14635 - Lyman continuum leaking in luminous compact star-forming galaxies

Cycle: 24, 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) J0901+2119	COS/FUV COS/NUV	5	21-Jun-2017 21:01:00.0	yes
02	(2) J1011+1947	COS/FUV COS/NUV	6	21-Jun-2017 21:01:02.0	yes
03	(3) J1154+2443	COS/FUV COS/NUV	6	21-Jun-2017 21:01:04.0	yes
53	(3) J1154+2443	COS/FUV COS/NUV	6	21-Jun-2017 21:01:06.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
04	(4) J1243+4646	COS/FUV COS/NUV	6	21-Jun-2017 21:01:08.0	yes
05	(5) J1248+4259	COS/FUV COS/NUV	5	21-Jun-2017 21:01:09.0	yes
06	(6) J1256+4509	COS/FUV COS/NUV	6	21-Jun-2017 21:01:11.0	yes

40 Total Orbits Used

ABSTRACT

One of the key questions in observational cosmology is the identification of the sources responsible for cosmic reionization. The general consensus is that a population of faint low-mass galaxies must be responsible for the bulk of the ionizing photons. However, until recently, attempts at identifying individual galaxies showing Lyman continuum (LyC) leakage have only found very few such galaxies, both at high and low redshifts. A breakthrough was recently achieved by Izotov et al. (2016ab), who detected LyC emission in five out of five low-redshift (z~0.3) luminous compact star-forming galaxies (LCGs) with robust LyC escape fractions of 6-13%, using HST/COS observations. This high success rate is presumably due to the new selection criteria,based primarily on compactness and on a high [OIII]5007/[OII]3727 (O32) ratio. Furthermore these galaxies show narrow Lya line profiles, confirming our predictions for LyC leakers. Based on this success we now propose to extend our study to six LCGs at z~0.3-0.4 with extreme O32~9-23, a range which has never been observed with HST. This will allow us to determine if they are also LyC leakers as expected from their high O32, and if the LyC escape fraction continues to rise with increasing O32, as indicated by the sources with existing LyC detections. Finally the requested COS observations will allow us to measure for the first time the Lya line profile of such extreme objects, providing thus an empirical probe of this indirect LyC leakage indicator. Since the LCGs share many properties with typical star-forming galaxies at high redshift our study will provide important insight on the sources of cosmic reionization.

OBSERVING DESCRIPTION

We adopt an observing strategy following our succesful proposal GO 13744, in which the escaping LyC radiation was detected in 5 out of 5 Green Pea galaxies at redshifts z~0.3 with absolute escape fraction of ~6% - 13%. All observed galaxies are characterized by high [O iii]/[O ii]>5. In this proposal we extend the range of [O iii]/[O ii] = 9 - 22 to observe six compact galaxies at redshifts z~0.30 - 0.43. These galaxies are bright enough to ensure that we obtain within a reasonable observing time a spectrum with a S/N high enough in the FUV region to measure well the LyC, the Ly

profile and the ISM low-ionization metal absorption lines (LIS). With redshifts z > 0.3 the LyC of objects is shifted into the wavelength range where COS is most sensitive. They have a compact or unresolved morphology in the SDSS image so that the 2.5" diameter COS aperture measures the totality of the galaxy's light and global quantities can be derived.

NUV acquisition images of the targets will be obtained with the standard MirrorA and the ACQ/IMAGE mode to reach a S/N~40 inside a 9x9 pixel box centered on the brightest part of the galaxy. The total time needed for acquisition depends on the NUV flux of the objects and its compactness. The NUV fluxes are obtained from the GALEX database, and the NUV angular radii are assumed to be R05~0.15 arcsec, similar to angular radii of GPs observed in the proposal GO. Therefore, the surface brightness per square arcsec of our galaxies is flux(NUV)/(pi R05^2). The acquisition exposure times were calculated selecting the "EXTENDED" option and adopting a S/N of 40. As a bonus, we will be able to study the morphology of the selected objects with these acquisition images. The TAs are one orbit long and splitting the visits into shorter segments will severely affect our program.

We plan to use COS in combination with 2 gratings: 1) the low-resolution G140L grating to measure the LyC. Using the spectral energy distributions (SEDs) derived from the SDSS spectra and the SED extrapolations to the UV range we have calculated for each object the required number of orbits to probe the LyC escape fraction down to 5% with SNR > 5 for a 100-pixel binned spectrum. 2) the medium-resolution G160M grating to observe the Ly-alpha and LIS lines. Adopting the same extrapolation of the SED derived from the SDSS spectrum we have calculated for each object the required exposure time to obtain a S/N > 5 for a 10-pixel binned spectrum, enough to measure any residual intensity in the LIS lines. In all cases the ETC "EXTENDED" mode was adopted. Buffer times for science exposures were adopted to be 2/3 of the values returned by ETC for both G140L and G160M gratings.

The G140L observations in the 6 orbit visits are split between 3 orbits. With 4 FP-POS to split over 3 orbits, 2 FP-POSs are given one orbit each, and the other two split an orbit. The overall usage of the G140L FP-POSs are balanced when all visits are considered. The G160M observations and the G140L observations in the 5-orbit visits are always 4 FP-POS split over 2 orbits, 2 FP-POS each, so are balanced. All G140L exposures are taken first using Segment A only, and the G160M observations complete the visits.

Visit

Proposal 14635, J0901+2119 - 5 orbits (01), scheduling Thu Jun 22 01:01:13 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(J0901+2119 - 5 orbits (01)) Warning (Form): If the target coordinates are not known to 0.4" (or better), an ACQ/SEARCH should precede the ACQ/IMAGE.

(J0901+2119 - 5 orbits (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J0901+2119 - 5 orbits (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

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(J0901+2119 - 5 orbits (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J0901+2119 - 5 orbits (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	J0901+2119	RA: 09 01 45.6100 (135.4400417d) Dec: +21 19 27.78 (21.32438d) Equinox: J2000	Redshift: 0.299	V=21.54+/-0.05 FUV=21.52+/-0.36, NUV=22.13+/-0.45, F(LyC, 1185A)=9e-18 erg/s/cm2/A, F(Lya, 1570A)=9e-17 erg/s/cm2/A, F(acq, 2200A)= 8e-17 erg/s/cm2/A	Reference Frame: ICRS

Comments: Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	J0901+2119_ACQ (COS.ta.827884)	(1) J0901+2119	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				1408 Secs (1408 Secs) *[==>]*	***[1]***

Comments: Galex NUV Mag for this target is 22.13. The ETC run listed here uses the "Extended source that fills the aperture (1.25 arcsec radius)" option. We estimate that our target has R < 0.3", so that the actual required time to S/N = 40 is 4-5 times shorter (8000s in the ETC run converts to ~1600s for this target). The exposure time used here is the maximum time possible for an ACQ/IMAGE and is our best TA strategy. This target has the faintest Galex NUV mag of any the targets in this program. All of the other ACQ/IMAGE ETC runs in this program will use the placeholder ETC run for a Galex NUV mag of 20.5 (COS.ta.821042). The COS.ta.821042 ETC run is brighter than any target in the program by at least 0.66 magnitudes. The COS.ta.821042 ETC run demonstrates that all TAs in this program with extremely low brightest pixel counts rates (< 0.1 cps).

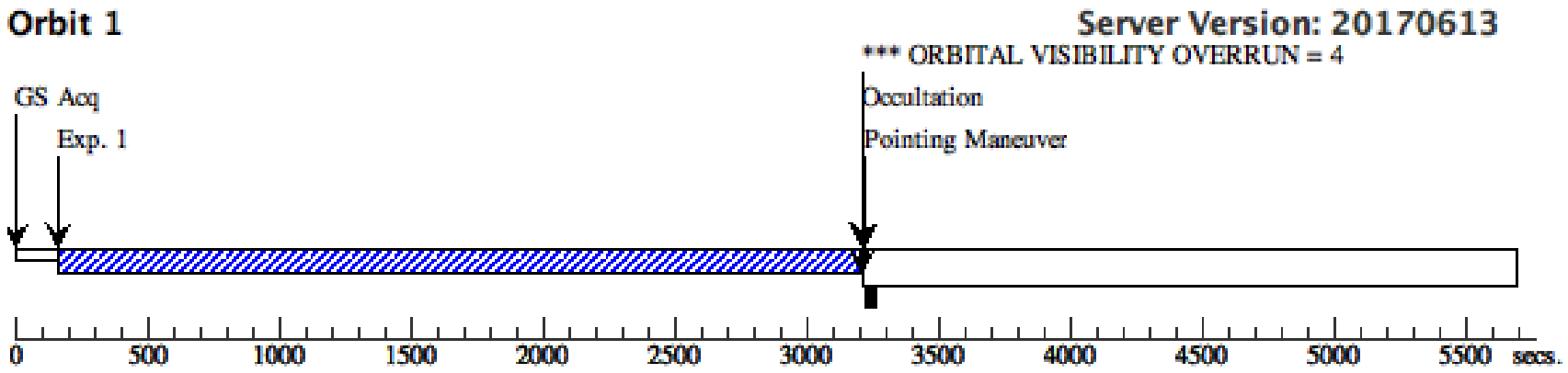
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
2	J0901+2119_G140L (COS.sp.821050)	(1) J0901+2119	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; SEGMENT=A; FP-POS=ALL			1409 Secs (5636 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[2]*** ***[3]***

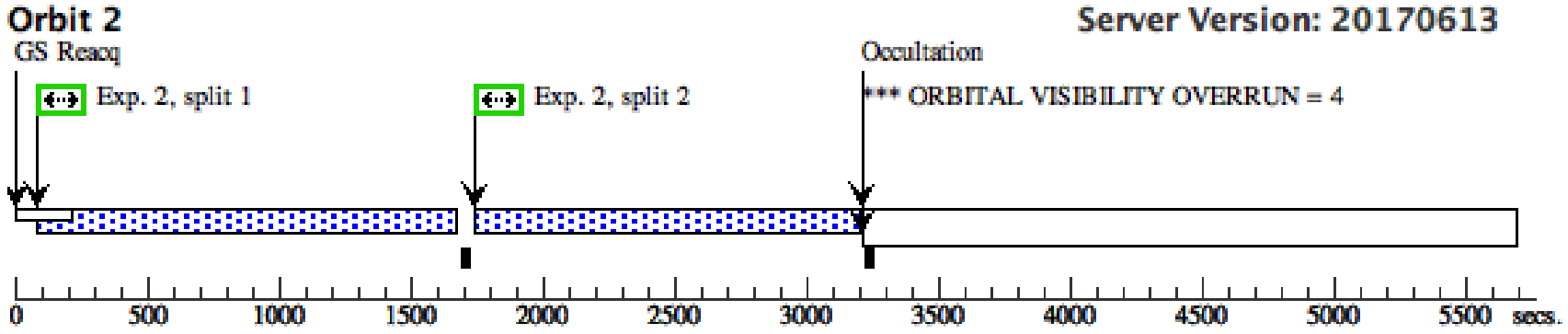
*Comments: This ETC run assumes that the target is more compact than our ACQ/IMAGE estimate (R=0.15") and is 10x brighter than our expected flux (9e-17 at 1185.0A instead of 9e-18 erg/s/cm2/A). This ETC shows that our count rates are safe to the instrument. As all of our targets are fainter than this ETC run, we use this ETC run for all G140L exposures in this program. The Buffer time for the G140L for this ETC run is 2/3 * 13,174 = 8780. We will use this buffer time for all G140L exposures in this program.*

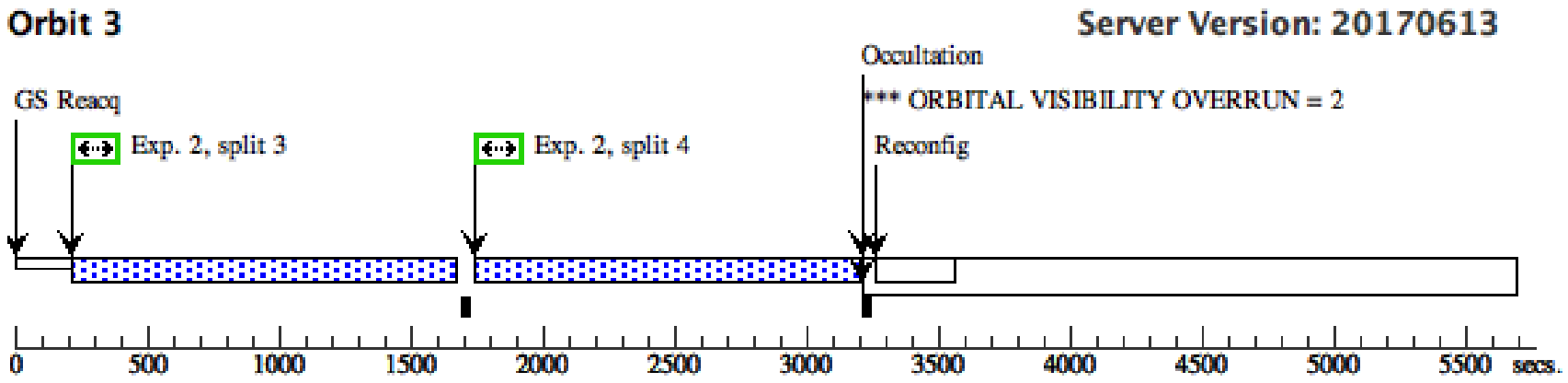
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
3	J0901+2119_G160M (COS.sp.821056)	(1) J0901+2119	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=11000.0; FLASH=YES; FP-POS=ALL; SEGMENT=BOTH			1409 Secs (5636 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[4]*** ***[5]***

