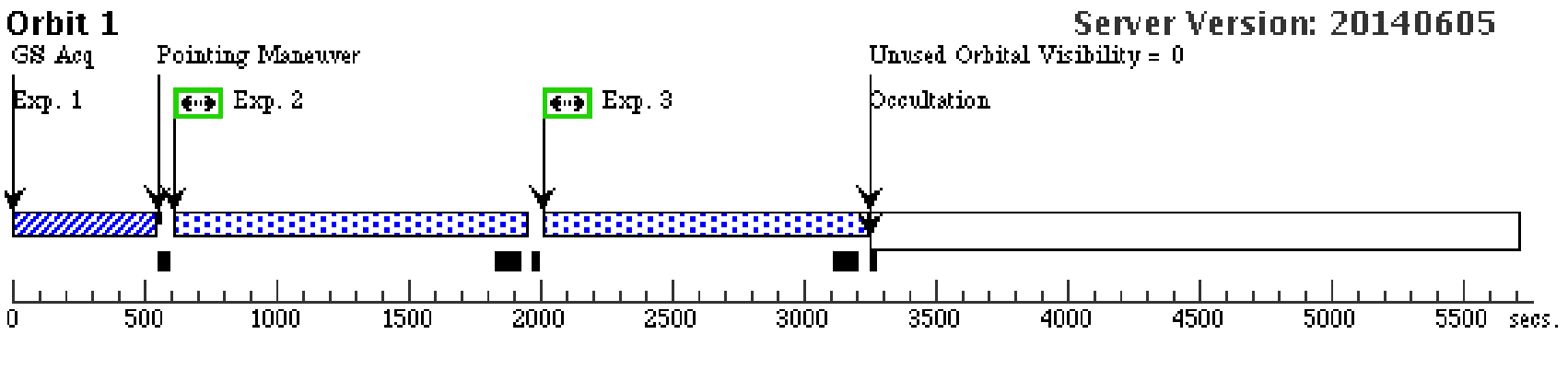
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	VV2006-J092542.3+344108	RA: 09 25 42.3265 (141.4263604d) Dec: +34 41 8.60 (34.68572d) Equinox: J2000		V=16.7+/-0.1 FUV=17.85	Reference Frame: ICRS

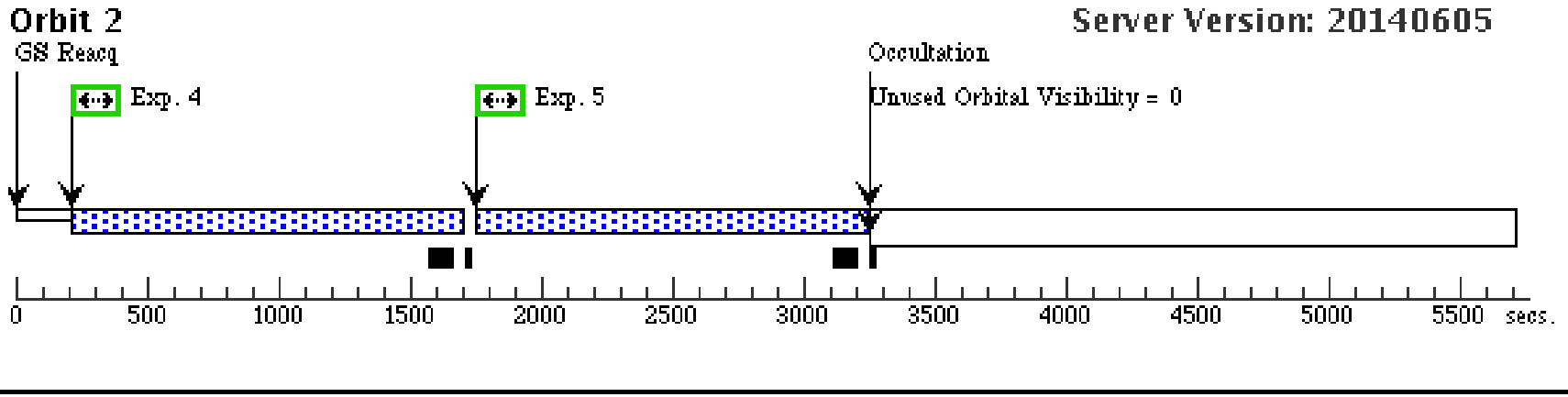
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.This object was generated by the targetselector and retrieved from the SIMBAD database.

