13017 - UV Spectroscopy of Lyman Break Galaxy Analogs: A Local Window on the Early Universe

Cycle: 20, Proposal Category: GO

(Availability Mode: SUPPORTED)

INVESTIGATORS

Name	*Institution*	*E-Mail*
Dr. Timothy M. Heckman (PI) (Contact)	**The Johns Hopkins University**	**heckman@pha.jhu.edu**
Dr. Roderik Overzier (CoI)	University of Texas at Austin	overzier@astro.as.utexas.edu
Dr. Sanchayeeta Borthakur (CoI)	The Johns Hopkins University	sanch@pha.jhu.edu
Dr. Claus Leitherer (CoI)	Space Telescope Science Institute	leitherer@stsci.edu

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(14) HARO11	COS/FUV COS/NUV	2	11-Sep-2012 03:42:41.0	yes
02	(2) J002101.02+005248	COS/FUV COS/NUV	2	11-Sep-2012 03:42:57.0	yes
03	(1) J082354.95+280621.6	COS/FUV COS/NUV	2	11-Sep-2012 03:43:11.0	yes
04	(3) J152521.84+075720.3	COS/FUV COS/NUV	2	11-Sep-2012 03:43:25.0	yes
05	(11) J102548.47+362258.4	COS/FUV COS/NUV	3	11-Sep-2012 03:43:38.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
06	(7) J114422.31+401221.2	COS/FUV COS/NUV	3	11-Sep-2012 03:43:55.0	yes
07	(8) J141454.23+054047.6	COS/FUV COS/NUV	3	11-Sep-2012 03:44:09.0	yes
08	(10) J111244.15+550347.1	COS/FUV COS/NUV	3	11-Sep-2012 03:44:23.0	yes
09	(12) J142947.03+064334.9	COS/FUV COS/NUV	3	11-Sep-2012 03:44:36.0	yes
10	(5) J141612.96+122340.5	COS/FUV COS/NUV	3	11-Sep-2012 03:44:50.0	yes
11	(6) J142856.4+165339.4	COS/FUV COS/NUV	3	11-Sep-2012 03:45:04.0	yes
12	(4) J152141.52+075921.7	COS/FUV COS/NUV	3	11-Sep-2012 03:45:17.0	yes
13	(9) J161245.59+081701	COS/FUV COS/NUV	3	11-Sep-2012 03:45:33.0	yes
14	(13) J111323.99+293039.2	COS/FUV COS/NUV	4	11-Sep-2012 03:45:47.0	yes

39 Total Orbits Used

ABSTRACT

UV-selected galaxies at high redshift (LBGs at z~3-10) are the most direct tracers of the early evolution of galaxies and the IGM, but it is difficult to investigate these faint and distant objects in detail. To address this, we have been performing a major program using GALEX and the SDSS to find and study the only type of nearby galaxy that shares many properties with LBGs. These local "Lyman Break Analogs" (LBAs) resemble LBGs in terms of morphology, size, UV luminosity, SFR, mass, velocity dispersion, metallicity, and dust content, allowing us to use them as local laboratories for better understanding of the relevant processes at high-z. Our data includes UV/optical imaging with HST (95 orbits in Cy15-16), X-ray (Chandra, XMM), optical/NIR spectroscopy (VLT, Keck), infrared (Spitzer, Herschel) and radio (VLA, VLBI).

Our Cycle 17 exploratory program with COS revealed numerous new details based on a small sample of LBAs with direct implications for high-z. Most intriguingly, we found strong connections between extreme SN-driven winds (v~1000 km/s), a non-uniform covering by neutral hydrogen, complex Lya profiles, and interstellar absorption lines highly suggestive of a non-zero Lyman continuum escape fraction. Following the tenfold increase in the area surveyed in the UV by GALEX, we have compiled the largest statistical sample of LBAs to date, including many new targets bright enough for COS. We wish to extend our sample size by a factor of 3 to robustly characterize these extraordinary starbursts in the UV. In so-doing it will also shed new light on the complex astrophysics of starbursts, galaxy formation, and enrichment and heating of the IGM in the early universe.

OBSERVING DESCRIPTION

- Each target will be observed with COS/FUV/PSA in grisms G130M and G160M using TIME-TAG mode. Exposures are taken at all FP-POS. We set FLASH=yes for better wavelength calibration.

- For BUFFER-TIME, we assumed a point source flat (in Fnu) with a total FUV magnitude within the COS aperture esimated based on the GALEX flux and the u-band sizes. The buffer time is the shorter value of 2/3 times the buffer time returned by the ETC and the exposure time (was always the exposure time). We further set BUFFER-TIME=EXPOSURE TIME - 100, as recommended by the COS instrument handbook.

- SCHEDULABILITY was set to 100% for all targets.

- The acquisition is done using the NUV imaging mode, either with Mirror A or Mirror B depending on the target surface brightness determined in a 9x9 pixel box. Based on the BOT with the GALEX catalog, visits 01,02,03,04,07 need mirror B.

Target Haro 11: the acquisition is done by a 2x2 spiral pattern ACQ/SEARCH and centering on the brightest pixel, followed by an ACQ/IMAGE. Taking the FUV flux within the COS aperture of 2e-14 erg/s/cm2/A, unresolved size, flat in f_lam, the S/N in mirror B of the PSA reaches ~40 in 30 seconds.

Other targets: the acquisition is done solely by an ACQ/IMAGE, as they have are very compact sources and have SDSS positions to about <0.4" accuracy. To calculate the acquisition times with MIRROR A, we used the COS ACQ ETC to estimate the time necessary to reach S/N~40 inside a 9x9 pixel box centered on the brightest part of the target. We do not know the intrinsic morphology good enough, so we make an optimistic and

pessimistic guess: the optimistic guess is that half the FUV flux falls within the 9x9 pixels (this was true for some of our previous supercompact objects). The pessimistic guess is that the source is completely diffuse within the area given by the U-band half-light radius. Then, we chose the NUV acq-image exposure times such that in the pessimistic case we always have a S/N>30-35. In most cases, this will lead to am actually much higher S/N.

The MIRROR B acquisition times were calculated in a slightly different way: Because the Mirror B is so much less efficient, we risk wasting a lot of exposure time on acquisitions if our estimate for the 9x9 box surface brightness is way off. We assume that the central surface brightness for these targets is similar to that of our targets observed in Cycle 18, which had SB(9x9pixel) of ~16.5 mag. The ETC gives a mirror B acquisition time of ~400 seconds for a S/N=40. We will adopt these exposure times.

The table in the 'additional comments' field below gives the FUV magnitudes and surface brightness used to estimate acquisition and buffer times.

See numbers in the 'Additional comments' box below.

ADDITIONAL COMMENTS

M(2.5") = FUV magnitude inside COS aperture

SB(ex) and SB(co) are the estimated surface brightness for the 9x9 pixel check box assuming that the source is completely extended (ex) and assuming it is compact (co). The last columns give the acquisition time and expected SNR in the completely extended source scenario. In most cases, the source will be more compact than that, and thus the SNR is expected to be higher in practice.

ID	z	M(2.5")	SB(ex)	SB(co)	SB(used)	MIRROR	ACQTIME	SNR	ETC
Haro11	0.021	16.0	-	-	14.1	B	30	>35	COS.ta.411443
J082354.95+280621.6	0.047	17.8	18.2	15.3	16.5	B	400	40	COS.ta.416436
J002101.02+005248	0.098	17.9	18.3	15.4	16.5	B	400	40	COS.ta.416436
J152521.84+075720.3	0.076	18.3	18.5	15.9	16.5	B	400	40	COS.ta.416436
J152141.52+075921.7	0.094	18.5	17.8	16.0	17.8	A	100	>40	COS.ta.411447
J141612.96+122340.5	0.123	18.7	18.3	16.2	18.3	A	100	>30	COS.ta.411445
J142856.4+165339.4	0.182	18.9	19.3	16.4	19.3	A	200	>30	COS.ta.411449

J114422.31+401221.2	0.127	18.9	18.9	16.4	18.9	A	200	>32 COS.ta.411450
J141454.23+054047.6	0.082	18.9	17.7	16.5	16.5	B	400	40 COS.ta.416436
J161245.59+081701	0.149	19.0	17.6	16.5	17.6	A	100	>40 COS.ta.411451
J111244.15+550347.1	0.1316	19.0	18.7	16.5	18.7	A	150	>30 COS.ta.411453
J102548.47+362258.4	0.127	19.0	19.3	16.6	19.3	A	200	>30 COS.ta.411449
J142947.03+064334.9	0.174	19.0	17.3	16.6	17.3	A	100	>50 COS.ta.411455
J111323.99+293039.2	0.175	19.5	19.6	17.0	19.6	A	300	>30 COS.ta.411457

Visit

Proposal 13017, Visit 01, implementation Tue Sep 11 07:45:57 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(Visit 01) Warning (Orbit Planner): VISIBILITY OVERRUN

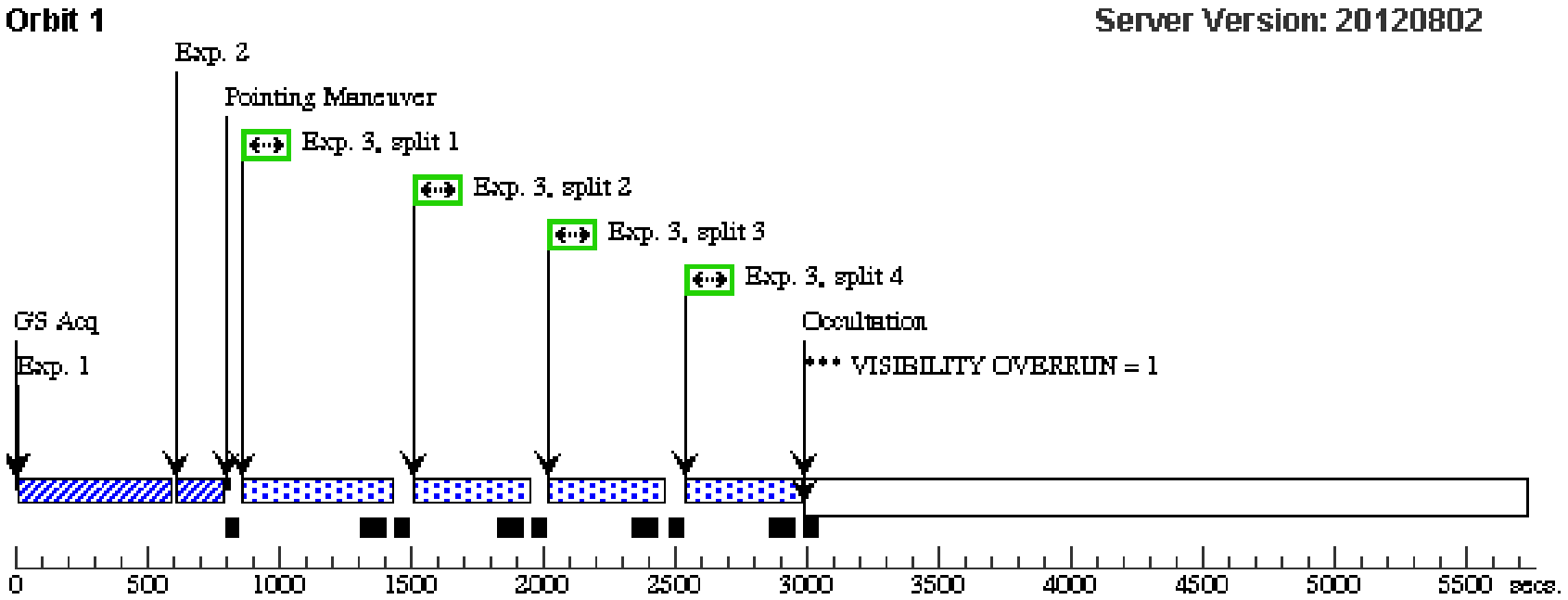
Fixed Targets

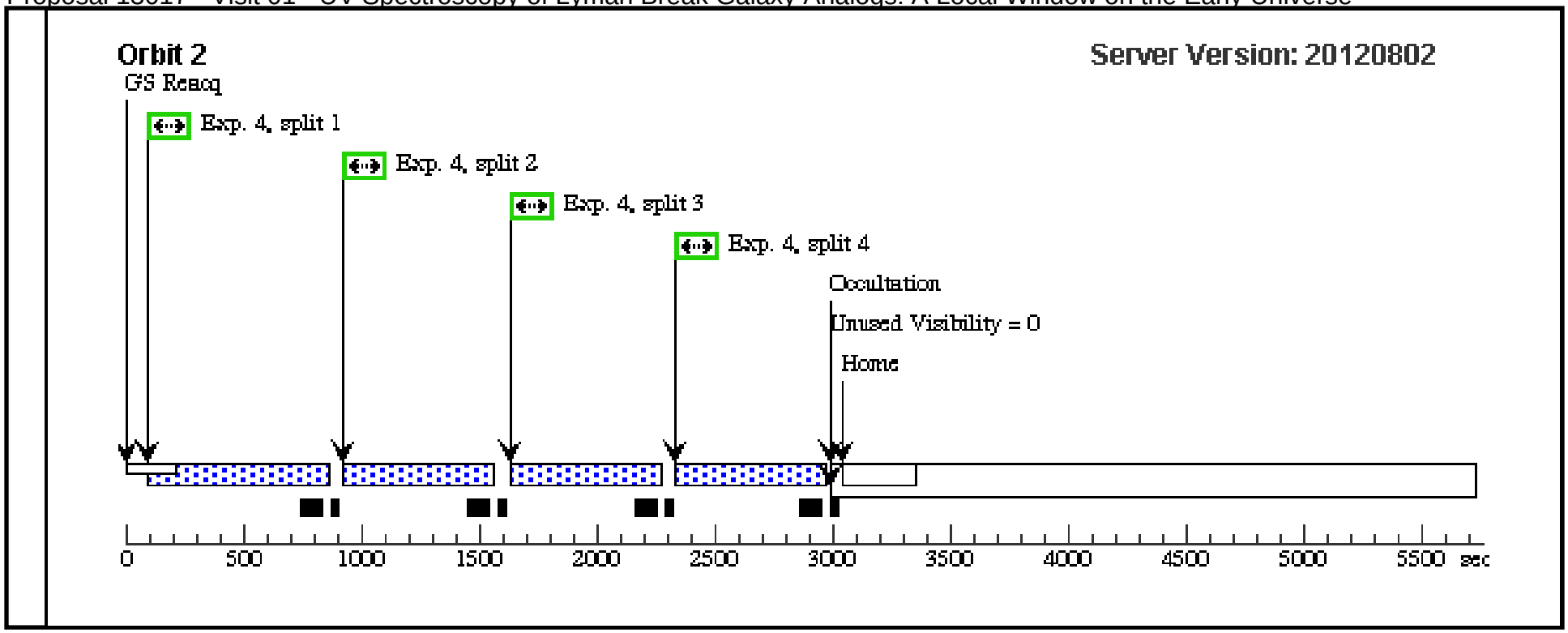
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(14)	HARO11	RA: 00 36 52.6790 (9.2194958d) Dec: -33 33 17.24 (-33.55479d) Equinox: J2000		V=13.5 COS FUV flux 1.9e-14 erg/s/cm 2/A, z = 0.021	Reference Frame: ICRS