*Comments: This ETC run assumes that the target is more compact than our ACQ/IMAGE estimate (R=0.15") and is 10x brighter than our expected flux (9e-16 flam at 1570.0 instead of 9e-17 erg/s/cm2/A). This ETC shows that our count rates are safe to the instrument. As all of our targets are fainter than this ETC run, we use this ETC run for all G160M exposures in this program. The Buffer time for the G160M for this ETC run is 2/3 * 25,900 = 17200. We will use this buffer time for all G160M exposures in this program.*

Orbit Structure



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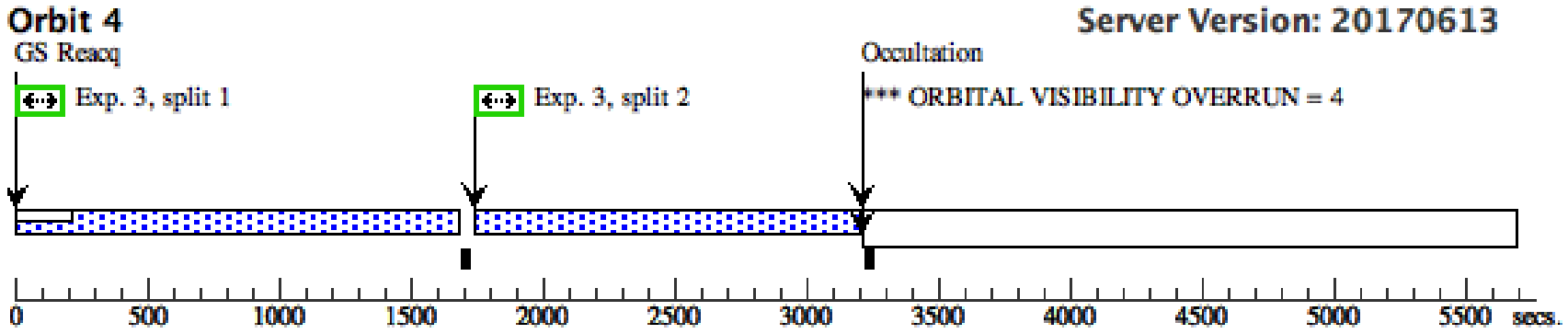
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GS Reacq
Occultation
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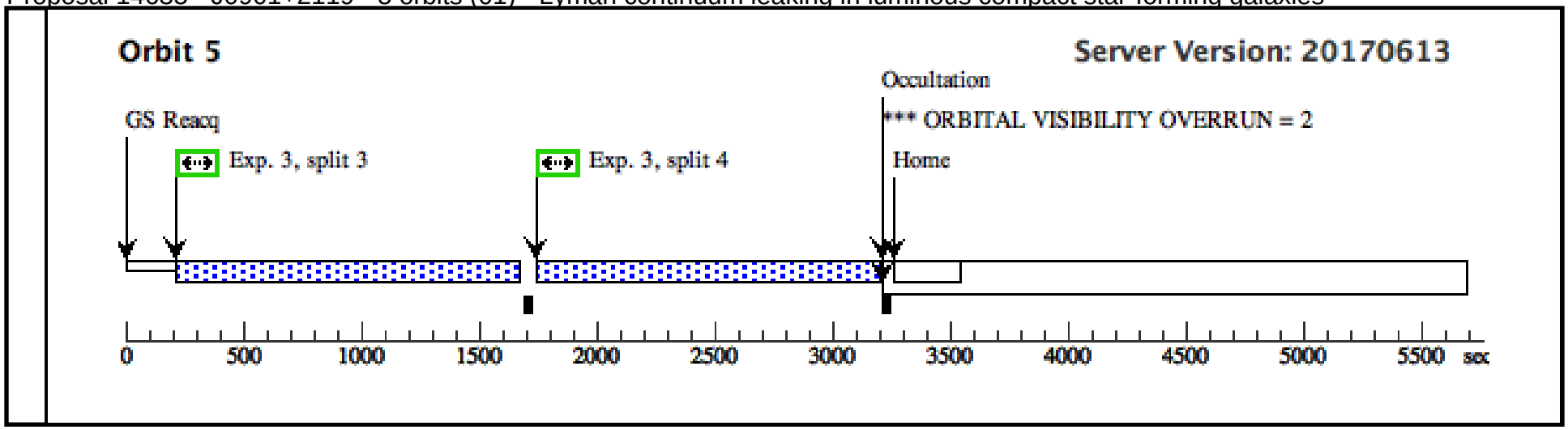
Orbit 5
Server Version: 20170613
Occultation
GS Reacq
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sec

Visit

Proposal 14635, J1011+1947 - 6 orbits (02), scheduling Thu Jun 22 01:01:13 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(J1011+1947 - 6 orbits (02)) Warning (Form): If the target coordinates are not known to 0.4" (or better), an ACQ/SEARCH should precede the ACQ/IMAGE.

(J1011+1947 - 6 orbits (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1011+1947 - 6 orbits (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

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(J1011+1947 - 6 orbits (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1011+1947 - 6 orbits (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

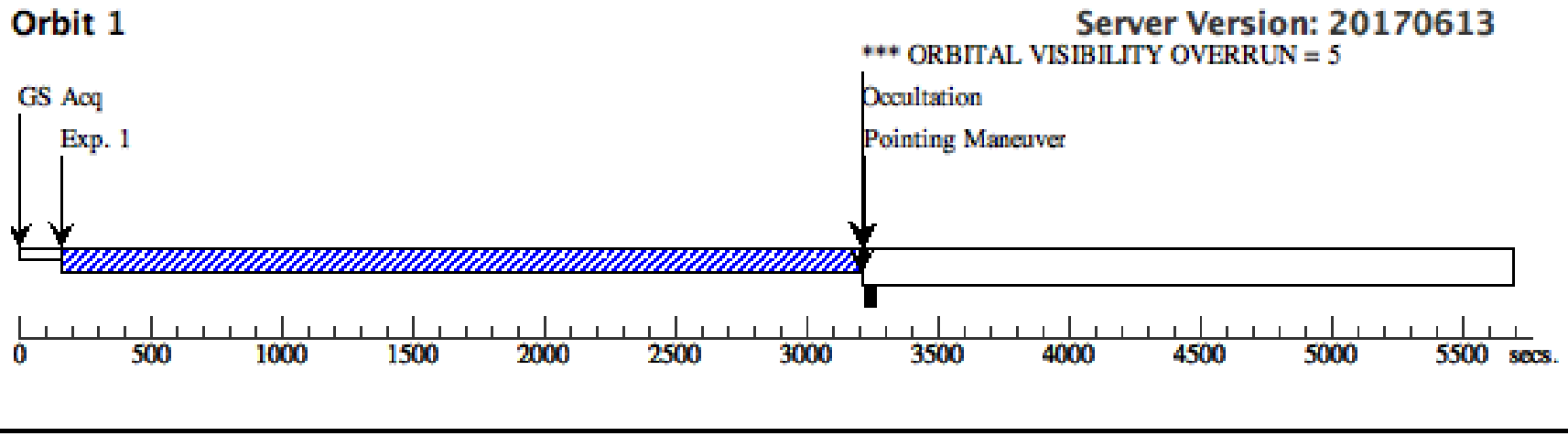
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	J1011+1947	RA: 10 11 38.2800 (152.9095000d) Dec: +19 47 20.94 (19.78915d) Equinox: J2000	Redshift: 0.332	V=21.24+/-0.05 FUV=22.08+/-0.50, NUV=21.31+/-0.27, F(LyC, 1230A)=6e-18 erg/s/cm2/A, F(Lya, 1620A)=8e-17 erg/s/cm2/A, F(acq, 2200A)=8e-17 erg/s/cm2/A	Reference Frame: ICRS