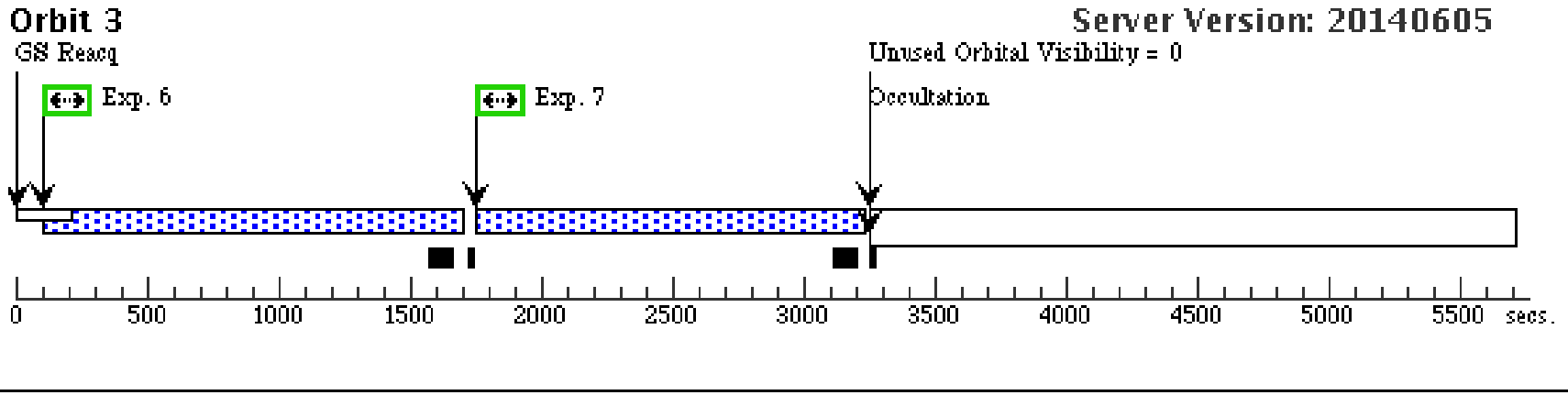
Exposures

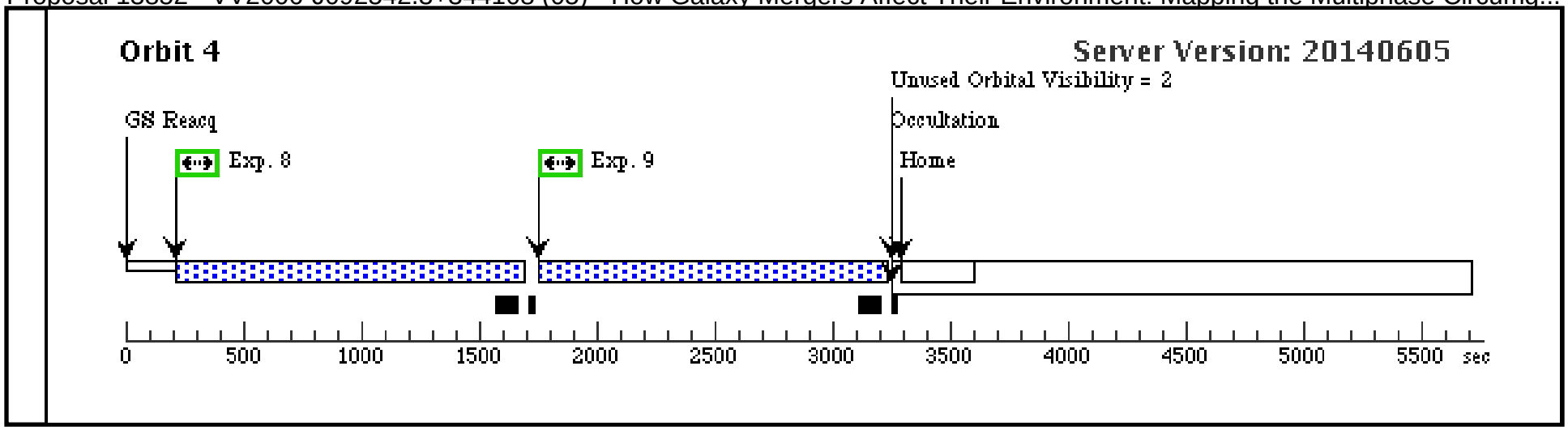
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Target Acq (COS.ta.623287)	(1) VV2006-J092542.3+344108	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				60 Secs (60 Secs) *[==>]*	***[1]***
2	(COS.sp.623301)	(1) VV2006-J092542.3+344108	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=1068; FLASH=YES; FP-POS=1			1178. Secs (1178 Secs) *[==>]*	***[1]***
3	(COS.sp.623301)	(1) VV2006-J092542.3+344108	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=1068; FLASH=YES; FP-POS=2			1178 Secs (1178 Secs) *[==>]*	***[1]***
4	(COS.sp.623302)	(1) VV2006-J092542.3+344108	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=1323; FLASH=YES; FP-POS=3			1433 Secs (1433 Secs) *[==>]*	***[2]***
5	(COS.sp.623302)	(1) VV2006-J092542.3+344108	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=1323; FLASH=YES; FP-POS=4			1433 Secs (1433 Secs) *[==>]*	***[2]***
6	(COS.sp.623300)	(1) VV2006-J092542.3+344108	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=1322; FLASH=YES; FP-POS=1			1432 Secs (1432 Secs) *[==>]*	***[3]***
7	(COS.sp.623300)	(1) VV2006-J092542.3+344108	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=1322; FLASH=YES; FP-POS=2			1432 Secs (1432 Secs) *[==>]*	***[3]***
8	(COS.sp.623300)	(1) VV2006-J092542.3+344108	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=1322; FLASH=YES; FP-POS=3			1432 Secs (1432 Secs) *[==>]*	***[4]***
9	(COS.sp.623300)	(1) VV2006-J092542.3+344108	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=1322; FLASH=YES; FP-POS=4			1432 Secs (1432 Secs) *[==>]*	***[4]***

Orbit Structure








Orbit 4
Server Version: 20140605
Unused Orbital Visibility = 2
GS Reacq
Exp. 8
Exp. 9
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13852, VV2006-J115412.1+463552 (06), implementation Fri Jul 25 02:02:30 GMT 2014

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Comments: First visit =3 orbit visit out of a total of 6 orbits
grating = G130M
cenwave=1300

Fixed Targets

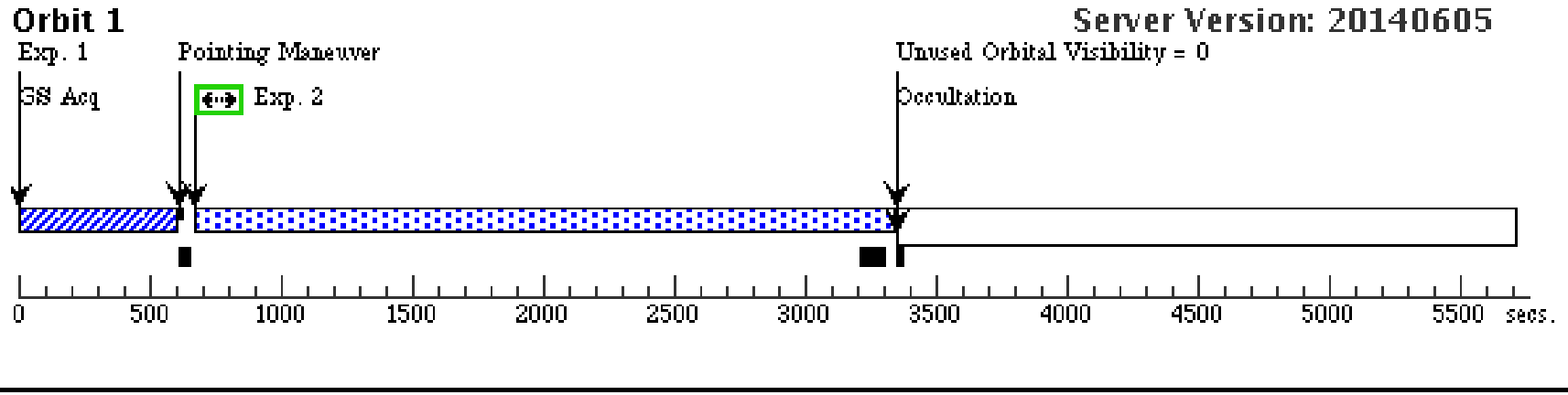
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	VV2006-J115412.1+463552	RA: 11 54 12.0677 (178.5502821d) Dec: +46 35 52.16 (46.59782d) Equinox: J2000		V=17.51+/-0.1 FUV= 18.47	Reference Frame: ICRS

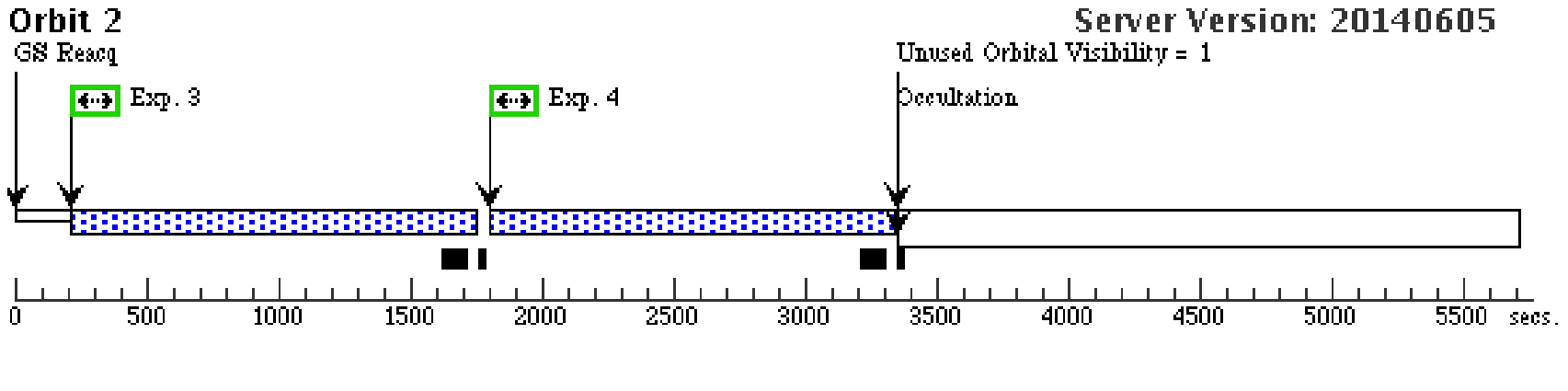
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