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	Haro11_acq_search (COS.ta.411443)	(14) HARO11	COS/NUV, ACQ/SEARCH, PSA	MIRRORB	CENTER=BRIGHTEST; SCAN-SIZE=2			30 Secs *[==>]*	*[1]*
2	Haro11_acq_image (COS.ta.411443)	(14) HARO11	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				30 Secs *[==>]*	*[1]*
3	Haro11_G130M_orbit1a (COS.sp.416581)	(14) HARO11	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=284; FLASH=YES; FP-POS=ALL			384 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
4	Haro11_G160M_orbit2a (COS.sp.416580)	(14) HARO11	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=491; FLASH=YES; FP-POS=ALL			591 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[2]*

Orbit Structure

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Exp. 4, split 2
Exp. 4, split 3
Exp. 4, split 4
Occultation
Unused Visibility = 0
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13017, Visit 02, implementation Tue Sep 11 07:46:00 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(Visit 02) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 02) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

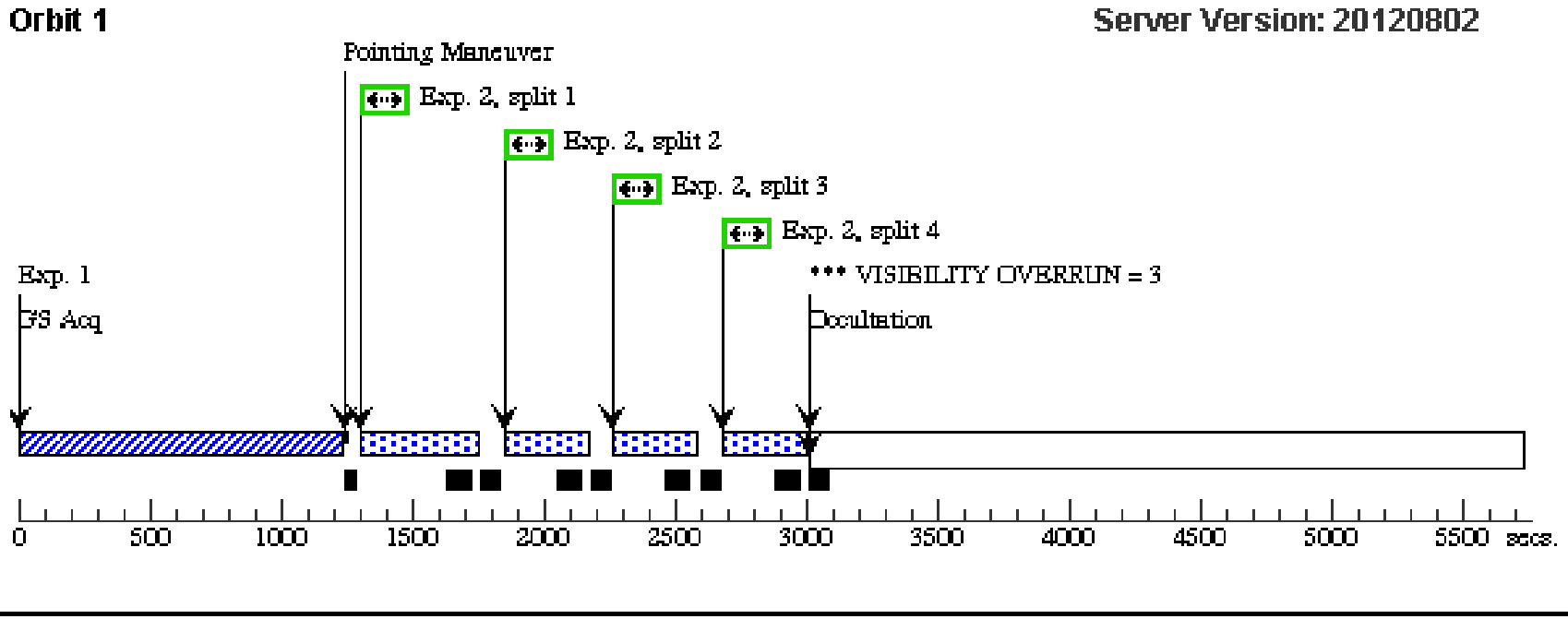
Fixed Targets

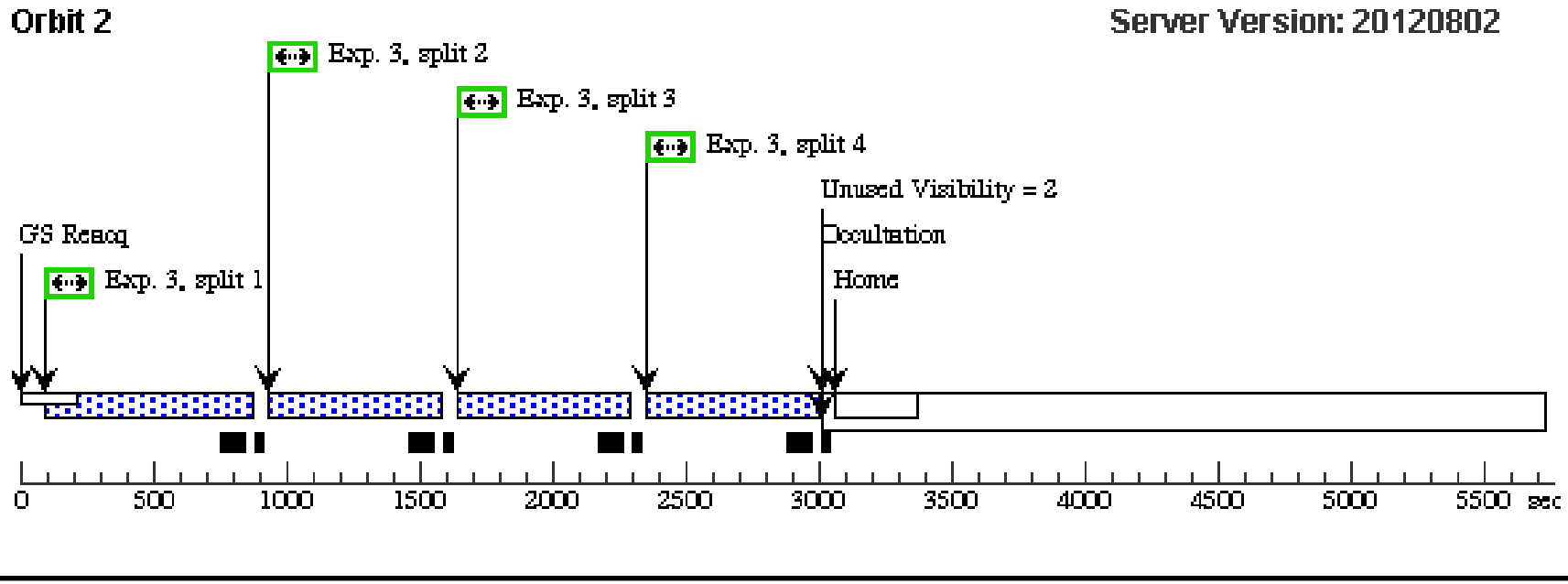
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	J002101.02+005248	RA: 00 21 1.0300 (5.2542917d) Dec: +00 52 48.12 (.88003d) Equinox: J2000		V=17.5 COS FUV flux 3.2e-15 erg/s/cm 2/A, z = 0.098	Reference Frame: ICRS

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	J002101_acq_image (COS.ta.416436)	(2) J002101.02+005248	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				400 Secs *[==>]*	*[1]*
2	J002101_G130M_orbit1 (COS.sp.416576)	(2) J002101.02+005248	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=165; FLASH=YES; FP-POS=ALL			265 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
3	J002101_G160M_orbit1 (COS.sp.416579)	(2) J002101.02+005248	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=495; FLASH=YES; FP-POS=ALL			595 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[2]*

Orbit Structure





Visit

Proposal 13017, Visit 03, implementation Tue Sep 11 07:46:02 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(Visit 03) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 03) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

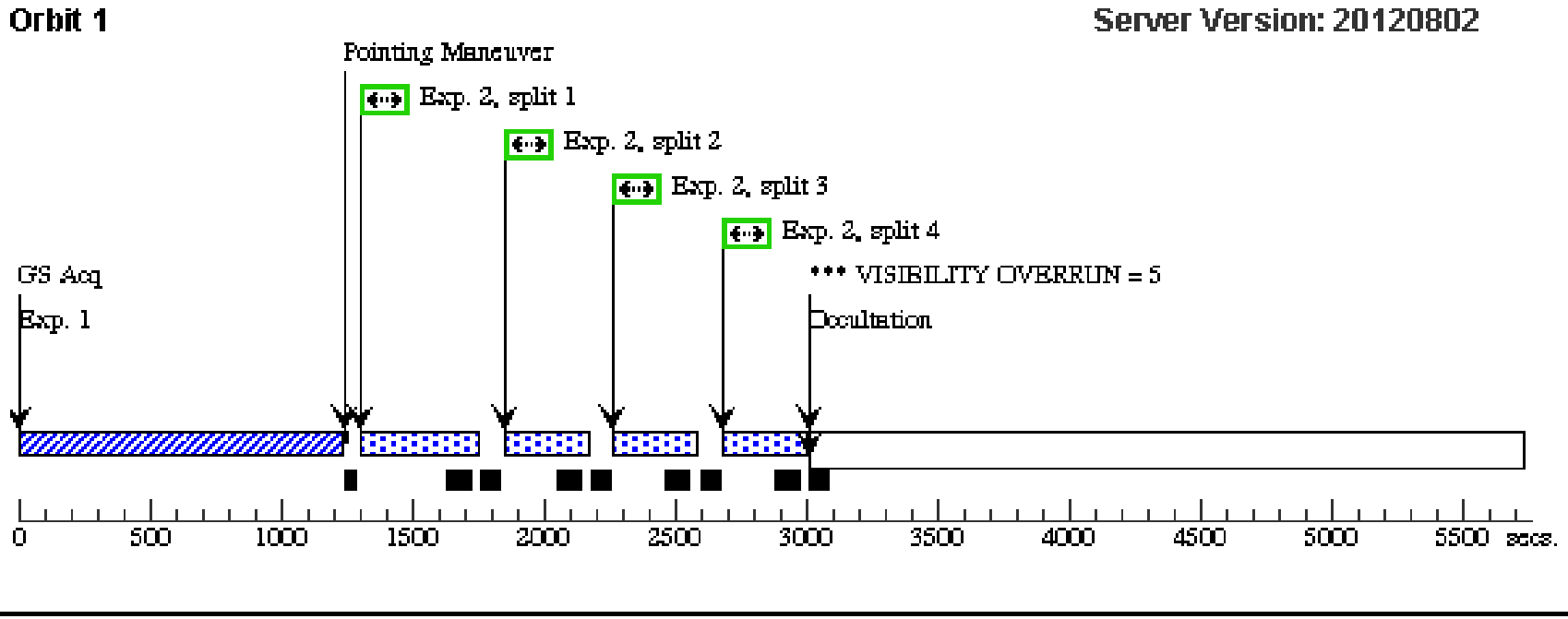
Fixed Targets

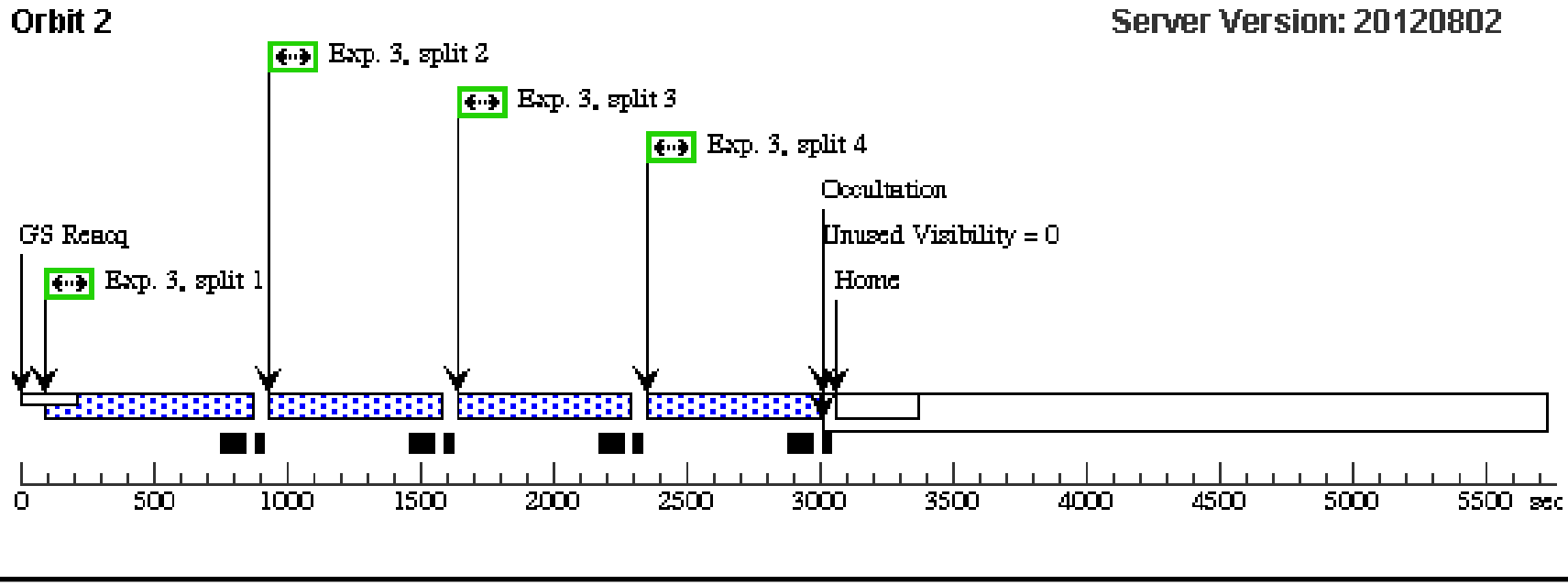
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	J082354.95+280621.6	RA: 08 23 54.9600 (125.9790000d) Dec: +28 06 21.67 (28.10602d) Equinox: J2000		V=17.3 COS FUV flux 3.6e-15 erg/s/cm 2/A, z = 0.047	Reference Frame: ICRS

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	J082354_acq_image (COS.ta.416436)	(1) J082354.95+280621.6	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				400 Secs *[==>]*	*[1]*
2	J082354_G130M_orbit1 (COS.sp.416582)	(1) J082354.95+280621.6	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=165; FLASH=YES; FP-POS=ALL			265 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
3	J082354_G160M_orbit1 (COS.sp.416584)	(1) J082354.95+280621.6	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=495; FLASH=YES; FP-POS=ALL			595 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[2]*