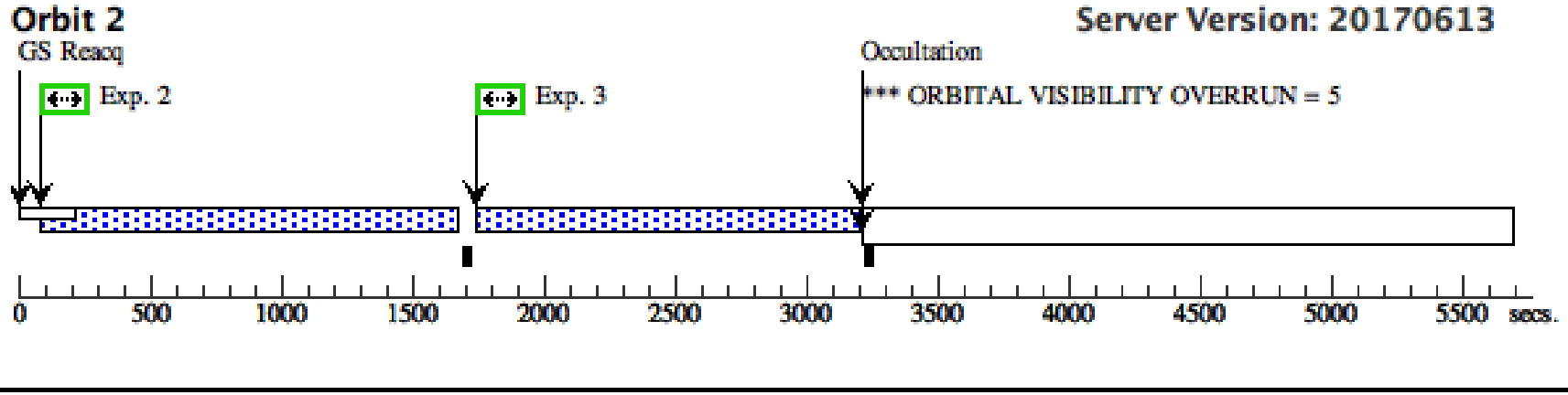
Comments: Extended=NO

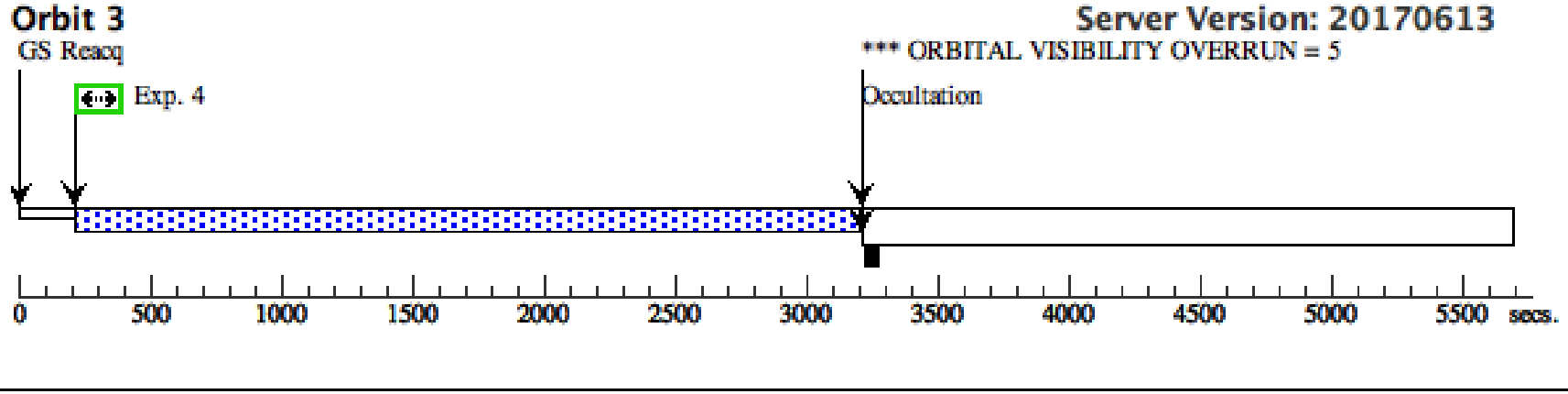
Exposures

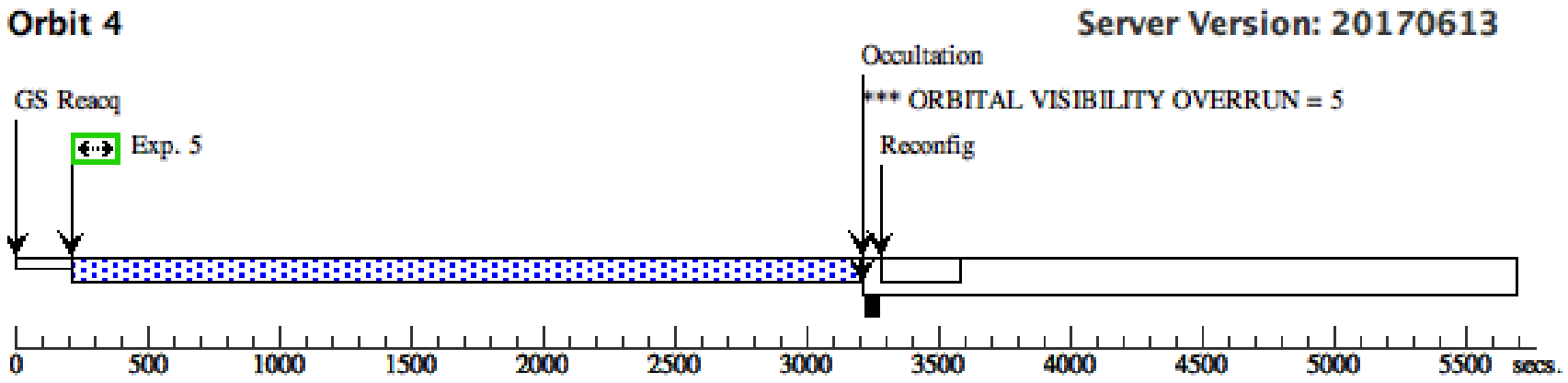
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	J1011+1947_ACQ (COS.ta.821042)	(2) J1011+1947	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				1408 Secs (1408 Secs) *[==>]*	***[1]***
2	J1011+1947_G140L (COS.sp.821050)	(2) J1011+1947	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=1; SEGMENT=A			1409 Secs (1409 Secs) *[==>]*	***[2]***
3	J1011+1947_G140L (COS.sp.821050)	(2) J1011+1947	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=2; SEGMENT=A			1409 Secs (1409 Secs) *[==>]*	***[2]***
4	J1011+1947_G140L (COS.sp.821050)	(2) J1011+1947	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=3; SEGMENT=A			2935 Secs (2935 Secs) *[==>]*	***[3]***
5	J1011+1947_G140L (COS.sp.821050)	(2) J1011+1947	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=4; SEGMENT=A			2935 Secs (2935 Secs) *[==>]*	***[4]***
6	J1011+1947_G160M (COS.sp.821056)	(2) J1011+1947	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=11000.0; FLASH=YES; FP-POS=ALL; SEGMENT=BOTH			1409 Secs (5636 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[5]*** ***[6]***

Orbit Structure








Orbit 4
Server Version: 20170613
Occultation
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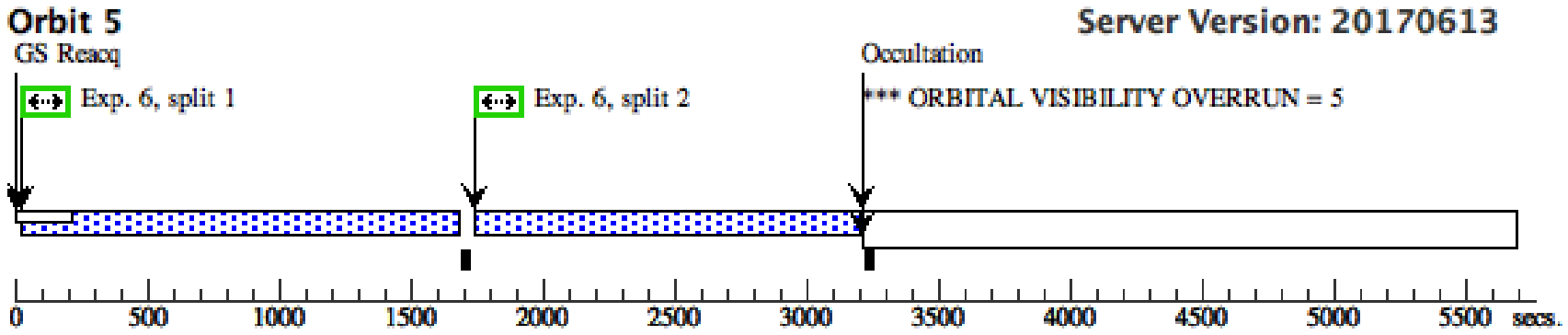
Orbit 5
Server Version: 20170613
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Exp. 6, split 2
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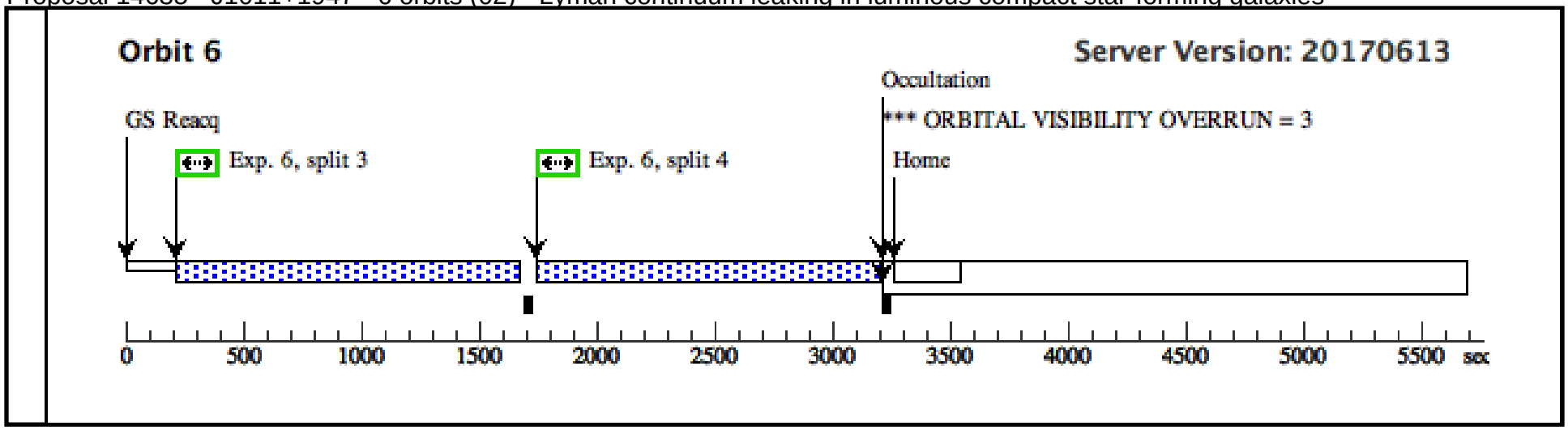
secs.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Server Version: 20170613
Occultation
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GS Reacq
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Exp. 6, split 4
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4500
5000
5500
sec

Visit

Proposal 14635, J1154+2443 -6 orbits (03), completed Thu Jun 22 01:01:13 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(J1154+2443 -6 orbits (03)) Warning (Form): If the target coordinates are not known to 0.4" (or better), an ACQ/SEARCH should precede the ACQ/IMAGE.

(J1154+2443 -6 orbits (03)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

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Fixed Targets

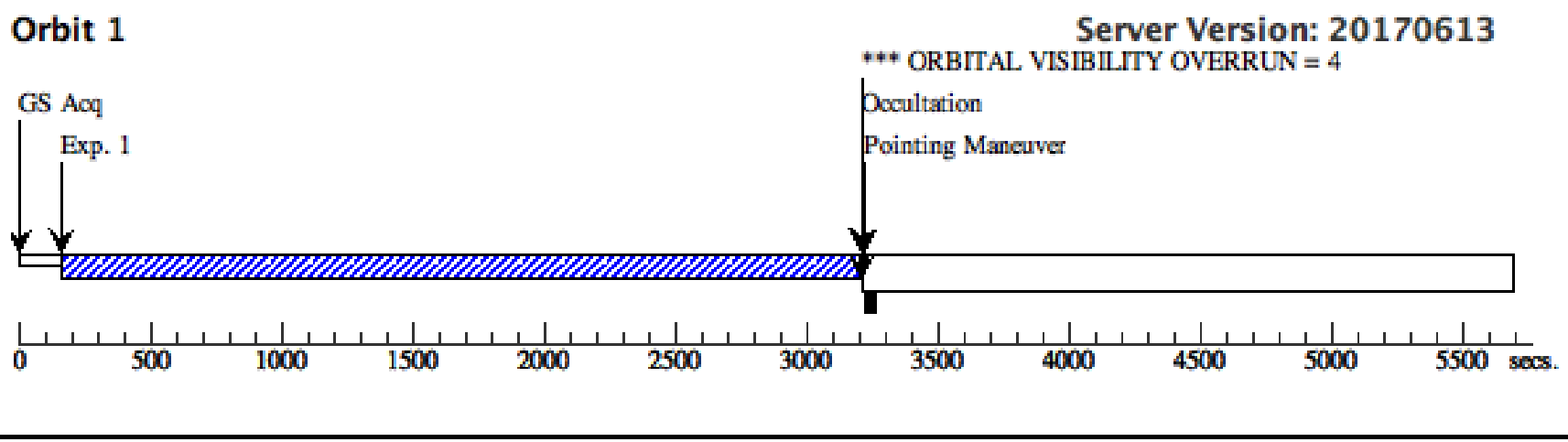
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	J1154+2443	RA: 11 54 48.8500 (178.7035417d) Dec: +24 43 33.03 (24.72584d) Equinox: J2000	Redshift: 0.369	V=21.77+/-0.05 FUV=22.10+/-0.53, NUV=21.57+/-0.34, F(LyC, 1248A)=4e-18 erg/s/cm2/A, F(Lya, 1665A)=5e-17 erg/s/cm2/A, F(acq, 2200A)=5e-17 erg/s/cm2/A	Reference Frame: ICRS