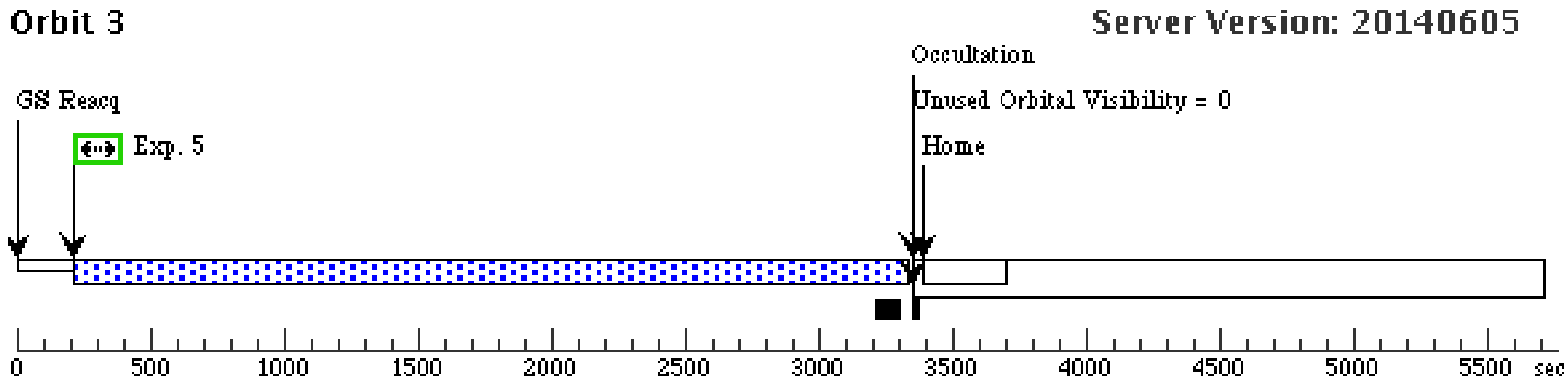
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Target Acq (COS.ta.623306)	(5) VV2006-J115412.1+463552	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				90.0 Secs (90 Secs) *[==>]*	 ***[1]***
2	(COS.sp.623307)	(5) VV2006-J115412.1+463552	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=2389; FLASH=YES; FP-POS=1			2499 Secs (2499 Secs) *[==>]*	 ***[1]***
3	(COS.sp.623311)	(5) VV2006-J115412.1+463552	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=1373; FLASH=YES; FP-POS=2			1483. Secs (1483 Secs) *[==>]*	 ***[2]***
4	(COS.sp.623311)	(5) VV2006-J115412.1+463552	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=1373; FLASH=YES; FP-POS=3			1483 Secs (1483 Secs) *[==>]*	 ***[2]***
5	(COS.sp.623312)	(5) VV2006-J115412.1+463552	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=2962; FLASH=YES; FP-POS=4			3072 Secs (3072 Secs) *[==>]*	 ***[3]***

Orbit Structure







Visit

Proposal 13852, VV2006-J115412.1+463552 (07), implementation Fri Jul 25 02:02:30 GMT 2014

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Comments: Second visit =3 orbit visit out of a total of 6 orbits
grating = G160M
cenwave=1600

Fixed Targets

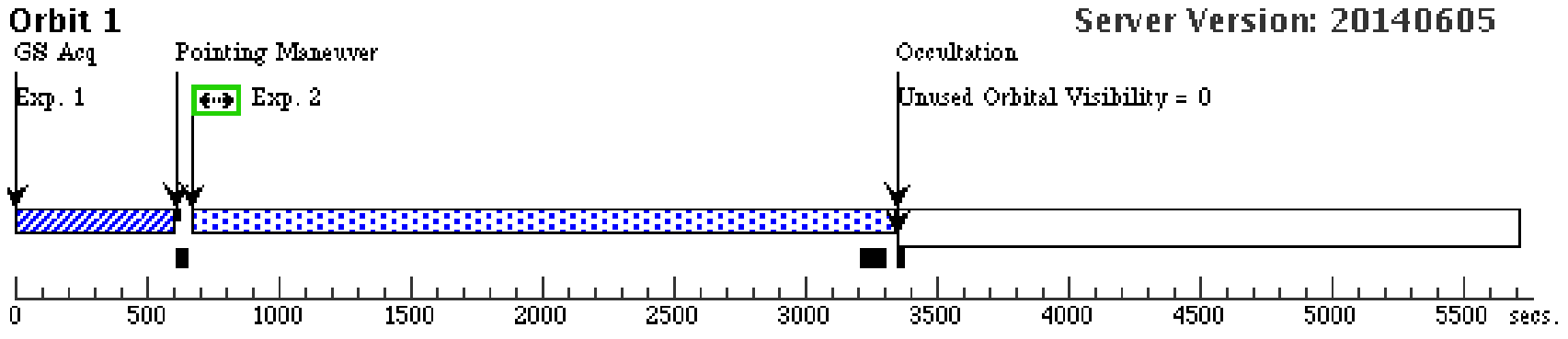
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	VV2006-J115412.1+463552	RA: 11 54 12.0677 (178.5502821d) Dec: +46 35 52.16 (46.59782d) Equinox: J2000		V=17.51+/-0.1 FUV= 18.47	Reference Frame: ICRS

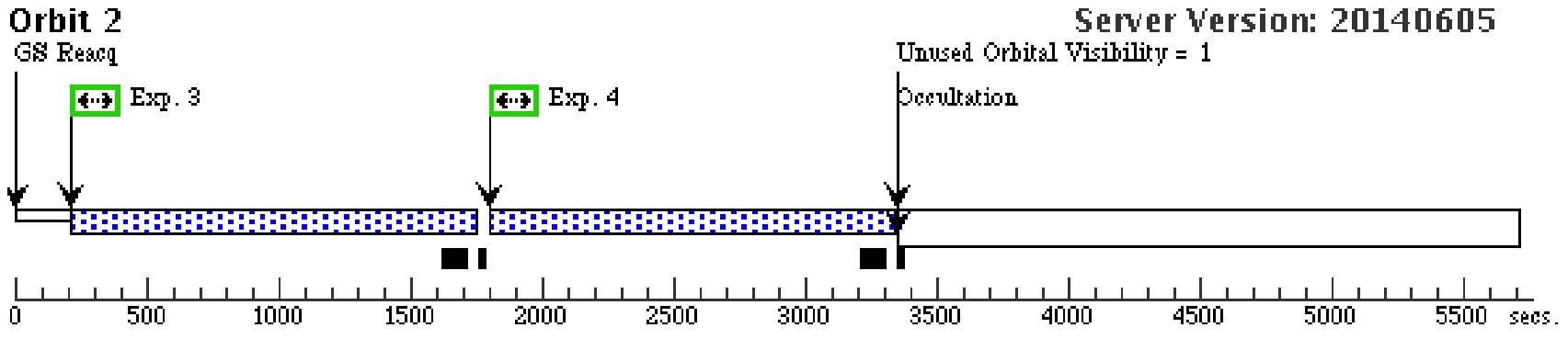
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