Orbit Structure





Visit

Proposal 13017, Visit 04, implementation Tue Sep 11 07:46:04 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(Visit 04) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

(Visit 04) Warning (Orbit Planner): VISIBILITY OVERRUN

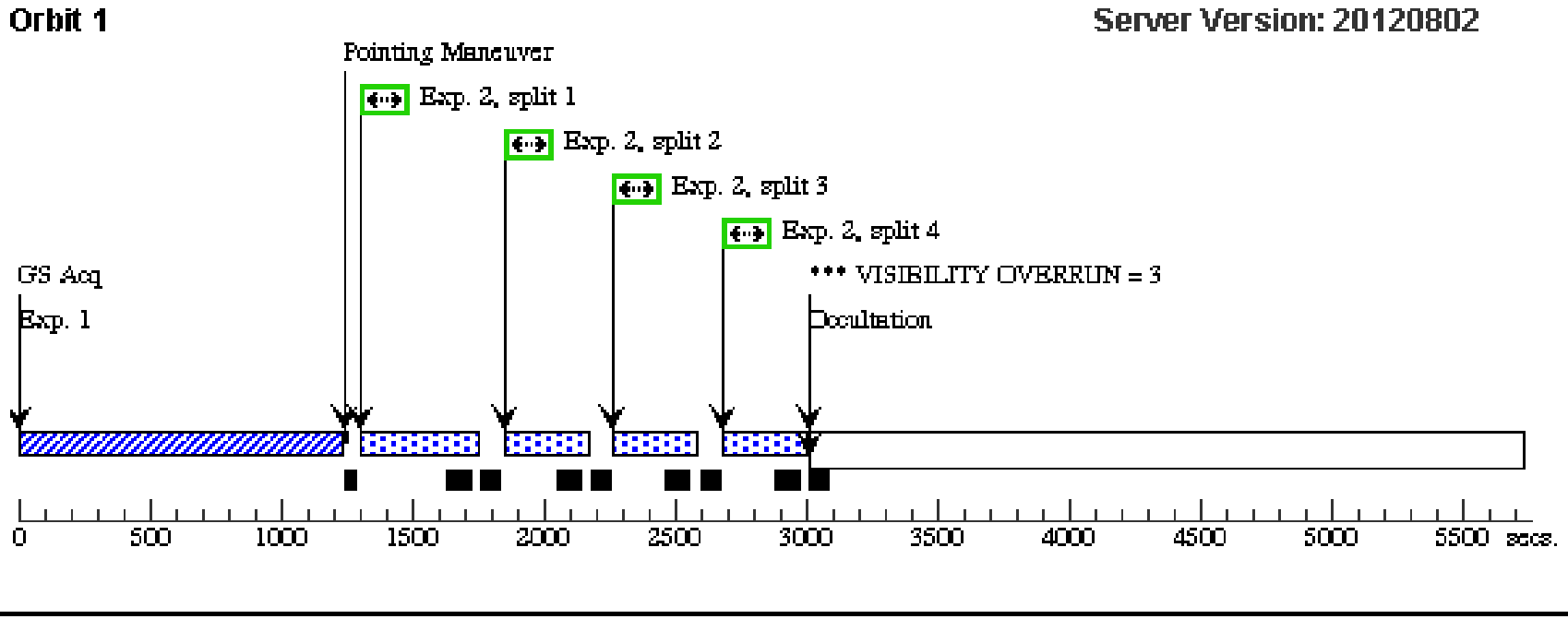
Fixed Targets

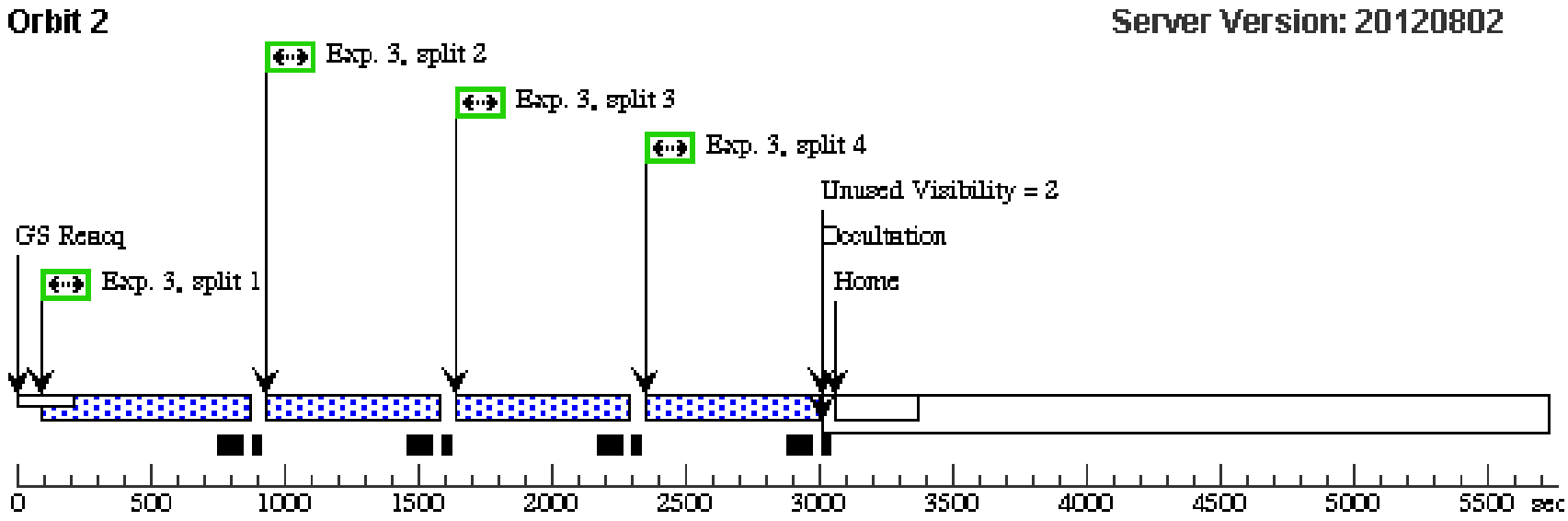
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	J152521.84+075720.3	RA: 15 25 21.8800 (231.3411667d) Dec: +07 57 20.30 (7.95564d) Equinox: J2000		V=17.3 COS FUV flux 2.1e-15 erg/s/cm 2/A, z = 0.076	Reference Frame: ICRS

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	J152521_acq_image (COS.ta.416436)	(3) J152521.84+075720.3	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				400 Secs *[==>]*	*[1]*
2	J152521_G130M_orbit1 (COS.sp.416587)	(3) J152521.84+075720.3	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=165; FLASH=YES; FP-POS=ALL			265 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
3	J152521_G160M_orbit1 (COS.sp.416586)	(3) J152521.84+075720.3	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=495; FLASH=YES; FP-POS=ALL			595 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[2]*

Orbit Structure





Visit

Proposal 13017, Visit 05, implementation Tue Sep 11 07:46:06 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(Visit 05) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 05) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

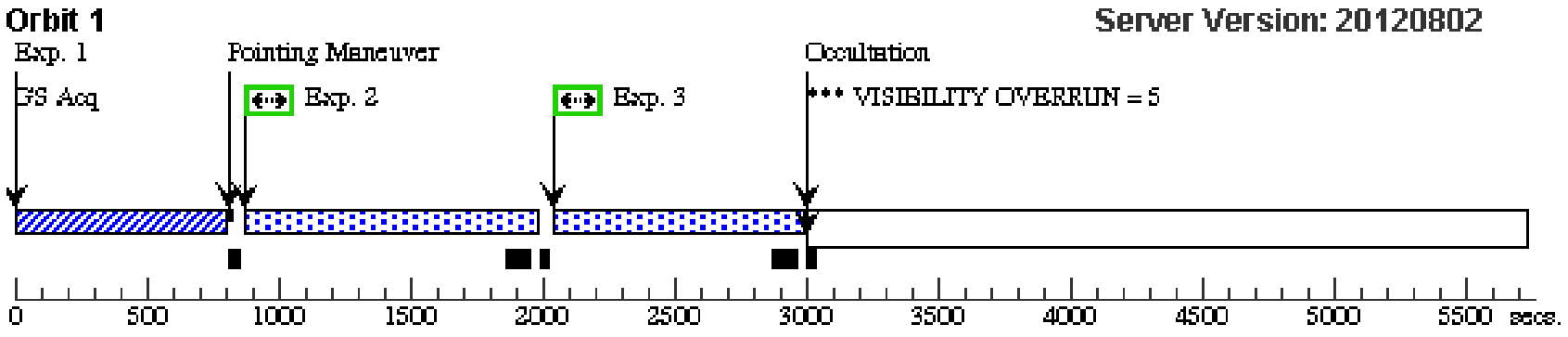
Fixed Targets

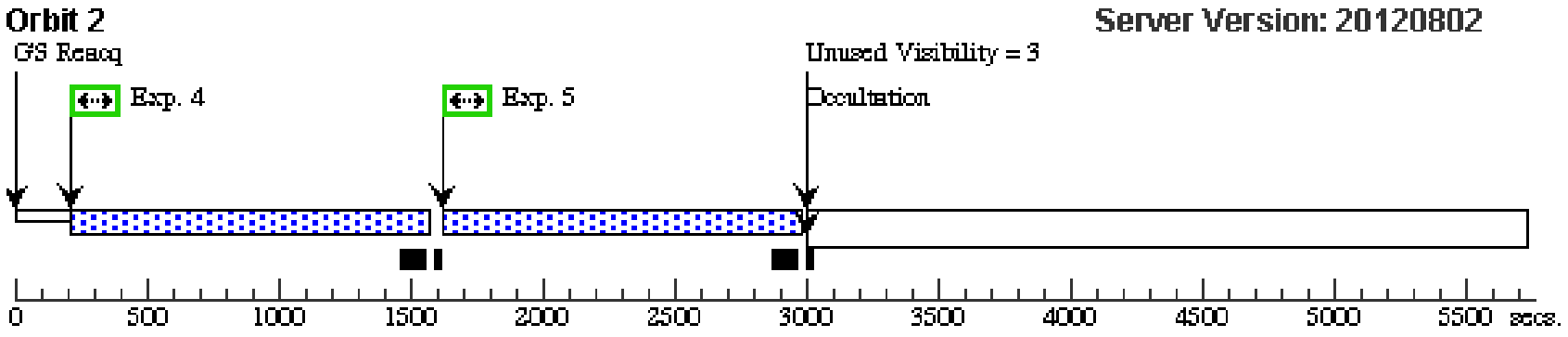
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	J102548.47+362258.4	RA: 10 25 48.3800 (156.4515833d) Dec: +36 22 58.42 (36.38289d) Equinox: J2000		V=18.1 COS FUV flux 1.1e-15 erg/s/cm 2/A, z = 0.13	Reference Frame: ICRS

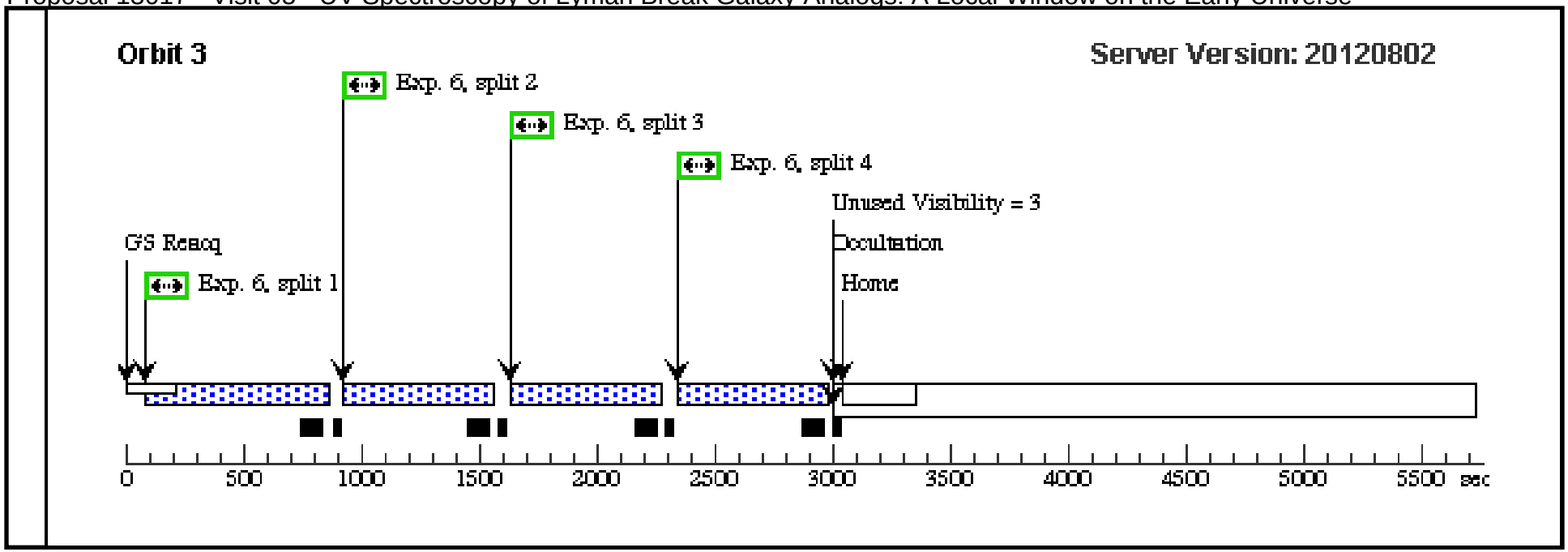
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	J102548_acq_image (COS.ta.411449)	(11) J102548.47+362258.4	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				200 Secs *[==>]*	***[1]***
2	J102548_G160M_orbit1_FP1 (COS.sp.416605)	(11) J102548.47+362258.4	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=795; FLASH=YES; FP-POS=1			895 Secs *[==>]*	***[1]***
3	J102548_G160M_orbit1_FP2 (COS.sp.416605)	(11) J102548.47+362258.4	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=795; FLASH=YES; FP-POS=2			895 Secs *[==>]*	***[1]***
4	J102548_G160M_orbit2_FP3 (COS.sp.416605)	(11) J102548.47+362258.4	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=1205; FLASH=YES; FP-POS=3			1305 Secs *[==>]*	***[2]***
5	J102548_G160M_orbit2_FP4 (COS.sp.416605)	(11) J102548.47+362258.4	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=1205; FLASH=YES; FP-POS=4			1305 Secs *[==>]*	***[2]***
6	J102548_G130M_orbit1 (COS.sp.416590)	(11) J102548.47+362258.4	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=492; FLASH=YES; FP-POS=ALL			592 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[3]***

Orbit Structure






Orbit 3
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Exp. 6, split 2
Exp. 6, split 3
Exp. 6, split 4
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GS Reacq
Occultation
Exp. 6, split 1
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13017, Visit 06, implementation Tue Sep 11 07:46:08 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(Visit 06) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 06) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