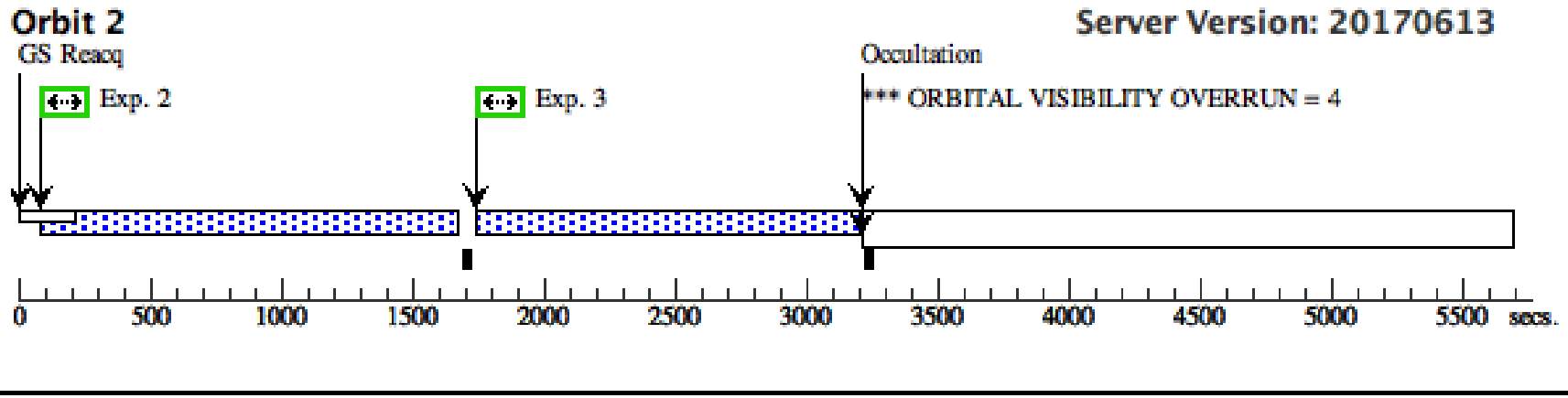
Comments: Extended=NO

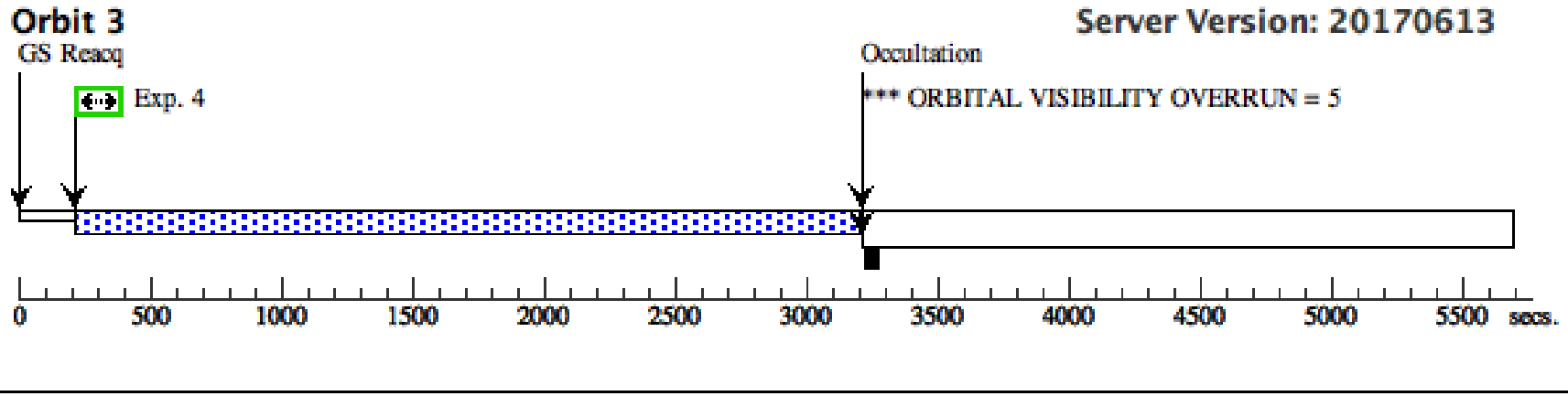
Exposures

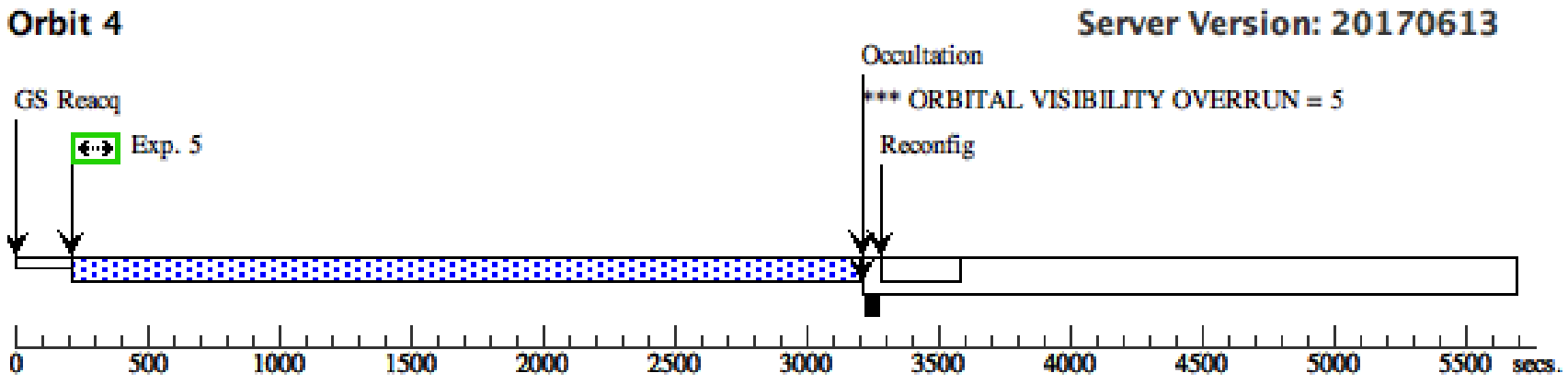
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	J1154+2443_ACQ (COS.ta.821042)	(3) J1154+2443	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				1408 Secs (1408 Secs) *[==>]*	***[1]***
2	J1154+2443_G140L (COS.sp.821050)	(3) J1154+2443	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=1; SEGMENT=A			1409 Secs (1409 Secs) *[==>]*	***[2]***
3	J1154+2443_G140L (COS.sp.821050)	(3) J1154+2443	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=2; SEGMENT=A			1409 Secs (1409 Secs) *[==>]*	***[2]***
4	J1154+2443_G140L (COS.sp.821050)	(3) J1154+2443	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=3; SEGMENT=A			2936 Secs (2936 Secs) *[==>]*	***[3]***
5	J1154+2443_G140L (COS.sp.821050)	(3) J1154+2443	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=4; SEGMENT=A			2936 Secs (2936 Secs) *[==>]*	***[4]***
6	J1154+2443_G160M (COS.sp.821056)	(3) J1154+2443	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=11000.0; FLASH=YES; FP-POS=ALL; SEGMENT=BOTH			1409 Secs (5636 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[5]*** ***[6]***

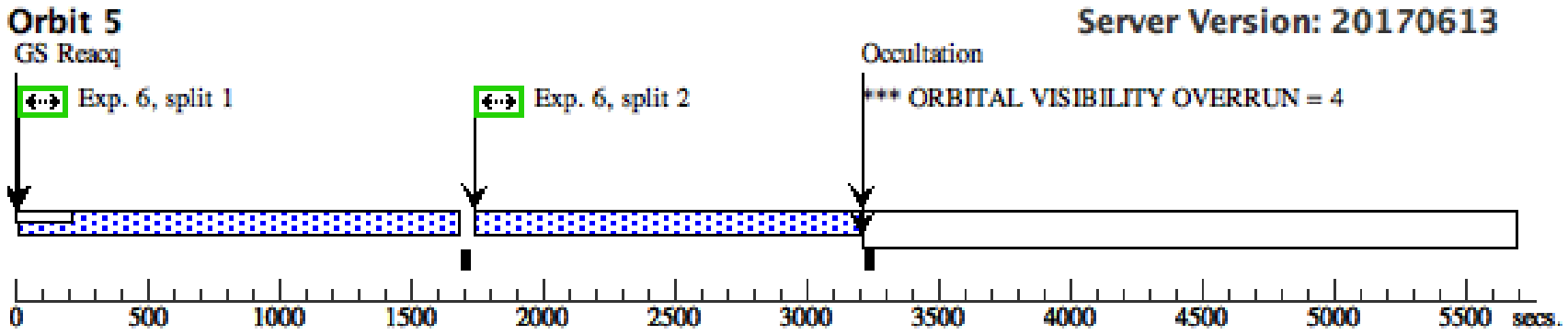
Orbit Structure

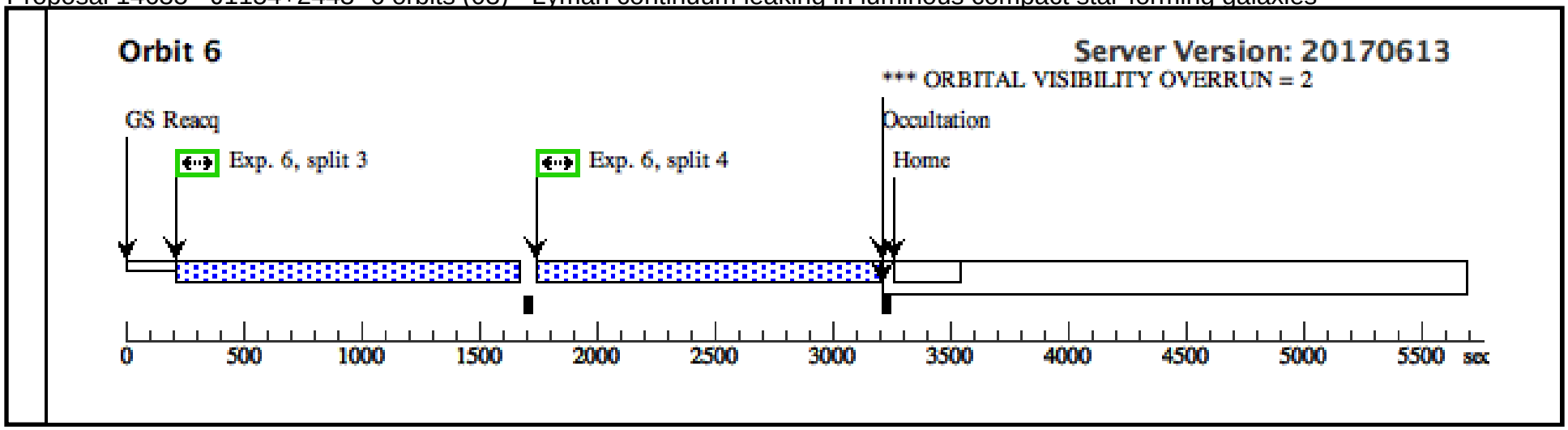







Orbit 4
Server Version: 20170613
Occultation
GS Reacq
*** ORBITAL VISIBILITY OVERRUN = 5
Exp. 5
Reconfig
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 5
Server Version: 20170613
GS Reacq
Occultation
Exp. 6, split 1
Exp. 6, split 2
*** ORBITAL VISIBILITY OVERRUN = 4
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 6
Server Version: 20170613
*** ORBITAL VISIBILITY OVERRUN = 2
GS Reacq
Exp. 6, split 3
Exp. 6, split 4
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14635, J1154+2443 -6 orbits (53)

Thu Jun 22 01:01:13 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Repeat of visit 3 which was lost due to a SIC&DH lockup event.

Diagnostics

(J1154+2443 -6 orbits (53)) Warning (Form): If the target coordinates are not known to 0.4" (or better), an ACQ/SEARCH should precede the ACQ/IMAGE.
(J1154+2443 -6 orbits (53)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(J1154+2443 -6 orbits (53)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(J1154+2443 -6 orbits (53)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(J1154+2443 -6 orbits (53)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(J1154+2443 -6 orbits (53)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(J1154+2443 -6 orbits (53)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

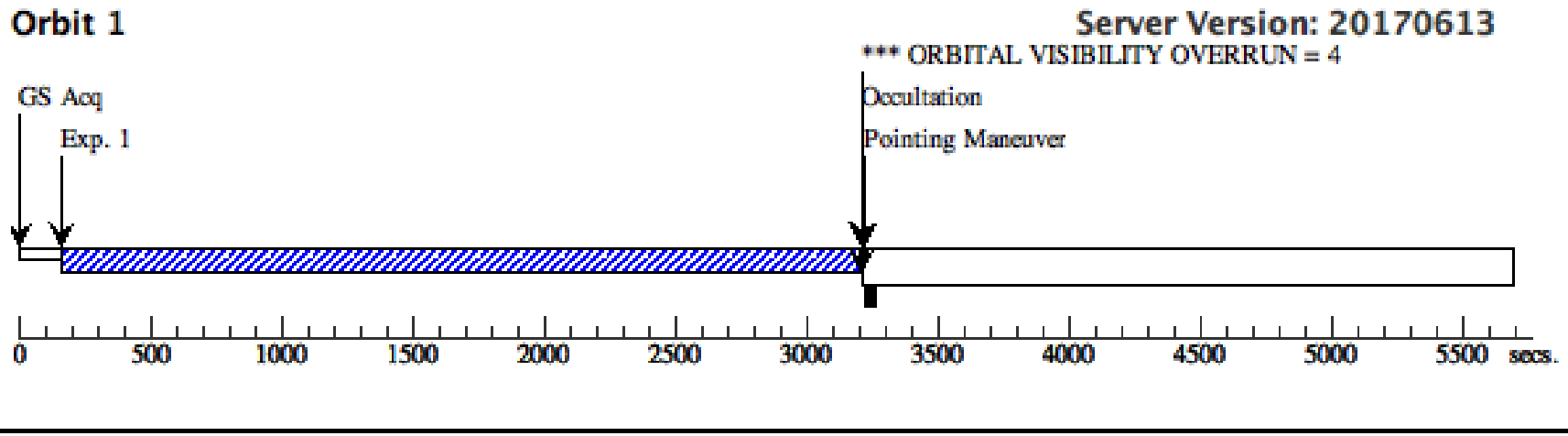
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	J1154+2443	RA: 11 54 48.8500 (178.7035417d) Dec: +24 43 33.03 (24.72584d) Equinox: J2000	Redshift: 0.369	V=21.77+/-0.05 FUV=22.10+/-0.53, NUV=21.57+/-0.34, F(LyC, 1248A)=4e-18 erg/s/cm2/A, F(Lya, 1665A)=5e-17 erg/s/cm2/A, F(acq, 2200A)=5e-17 erg/s/cm2/A	Reference Frame: ICRS