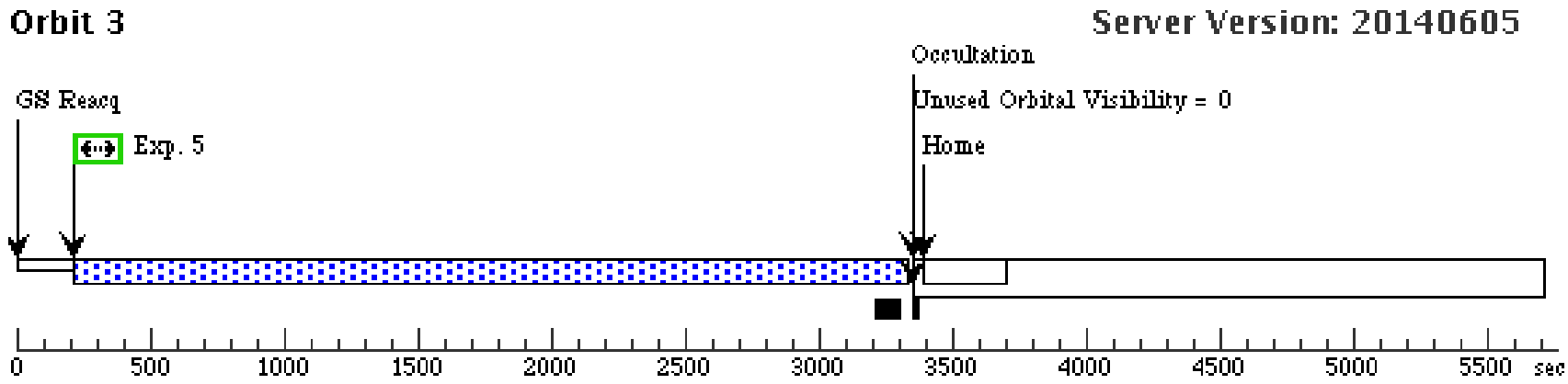
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Target Acq (COS.ta.623306)	(5) VV2006-J115412.1+463552	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				90.0 Secs (90 Secs) *[==>]*	 ***[1]***
2	(COS.sp.623314)	(5) VV2006-J115412.1+463552	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=2346; FLASH=YES; FP-POS=1			2456 Secs (2456 Secs) *[==>]*	 ***[1]***
3	(COS.sp.623315)	(5) VV2006-J115412.1+463552	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=1373; FLASH=YES; FP-POS=2			1483. Secs (1483 Secs) *[==>]*	 ***[2]***
4	(COS.sp.623315)	(5) VV2006-J115412.1+463552	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=1373; FLASH=YES; FP-POS=3			1483 Secs (1483 Secs) *[==>]*	 ***[2]***
5	(COS.sp.623316)	(5) VV2006-J115412.1+463552	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=2962; FLASH=YES; FP-POS=4			3072 Secs (3072 Secs) *[==>]*	 ***[3]***

Orbit Structure







Visit

Proposal 13852, VV2006-J222836.3-095009 (08), implementation Fri Jul 25 02:02:30 GMT 2014

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Comments: First visit =3 orbit visit out of a total of 7 orbits
grating = G130M
cenwave=1291

Fixed Targets

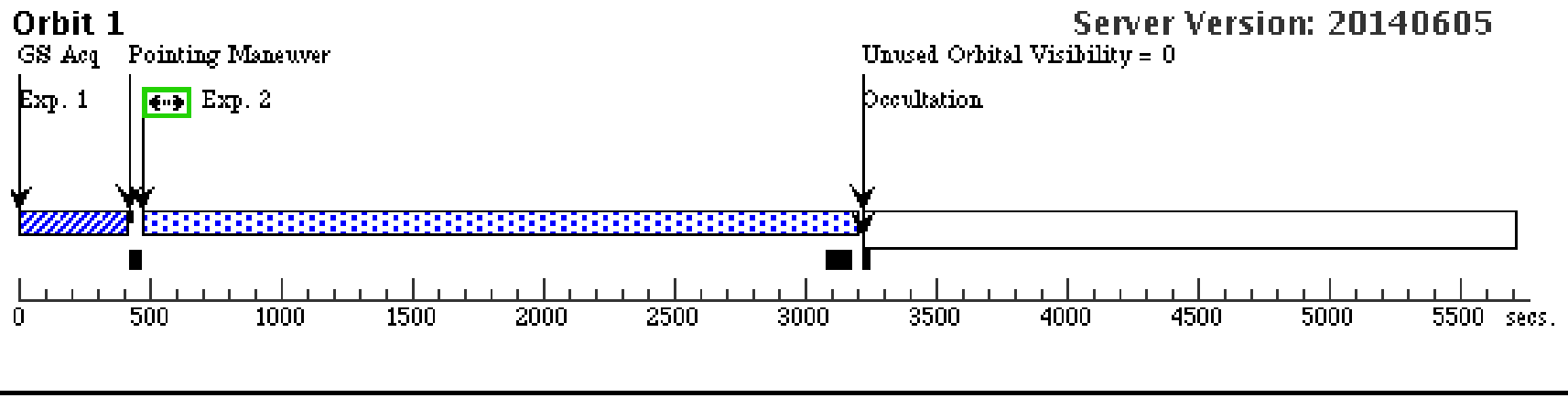
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	VV2006-J222836.3-095009	RA: 22 28 36.3287 (337.1513696d) Dec: -09 50 8.96 (-9.83582d) Equinox: J2000		V=17.3+/-0.1 FUV=18.6	Reference Frame: ICRS

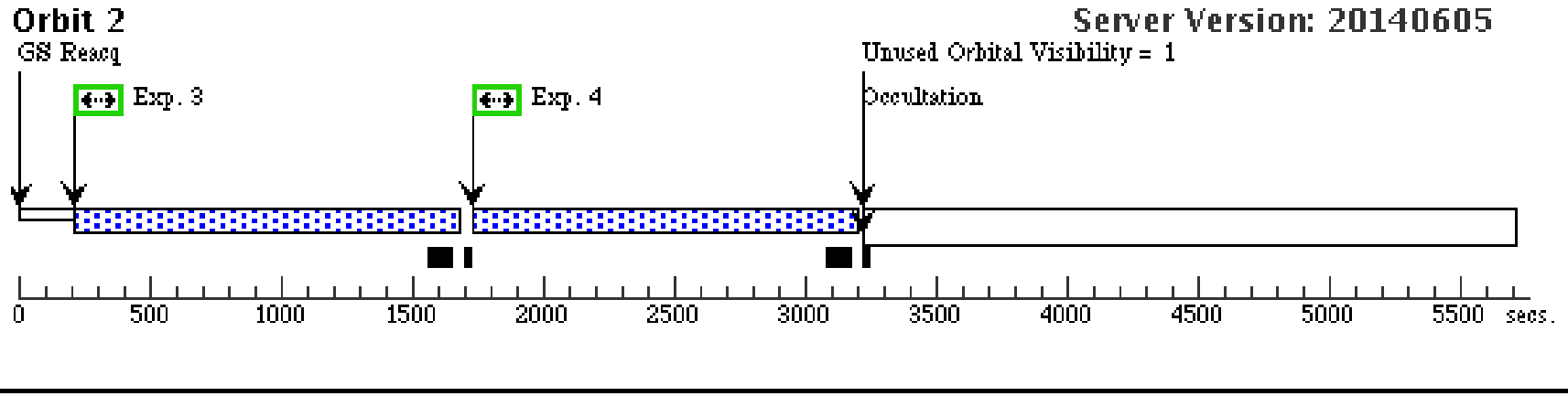
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