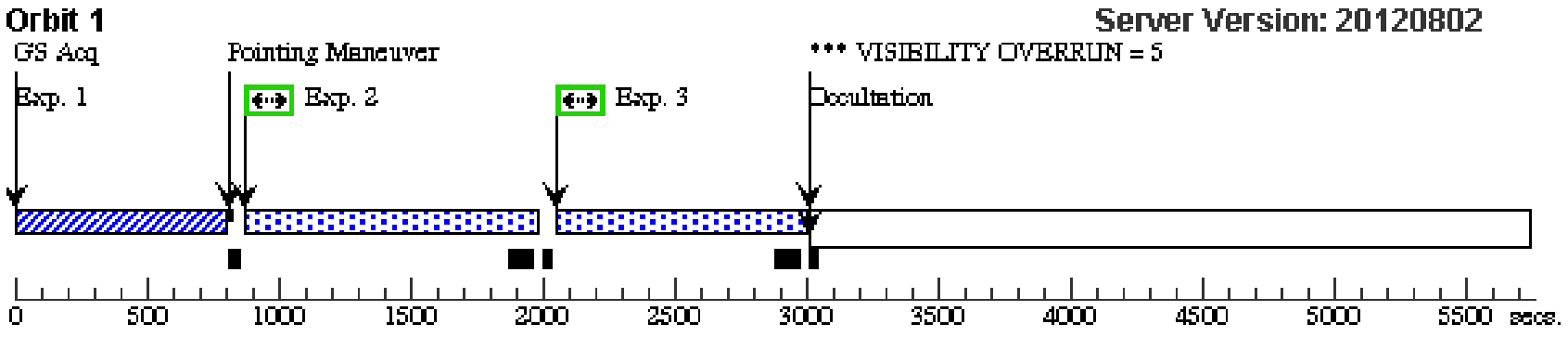
Fixed Targets

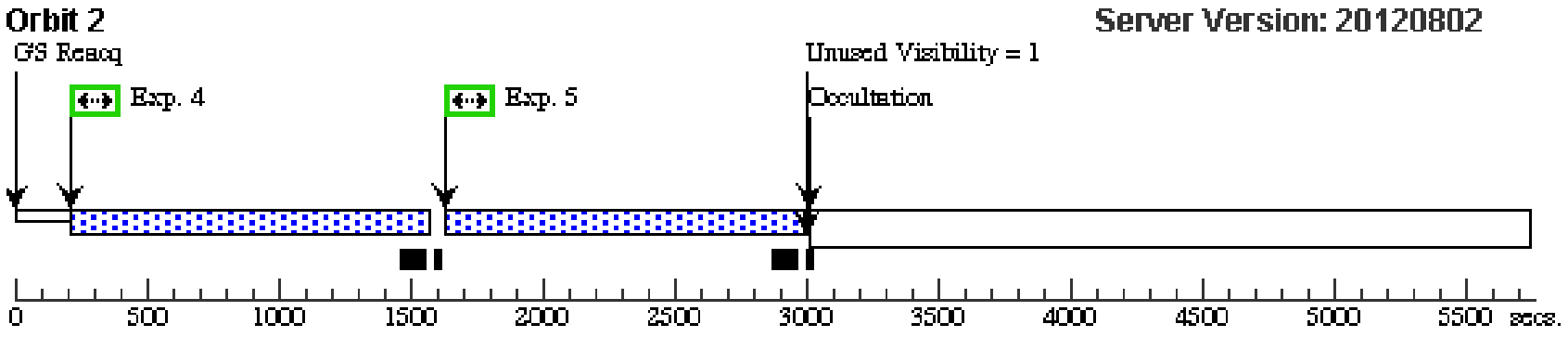
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	J114422.31+401221.2	RA: 11 44 22.2800 (176.0928333d) Dec: +40 12 21.19 (40.20589d) Equinox: J2000		V=17.5 COS FUV flux 1.3e-15 erg/s/cm 2/A, z = 0.13	Reference Frame: ICRS

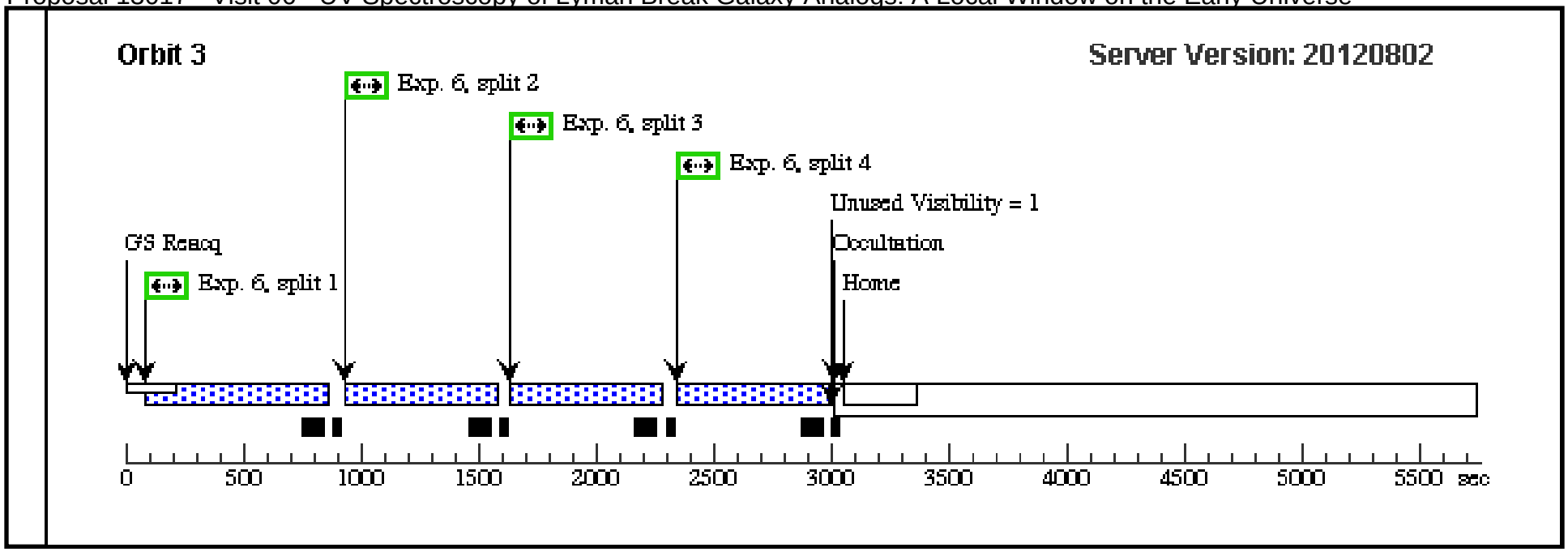
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	J114422_acq_image (COS.ta.411450)	(7) J114422.31+401221.2	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				200 Secs *[==>]*	*[1]*
2	J114422_G160M_orbit1_FP1 (COS.sp.416609)	(7) J114422.31+401221.2	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=798; FLASH=YES; FP-POS=1			898 Secs *[==>]*	*[1]*
3	J114422_G160M_orbit1_FP2 (COS.sp.416609)	(7) J114422.31+401221.2	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=798; FLASH=YES; FP-POS=2			898 Secs *[==>]*	*[1]*
4	J114422_G160M_orbit2_FP3 (COS.sp.416609)	(7) J114422.31+401221.2	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=1209; FLASH=YES; FP-POS=3			1309 Secs *[==>]*	*[2]*
5	J114422_G160M_orbit2_FP4 (COS.sp.416609)	(7) J114422.31+401221.2	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=1209; FLASH=YES; FP-POS=4			1309 Secs *[==>]*	*[2]*
6	J114422_G130M_orbit1 (COS.sp.416610)	(7) J114422.31+401221.2	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=494; FLASH=YES; FP-POS=ALL			594 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[3]*

Orbit Structure






Orbit 3
Server Version: 20120802
Exp. 6, split 2
Exp. 6, split 3
Exp. 6, split 4
Unused Visibility = 1
GS Reacq
Occultation
Exp. 6, split 1
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13017, Visit 07, implementation Tue Sep 11 07:46:11 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(Visit 07) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 07) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

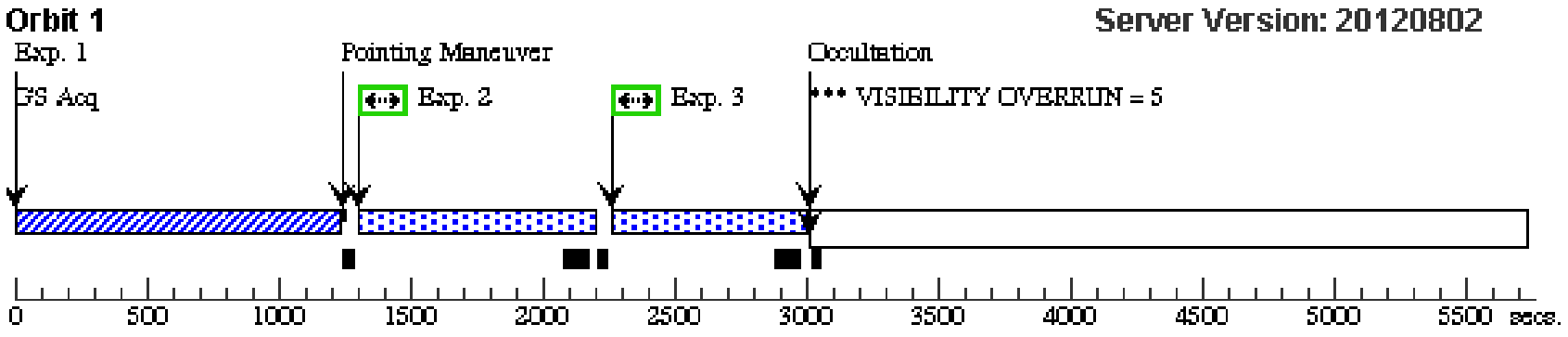
Fixed Targets

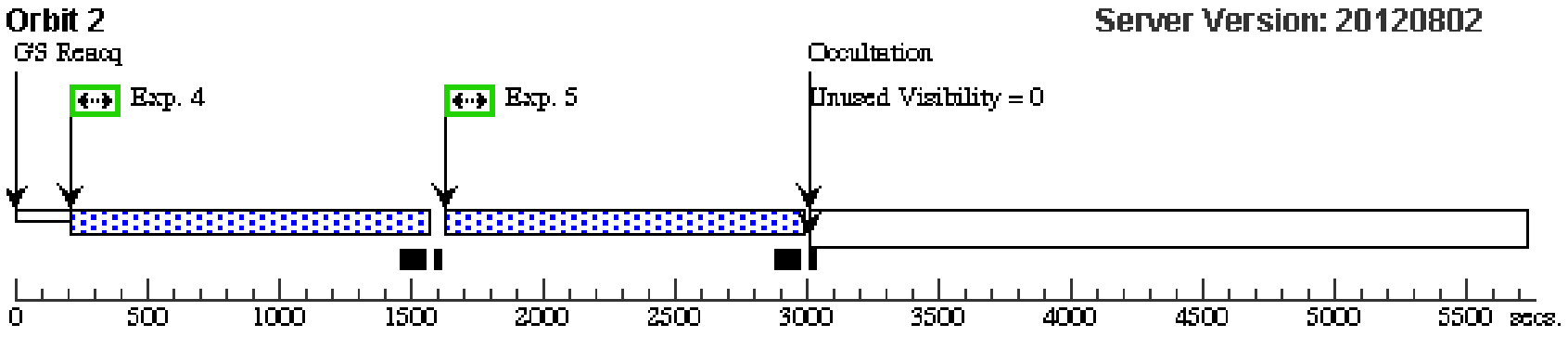
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	J141454.23+054047.6	RA: 14 14 54.1300 (213.7255417d) Dec: +05 40 47.60 (5.67989d) Equinox: J2000		V=19.2 COS FUV flux 1.2e-15 erg/s/cm 2/A, z = 0.08	Reference Frame: ICRS

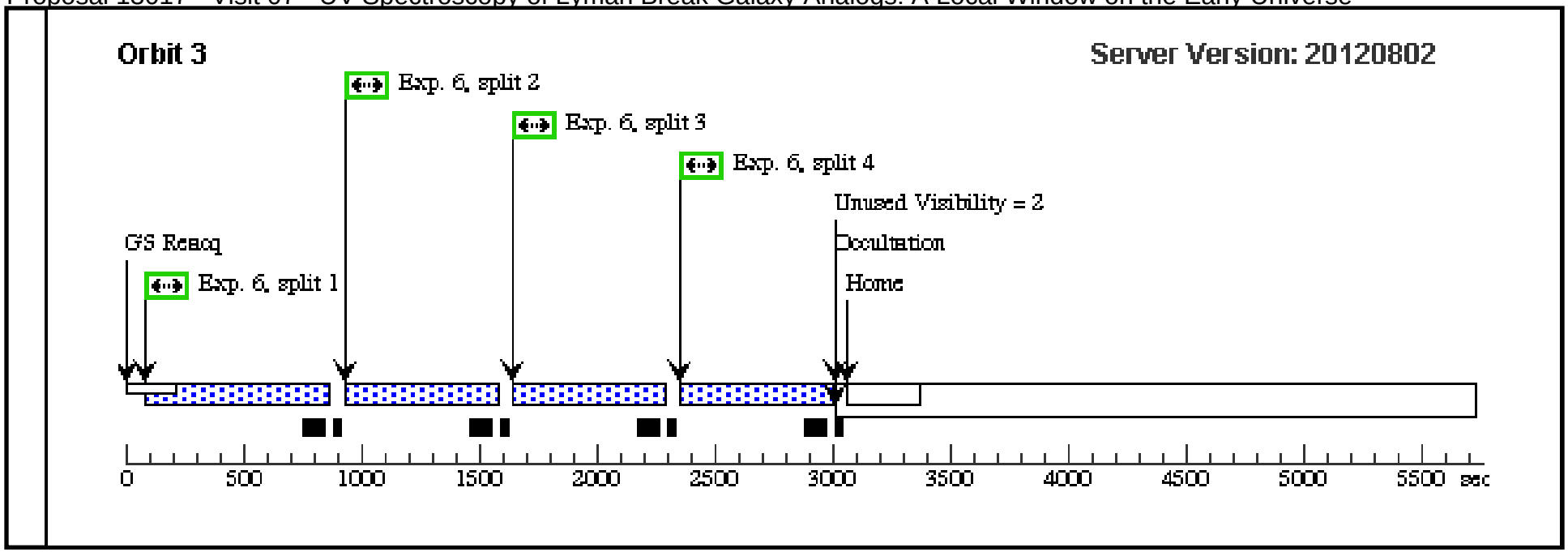
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	J141454_acq_image (COS.ta.416436)	(8) J141454.23+054047.6	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				400 Secs *[==>]*	***[1]***
2	J141454_G160M_orbit1_FP1 (COS.sp.416614)	(8) J141454.23+054047.6	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=586; FLASH=YES; FP-POS=1			686 Secs *[==>]*	***[1]***
3	J141454_G160M_orbit1_FP2 (COS.sp.416614)	(8) J141454.23+054047.6	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=586; FLASH=YES; FP-POS=2			686 Secs *[==>]*	***[1]***
4	J141454_G160M_orbit2_FP3 (COS.sp.416614)	(8) J141454.23+054047.6	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1212; FLASH=YES; FP-POS=3			1312 Secs *[==>]*	***[2]***
5	J141454_G160M_orbit2_FP4 (COS.sp.416614)	(8) J141454.23+054047.6	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1212; FLASH=YES; FP-POS=4			1312 Secs *[==>]*	***[2]***
6	J141454_G130M_orbit1 (COS.sp.416611)	(8) J141454.23+054047.6	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=495; FLASH=YES; FP-POS=ALL			595 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20120802
Exp. 6, split 2
Exp. 6, split 3
Exp. 6, split 4
Unused Visibility = 2
GS Reacq
Occultation
Exp. 6, split 1
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13017, Visit 08, implementation Tue Sep 11 07:46:13 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(Visit 08) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 08) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