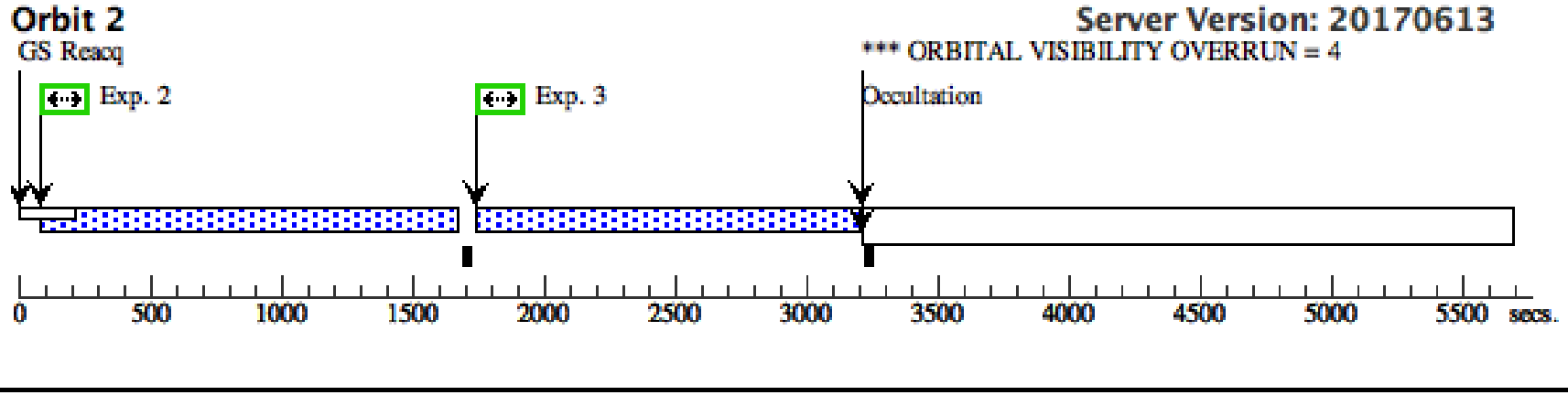
Comments: Extended=NO

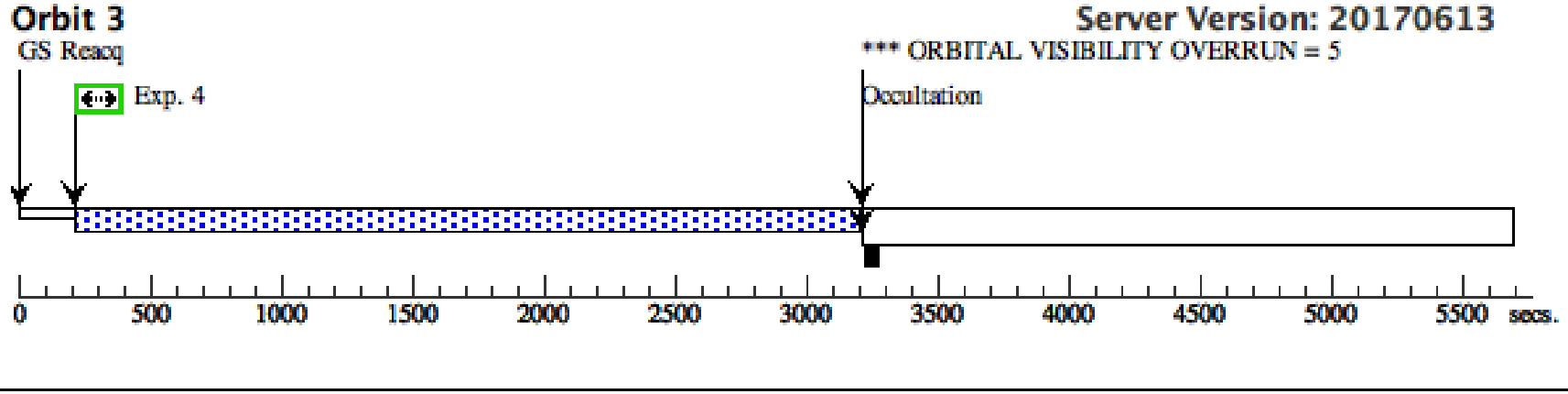
Exposures

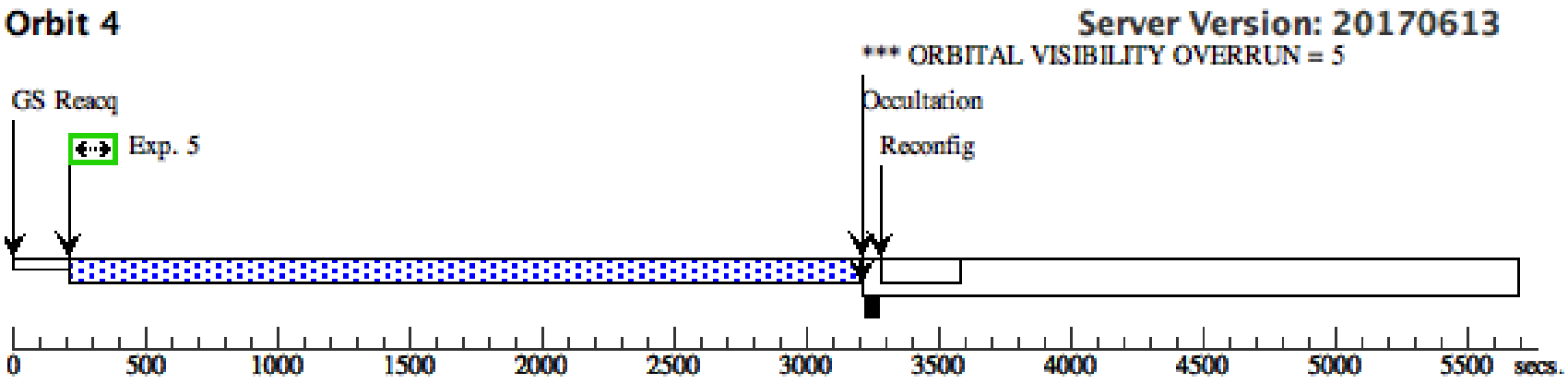
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	J1154+2443_ACQ (COS.ta.821042)	(3) J1154+2443	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				1408 Secs (1408 Secs) *[==>]*	***[1]***
2	J1154+2443_G140L (COS.sp.821050)	(3) J1154+2443	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=1; SEGMENT=A			1409 Secs (1409 Secs) *[==>]*	***[2]***
3	J1154+2443_G140L (COS.sp.821050)	(3) J1154+2443	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=2; SEGMENT=A			1409 Secs (1409 Secs) *[==>]*	***[2]***
4	J1154+2443_G140L (COS.sp.821050)	(3) J1154+2443	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=3; SEGMENT=A			2936 Secs (2936 Secs) *[==>]*	***[3]***
5	J1154+2443_G140L (COS.sp.821050)	(3) J1154+2443	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=4; SEGMENT=A			2936 Secs (2936 Secs) *[==>]*	***[4]***
6	J1154+2443_G160M (COS.sp.821056)	(3) J1154+2443	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=11000.0; FLASH=YES; FP-POS=ALL; SEGMENT=BOTH			1409 Secs (5636 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[5]*** ***[6]***

Orbit Structure








Orbit 4
Server Version: 20170613
*** ORBITAL VISIBILITY OVERRUN = 5
GS Reacq
Exp. 5
Occultation
Reconfig
0
500
1000
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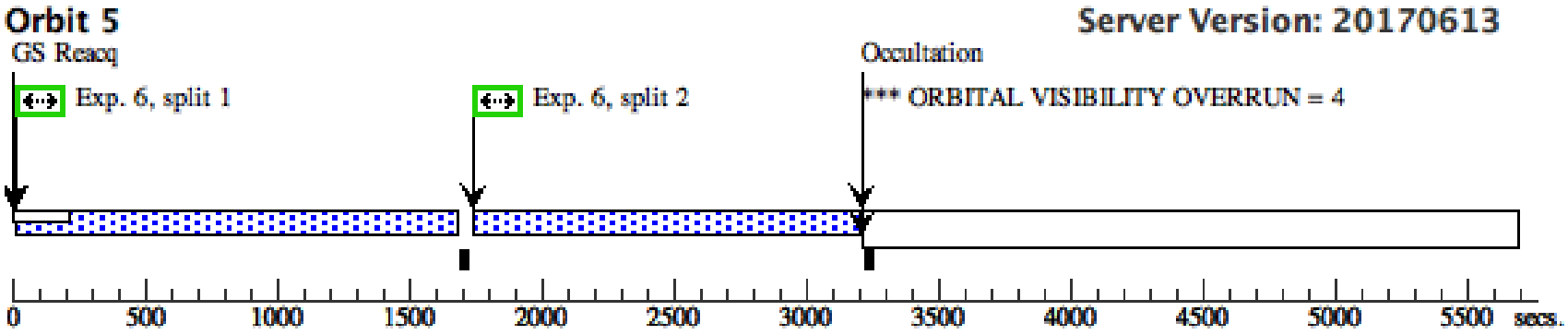
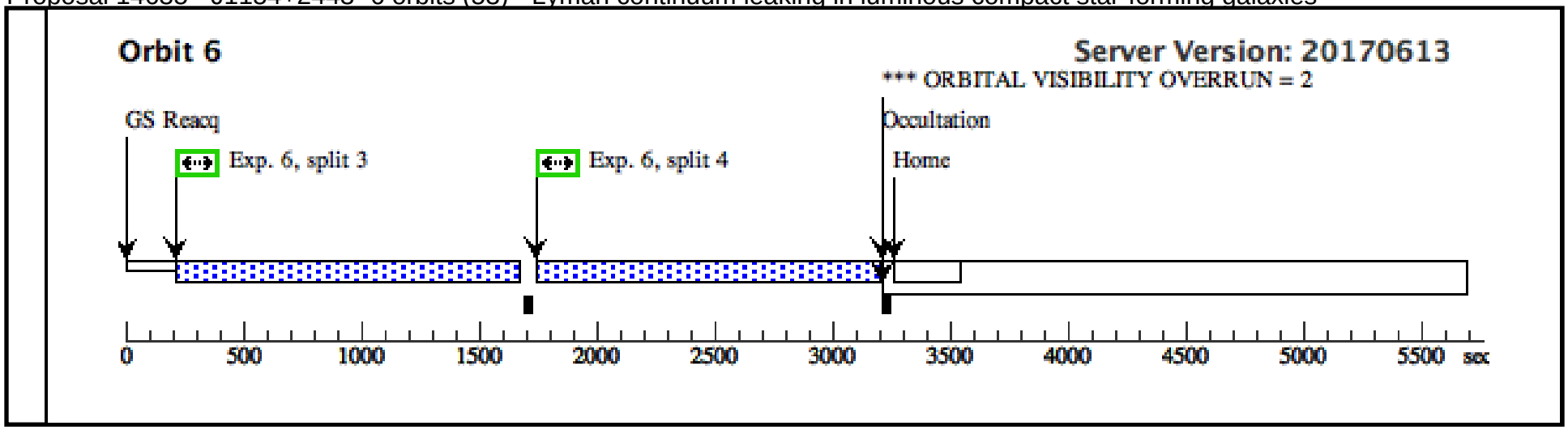
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 5
Server Version: 20170613
GS Reacq
Exp. 6, split 1
Exp. 6, split 2
Occultation
*** ORBITAL VISIBILITY OVERRUN = 4
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 6
Server Version: 20170613
*** ORBITAL VISIBILITY OVERRUN = 2
GS Reacq
Exp. 6, split 3
Exp. 6, split 4
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Proposal 14635 - J1243+4646 - 6 orbits (04) - Lyman continuum leaking in luminous compact star-forming galaxies

Visit

Proposal 14635, J1243+4646 - 6 orbits (04), scheduling Thu Jun 22 01:01:13 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(J1243+4646 - 6 orbits (04)) Warning (Form): If the target coordinates are not known to 0.4" (or better), an ACQ/SEARCH should precede the ACQ/IMAGE.

(J1243+4646 - 6 orbits (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1243+4646 - 6 orbits (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1243+4646 - 6 orbits (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1243+4646 - 6 orbits (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1243+4646 - 6 orbits (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1243+4646 - 6 orbits (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

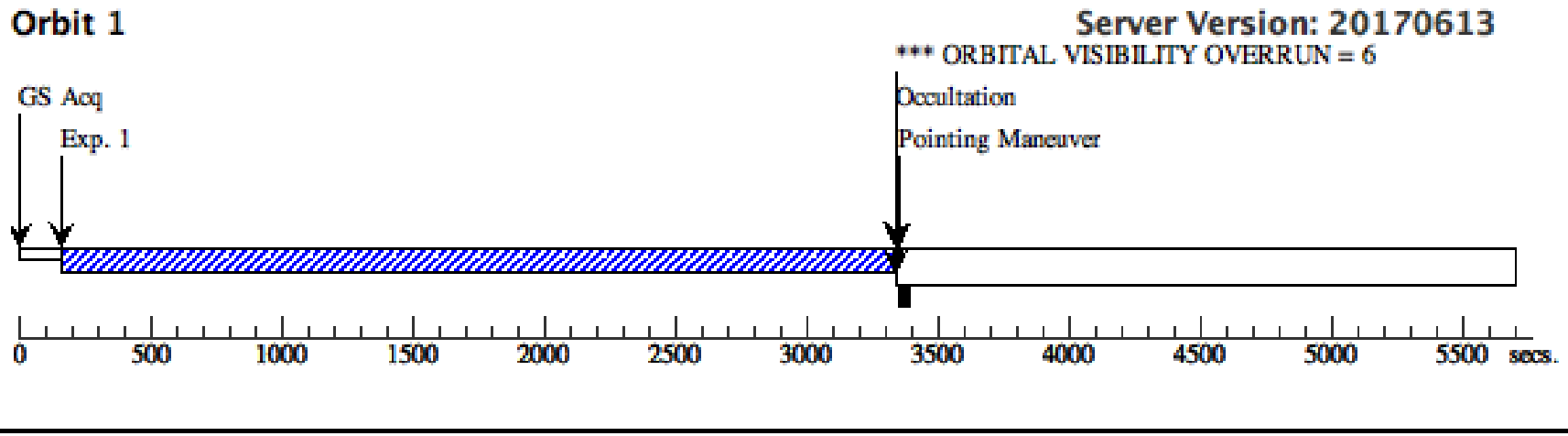
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	J1243+4646	RA: 12 43 0.6300 (190.7526250d) Dec: +46 46 50.40 (46.78067d) Equinox: J2000	Redshift: 0.432	V=21.48+/-0.05 FUV=21.31+/-0.26, NUV=21.61+/-0.24, F(LyC, 1290A)=6e-18 erg/s/cm2/A, F(Lya, 1741A)=6e-17 erg/s/cm2/A, F(acq, 2200A)=8e-17 erg/s/cm2/A	Reference Frame: ICRS