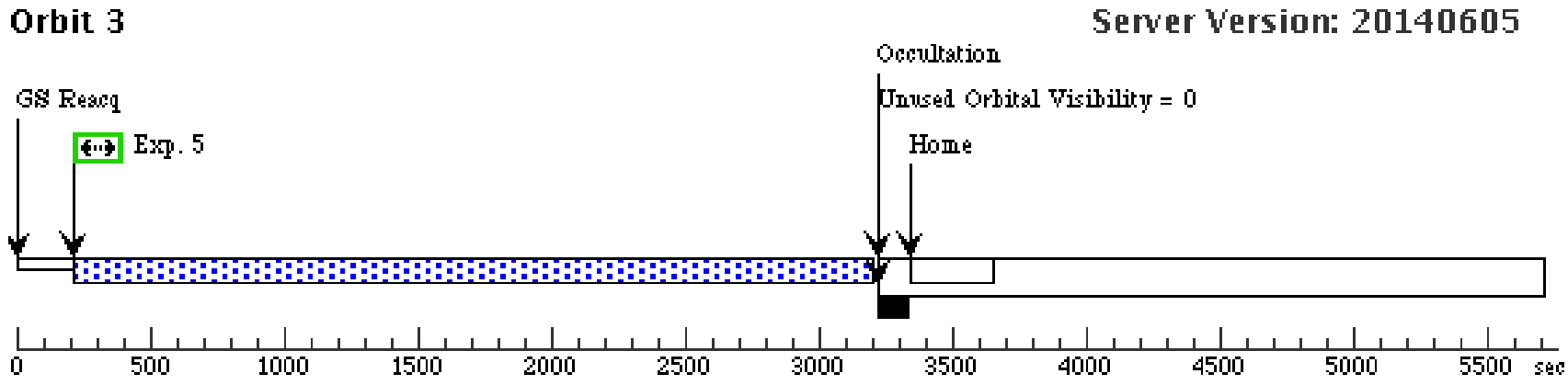
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Target Acq (COS.ta.625115)	(8) VV2006-J222836.3-095009	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				5 Secs (5 Secs) *[==>]*	 ***[1]***
2	(COS.sp.625127)	(8) VV2006-J222836.3-095009	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=2455; FLASH=YES; FP-POS=1			2565 Secs (2565 Secs) *[==>]*	 ***[1]***
3	(COS.sp.625132)	(8) VV2006-J222836.3-095009	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=1305; FLASH=YES; FP-POS=2			1415. Secs (1415 Secs) *[==>]*	 ***[2]***
4	(COS.sp.625132)	(8) VV2006-J222836.3-095009	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=1305; FLASH=YES; FP-POS=3			1415 Secs (1415 Secs) *[==>]*	 ***[2]***
5	(COS.sp.625134)	(8) VV2006-J222836.3-095009	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=2853; FLASH=YES; FP-POS=4			2936 Secs (2936 Secs) *[==>]*	 ***[3]***

Orbit Structure







Visit

Proposal 13852, VV2006-J222836.3-095009 (09), implementation Fri Jul 25 02:02:30 GMT 2014

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Comments: Second visit =4 orbit visit out of a total of 6 orbits
grating = G160M
cenwave=1611

Fixed Targets

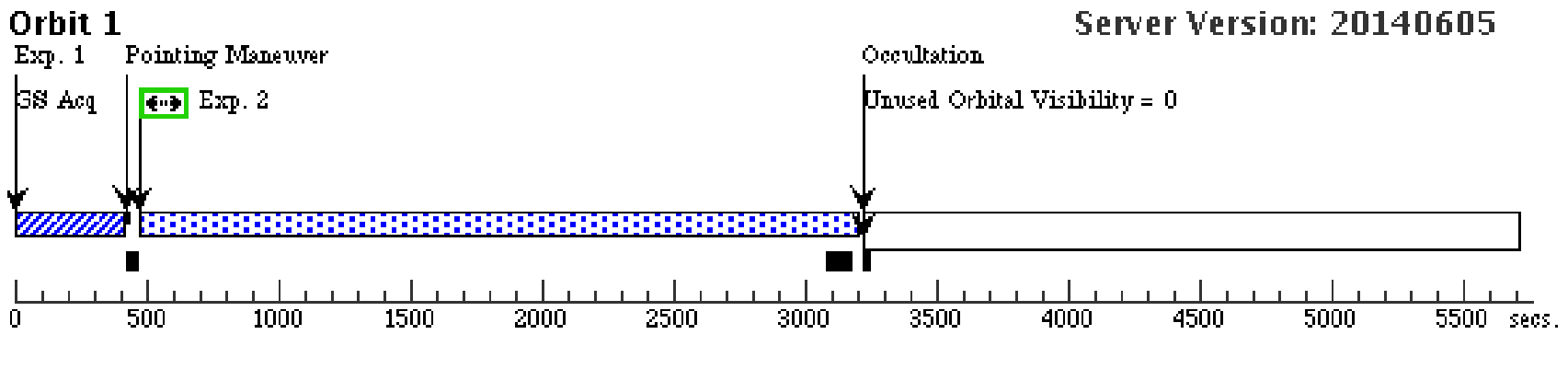
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	VV2006-J222836.3-095009	RA: 22 28 36.3287 (337.1513696d) Dec: -09 50 8.96 (-9.83582d) Equinox: J2000		V=17.3+/-0.1 FUV=18.6	Reference Frame: ICRS

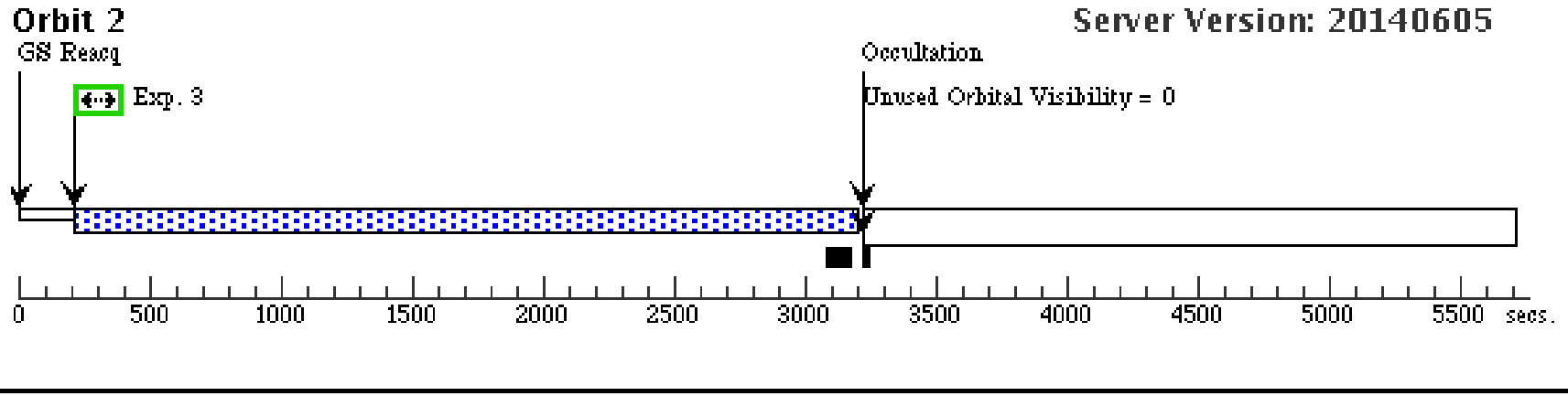
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