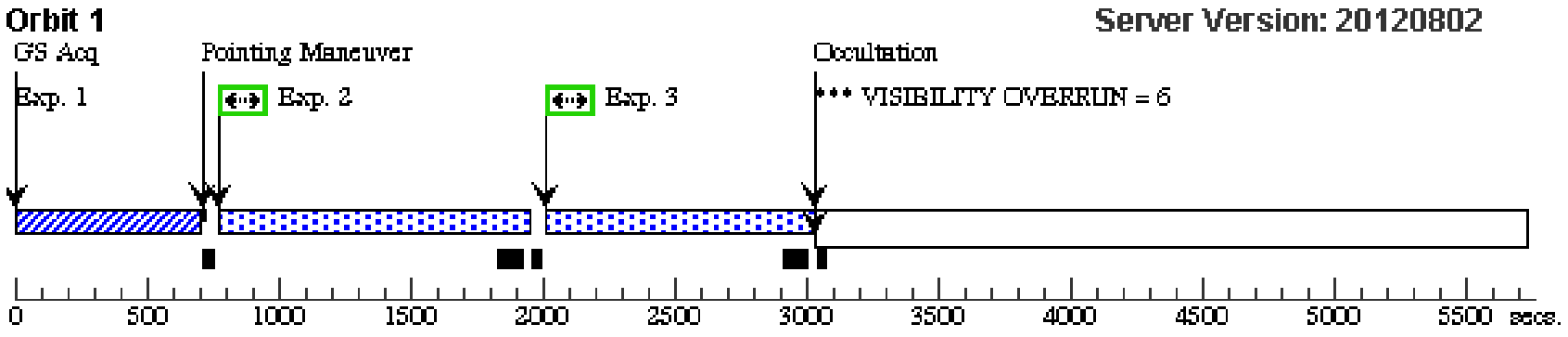
Fixed Targets

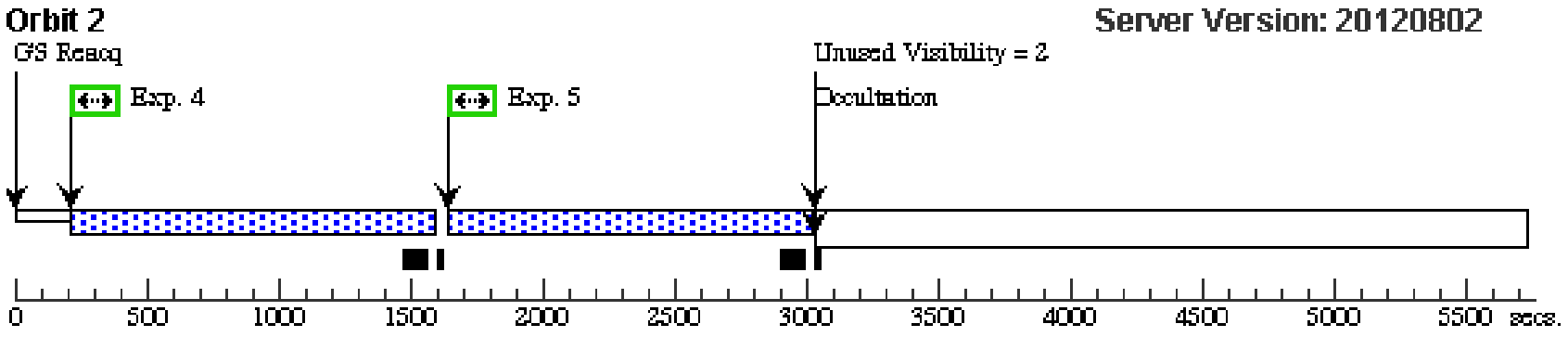
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	J111244.15+550347.1	RA: 11 12 44.0500 (168.1835417d) Dec: +55 03 47.01 (55.06306d) Equinox: J2000		V=17.1 COS FUV flux 1.1e-15 erg/s/cm 2/A, z = 0.13	Reference Frame: ICRS

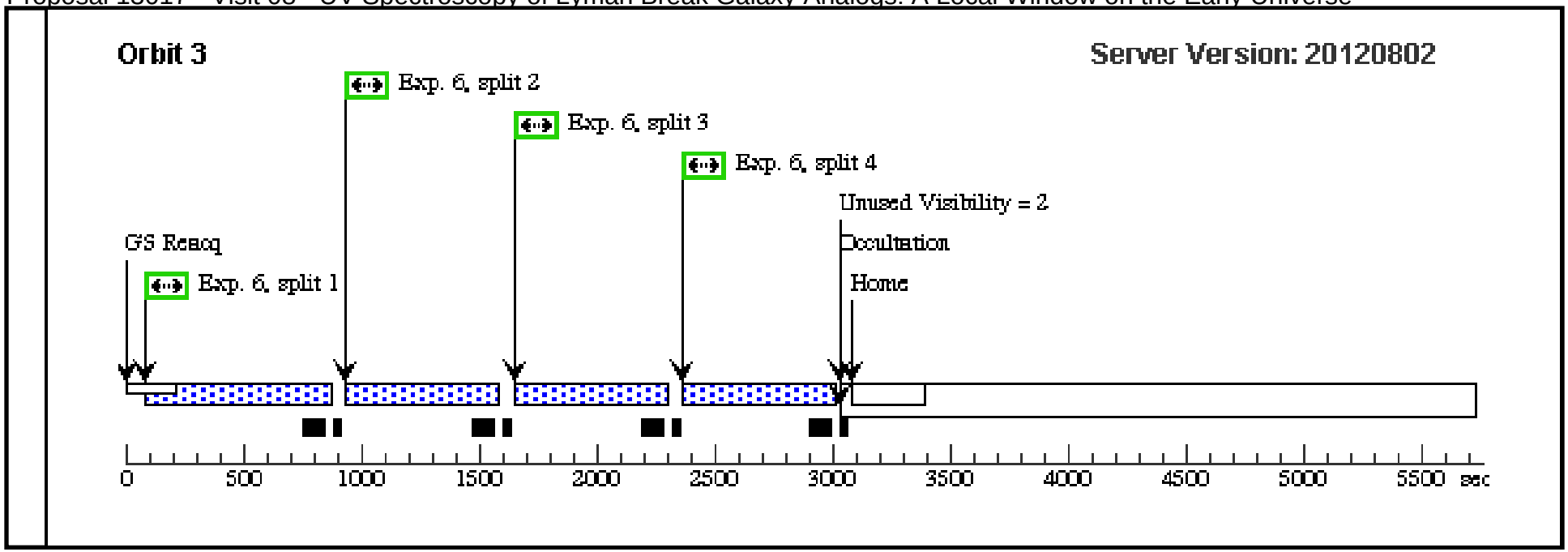
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	J111244_acq_image (COS.ta.411453)	(10) J111244.15+550347.1	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				150 Secs *[==>]*	***[1]***
2	J111244_G160M_orbit1_FP1 (COS.sp.416616)	(10) J111244.15+550347.1	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=863; FLASH=YES; FP-POS=1			963 Secs *[==>]*	***[1]***
3	J111244_G160M_orbit1_FP2 (COS.sp.416616)	(10) J111244.15+550347.1	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=863; FLASH=YES; FP-POS=2			963 Secs *[==>]*	***[1]***
4	J111244_G160M_orbit2_FP3 (COS.sp.416616)	(10) J111244.15+550347.1	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=1223; FLASH=YES; FP-POS=3			1323 Secs *[==>]*	***[2]***
5	J111244_G160M_orbit2_FP4 (COS.sp.416616)	(10) J111244.15+550347.1	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=1223; FLASH=YES; FP-POS=4			1323 Secs *[==>]*	***[2]***
6	J111244_G130M_orbit1 (COS.sp.416617)	(10) J111244.15+550347.1	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=501; FLASH=YES; FP-POS=ALL			601 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20120802
Exp. 6, split 2
Exp. 6, split 3
Exp. 6, split 4
Unused Visibility = 2
GS Reacq
Occultation
Exp. 6, split 1
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13017, Visit 09, implementation Tue Sep 11 07:46:16 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(Visit 09) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 09) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

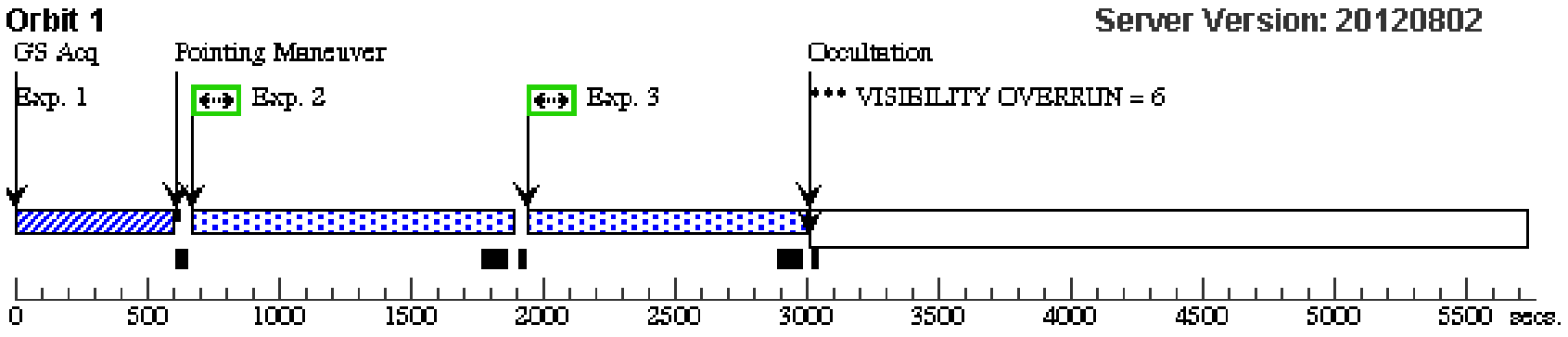
Fixed Targets

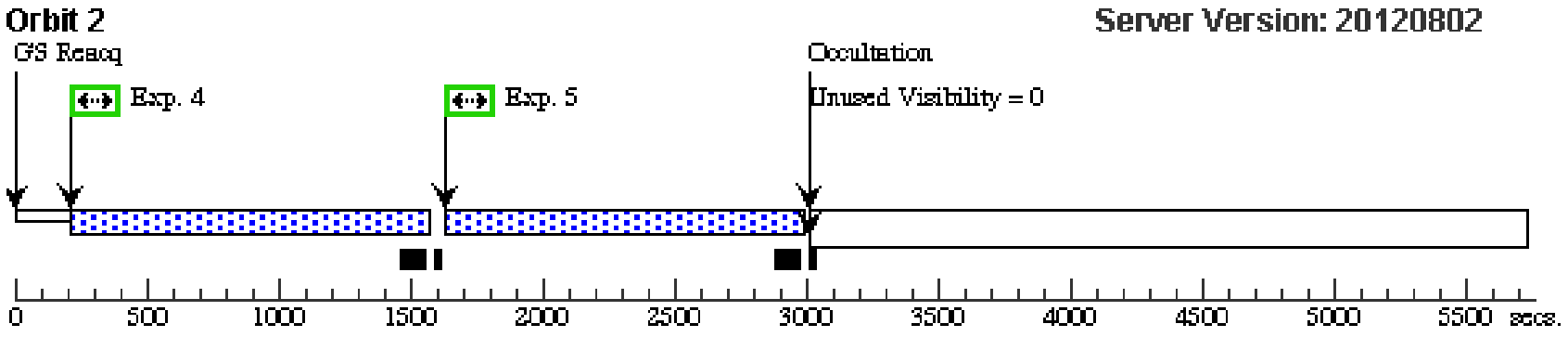
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	J142947.03+064334.9	RA: 14 29 47.0000 (217.4458333d) Dec: +06 43 34.95 (6.72638d) Equinox: J2000		V=17.8 COS FUV flux 1.1e-15 erg/s/cm 2/A, z = 0.17	Reference Frame: ICRS

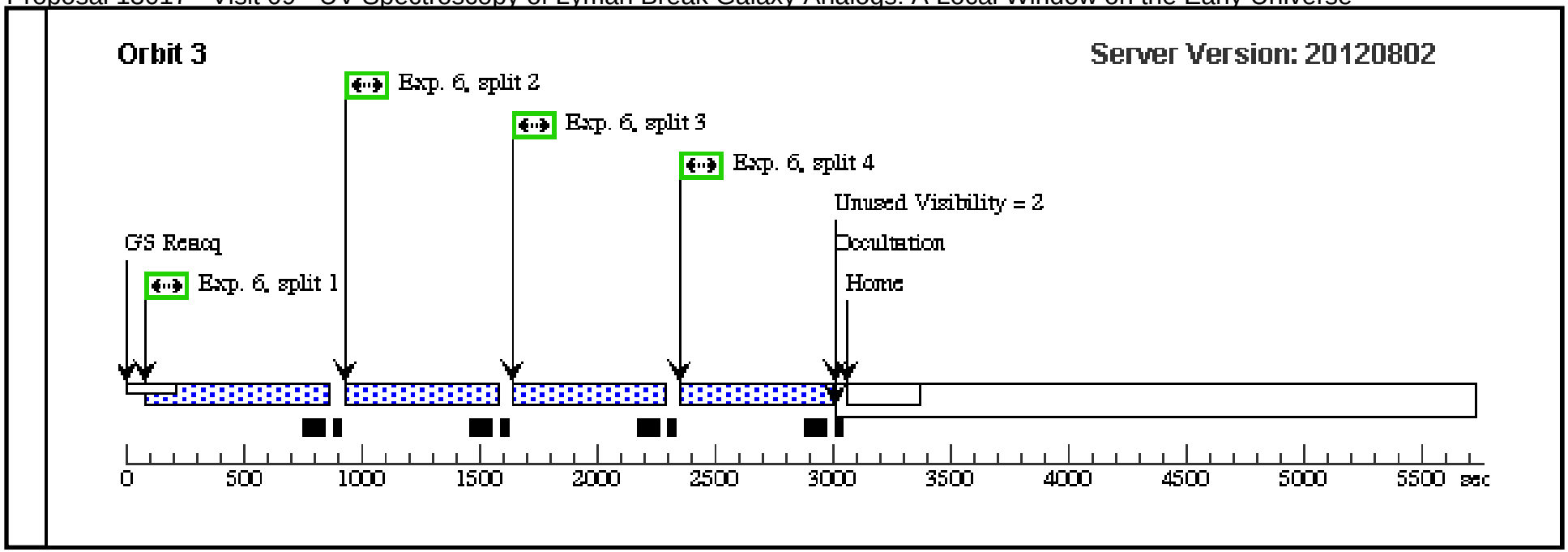
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	J142947_acq_image (COS.ta.411455)	(12) J142947.03+064334.9	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				100 Secs *[==>]*	*[1]*
2	J142947_G160M_orbit1_FP1 (COS.sp.416620)	(12) J142947.03+064334.9	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=9006; FLASH=YES; FP-POS=1			1006 Secs *[==>]*	*[1]*
3	J142947_G160M_orbit1_FP2 (COS.sp.416620)	(12) J142947.03+064334.9	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=9006; FLASH=YES; FP-POS=2			1006 Secs *[==>]*	*[1]*
4	J142947_G160M_orbit2_FP3 (COS.sp.416620)	(12) J142947.03+064334.9	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=1212; FLASH=YES; FP-POS=3			1312 Secs *[==>]*	*[2]*
5	J142947_G160M_orbit2_FP4 (COS.sp.416620)	(12) J142947.03+064334.9	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=1212; FLASH=YES; FP-POS=4			1312 Secs *[==>]*	*[2]*
6	J142947_G130M_orbit1 (COS.sp.416618)	(12) J142947.03+064334.9	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=495; FLASH=YES; FP-POS=ALL			595 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[3]*