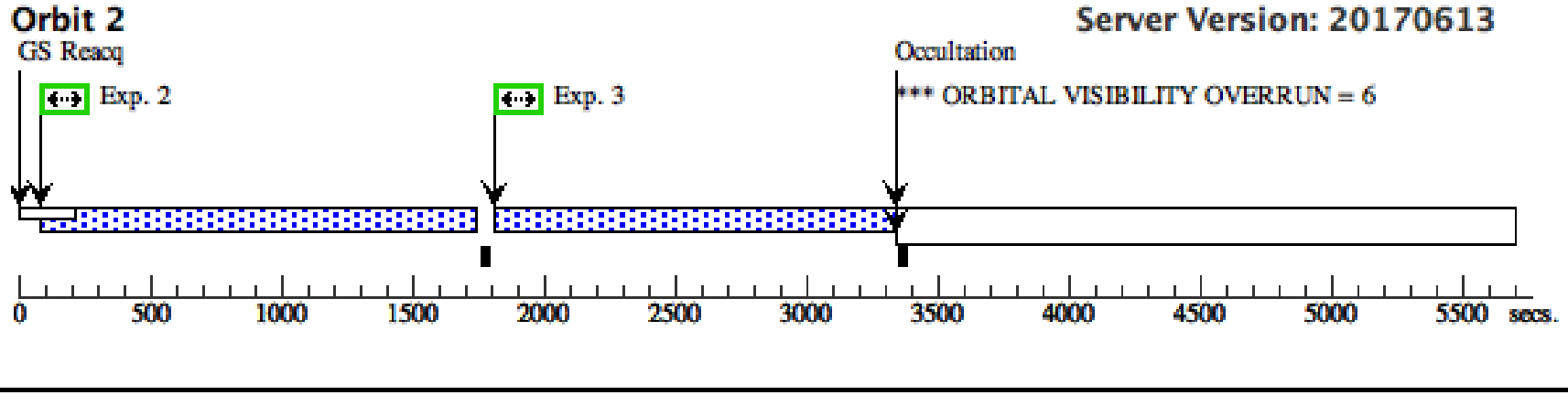
Comments: Extended=NO

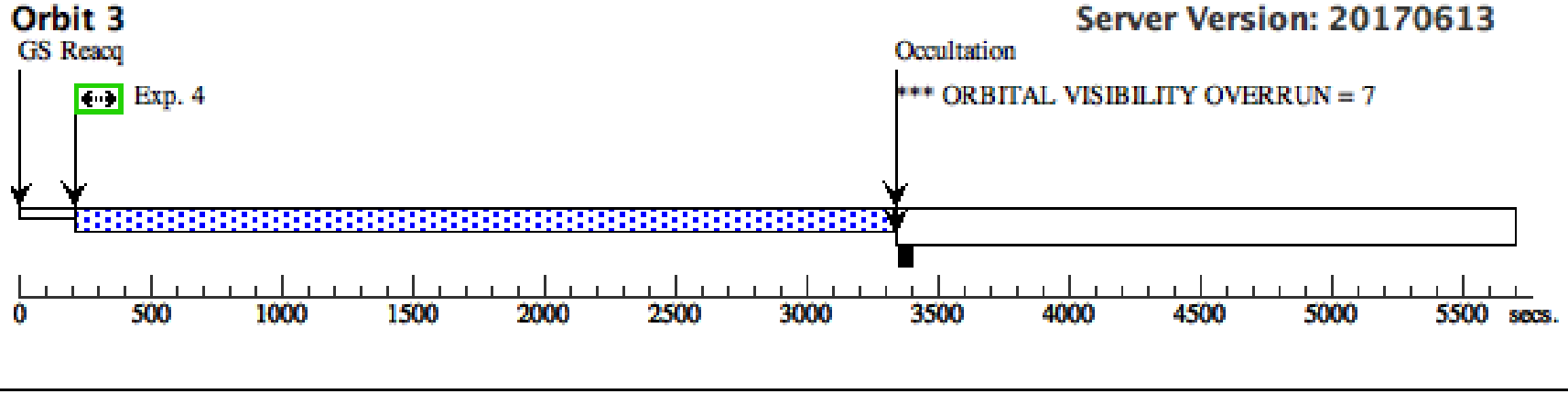
Exposures

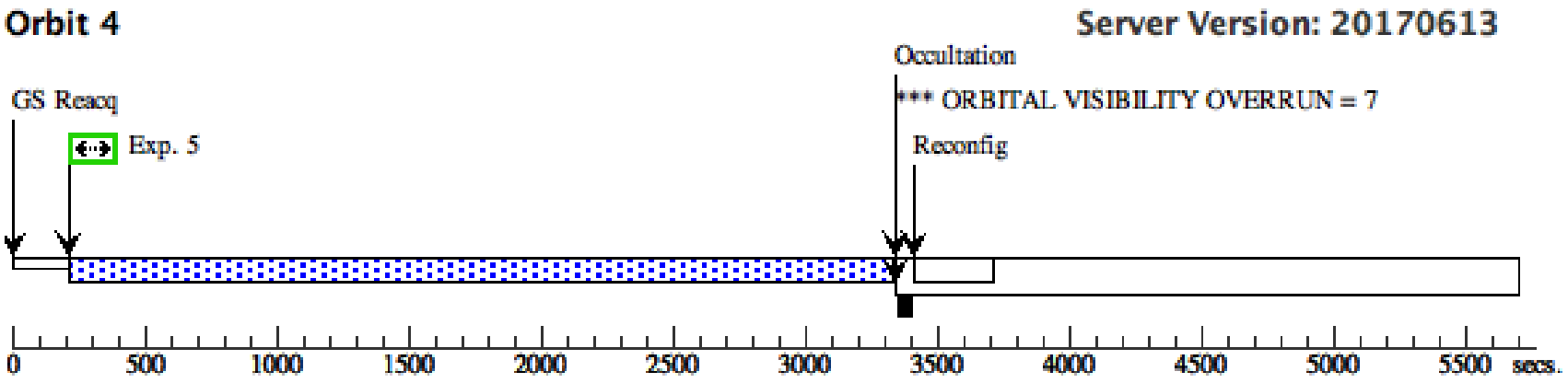
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	J1243+4646_ACQ (COS.ta.821042)	(4) J1243+4646	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				1473 Secs (1473 Secs) *[==>]*	***[1]***
2	J1243+4646_G140L (COS.sp.821050)	(4) J1243+4646	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=1; SEGMENT=A			1474 Secs (1474 Secs) *[==>]*	***[2]***
3	J1243+4646_G140L (COS.sp.821050)	(4) J1243+4646	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=2; SEGMENT=A			1474 Secs (1474 Secs) *[==>]*	***[2]***
4	J1243+4646_G140L (COS.sp.821050)	(4) J1243+4646	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=3; SEGMENT=A			3066 Secs (3066 Secs) *[==>]*	***[3]***
5	J1243+4646_G140L (COS.sp.821050)	(4) J1243+4646	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=4; SEGMENT=A			3066 Secs (3066 Secs) *[==>]*	***[4]***
6	J1243+4646_G160M (COS.sp.821056)	(4) J1243+4646	COS/FUV, TIME-TAG, PSA	G160M 1611 A	BUFFER-TIME=11000.0; FLASH=YES; FP-POS=ALL; SEGMENT=BOTH			1474 Secs (5896 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[5]*** ***[6]***

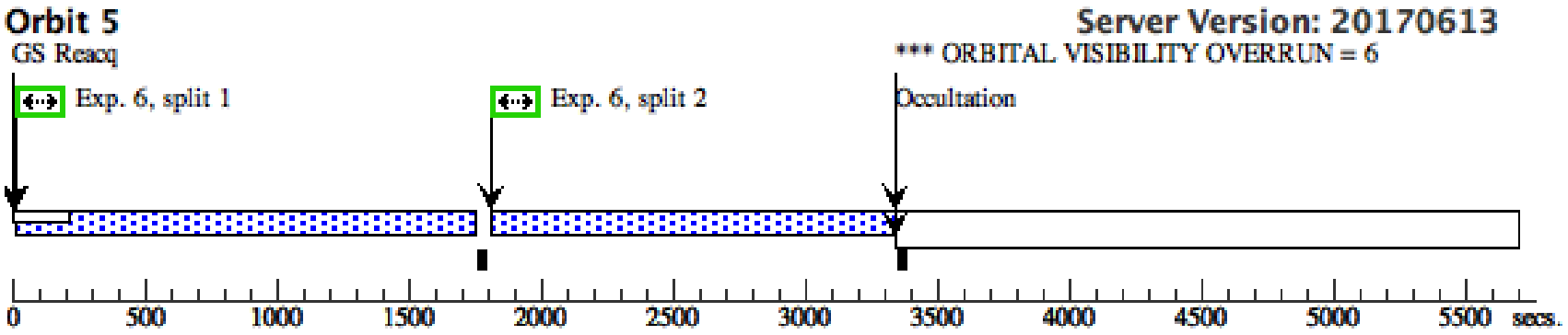
Orbit Structure

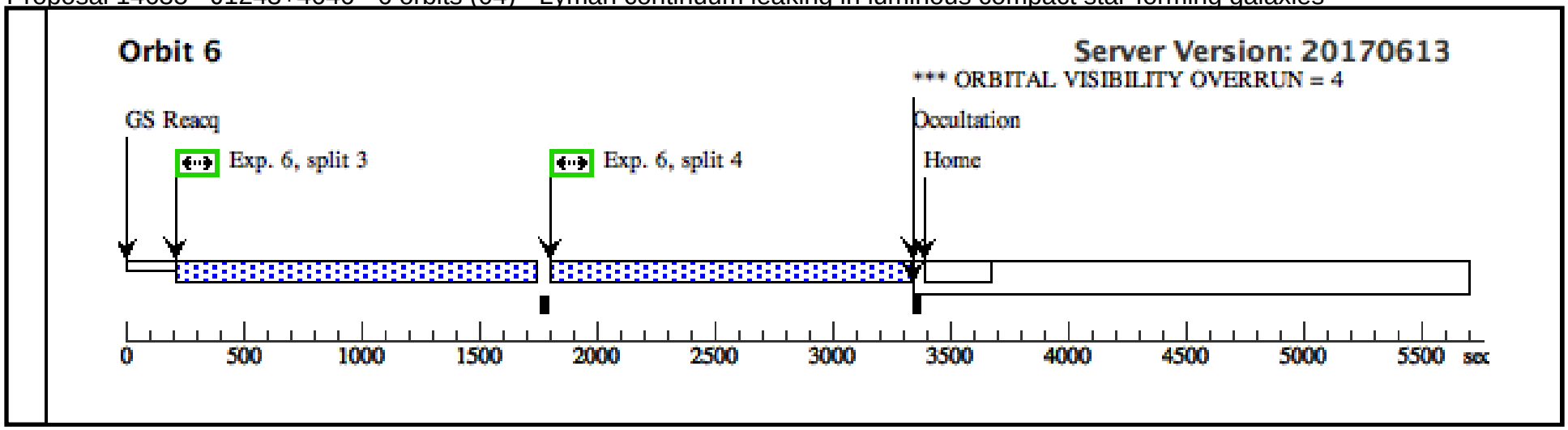







Orbit 4
Server Version: 20170613
Occultation
GS Reacq
*** ORBITAL VISIBILITY OVERRUN = 7
Exp. 5
Reconfig
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 5
Server Version: 20170613
GS Reacq
*** ORBITAL VISIBILITY OVERRUN = 6
Exp. 6, split 1
Exp. 6, split 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 6
Server Version: 20170613
*** ORBITAL VISIBILITY OVERRUN = 4
GS Reacq
Exp. 6, split 3
Exp. 6, split 4
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14635, J1248+4259 - 5 orbits (05), scheduling Thu Jun 22 01:01:13 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(J1248+4259 - 5 orbits (05)) Warning (Form): If the target coordinates are not known to 0.4" (or better), an ACQ/SEARCH should precede the ACQ/IMAGE.