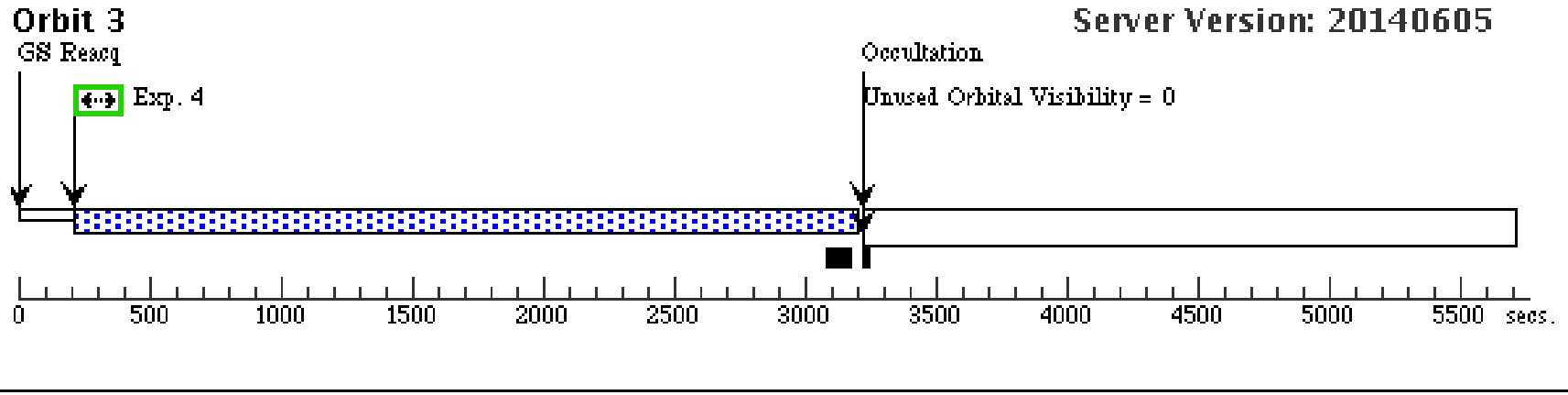
Exposures

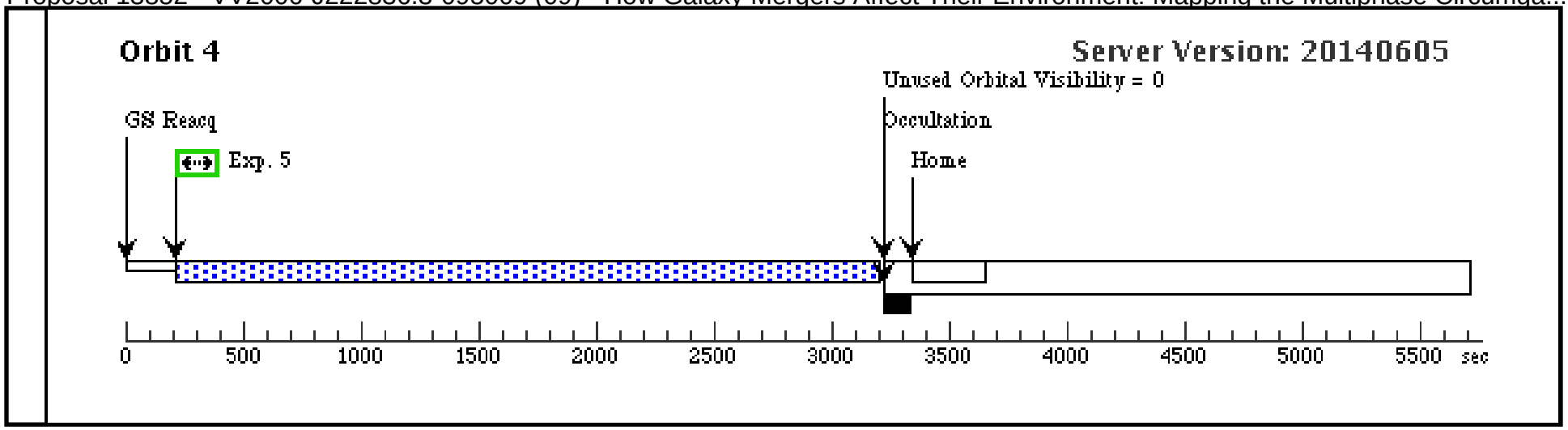
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Target Acq (COS.ta.625115)	(8) VV2006-J222836.3-095009	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				5 Secs (5 Secs) *[==>]*	 ***[1]***
2	(COS.sp.625141)	(8) VV2006-J222836.3-095009	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=2405; FLASH=YES; FP-POS=1			2515 Secs (2515 Secs) *[==>]*	 ***[1]***
3	(COS.sp.623334)	(8) VV2006-J222836.3-095009	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=2826; FLASH=YES; FP-POS=2			2936 Secs (2936 Secs) *[==>]*	 ***[2]***
4	(COS.sp.623334)	(8) VV2006-J222836.3-095009	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=2826; FLASH=YES; FP-POS=3			2936 Secs (2936 Secs) *[==>]*	 ***[3]***
5	(COS.sp.623334)	(8) VV2006-J222836.3-095009	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=2853; FLASH=YES; FP-POS=4			2936 Secs (2936 Secs) *[==>]*	 ***[4]***

Orbit Structure








Orbit 4
Server Version: 20140605
Unused Orbital Visibility = 0
GS Reacq
Occultation
Exp. 5
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13852, VV2006-J101541.1+594445 (10), implementation Fri Jul 25 02:02:31 GMT 2014

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Comments: First visit =3 orbit visit out of a total of 7 orbits
grating = G130M
cenwave=1291

Fixed Targets

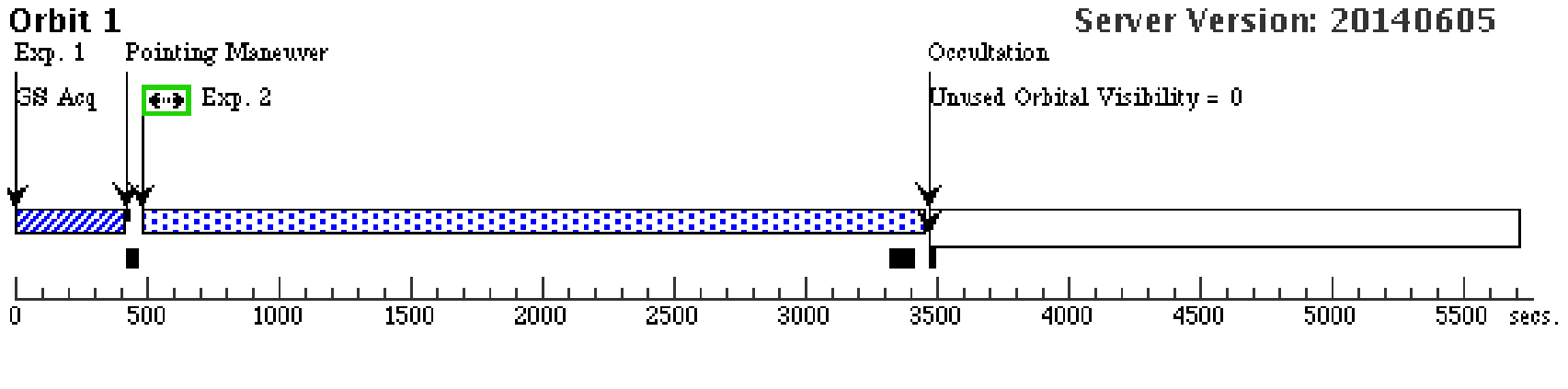
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	VV2006-J101541.1+594445	RA: 10 15 41.1483 (153.9214513d) Dec: +59 44 45.39 (59.74594d) Equinox: J2000		V=18.51+/-0.1 FUV=18.6	Reference Frame: ICRS