Orbit Structure






Orbit 3
Server Version: 20120802
Exp. 6, split 2
Exp. 6, split 3
Exp. 6, split 4
Unused Visibility = 2
GS Reacq
Occultation
Exp. 6, split 1
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13017, Visit 10, implementation Tue Sep 11 07:46:18 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(Visit 10) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

(Visit 10) Warning (Orbit Planner): VISIBILITY OVERRUN

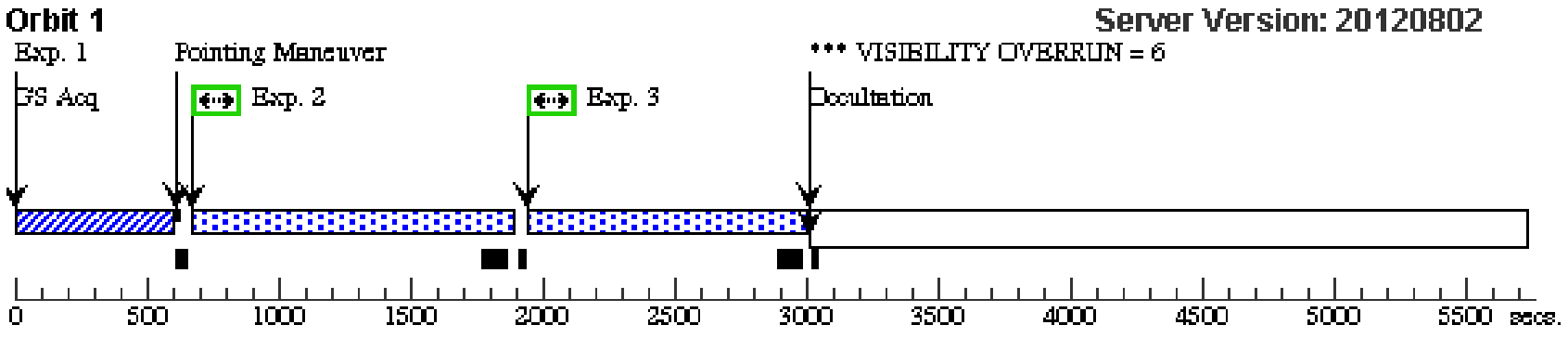
Fixed Targets

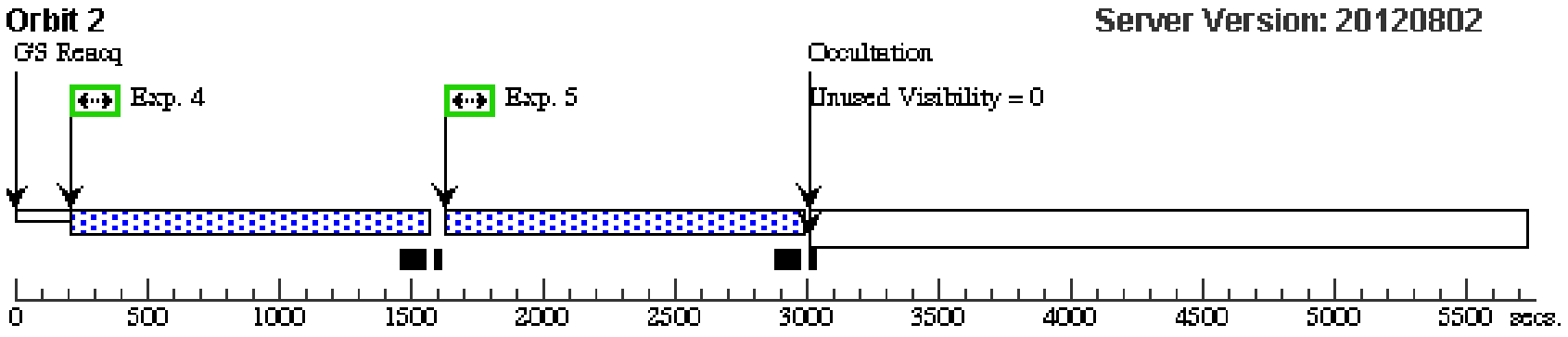
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	J141612.96+122340.5	RA: 14 16 12.8700 (214.0536250d) Dec: +12 23 40.42 (12.39456d) Equinox: J2000		V=17.2 COS FUV flux 1.5e-15 erg/s/cm 2/A, z = 0.12	Reference Frame: ICRS

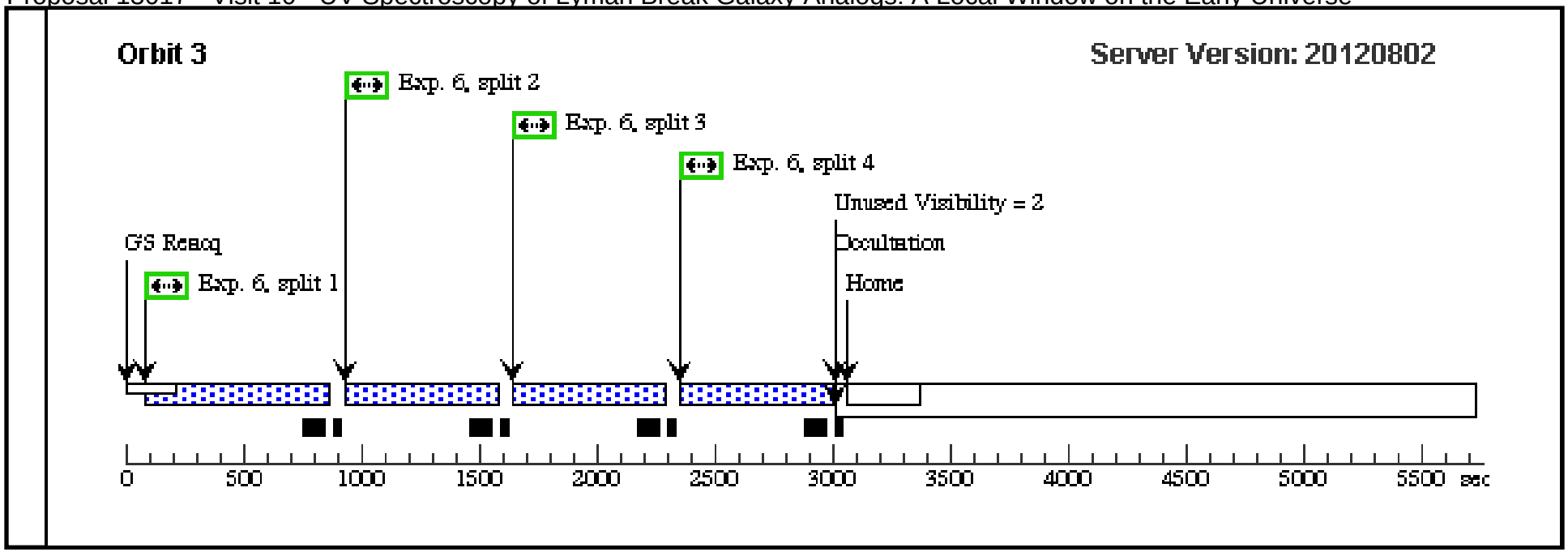
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	J141612_acq_image (COS.ta.411445)	(5) J141612.96+122340.5	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				100 Secs *[==>]*	*[1]*
2	J141612_G160M_orbit1_FP1 (COS.sp.416621)	(5) J141612.96+122340.5	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=906; FLASH=YES; FP-POS=1			1006 Secs *[==>]*	*[1]*
3	J141612_G160M_orbit1_FP2 (COS.sp.416621)	(5) J141612.96+122340.5	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=906; FLASH=YES; FP-POS=2			1006 Secs *[==>]*	*[1]*
4	J141612_G160M_orbit2_FP3 (COS.sp.416621)	(5) J141612.96+122340.5	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=1212; FLASH=YES; FP-POS=3			1312 Secs *[==>]*	*[2]*
5	J141612_G160M_orbit2_FP4 (COS.sp.416621)	(5) J141612.96+122340.5	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=1212; FLASH=YES; FP-POS=4			1312 Secs *[==>]*	*[2]*
6	J141612_G130M_orbit1 (COS.sp.416622)	(5) J141612.96+122340.5	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=495; FLASH=YES; FP-POS=ALL			595 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[3]*

Orbit Structure






Orbit 3
Server Version: 20120802
Exp. 6, split 2
Exp. 6, split 3
Exp. 6, split 4
Unused Visibility = 2
GS Reacq
Occultation
Exp. 6, split 1
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13017, Visit 11, implementation Tue Sep 11 07:46:21 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(Visit 11) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

(Visit 11) Warning (Orbit Planner): VISIBILITY OVERRUN

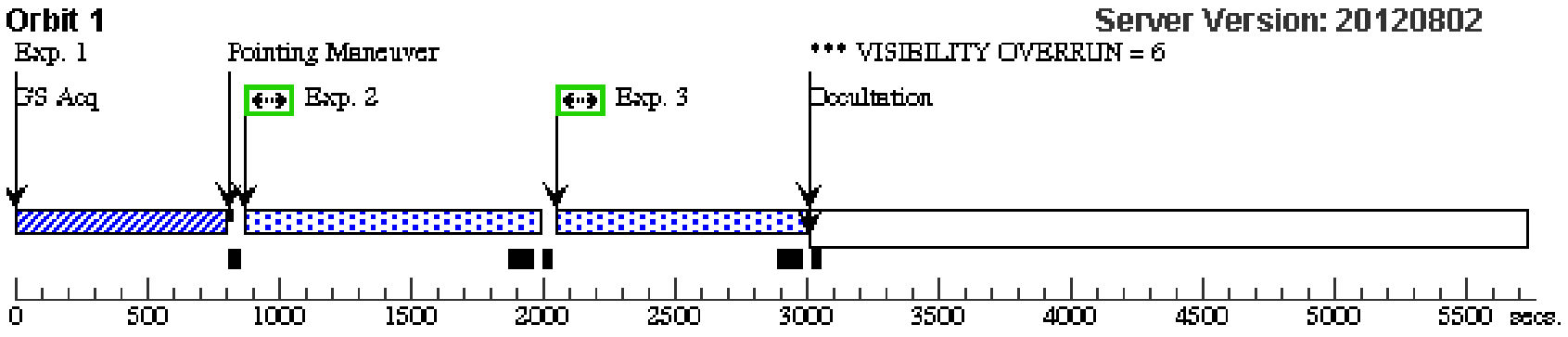
Fixed Targets

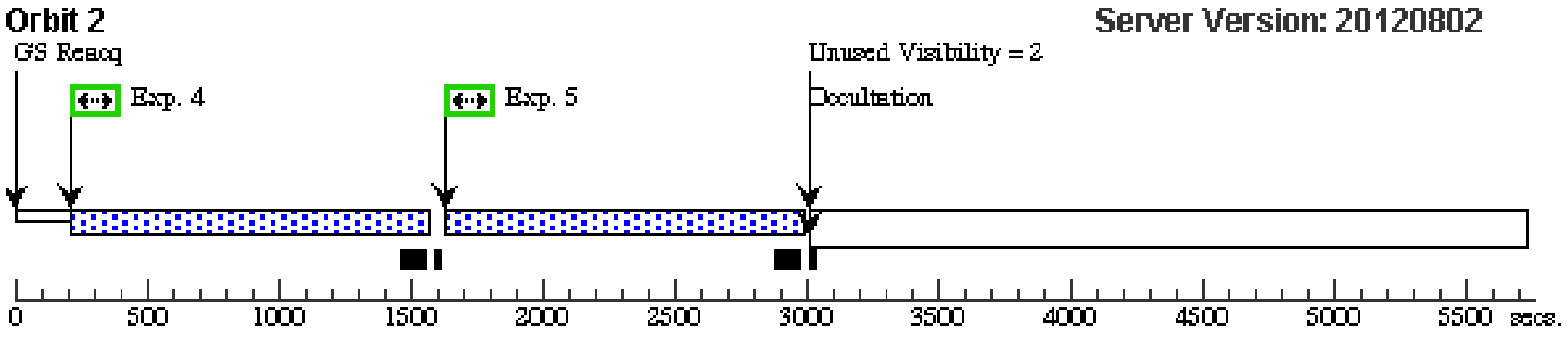
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	J142856.4+165339.4	RA: 14 28 56.4100 (217.2350417d) Dec: +16 53 39.32 (16.89426d) Equinox: J2000		V=18.1 COS FUV flux 1.3e-15 erg/s/cm 2/A, z = 0.18	Reference Frame: ICRS

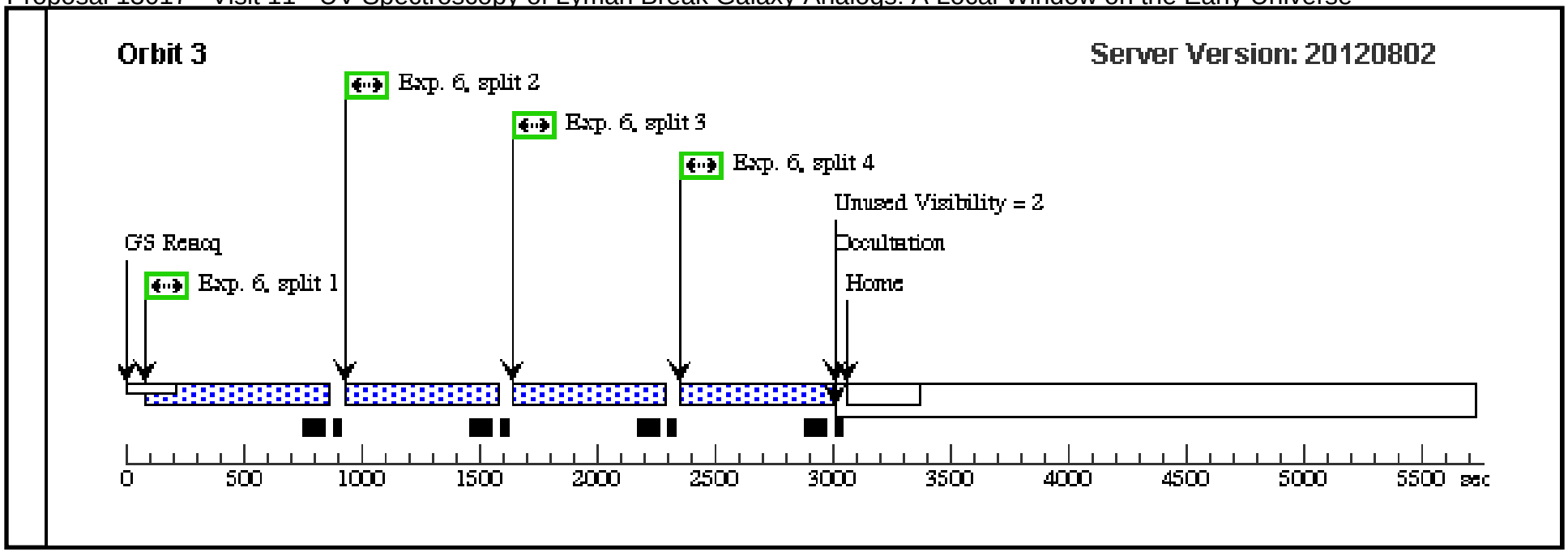
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	J142856_acq_image (COS.ta.411449)	(6) J142856.4+165339.4	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				200 Secs *[==>]*	***[1]***
2	J142856_G160M_orbit1_FP1 (COS.sp.416625)	(6) J142856.4+165339.4	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=8011; FLASH=YES; FP-POS=1			901 Secs *[==>]*	***[1]***
3	J142856_G160M_orbit1_FP2 (COS.sp.416625)	(6) J142856.4+165339.4	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=8011; FLASH=YES; FP-POS=2			901 Secs *[==>]*	***[1]***
4	J142856_G160M_orbit2_FP3 (COS.sp.416625)	(6) J142856.4+165339.4	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=1211; FLASH=YES; FP-POS=3			1311 Secs *[==>]*	***[2]***
5	J142856_G160M_orbit2_FP4 (COS.sp.416625)	(6) J142856.4+165339.4	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=1211; FLASH=YES; FP-POS=4			1311 Secs *[==>]*	***[2]***
6	J142856_G130M_orbit1 (COS.sp.416623)	(6) J142856.4+165339.4	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=495; FLASH=YES; FP-POS=ALL			595 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20120802
Exp. 6, split 2
Exp. 6, split 3
Exp. 6, split 4
Unused Visibility = 2
GS Reacq
Occultation
Exp. 6, split 1
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13017, Visit 12, implementation Tue Sep 11 07:46:23 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(Visit 12) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 12) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

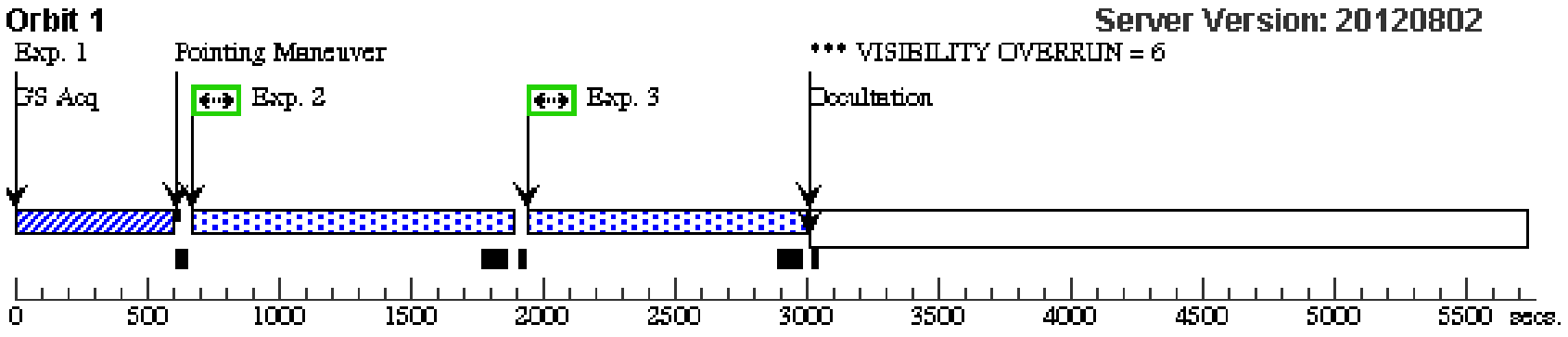
Fixed Targets

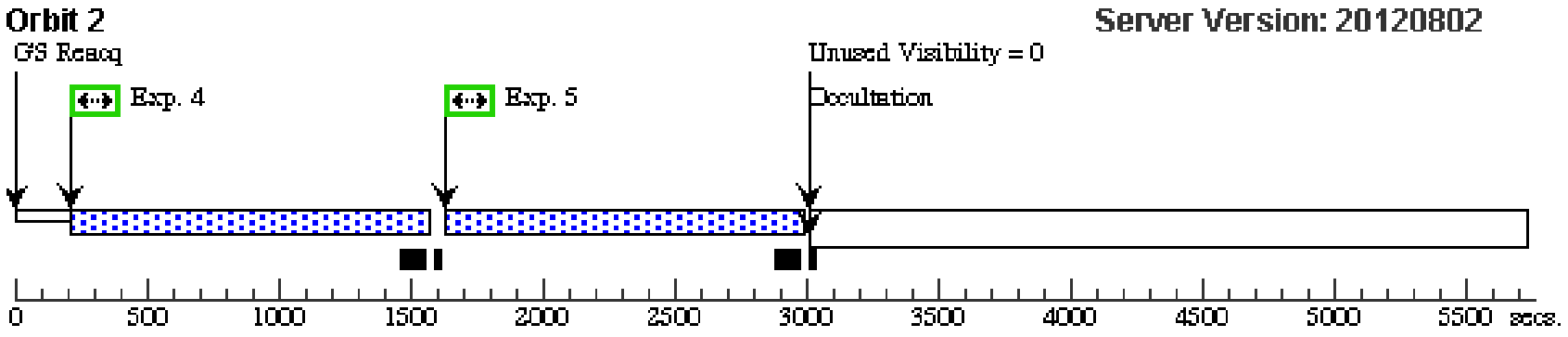
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	J152141.52+075921.7	RA: 15 21 41.4200 (230.4225833d) Dec: +07 59 21.72 (7.98937d) Equinox: J2000		V=17.6 COS FUV flux 1.8e-15 erg/s/cm 2/A, z = 0.094	Reference Frame: ICRS

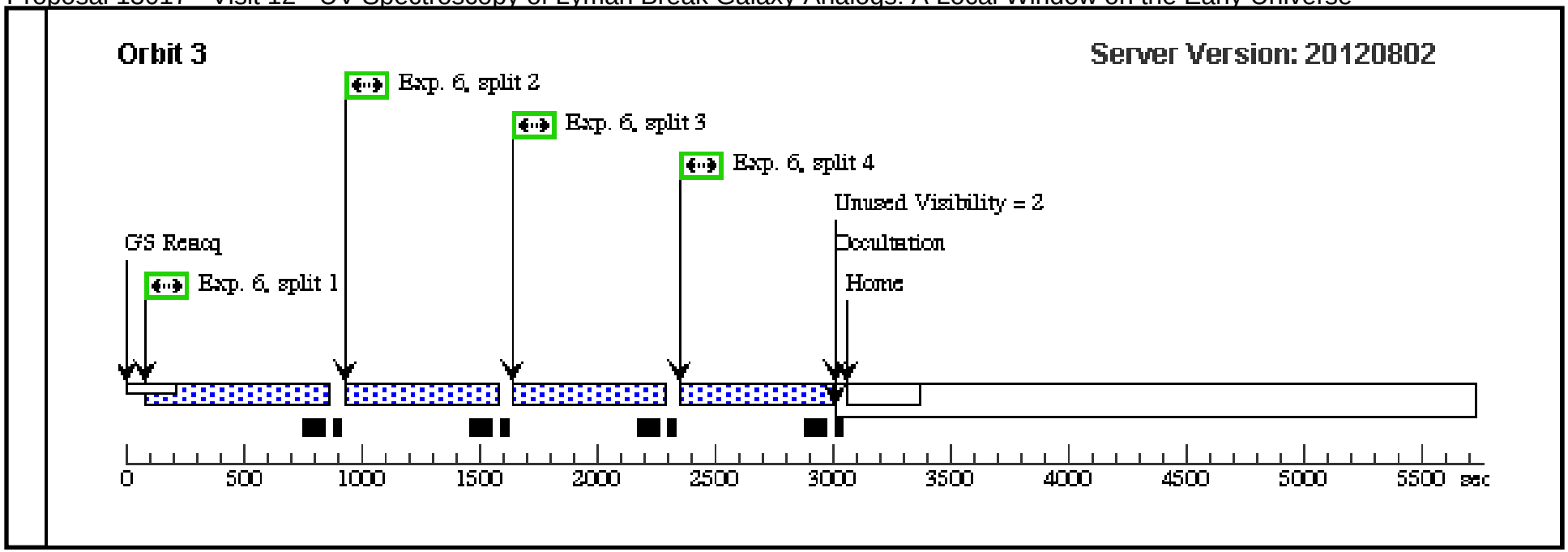
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	J152141_acq_image (COS.ta.411447)	(4) J152141.52+075921.7	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				100 Secs *[==>]*	*[1]*
2	J152141_G160M_orbit1_FP1 (COS.sp.416627)	(4) J152141.52+075921.7	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=906; FLASH=YES; FP-POS=1			1006 Secs *[==>]*	*[1]*
3	J152141_G160M_orbit1_FP2 (COS.sp.416627)	(4) J152141.52+075921.7	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=906; FLASH=YES; FP-POS=2			1006 Secs *[==>]*	*[1]*
4	J152141_G160M_orbit2_FP3 (COS.sp.416627)	(4) J152141.52+075921.7	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=1212; FLASH=YES; FP-POS=3			1312 Secs *[==>]*	*[2]*
5	J152141_G160M_orbit2_FP4 (COS.sp.416627)	(4) J152141.52+075921.7	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=1212; FLASH=YES; FP-POS=4			1312 Secs *[==>]*	*[2]*
6	J152141_G130M_orbit1 (COS.sp.416629)	(4) J152141.52+075921.7	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=495; FLASH=YES; FP-POS=ALL			595 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[3]*

Orbit Structure






Orbit 3
Server Version: 20120802
Exp. 6, split 2
Exp. 6, split 3
Exp. 6, split 4
Unused Visibility = 2
GS Reacq
Occultation
Exp. 6, split 1
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13017, Visit 13, implementation Tue Sep 11 07:46:25 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(Visit 13) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

(Visit 13) Warning (Orbit Planner): VISIBILITY OVERRUN

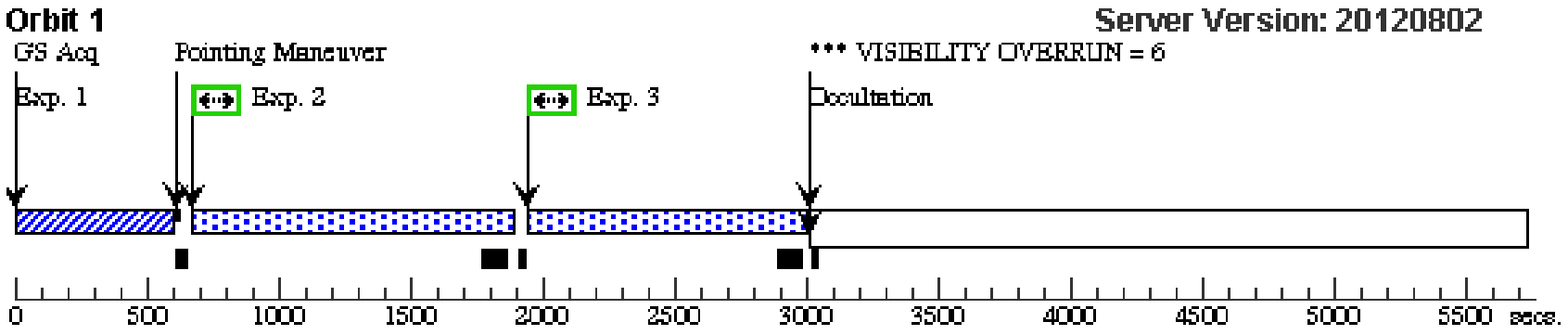
Fixed Targets

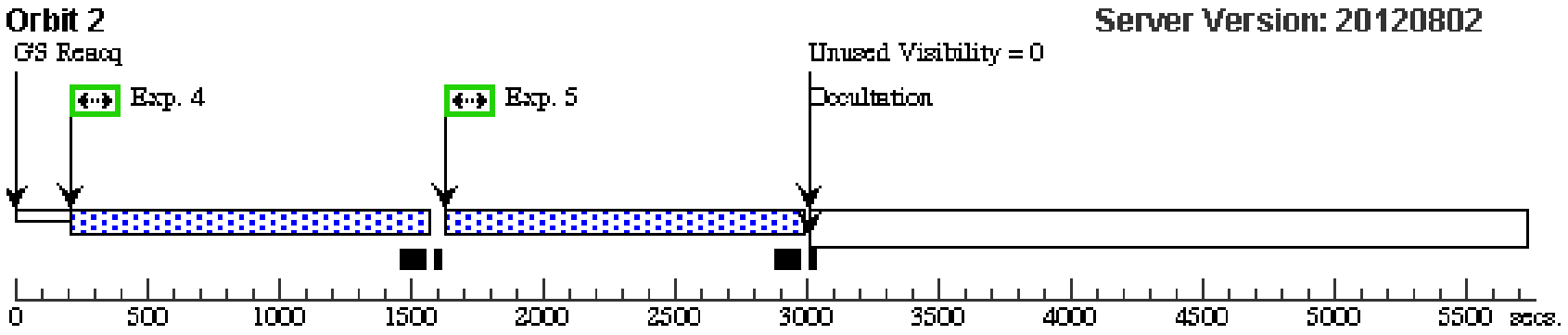
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	J161245.59+081701	RA: 16 12 45.5200 (243.1896667d) Dec: +08 17 1.01 (8.28361d) Equinox: J2000		V=17.4 COS FUV flux 1.2e-15 erg/s/cm 2/A, z = 0.15	Reference Frame: ICRS

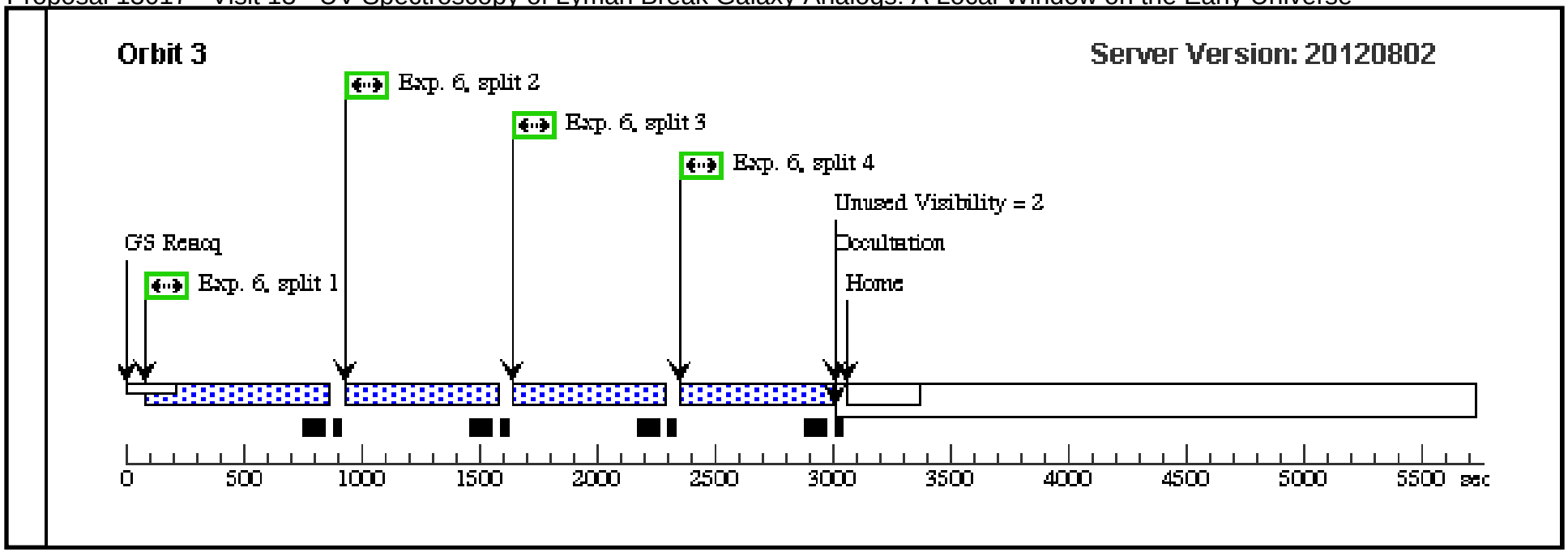
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	J161245_acq_image (COS.ta.411451)	(9) J161245.59+081701	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				100 Secs *[==>]*	***[1]***
2	J161245_G160M_orbit1_FP1 (COS.sp.416631)	(9) J161245.59+081701	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=9066; FLASH=YES; FP-POS=1			1006 Secs *[==>]*	***[1]***
3	J161245_G160M_orbit1_FP2 (COS.sp.416631)	(9) J161245.59+081701	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=9066; FLASH=YES; FP-POS=2			1006 Secs *[==>]*	***[1]***
4	J161245_G160M_orbit2_FP3 (COS.sp.416631)	(9) J161245.59+081701	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=1212; FLASH=YES; FP-POS=3			1312 Secs *[==>]*	***[2]***
5	J161245_G160M_orbit2_FP4 (COS.sp.416631)	(9) J161245.59+081701	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=1212; FLASH=YES; FP-POS=4			1312 Secs *[==>]*	***[2]***
6	J161245_G130M_orbit1 (COS.sp.416630)	(9) J161245.59+081701	COS/FUV, TIME-TAG, PSA	G130M 1318 A	BUFFER-TIME=495; FLASH=YES; FP-POS=ALL			595 Secs *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20120802
Exp. 6, split 2
Exp. 6, split 3
Exp. 6, split 4
Unused Visibility = 2
GS Reacq
Occultation
Exp. 6, split 1
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 13017, Visit 14, implementation Tue Sep 11 07:46:28 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%

Diagnostics

(Visit 14) Warning (Orbit Planner): VISIBILITY OVERRUN

(Visit 14) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

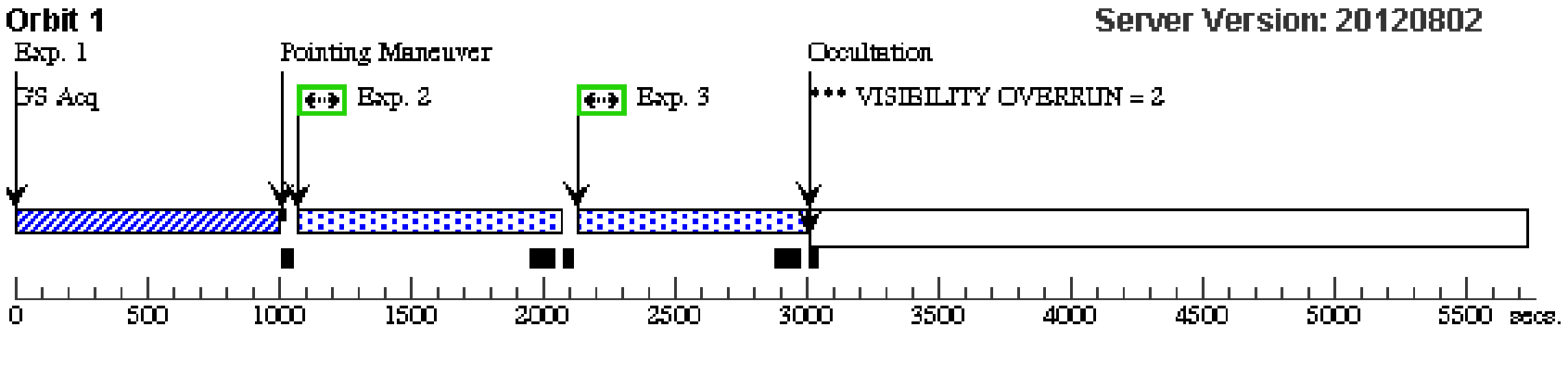
Fixed Targets

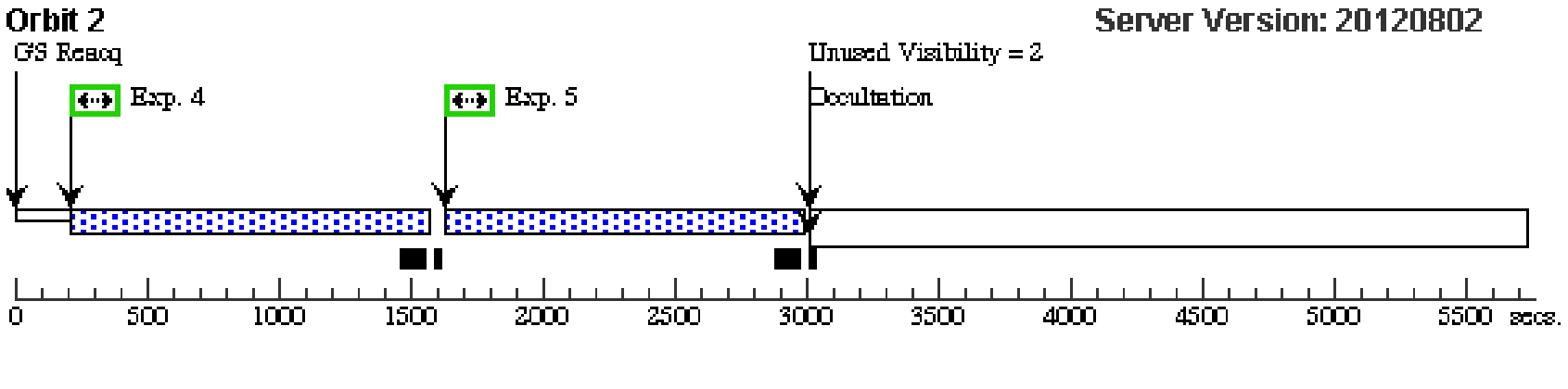
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(13)	J111323.99+293039.2	RA: 11 13 23.8800 (168.3495000d) Dec: +29 30 39.32 (29.51092d) Equinox: J2000		V=18.4 COS FUV flux 7.3e-16 erg/s/cm 2/A, z = 0.18	Reference Frame: ICRS

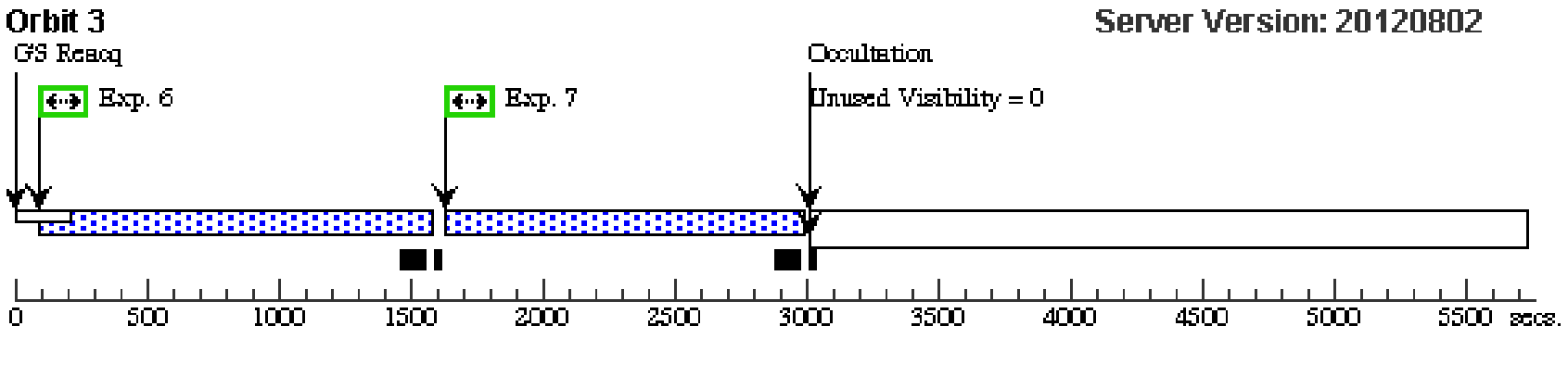
Exposures

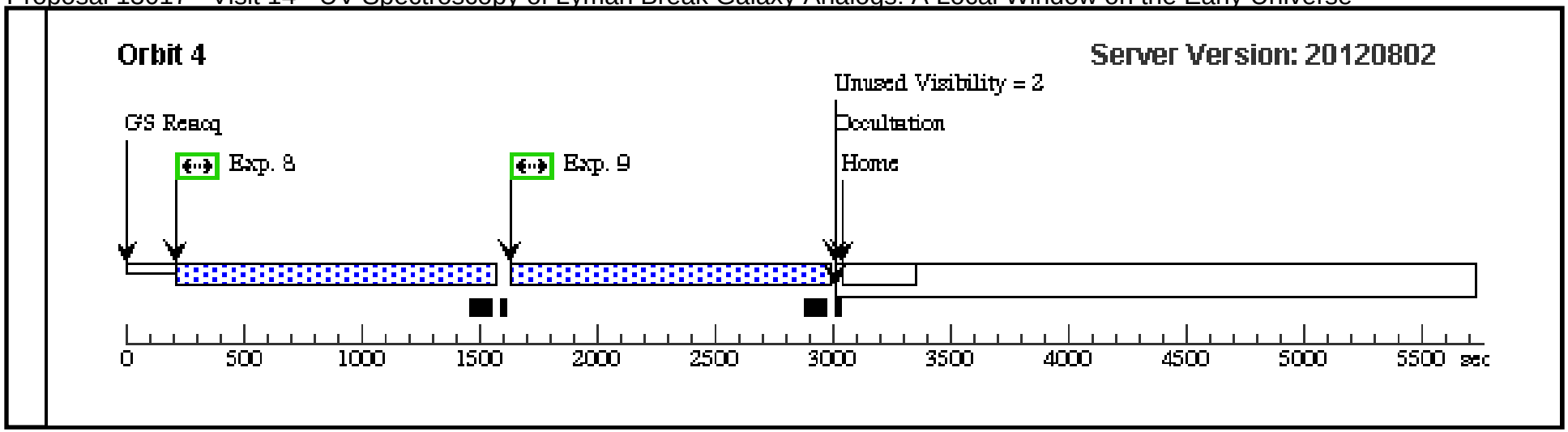
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	J111323_acq_image (COS.ta.411457)	(13) J111323.99+293039.2	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				300 Secs *[==>]*	*[1]*
2	J111323_G130M_orbit1_FP1 (COS.sp.416634)	(13) J111323.99+293039.2	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=7155; FLASH=YES; FP-POS=1			815 Secs *[==>]*	*[1]*
3	J111323_G130M_orbit1_FP2 (COS.sp.416634)	(13) J111323.99+293039.2	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=7155; FLASH=YES; FP-POS=2			815 Secs *[==>]*	*[1]*
4	J111323_G130M_orbit2_FP3 (COS.sp.416634)	(13) J111323.99+293039.2	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=1210; FLASH=YES; FP-POS=3			1310 Secs *[==>]*	*[2]*
5	J111323_G130M_orbit2_FP4 (COS.sp.416634)	(13) J111323.99+293039.2	COS/FUV, TIME-TAG, PSA	G130M 1300 A	BUFFER-TIME=1210; FLASH=YES; FP-POS=4			1310 Secs *[==>]*	*[2]*
6	J111323_G160M_orbit1_FP1 (COS.sp.416633)	(13) J111323.99+293039.2	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=1210; FLASH=YES; FP-POS=1			1310 Secs *[==>]*	*[3]*
7	J111323_G160M_orbit1_FP2 (COS.sp.416633)	(13) J111323.99+293039.2	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=1210; FLASH=YES; FP-POS=2			1310 Secs *[==>]*	*[3]*
8	J111323_G160M_orbit2_FP3 (COS.sp.416633)	(13) J111323.99+293039.2	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=1210; FLASH=YES; FP-POS=3			1310 Secs *[==>]*	*[4]*
9	J111323_G160M_orbit2_FP4 (COS.sp.416633)	(13) J111323.99+293039.2	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=1210; FLASH=YES; FP-POS=4			1310 Secs *[==>]*	*[4]*

Orbit Structure








Orbit 4
Server Version: 20120802
Unused Visibility = 2
GS Reacq
Occultation
Exp. 8
Exp. 9
Home
0
500
1000
1500
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4000
4500
5000
5500
sec