(J1248+4259 - 5 orbits (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1248+4259 - 5 orbits (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1248+4259 - 5 orbits (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1248+4259 - 5 orbits (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1248+4259 - 5 orbits (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

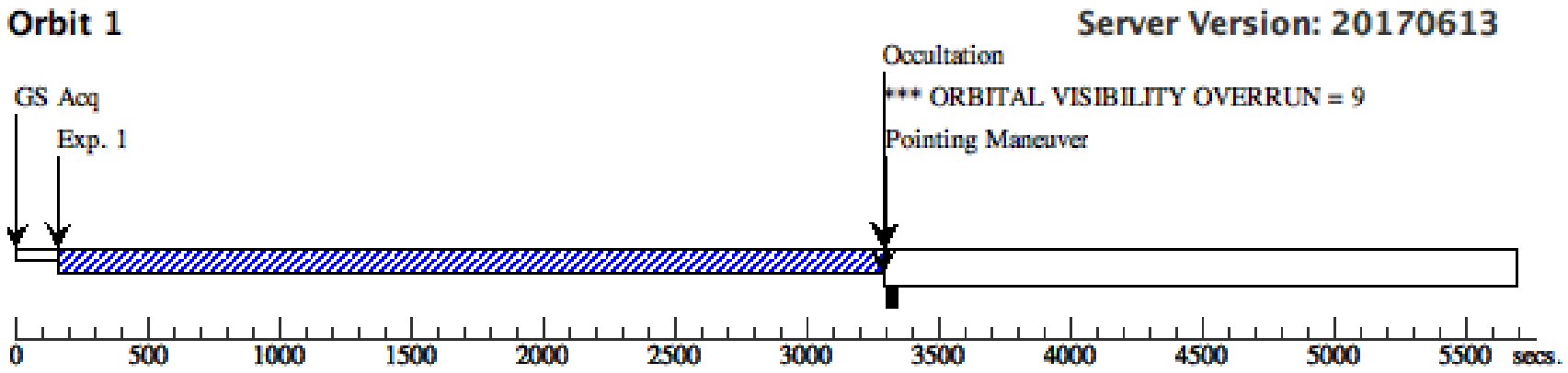
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	J1248+4259	RA: 12 48 10.4800 (192.0436667d) Dec: +42 59 53.60 (42.99822d) Equinox: J2000	Redshift: 0.363	V=21.22+/-0.05 FUV=21.42+/-0.38, NUV=21.16+/-0.28, F(LyC, 1243A)=12e-18 erg/s/cm2/A, F(Lya, 1656A)=7e-17 erg/s/cm2/A, F(acq, 2200A)=8e-17 erg/s/cm2/A	Reference Frame: ICRS

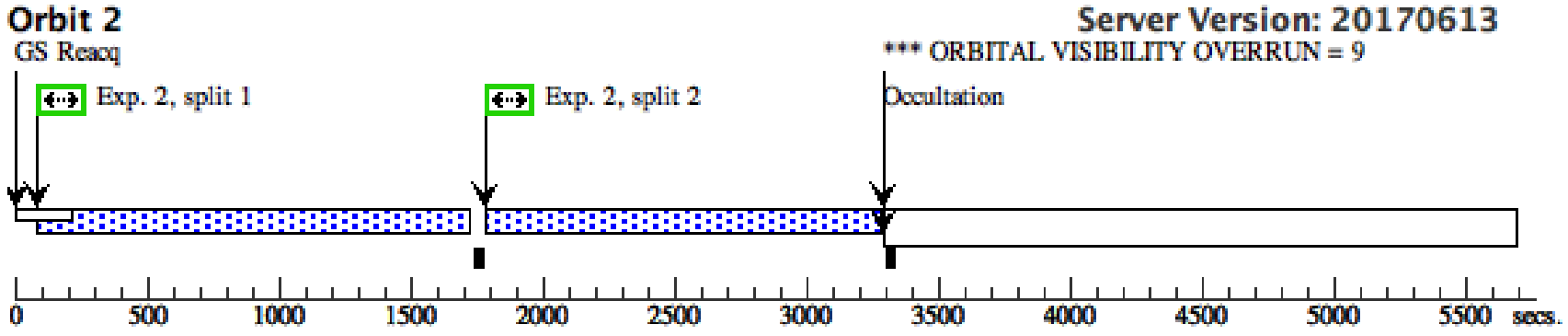
Comments: Extended=NO

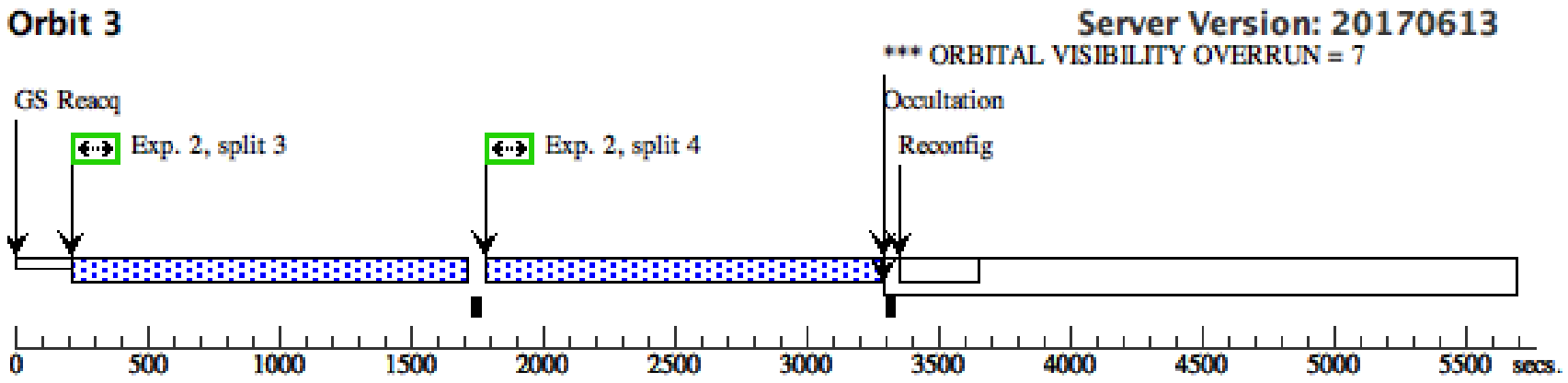
Exposures

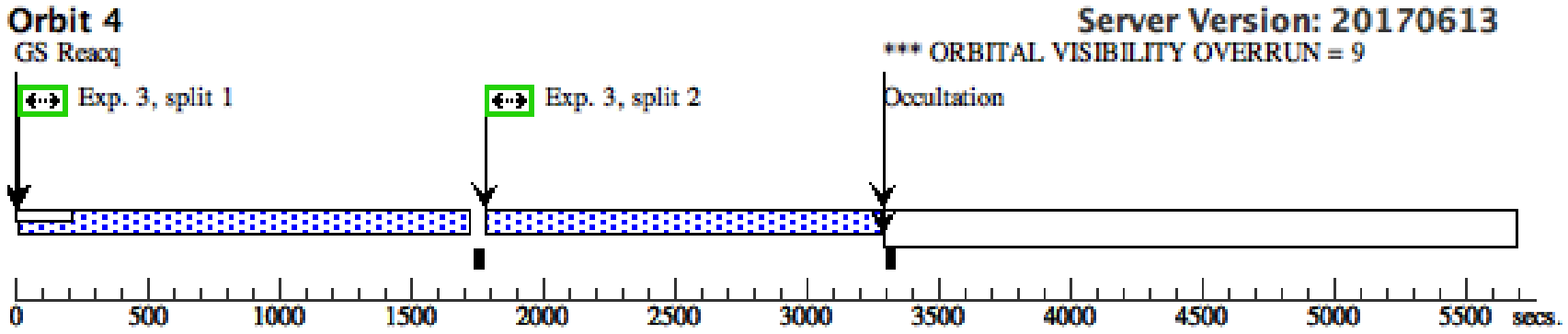
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	J1248+4259_ACQ (COS.ta.821042)	(5) J1248+4259	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				1451 Secs (1451 Secs) *[==>]*	 ***[1]***
2	J1248+4259_G140L (COS.sp.821050)	(5) J1248+4259	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=ALL; SEGMENT=A			1452 Secs (5808 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	 ***[2]*** ***[3]***
3	J1248+4259_G160M (COS.sp.821056)	(5) J1248+4259	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=11000.0; FLASH=YES; FP-POS=ALL; SEGMENT=BOTH			1452 Secs (5808 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	 ***[4]*** ***[5]***

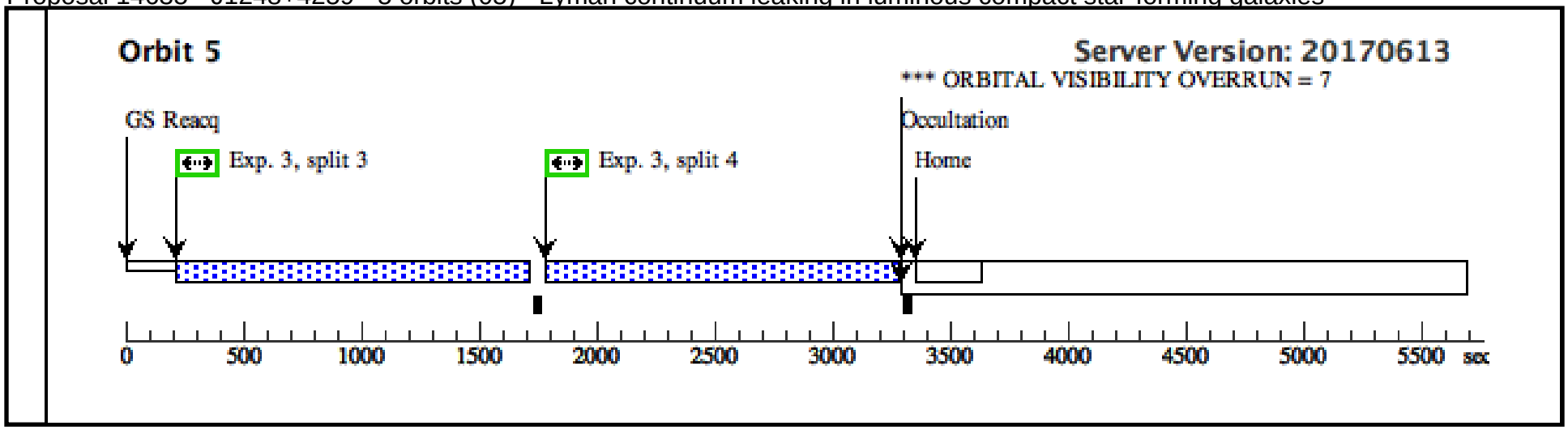
Orbit Structure






Orbit 3
Server Version: 20170613
*** ORBITAL VISIBILITY OVERRUN = 7
GS Reacq
Exp. 2, split 3
Exp. 2, split 4
Occultation
Reconfig
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 4
Server Version: 20170613
*** ORBITAL VISIBILITY OVERRUN = 9
GS Reacq
Exp. 3, split 1
Exp. 3, split 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 5
Server Version: 20170613
*** ORBITAL VISIBILITY OVERRUN = 7
GS Reacq
Exp. 3, split 3
Exp. 3, split 4
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 14635, J1256+4509 - 6 orbits (06), scheduling Thu Jun 22 01:01:14 GMT 2017

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(J1256+4509 - 6 orbits (06)) Warning (Form): If the target coordinates are not known to 0.4" (or better), an ACQ/SEARCH should precede the ACQ/IMAGE.
(J1256+4509 - 6 orbits (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(J1256+4509 - 6 orbits (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(J1256+4509 - 6 orbits (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(J1256+4509 - 6 orbits (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(J1256+4509 - 6 orbits (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN
(J1256+4509 - 6 orbits (06)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

Fixed Targets

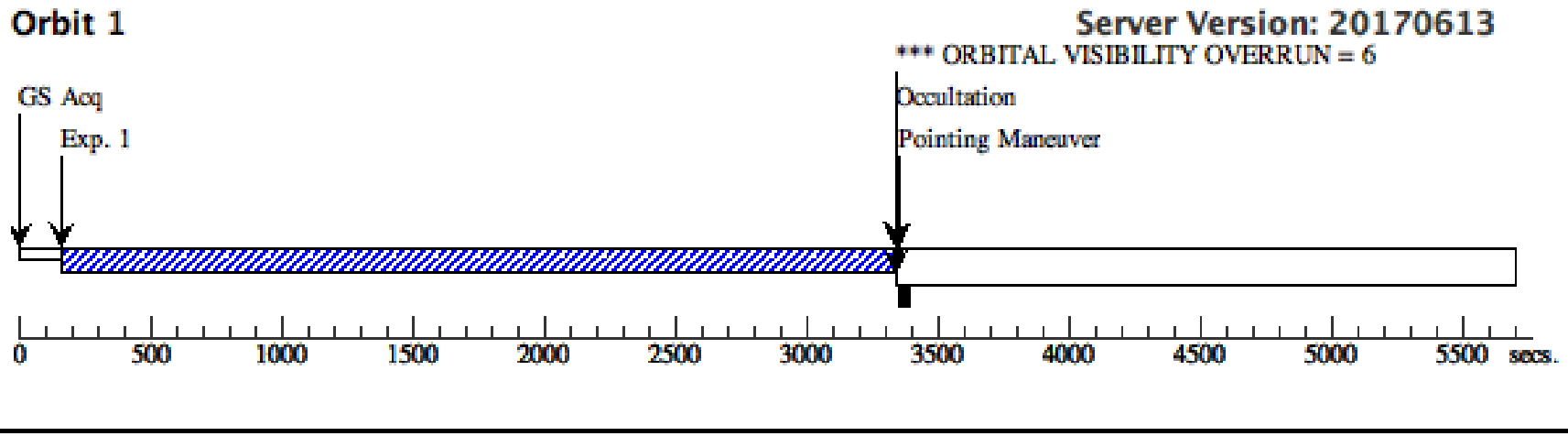
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	J1256+4509	RA: 12 56 44.1500 (194.1839583d) Dec: +45 09 17.01 (45.15472d) Equinox: J2000	Redshift: 0.353	V=22.01+/-0.05 FUV=21.66+/-0.30, NUV=21.85+/-0.27, F(LyC, 1234A)=7e-18 erg/s/cm2/A, F(Lya, 1645A)=4e-17 erg/s/cm2/A, F(acq, 2200A)=4e-17 erg/s/cm2/A	Reference Frame: ICRS