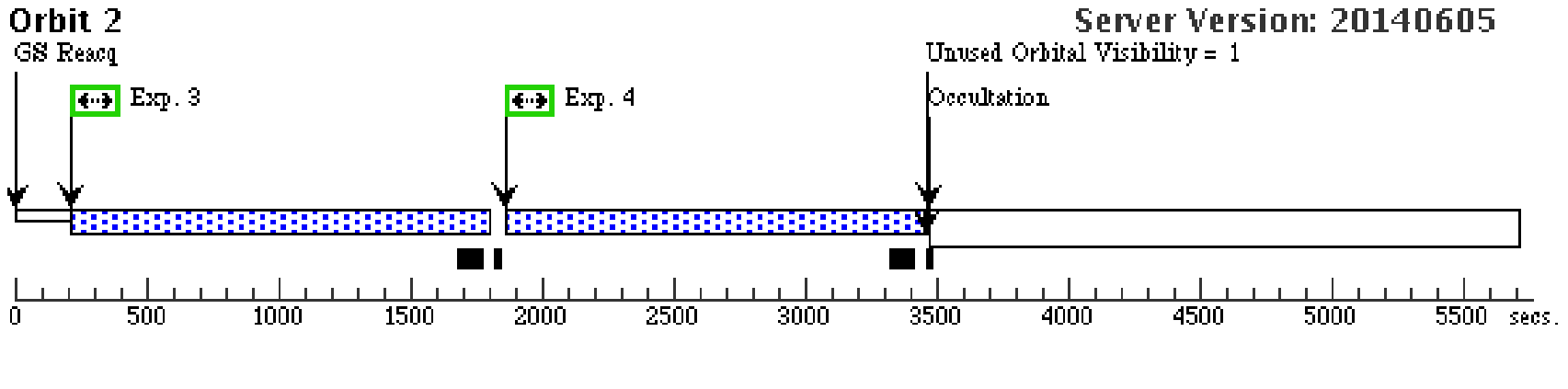
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

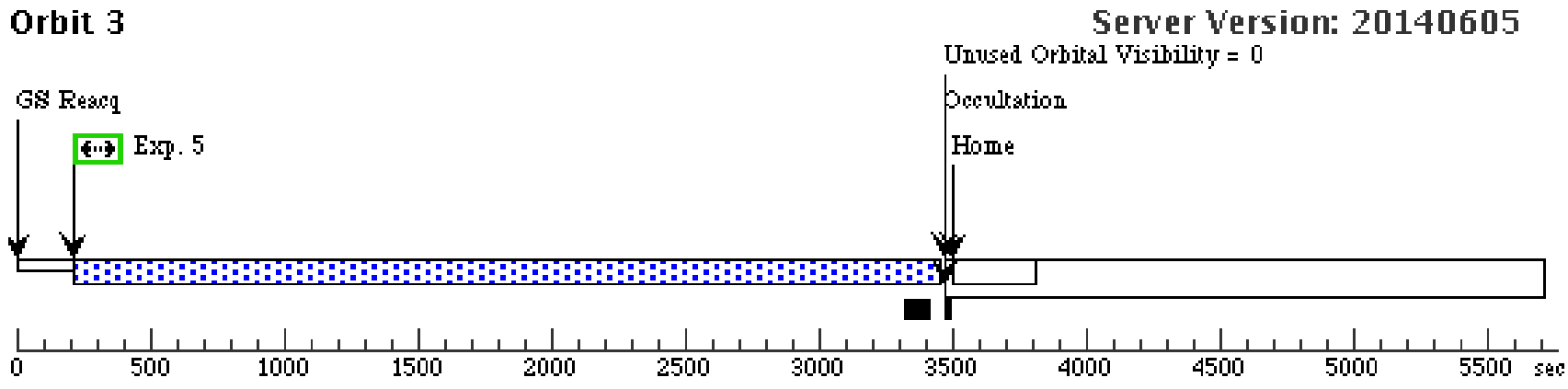
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Target Acq (COS.ta.623560)	(3) VV2006-J101541.1+594445	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				8 Secs (8 Secs) *[==>]*	***[1]***
2	(COS.sp.623561)	(3) VV2006-J101541.1+594445	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=2697; FLASH=YES; FP-POS=1			2807 Secs (2807 Secs) *[==>]*	***[1]***
3	(COS.sp.623368)	(3) VV2006-J101541.1+594445	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=1429; FLASH=YES; FP-POS=2			1539 Secs (1539 Secs) *[==>]*	***[2]***
4	(COS.sp.623368)	(3) VV2006-J101541.1+594445	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=1429; FLASH=YES; FP-POS=3			1539 Secs (1539 Secs) *[==>]*	***[2]***
5	(COS.sp.623369)	(3) VV2006-J101541.1+594445	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=3074; FLASH=YES; FP-POS=4			3184 Secs (3184 Secs) *[==>]*	***[3]***

Orbit Structure







Visit

Proposal 13852, VV2006-J101541.1+594445 (11), implementation Fri Jul 25 02:02:31 GMT 2014

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: (none)

Comments: Second visit =4 orbit visit out of a total of 7 orbits
grating = G160M
cenwave=1611

Fixed Targets

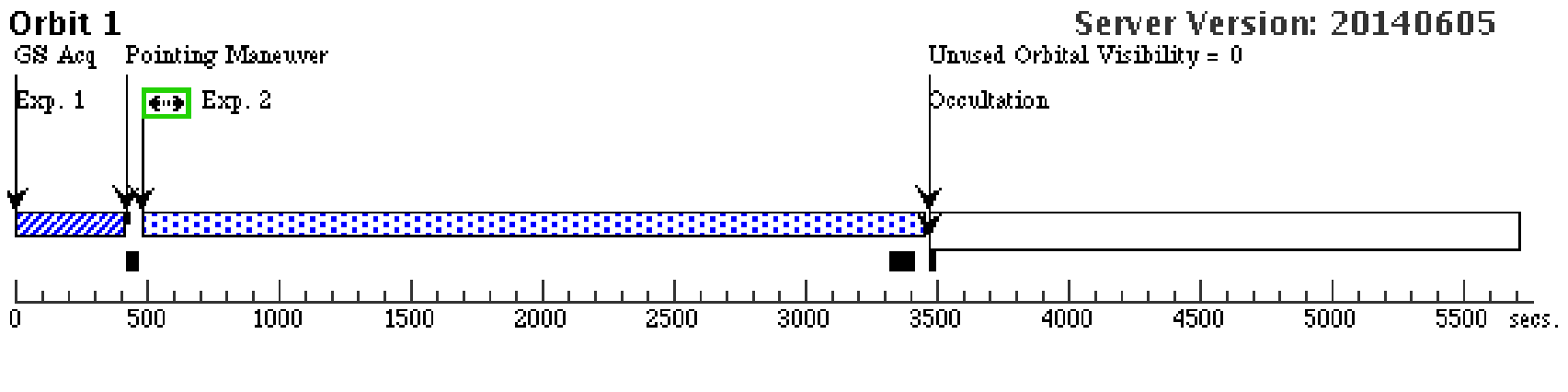
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	VV2006-J101541.1+594445	RA: 10 15 41.1483 (153.9214513d) Dec: +59 44 45.39 (59.74594d) Equinox: J2000		V=18.51+/-0.1 FUV=18.6	Reference Frame: ICRS

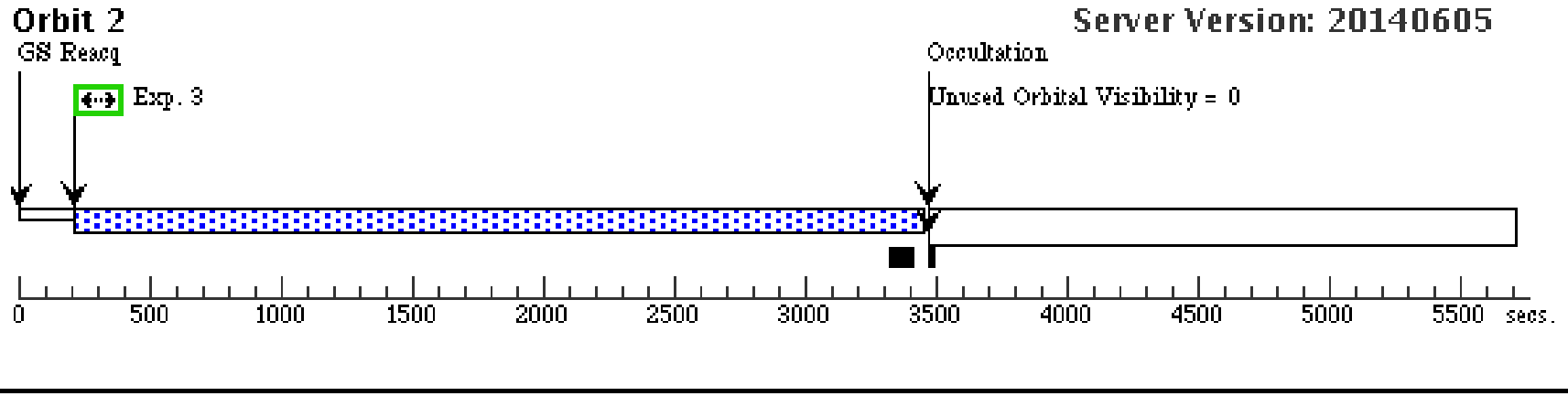
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

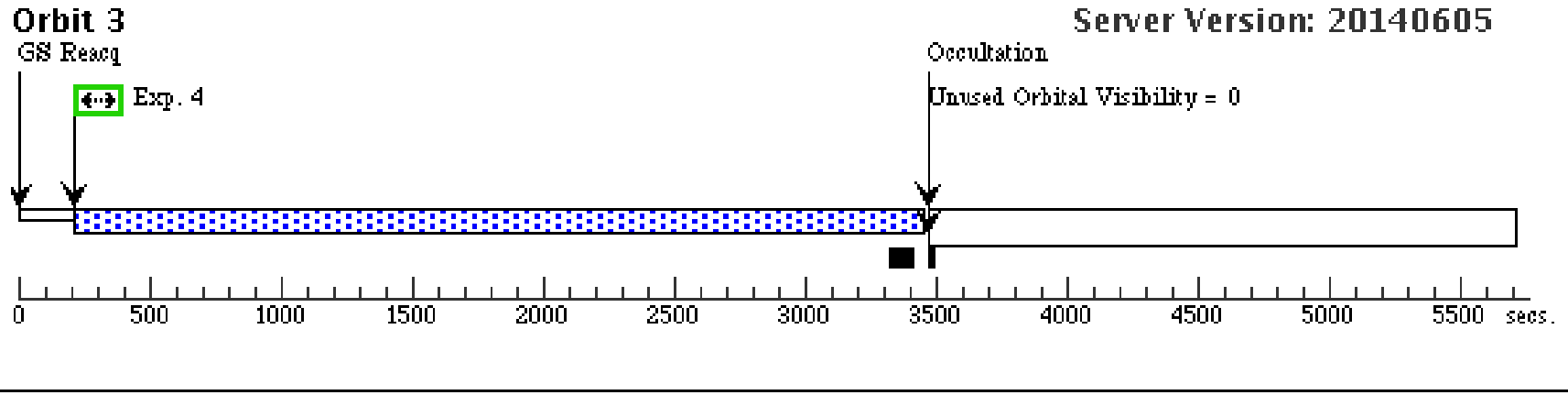
Exposures

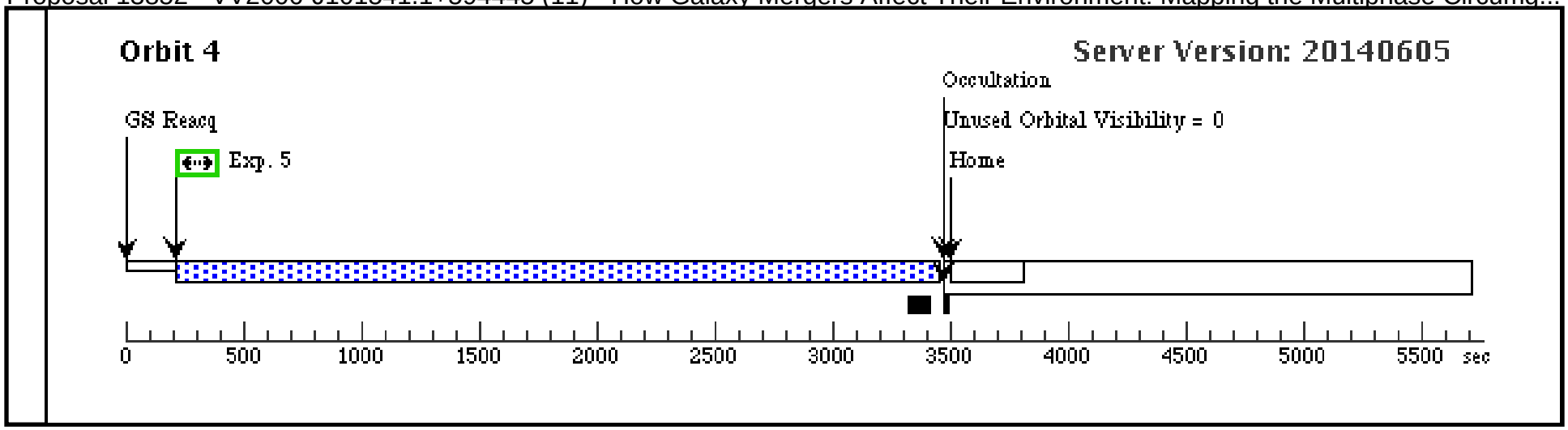
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Target Acq (COS.ta.623560)	(3) VV2006-J101541.1+594445	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				8 Secs (8 Secs) *[==>]*	***[1]***
2	(COS.sp.623562)	(3) VV2006-J101541.1+594445	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=2647; FLASH=YES; FP-POS=1			2757 Secs (2757 Secs) *[==>]*	***[1]***
3	(COS.sp.623383)	(3) VV2006-J101541.1+594445	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=3074; FLASH=YES; FP-POS=2			3184 Secs (3184 Secs) *[==>]*	***[2]***
4	(COS.sp.623383)	(3) VV2006-J101541.1+594445	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=3074; FLASH=YES; FP-POS=3			3184 Secs (3184 Secs) *[==>]*	***[3]***
5	(COS.sp.623383)	(3) VV2006-J101541.1+594445	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=3074; FLASH=YES; FP-POS=4			3184 Secs (3184 Secs) *[==>]*	***[4]***

Orbit Structure








Orbit 4
Server Version: 20140605
Occultation
GS Reacq
Unused Orbital Visibility = 0
Exp. 5
Home
0
500
1000
1500
2000
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3000
3500
4000
4500
5000
5500
sec