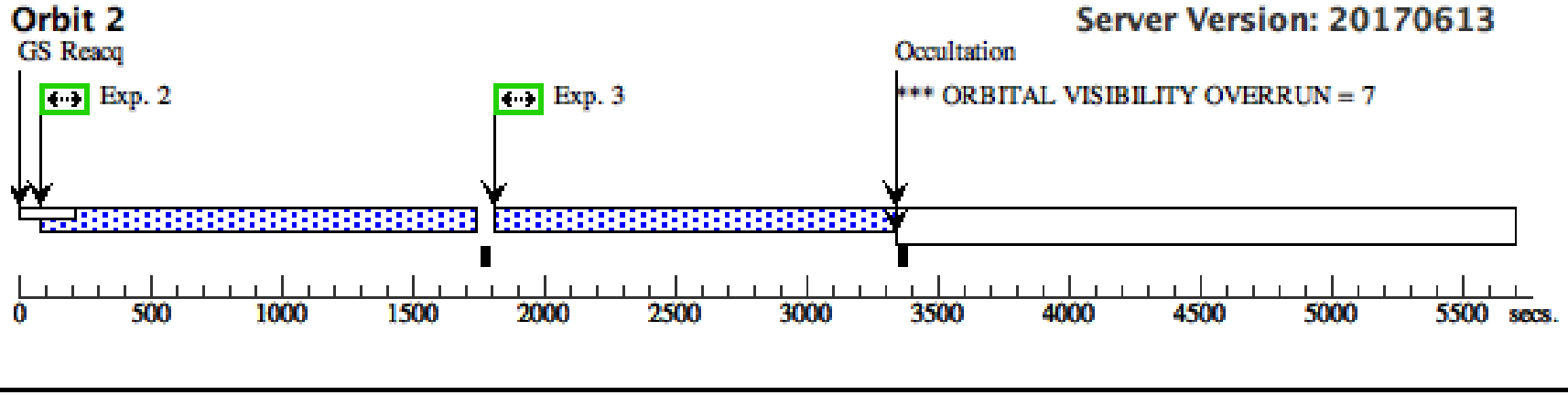
Comments: Extended=NO

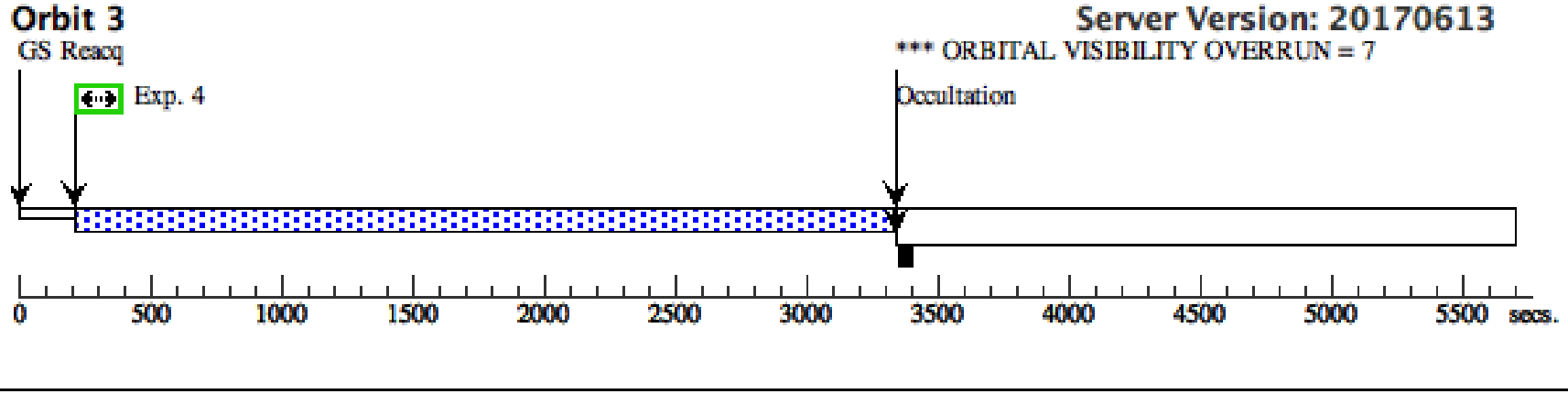
Exposures

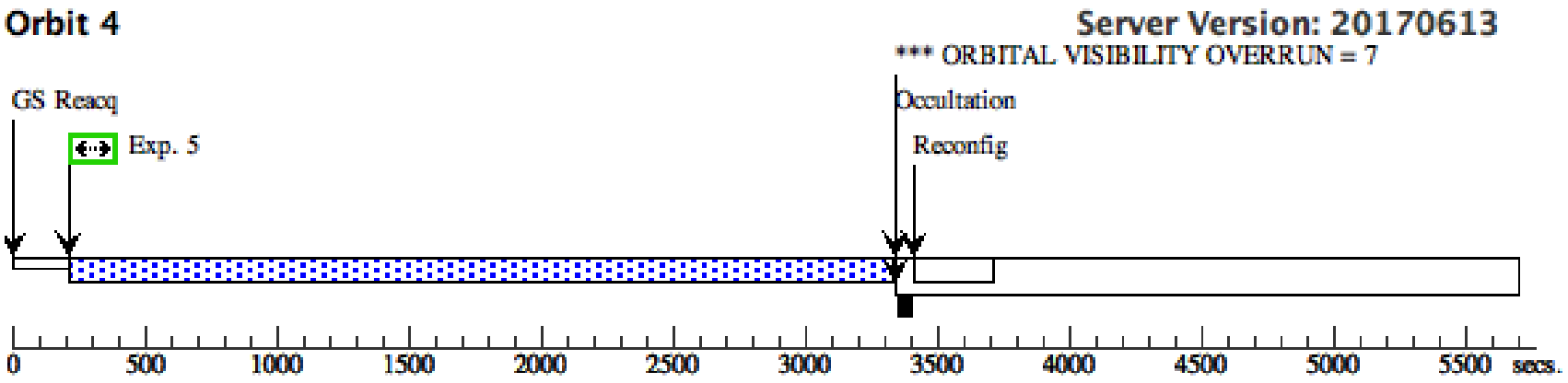
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	J1256+4509_ACQ (COS.ta.821042)	(6) J1256+4509	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				1473 Secs (1473 Secs) *[==>]*	***[1]***
2	J1256+4509_G140L (COS.sp.821050)	(6) J1256+4509	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=1; SEGMENT=A			1474 Secs (1474 Secs) *[==>]*	***[2]***
3	J1256+4509_G140L (COS.sp.821050)	(6) J1256+4509	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=2; SEGMENT=A			1475 Secs (1475 Secs) *[==>]*	***[2]***
4	J1256+4509_G140L (COS.sp.821050)	(6) J1256+4509	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=3; SEGMENT=A			3066 Secs (3066 Secs) *[==>]*	***[3]***
5	J1256+4509_G140L (COS.sp.821050)	(6) J1256+4509	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=7700.0; FLASH=YES; FP-POS=4; SEGMENT=A			3066 Secs (3066 Secs) *[==>]*	***[4]***
6	J1256+4509_G160M (COS.sp.821056)	(6) J1256+4509	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=11000.0; FLASH=YES; FP-POS=ALL; SEGMENT=BOTH			1474 Secs (5896 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[5]*** ***[6]***

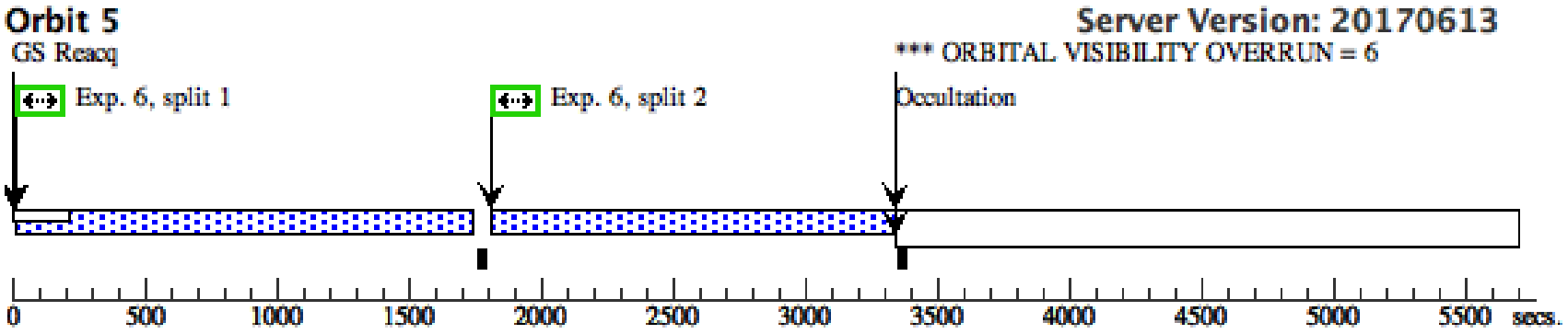
Orbit Structure

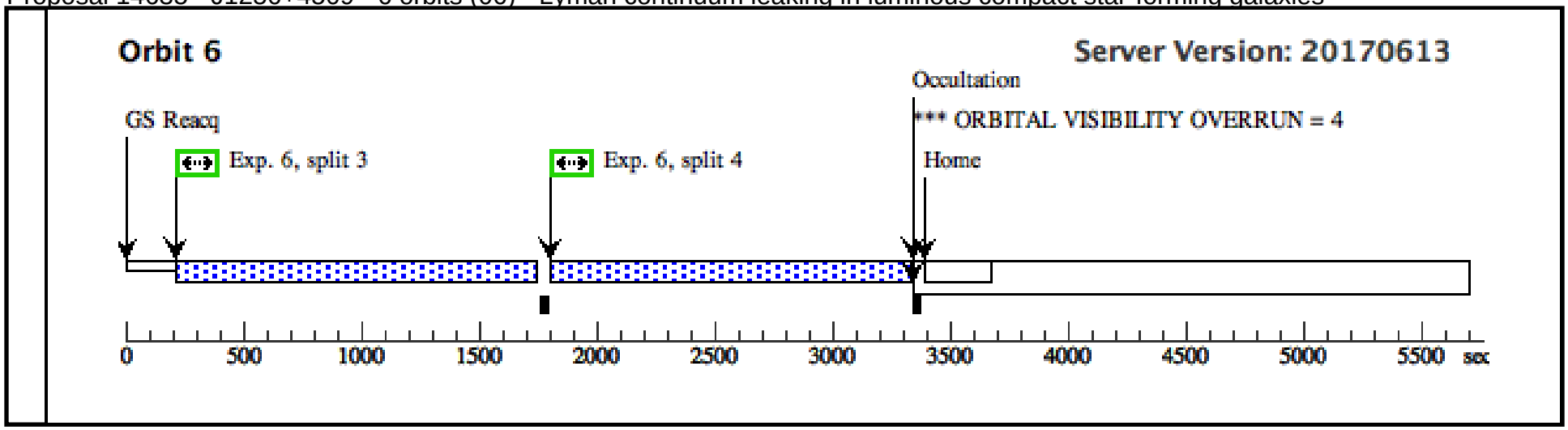







Orbit 4
Server Version: 20170613
*** ORBITAL VISIBILITY OVERRUN = 7
GS Reacq
Exp. 5
Occultation
Reconfig
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 5
Server Version: 20170613
*** ORBITAL VISIBILITY OVERRUN = 6
GS Reacq
Exp. 6, split 1
Exp. 6, split 2
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
secs.


Orbit 6
Server Version: 20170613
Occultation
GS Reacq
*** ORBITAL VISIBILITY OVERRUN = 4
Exp. 6, split 3
Exp. 6, split 4
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec