15935 - UV diagnostics as barometers for galactic scale AGN outflows

Cycle: 27, 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) J0833+1005-REFSTAR (2) J0833+1005-NUCLEUS (3) J0833+1005-OFFNUCLEUS	COS/FUV COS/NUV	3	16-Jul-2020 17:01:05.0	yes
02	(1) J0833+1005-REFSTAR (3) J0833+1005-OFFNUCLEUS	COS/FUV COS/NUV	2	16-Jul-2020 17:01:07.0	yes
03	(4) J0841+0101-REFSTAR (5) J0841+0101-NUCLEUS (6) J0841+0101-OFFNUCLEUS	COS/FUV COS/NUV	2	16-Jul-2020 17:01:08.0	yes
04	(7) J1000+1242-REFSTAR (8) J1000+1242-NUCLEUS (9) J1000+1242-OFFNUCLEUS	COS/FUV COS/NUV	2	16-Jul-2020 17:01:10.0	yes
05	(10) J1010+1413-REFSTAR (11) J1010+1413-NUCLEUS (12) J1010+1413-OFFNUCLEUS	COS/FUV COS/NUV	2	16-Jul-2020 17:01:13.0	yes
55	(10) J1010+1413-REFSTAR (11) J1010+1413-NUCLEUS (12) J1010+1413-OFFNUCLEUS	COS/FUV COS/NUV	2	16-Jul-2020 17:01:14.0	yes
09	(10) J1010+1413-REFSTAR (11) J1010+1413-NUCLEUS (12) J1010+1413-OFFNUCLEUS	COS/FUV COS/NUV	2	16-Jul-2020 17:01:16.0	yes
07	(13) J1222-0007-NUCLEUS (14) J1222-0007-OFFNUCLEUS	COS/FUV COS/NUV	3	16-Jul-2020 17:01:19.0	yes
08	(15) J1255-0339-REFSTAR (16) J1255-0339-NUCLEUS	COS/FUV COS/NUV	2	16-Jul-2020 17:01:20.0	yes
10	(15) J1255-0339-REFSTAR (17) J1255-0339-OFFNUCLEUS	COS/FUV COS/NUV	3	16-Jul-2020 17:01:22.0	yes
60	(15) J1255-0339-REFSTAR (17) J1255-0339-OFFNUCLEUS	COS/FUV COS/NUV	3	16-Jul-2020 17:01:24.0	yes

26 Total Orbits Used

ABSTRACT

Galaxy evolution models require feedback from AGN to suppress star-formation in massive galaxies. However, the mechanisms that enable central black holes to couple to galactic scale ISM are widely debated with proposed mechanisms ranging from radiation pressure on dust to ISM entrainment in hot, shocked winds. Observations that enable measurements of the presence and properties of the hot wind component therefore represent a critical test of AGN feedback physics. Sensitive and spatially resolved UV diagnostics from highly ionized emission lines not only differentiate between AGN photoionized gas and shocks, but can also serve as barometers that enable estimates of the pressure of any ambient hot wind. In particular, highly ionized emission line ratios depend strongly on the ratio of the ambient hot gas pressure to radiation pressure from the AGN, and hence can determine which of these processes dominates the outflow dynamics. GO-15280 performed a pilot study with the first spatially resolved UV spectroscopy of a prototypical galactic scale AGN-driven. The observed OVI, NV, and CIV ratios are consistent with predictions from AGN photoionized clouds compressed by radiation pressure and rule out the presence of a dynamically important hot wind component ~10 kpc from the nucleus, providing a strong constraint on feedback models. Building on this success, we propose to perform spatially resolved UV spectroscopy for a representative sample of 7 galactic scale AGN outflows. These observations will enable unique insights into the presence of an unseen hot wind; the physical conditions of the cool, galactic-scale outflows; and accurate estimates of mass/momentum outflow rates.

OBSERVING DESCRIPTION

We will acquire spatially resolved and sensitive UV diagnostics (OVI, NV, CIV, SiIV, and HeII) with HST+COS of known, low-z galactic-scale AGN-driven winds to distinguish AGN feedback mechanisms by searching for signatures of pressure from a hot confining wind. These observations will also allow us to distinguish gas ionized by AGN photoionization from shocks and go beyond order-of-magnitude estimates of the ionized outflow rate by constraining unresolved density structure through ionization modeling.

Choice of COS and gratings:

The OVI, NV, CIV, SiIV, and HeII emission lines can be observed at low redshift with a combination of the FUV and NUV channels on STIS or COS. While the significantly higher spatial resolution of STIS would be useful for the proposed analysis, the lower throughput and significantly higher dark current per arcsec^2 make observations with STIS prohibitively expensive. We will carry out the observations with the COS NUV and FUV channels. Because the gas kinematics have already been measured based on optical data and the emission lines from different ions are well

separated by hundreds of Angstroms (we do not require measurements of doublet ratios), the low-resolution data are sufficient for our purposes. The COS/FUV+G140L and COS/NUV+G230L setups are therefore ideal because of their broad wavelength coverage. Coverage of the desired wavelength range is possible with just G140L for most of the targets, but the somewhat higher redshifts of J0833+1005 (z=0.2547) and J1010+1413 (z=0.1987) require observations with G230L for CIV and HeII.

Two objects (J1222-0007 and J1255-0339) are at z=0.17 which places the OVI emission line close to geocoronal HI lya emission though not close enough for the Milky Way ISM damping wing to significantly effect the emission levels. With the low resolution grating, the geocoronal HI lya will significantly contaminate the OVI emission. We will therefore also observe these two systems with the higher resolution G130M grating which will cleanly separate the OVI emission from geocoronal contamination.

Finally, we note that for J0833+1000, the OVI emission line falls close to the geocoronal O I emission line at approx 1300 Angstroms. To minimize contamination, we therefore request G140L observations of the target when the spacecraft is in shadow which reduces the O I emission to negligible levels. The remaining portions of the orbit outside of shadow will be used for the other emission lines.

In order to search for signatures of hot gas pressure in optically identified, spatially resolved outflows, we require both a COS pointing at the location of the outflow and also a nuclear pointing. In order to determine whether radiation pressure or hot gas pressure dominate the dynamics of the emitting clouds, we require sufficient S/N to measure line ratios to within 0.05-0.1 dex requiring a S/N of approx 20-30 in OVI and CIV and S/N of approx 15 in NV.

To estimate exposure times, we measured the [O III] surface brightness based on existing measurements from spatially resolved ground-based spectroscopy (Greene et al. 2011, Sun et al. 2017, Jarvis et al., 2019). We then converted these to expected surface brightness in OVI, NV, CIV, and HeII lambda 1637 based on the observed line ratios of J1356+1026 observed in a Cycle 25 pilot program. Finally, we computed estimated flux levels accounting for the effective area of the COS primary science aperture (PSA). The total flux levels in the aperture expected in these emission lines for outflow pointings range from 5e-16 to 5e-15 (cgs) for the weakest line (NV) and 1e-16 to 1e-14 (cgs) for the strongest lines. Based on [OIII] measurements in the nuclear SDSS spectra, the expected flux levels in the nuclear COS pointings will be 2-10x higher. Based on the ETC, we therefore require total exposure times of 2400-4500 sec in G140L and G230L for the off-nuclear outflow pointings. Because the observations are not dark limited, the observing time in G130M for objects that require the additional grating setup are similar. Integration times for the nuclear pointings are significantly shorter and range from 400-2400 sec. For each grating setup, we will acquire exposures in 4 FP-POS settings to mitigate the impact of the grid-wire pattern on emission line profiles.

The targets are unresolved and some exhibit complex morphologies in archival HST images. Whenever possible, we will therefore perform an acquisition using a nearby star with coordinates precisely measured by GAIA. Because the coordinates are known to better than 0.01", we will acquire with a ACQ/IMAGE sequence in the NUV and then offset the telescope to place the nuclear or off-nuclear pointings in the primary science aperture. For one target, J1222-0007, the morphology is sufficiently simple that a direct acquisition on the nucleus is possible.

Impact of 1 Gyro mode: This program will not be significantly impacted by 1 gyro mode which would result in slightly higher overhead for acquisition (+2 minutes) and offset from the reference star to the target (+1 minute).

Visit

Proposal 15935, J0833_nuc_offnuc_G140L (01), completed Thu Jul 16 21:01:24 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: J0833+1005 nuclear and off-nuclera pointings for G140L. Requires shadow to measure OVI which falls near the geocoronal OI line at the object redshift. Non-shadow portions of orbit are filled with G140L to increase S/N in other lines.

Diagnostics

(J0833_nuc_offnuc_G140L (01)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

(J0833_nuc_offnuc_G140L (01)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

(J0833_nuc_offnuc_G140L (01)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

(J0833_nuc_offnuc_G140L (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J0833_nuc_offnuc_G140L (01)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Exposure 2 (J0833_nuc_offnuc_G140L (01))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (J0833_nuc_offnuc_G140L (01))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 5 (J0833_nuc_offnuc_G140L (01))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 6 (J0833_nuc_offnuc_G140L (01))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 7 (J0833_nuc_offnuc_G140L (01))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 8 (J0833_nuc_offnuc_G140L (01))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 9 (J0833_nuc_offnuc_G140L (01))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

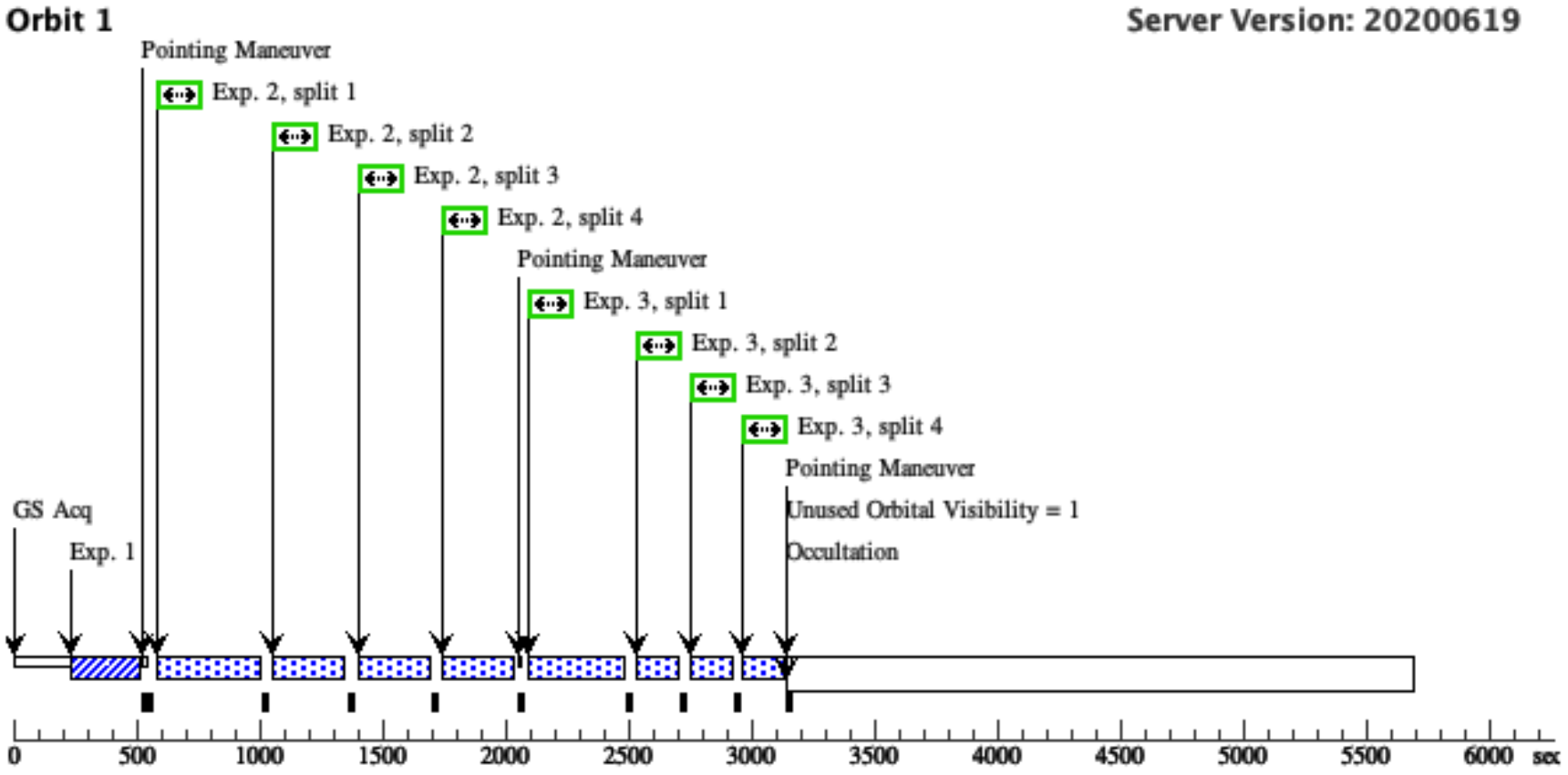
Fixed Targets

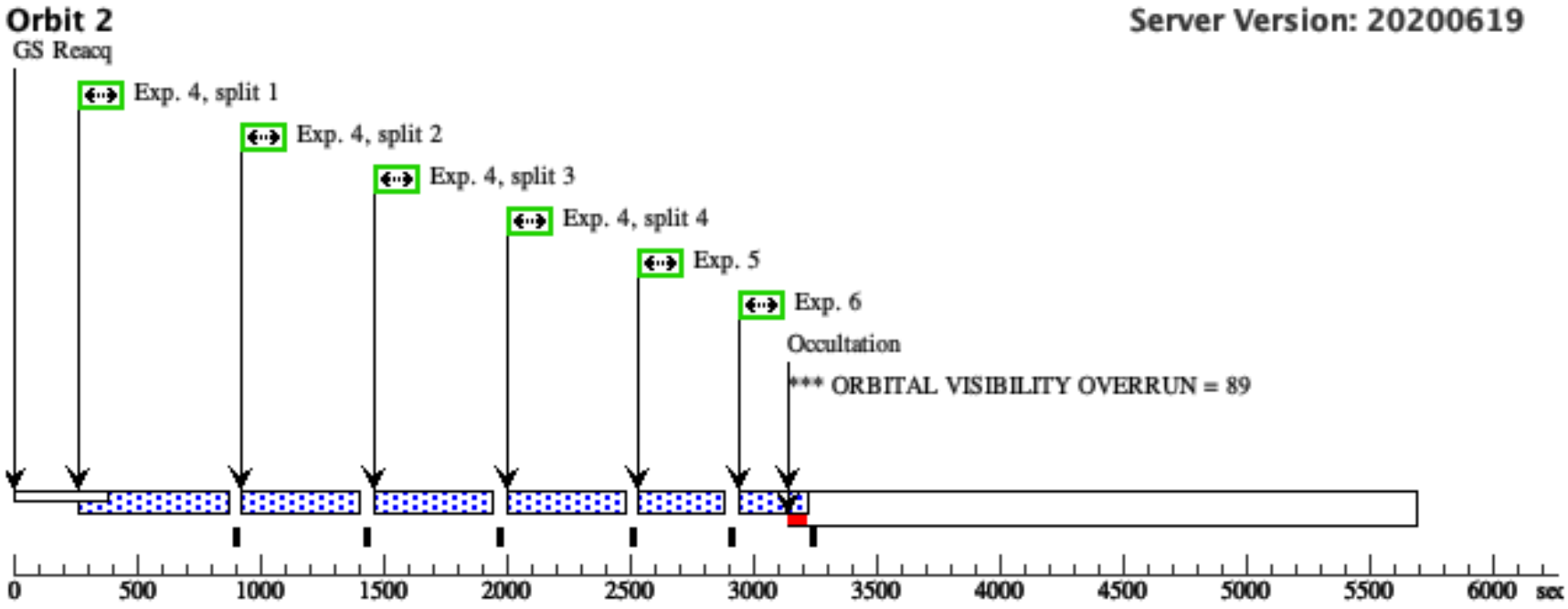
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	J0833+1005-REFSTAR	RA: 08 33 14.9300 (128.3122083d) Dec: +10 00 58.95 (10.01638d) Equinox: J2000		V=15.3 u=17.16	Reference Frame: ICRS
Comments: J0833+1005 offset star. Coordinates and mags from GAIA. Teff=5300 K. *Category=STAR* *Description=[G V-IV]* *Extended=NO*					
(2)	J0833+1005-NUCLEUS	RA: 08 33 15.0800 (128.3128333d) Dec: +10 00 52.40 (10.01456d) Equinox: J2000		V=19.59	Reference Frame: ICRS
Comments: nucleus to observe in G140L and G230L for 1 orbit each *Category=GALAXY* *Description=[NLR, QUASAR, WIND]* *Extended=YES*					
(3)	J0833+1005-OFFNUCLEUS	RA: 08 33 15.3200 (128.3138333d) Dec: +10 00 52.33 (10.01454d) Equinox: J2000		V=22+/-1	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, QUASAR, WIND]* *Extended=YES*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1370243)	(1) J0833+1005-REF STAR	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				30.00 Secs (30 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1370486)	(2) J0833+1005-NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=ALL; BUFFER-TIME=8496			241 Secs (964 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	 ***[1]***
3	(COS.sp.1370492)	(2) J0833+1005-NUCLEUS	COS/NUV, TIME-TAG, PSA	G230L 3000 A	FP-POS=ALL; BUFFER-TIME=1702			150 Secs (600 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	 ***[1]***
4	(COS.sp.1369142)	(3) J0833+1005-OFF NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=ALL; BUFFER-TIME=8496			380 Secs (1728 Secs) *[==>432.0 Secs (Split 1)]* *[==>432.0 Secs (Split 2)]* *[==>432.0 Secs (Split 3)]* *[==>432.0 Secs (Split 4)]*	 ***[2]***
5	(COS.sp.1369142)	(3) J0833+1005-OFF NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=1; BUFFER-TIME=8496			178 Secs (230 Secs) *[==>230.0 Secs]*	 ***[2]***
6	(COS.sp.1369142)	(3) J0833+1005-OFF NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=2; BUFFER-TIME=8496			178 Secs (230 Secs) *[==>230.0 Secs]*	 ***[2]***
7	(COS.sp.1369142)	(3) J0833+1005-OFF NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=ALL; BUFFER-TIME=8496			380 Secs (1728 Secs) *[==>432.0 Secs (Split 1)]* *[==>432.0 Secs (Split 2)]* *[==>432.0 Secs (Split 3)]* *[==>432.0 Secs (Split 4)]*	 ***[3]***
8	(COS.sp.1369142)	(3) J0833+1005-OFF NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=3; BUFFER-TIME=8496			179 Secs (231 Secs) *[==>231.0 Secs]*	 ***[3]***
9	(COS.sp.1369142)	(3) J0833+1005-OFF NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=4; BUFFER-TIME=8496			180 Secs (232 Secs) *[==>232.0 Secs]*	 ***[3]***

Orbit Structure

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Server Version: 20200619
GS Reacq
Exp. 4, split 1
Exp. 4, split 2
Exp. 4, split 3
Exp. 4, split 4
Exp. 5
Exp. 6
Occultation
*** ORBITAL VISIBILITY OVERRUN = 89
0
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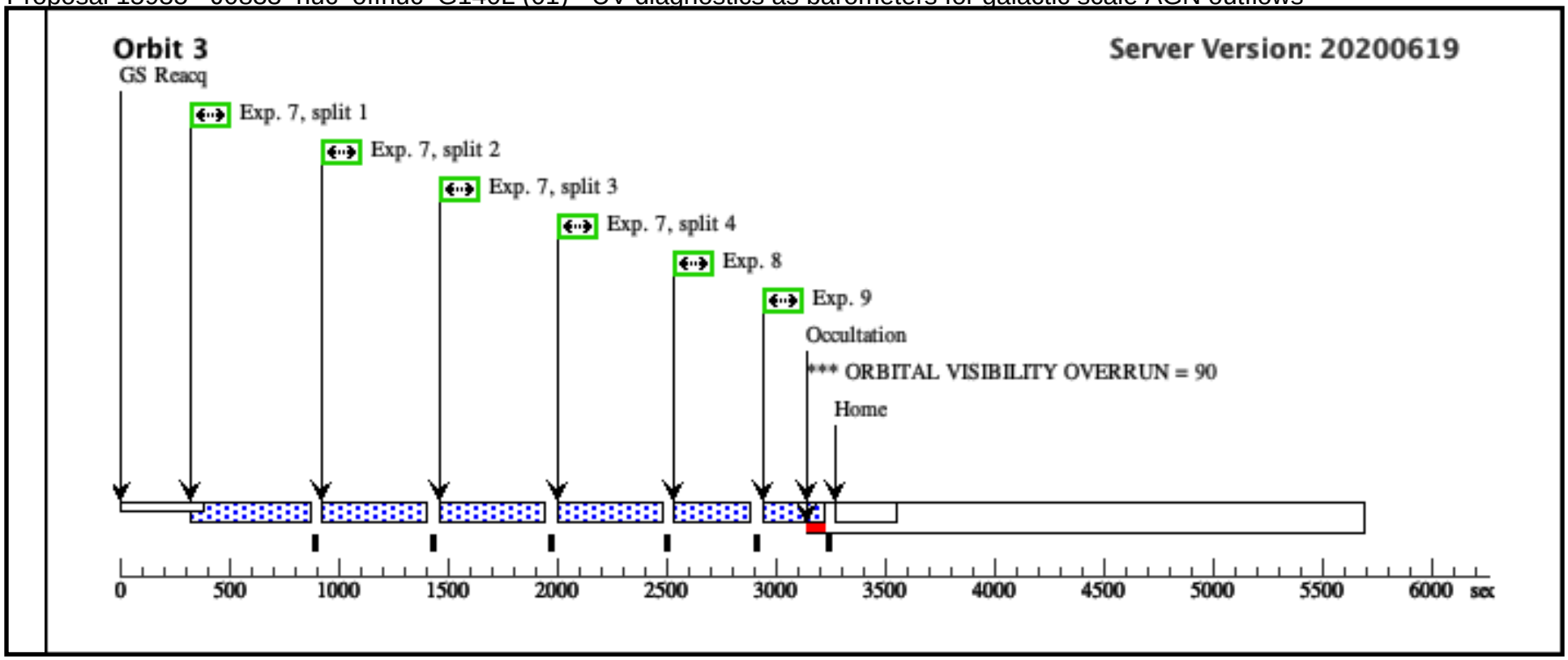
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec


Orbit 3
Server Version: 20200619
GS Reacq
Exp. 7, split 1
Exp. 7, split 2
Exp. 7, split 3
Exp. 7, split 4
Exp. 8
Exp. 9
Occultation
*** ORBITAL VISIBILITY OVERRUN = 90
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15935, J0833_nuc_offnuc_G230L (02), completed Thu Jul 16 21:01:24 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SAME ORIENT AS 01

Comments: G230L for J0833+1005 nucleus and off-nucleus pointings. This is required to get CIV and HeII at z=0.2547.

Diagnostics

(J0833_nuc_offnuc_G230L (02)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Exposure 3 (J0833_nuc_offnuc_G230L (02))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

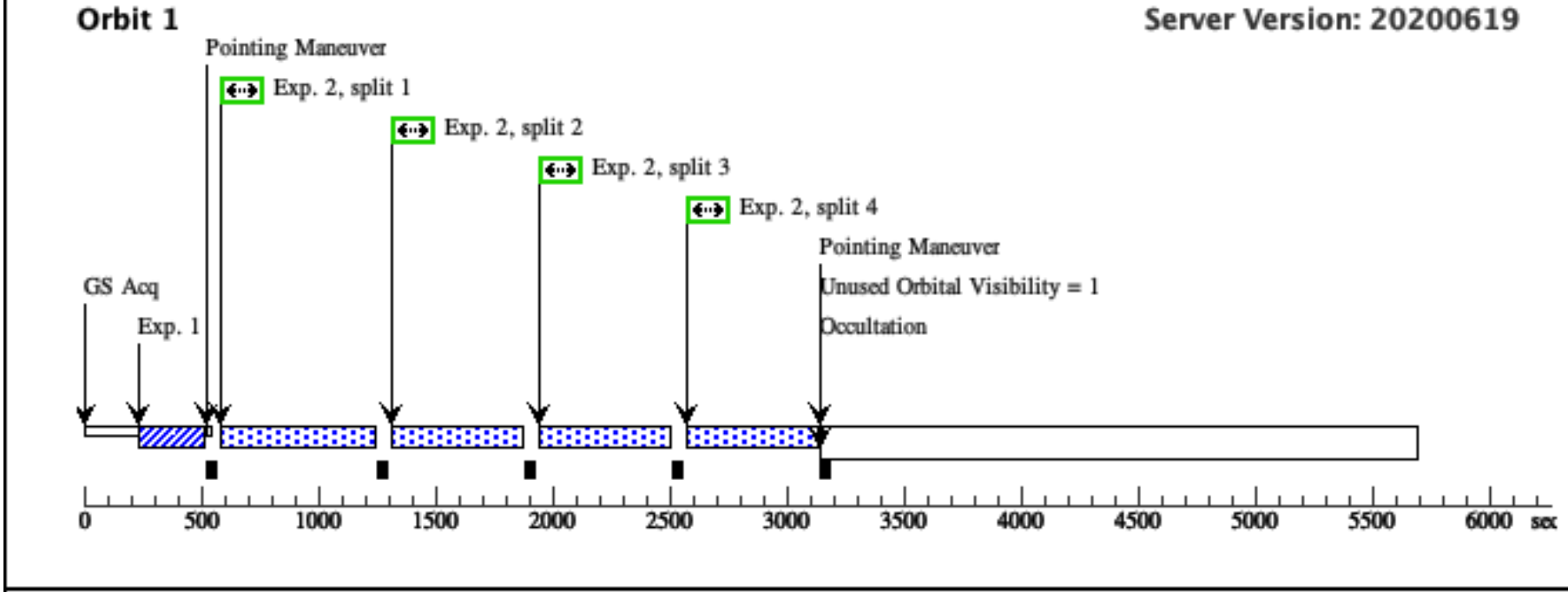
Fixed Targets

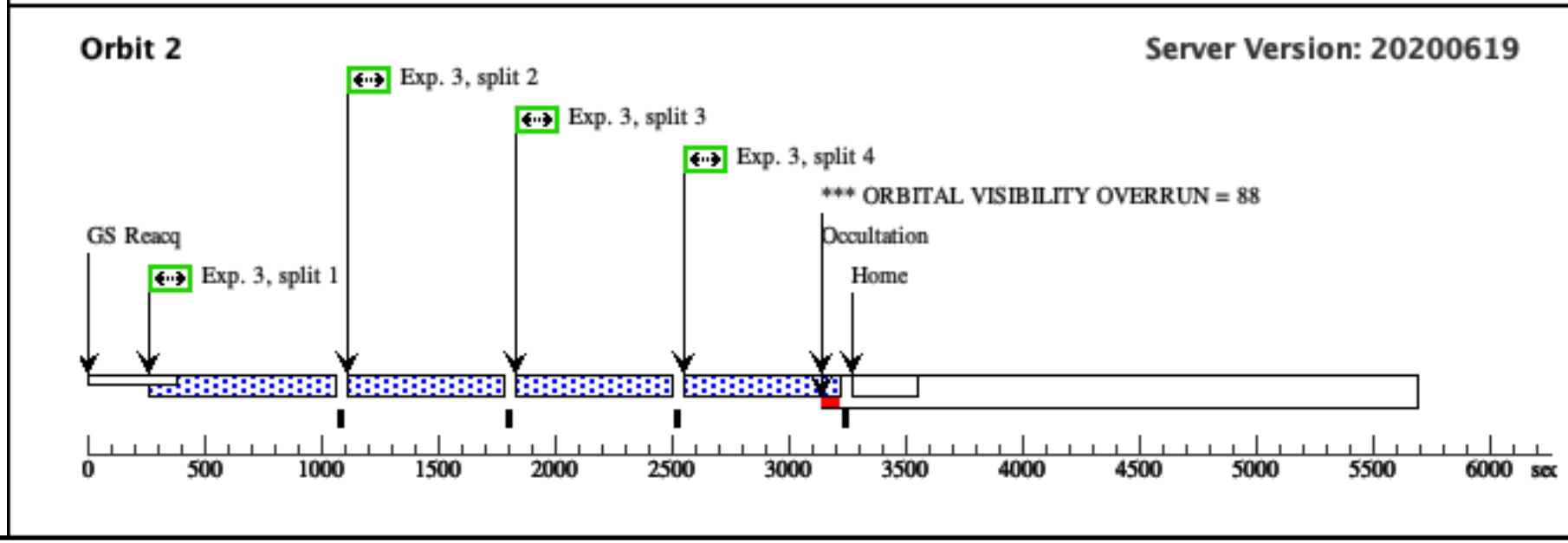
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	J0833+1005-REFSTAR	RA: 08 33 14.9300 (128.3122083d) Dec: +10 00 58.95 (10.01638d) Equinox: J2000		V=15.3 u=17.16	Reference Frame: ICRS
Comments: J0833+1005 offset star. Coordinates and mags from GAIA. Teff=5300 K. *Category=STAR* *Description=[G V-IV]* *Extended=NO*					
(3)	J0833+1005-OFFNUCLEUS	RA: 08 33 15.3200 (128.3138333d) Dec: +10 00 52.33 (10.01454d) Equinox: J2000		V=22+/-1	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, QUASAR, WIND]* *Extended=YES*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1370243)	(1) J0833+1005-REFSTAR	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				30.00 Secs (30 Secs)	
								[==>]	***[1]***
2	(COS.sp.1369367)	(3) J0833+1005-OFFNUCLEUS	COS/NUV, TIME-TAG, PSA	G230L 3000 A	FP-POS=ALL; BUFFER-TIME=1705			300 Secs (2176 Secs)	
								[==>544.0 Secs (Split 1)] *[==>544.0 Secs (Split 2)]* *[==>544.0 Secs (Split 3)]* *[==>544.0 Secs (Split 4)]*	***[1]***
3	(COS.sp.1370497)	(3) J0833+1005-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=8902; FP-POS=ALL			300 Secs (2464 Secs)	
								[==>616.0 Secs (Split 1)] *[==>616.0 Secs (Split 2)]* *[==>616.0 Secs (Split 3)]* *[==>616.0 Secs (Split 4)]*	***[2]***

Orbit Structure





Visit

Proposal 15935, J0841_nuc_offnuc (03), completed Thu Jul 16 21:01:25 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: J0841+0101 nuclear and off-nuclear pointings with G140L. 1 orbit each.

Diagnostics

(J0841_nuc_offnuc (03)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

(J0841_nuc_offnuc (03)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

(J0841_nuc_offnuc (03)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Exposure 2 (J0841_nuc_offnuc (03))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 3 (J0841_nuc_offnuc (03))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (J0841_nuc_offnuc (03))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

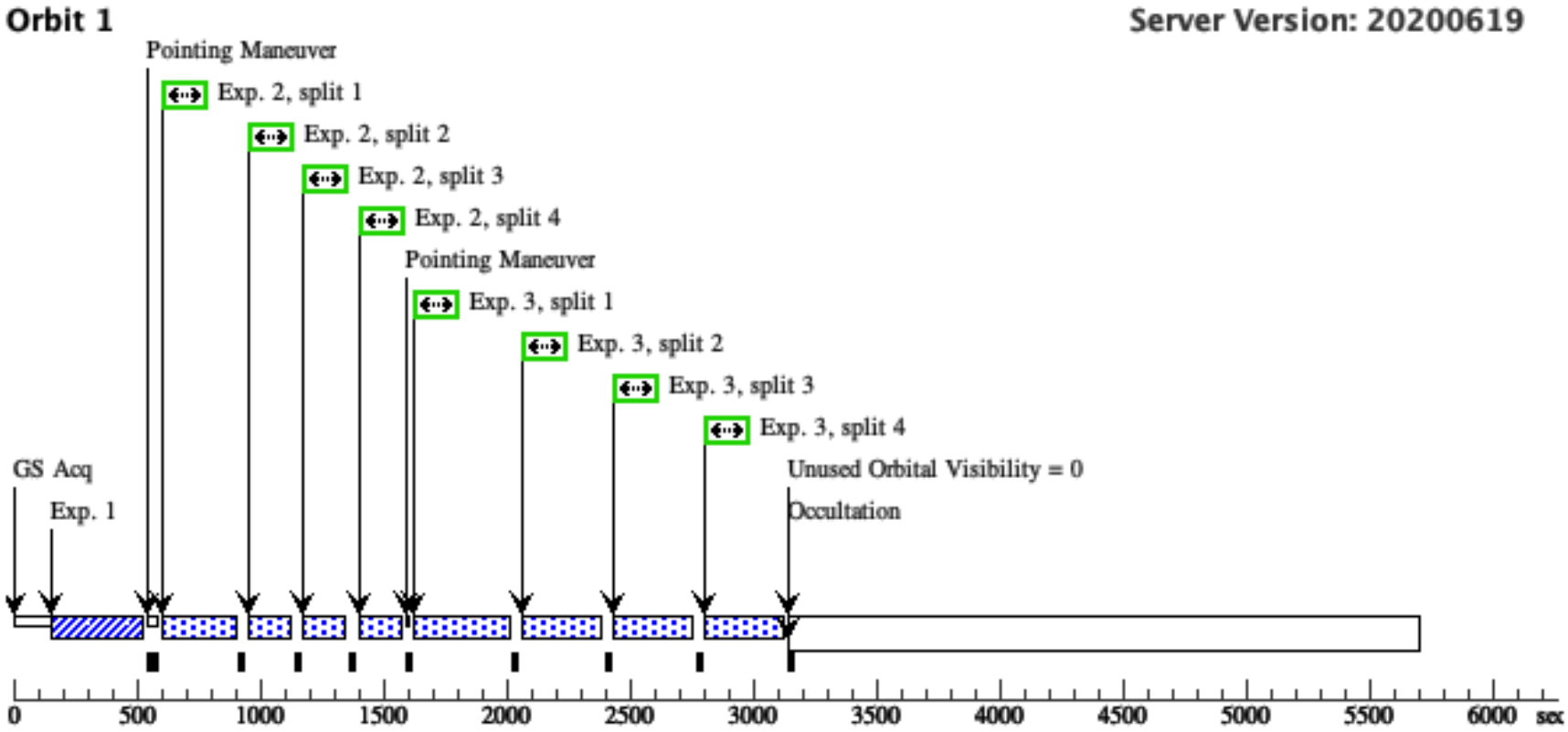
Fixed Targets

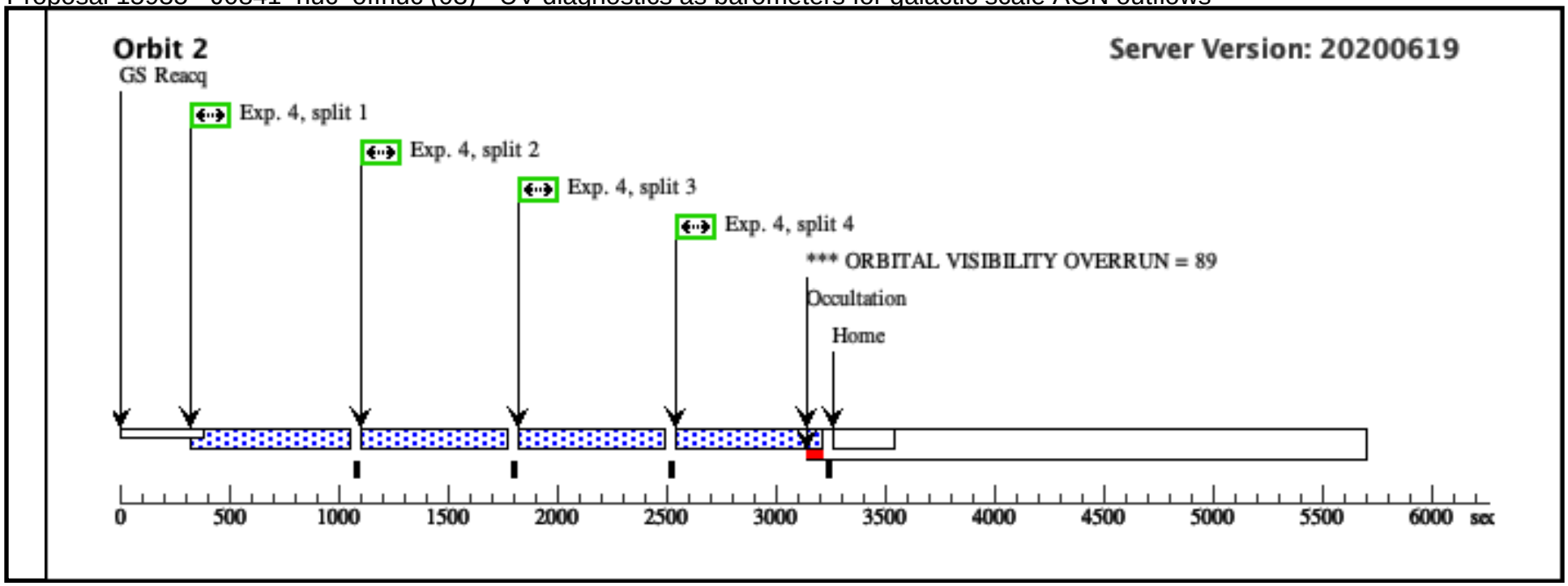
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	J0841+0101-REFSTAR	RA: 08 41 31.2300 (130.3801250d) Dec: +01 02 9.34 (1.03593d) Equinox: J2000		V=14.53 nuv=17.75	Reference Frame: ICRS
Comments: J0841+0101 offset star. Coordinates and mags from GAIA. Teff=7100 K F2 star. *Category=STAR* *Description=[F0-F2]* *Extended=NO*					
(5)	J0841+0101-NUCLEUS	RA: 08 41 35.0900 (130.3962083d) Dec: +01 01 56.30 (1.03231d) Equinox: J2000		V=22+/-1	Reference Frame: ICRS
Comments: V-band magnitude is uncertain as this is a line-emitting source *Category=GALAXY* *Description=[NLR, QUASAR, WIND]* *Extended=YES*					
(6)	J0841+0101-OFFNUCLEUS	RA: 08 41 34.9200 (130.3955000d) Dec: +01 01 57.00 (1.03250d) Equinox: J2000		V=18.40	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, WIND]* *Extended=YES*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1370262)	(4) J0841+0101-REFSTAR	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				40 Secs (40 Secs)	
								[==>]	***[1]***
2	(COS.sp.1370516)	(5) J0841+0101-NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=ALL; BUFFER-TIME=8318			120 Secs (480 Secs)	
								[==>(Split 1)] *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[1]***
3	(COS.sp.1370521)	(6) J0841+0101-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=8882; FP-POS=ALL			266 Secs (1064 Secs)	
								[==>(Split 1)] *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[1]***
4	(COS.sp.1370521)	(6) J0841+0101-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=ALL; BUFFER-TIME=8882			615 Secs (2460 Secs)	
								[==>(Split 1)] *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20200619
GS Reacq
Exp. 4, split 1
Exp. 4, split 2
Exp. 4, split 3
Exp. 4, split 4
*** ORBITAL VISIBILITY OVERRUN = 89
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15935, J1000_nuc_offnuc (04), completed Thu Jul 16 21:01:25 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(J1000_nuc_offnuc (04)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

(J1000_nuc_offnuc (04)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

(J1000_nuc_offnuc (04)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Exposure 2 (J1000_nuc_offnuc (04))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 3 (J1000_nuc_offnuc (04))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (J1000_nuc_offnuc (04))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

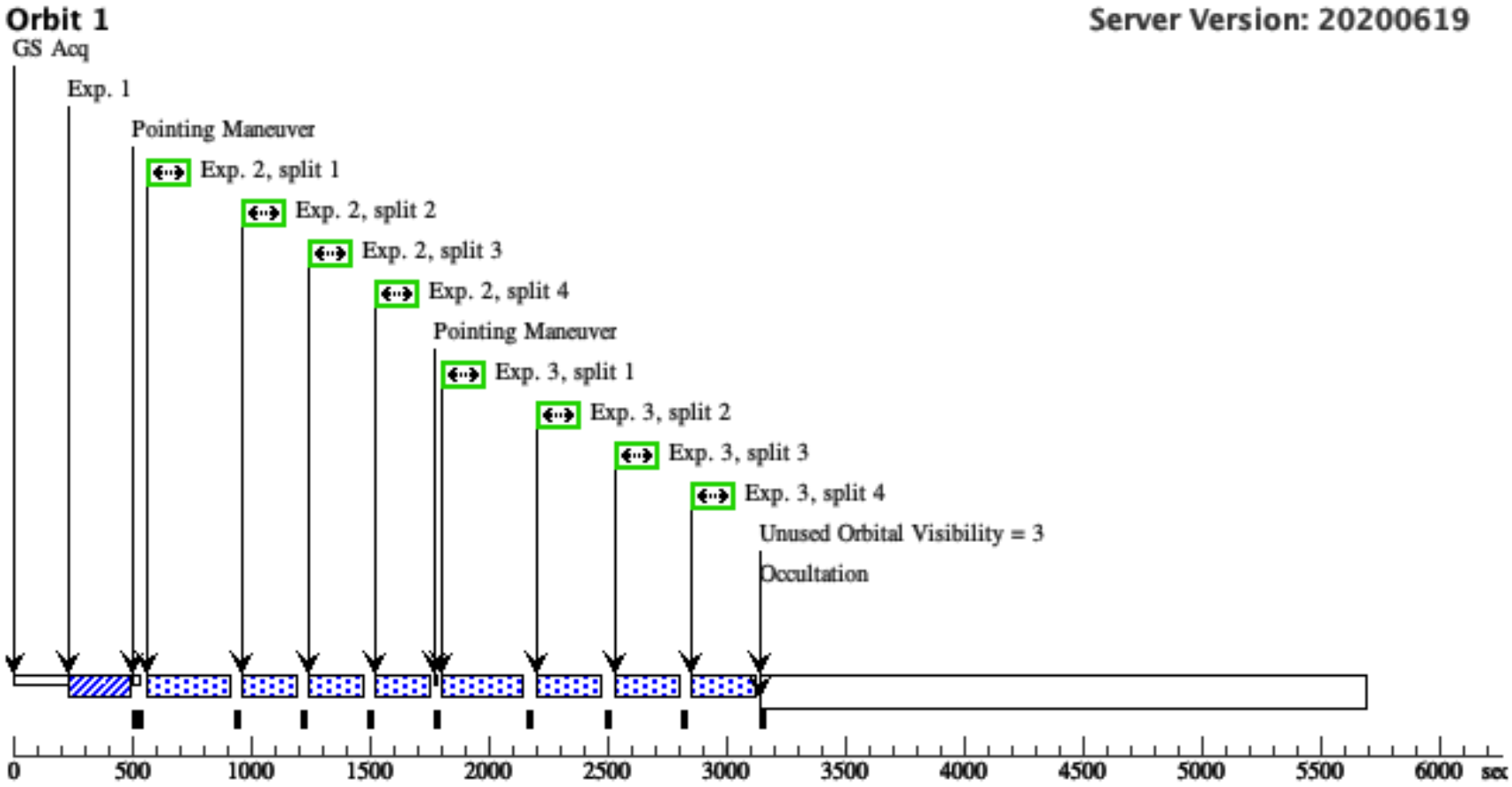
Fixed Targets

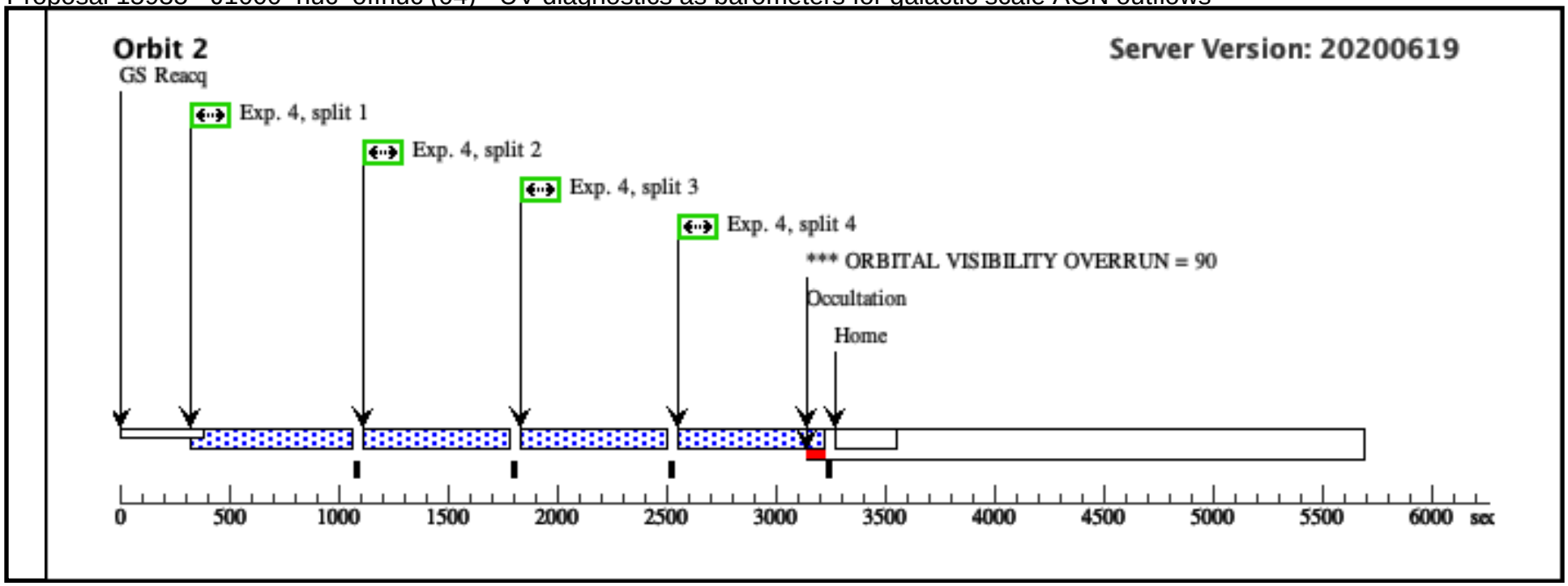
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	J1000+1242-REFSTAR	RA: 10 00 10.2580 (150.0427417d) Dec: +12 42 35.29 (12.70980d) Equinox: J2000		V=16.95 nuv=20.40	Reference Frame: ICRS
Comments: J1000+1242 offset star with coordinates from GAIA. Teff=6300 K. F-star. *Category=STAR* *Description=[F3-F9]* *Extended=NO*					
(8)	J1000+1242-NUCLEUS	RA: 10 00 13.1500 (150.0547917d) Dec: +12 42 26.20 (12.70728d) Equinox: J2000		V=18.40	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, QUASAR, SEYFERT]* *Extended=YES*					
(9)	J1000+1242-OFFNUCLEUS	RA: 10 00 13.2000 (150.0550000d) Dec: +12 42 29.10 (12.70808d) Equinox: J2000		V=22+/-1	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, WIND]* *Extended=YES*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1370265)	(7) J1000+1242-REF STAR	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				20.00 Secs (20 Secs)	
								[==>]	***[1]***
2	(COS.sp.1370586)	(8) J1000+1242-NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L	FP-POS=ALL;			175 Secs (700 Secs)	
				1105 A	BUFFER-TIME=8013			*[==>(Split 1)]*	***[1]***
								[==>(Split 2)]	
								[==>(Split 3)]	
								[==>(Split 4)]	
3	(COS.sp.1369415)	(9) J1000+1242-OFF NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L	FP-POS=ALL;			222 Secs (888 Secs)	
				1105 A	BUFFER-TIME=8013			*[==>(Split 1)]*	***[1]***
								[==>(Split 2)]	
								[==>(Split 3)]	
								[==>(Split 4)]	
4	(COS.sp.1369415)	(9) J1000+1242-OFF NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L	FP-POS=ALL;			617 Secs (2468 Secs)	
				1105 A	BUFFER-TIME=8013			*[==>(Split 1)]*	***[2]***
								[==>(Split 2)]	
								[==>(Split 3)]	
								[==>(Split 4)]	

Orbit Structure




Orbit 2
Server Version: 20200619
GS Reacq
Exp. 4, split 1
Exp. 4, split 2
Exp. 4, split 3
Exp. 4, split 4
*** ORBITAL VISIBILITY OVERRUN = 90
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15935, J1010_nuc_offnuc_G140L_G230L (05), failed Thu Jul 16 21:01:25 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(J1010_nuc_offnuc_G140L_G230L (05)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Exposure 2 (J1010_nuc_offnuc_G140L_G230L (05))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (J1010_nuc_offnuc_G140L_G230L (05))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

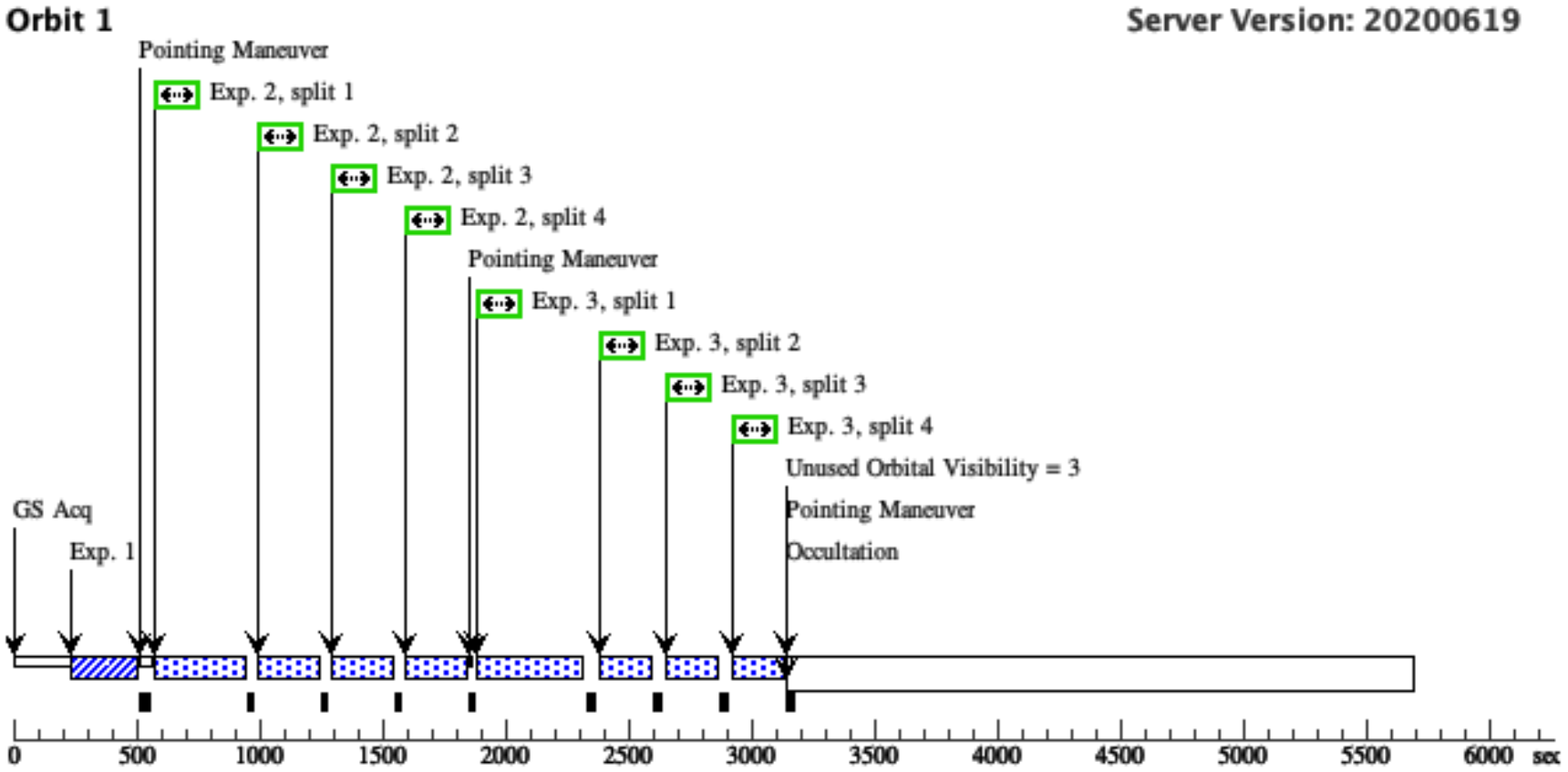
Fixed Targets

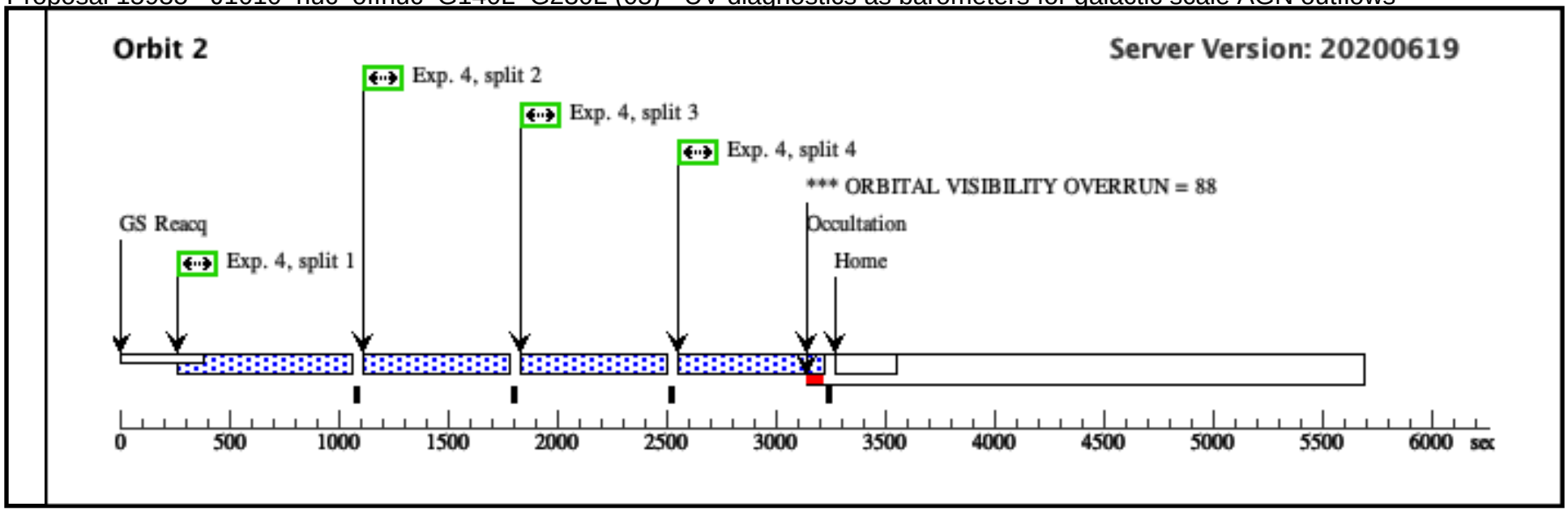
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	J1010+1413-REFSTAR	RA: 10 10 23.8620 (152.5994250d) Dec: +14 14 40.39 (14.24455d) Equinox: J2000		V=14.84 nuv=20.83	Reference Frame: ICRS
Comments: J1010+1413 offset star coordinates from GAIA. Teff=5500 G-star. *Category=STAR* *Description=[G V-IV]* *Extended=NO*					
(11)	J1010+1413-NUCLEUS	RA: 10 10 22.9500 (152.5956250d) Dec: +14 13 0.78 (14.21688d) Equinox: J2000		V=18.04	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, QUASAR, WIND]* *Extended=YES*					
(12)	J1010+1413-OFFNUCLEUS	RA: 10 10 22.9900 (152.5957917d) Dec: +14 13 4.34 (14.21787d) Equinox: J2000		V=22+/-1	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, WIND]* *Extended=YES*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1370272)	(10) J1010+1413-REFSTAR	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				24 Secs (24 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1370613)	(11) J1010+1413-NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=ALL; BUFFER-TIME=8031			197 Secs (772 Secs) *[==>193.0 Secs (Split 1)]* *[==>193.0 Secs (Split 2)]* *[==>193.0 Secs (Split 3)]* *[==>193.0 Secs (Split 4)]*	 ***[1]***
3	(COS.sp.1370615)	(11) J1010+1413-NUCLEUS	COS/NUV, TIME-TAG, PSA	G230L 3000 A	FP-POS=ALL; BUFFER-TIME=1678			197 Secs (772 Secs) *[==>193.0 Secs (Split 1)]* *[==>193.0 Secs (Split 2)]* *[==>193.0 Secs (Split 3)]* *[==>193.0 Secs (Split 4)]*	 ***[1]***
4	(COS.sp.1370624)	(12) J1010+1413-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=8885; FP-POS=ALL			616 Secs (2464 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	 ***[2]***

Orbit Structure




Orbit 2
Server Version: 20200619
Exp. 4, split 2
Exp. 4, split 3
Exp. 4, split 4
*** ORBITAL VISIBILITY OVERRUN = 88
GS Reacq
Occultation
Exp. 4, split 1
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15935, J1010_nuc_offnuc_G140L_G230L (55), implementation Thu Jul 16 21:01:25 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(J1010_nuc_offnuc_G140L_G230L (55)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Exposure 2 (J1010_nuc_offnuc_G140L_G230L (55))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (J1010_nuc_offnuc_G140L_G230L (55))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

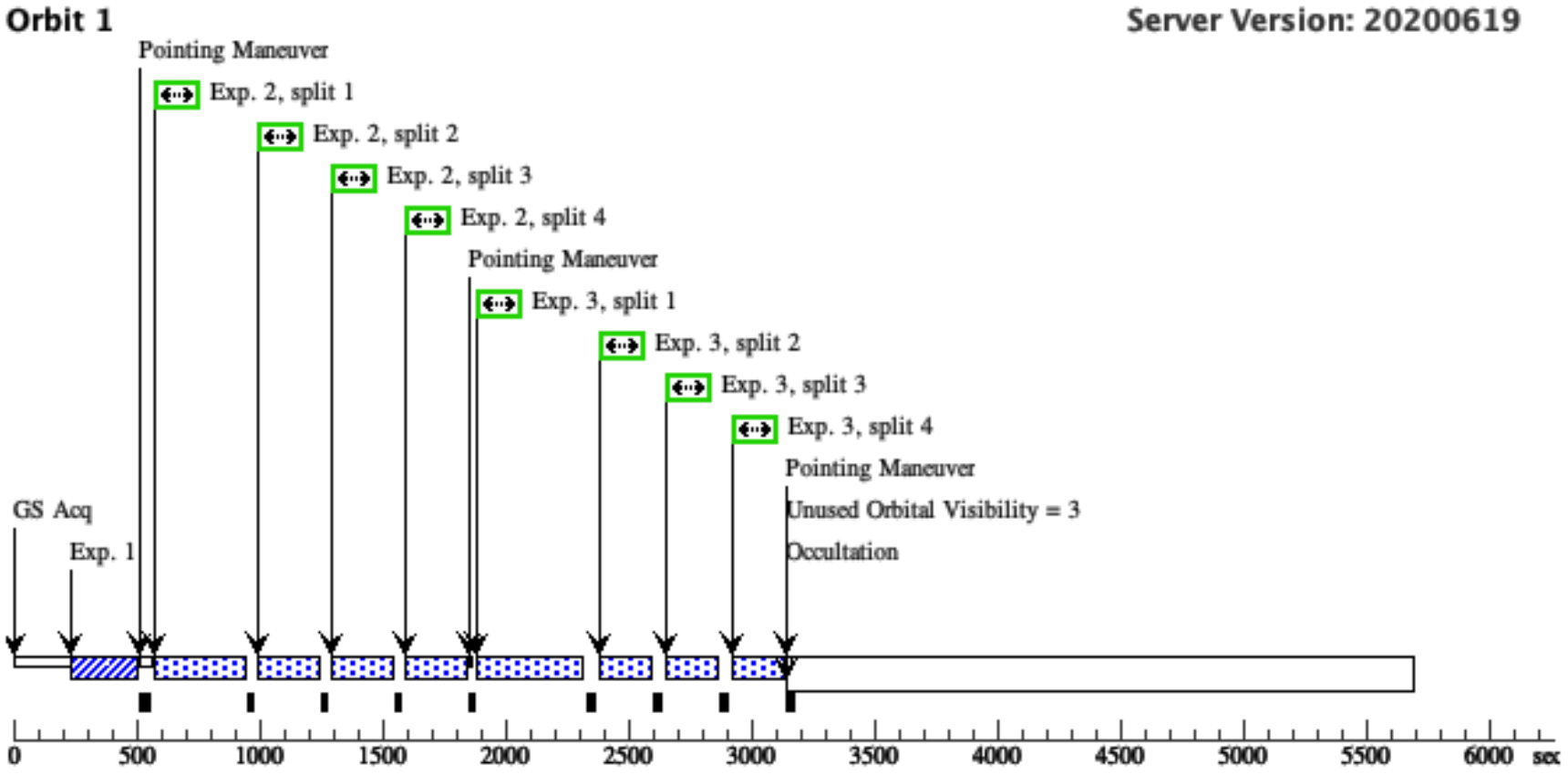
Fixed Targets

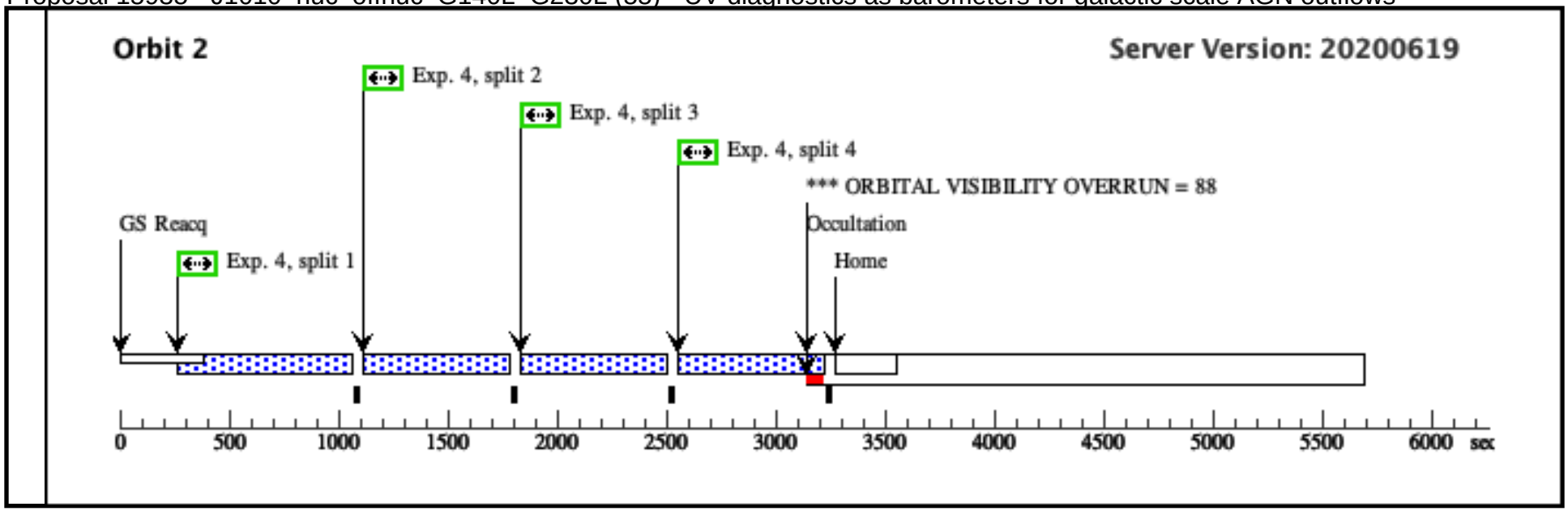
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	J1010+1413-REFSTAR	RA: 10 10 23.8620 (152.5994250d) Dec: +14 14 40.39 (14.24455d) Equinox: J2000		V=14.84 nuv=20.83	Reference Frame: ICRS
Comments: J1010+1413 offset star coordinates from GAIA. Teff=5500 G-star. *Category=STAR* *Description=[G V-IV]* *Extended=NO*					
(11)	J1010+1413-NUCLEUS	RA: 10 10 22.9500 (152.5956250d) Dec: +14 13 0.78 (14.21688d) Equinox: J2000		V=18.04	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, QUASAR, WIND]* *Extended=YES*					
(12)	J1010+1413-OFFNUCLEUS	RA: 10 10 22.9900 (152.5957917d) Dec: +14 13 4.34 (14.21787d) Equinox: J2000		V=22+/-1	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, WIND]* *Extended=YES*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1370272)	(10) J1010+1413-REFSTAR	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				24 Secs (24 Secs)	
								[==>]	***[1]***
2	(COS.sp.1370613)	(11) J1010+1413-NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=ALL; BUFFER-TIME=8031			197 Secs (772 Secs)	
								[==>193.0 Secs (Split 1)]	***[1]***
								[==>193.0 Secs (Split 2)]	
								[==>193.0 Secs (Split 3)]	
								[==>193.0 Secs (Split 4)]	
3	(COS.sp.1370615)	(11) J1010+1413-NUCLEUS	COS/NUV, TIME-TAG, PSA	G230L 3000 A	FP-POS=ALL; BUFFER-TIME=1678			197 Secs (772 Secs)	
								[==>193.0 Secs (Split 1)]	***[1]***
								[==>193.0 Secs (Split 2)]	
								[==>193.0 Secs (Split 3)]	
								[==>193.0 Secs (Split 4)]	
4	(COS.sp.1370624)	(12) J1010+1413-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=8885; FP-POS=ALL			616 Secs (2464 Secs)	
								[==>(Split 1)]	***[2]***
								[==>(Split 2)]	
								[==>(Split 3)]	
								[==>(Split 4)]	

Orbit Structure




Orbit 2
Server Version: 20200619
Exp. 4, split 2
Exp. 4, split 3
Exp. 4, split 4
*** ORBITAL VISIBILITY OVERRUN = 88
GS Reacq
Occultation
Exp. 4, split 1
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15935, J1010_nuc_offnuc_G140L_G230L (09), completed Thu Jul 16 21:01:25 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SAME ORIENT AS 05

Diagnostics

(J1010_nuc_offnuc_G140L_G230L (09)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

(J1010_nuc_offnuc_G140L_G230L (09)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Exposure 3 (J1010_nuc_offnuc_G140L_G230L (09))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (J1010_nuc_offnuc_G140L_G230L (09))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

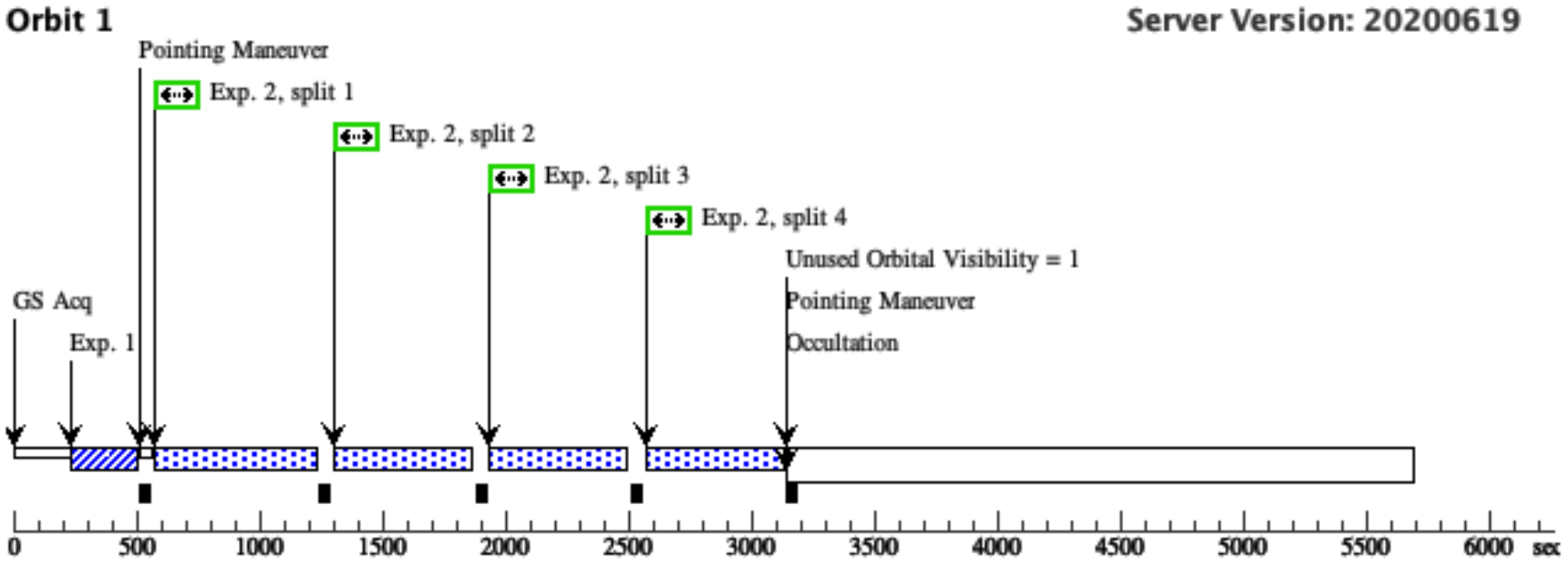
Fixed Targets

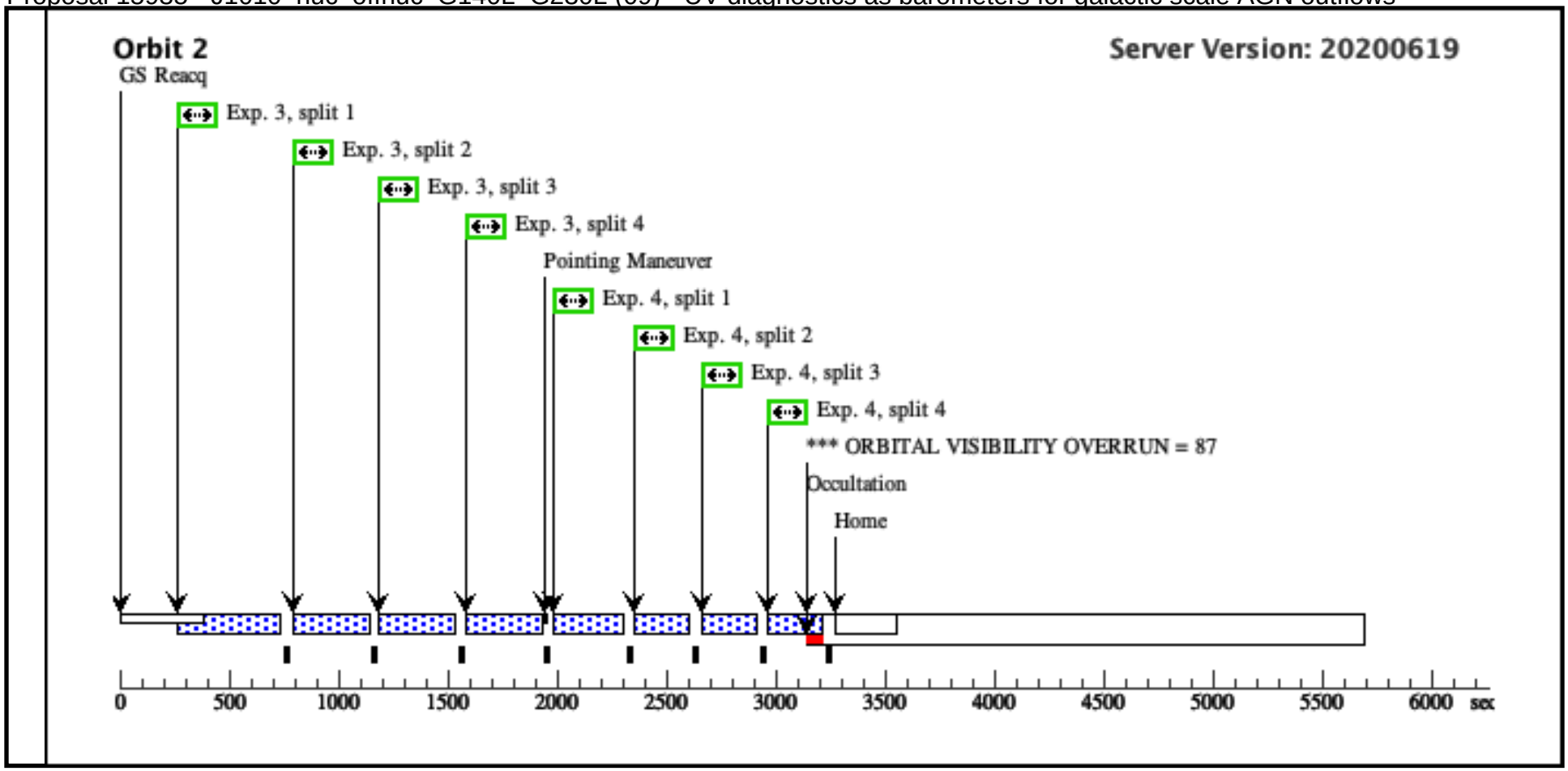
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	J1010+1413-REFSTAR	RA: 10 10 23.8620 (152.5994250d) Dec: +14 14 40.39 (14.24455d) Equinox: J2000		V=14.84 nuv=20.83	Reference Frame: ICRS
Comments: J1010+1413 offset star coordinates from GAIA. Teff=5500 G-star. *Category=STAR* *Description=[G V-IV]* *Extended=NO*					
(11)	J1010+1413-NUCLEUS	RA: 10 10 22.9500 (152.5956250d) Dec: +14 13 0.78 (14.21688d) Equinox: J2000		V=18.04	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, QUASAR, WIND]* *Extended=YES*					
(12)	J1010+1413-OFFNUCLEUS	RA: 10 10 22.9900 (152.5957917d) Dec: +14 13 4.34 (14.21787d) Equinox: J2000		V=22+/-1	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, WIND]* *Extended=YES*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1370272)	(10) J1010+1413-REFSTAR	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				24 Secs (24 Secs)	
								[==>]	***[1]***
2	(COS.sp.1370631)	(12) J1010+1413-OFFNUCLEUS	COS/NUV, TIME-TAG, PSA	G230L 3000 A	FP-POS=ALL; BUFFER-TIME=1708			561 Secs (2188 Secs)	
								[==>547.0 Secs (Split 1)] *[==>547.0 Secs (Split 2)]* *[==>547.0 Secs (Split 3)]* *[==>547.0 Secs (Split 4)]*	***[1]***
3	(COS.sp.1370624)	(12) J1010+1413-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=8885; FP-POS=ALL			294 Secs (1176 Secs)	
								[==>(Split 1)] *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[2]***
4	(COS.sp.1370624)	(11) J1010+1413-NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=8885; FP-POS=ALL			200 Secs (800 Secs)	
								[==>(Split 1)] *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	***[2]***

Orbit Structure




Orbit 2
Server Version: 20200619
GS Reacq
Exp. 3, split 1
Exp. 3, split 2
Exp. 3, split 3
Exp. 3, split 4
Pointing Maneuver
Exp. 4, split 1
Exp. 4, split 2
Exp. 4, split 3
Exp. 4, split 4
*** ORBITAL VISIBILITY OVERRUN = 87
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15935, J1222_nuc_offnuc_G140L_G130M (07), completed Thu Jul 16 21:01:25 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(J1222_nuc_offnuc_G140L_G130M (07)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

(J1222_nuc_offnuc_G140L_G130M (07)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

(J1222_nuc_offnuc_G140L_G130M (07)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1222_nuc_offnuc_G140L_G130M (07)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Exposure 2 (J1222_nuc_offnuc_G140L_G130M (07))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 3 (J1222_nuc_offnuc_G140L_G130M (07))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (J1222_nuc_offnuc_G140L_G130M (07))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 5 (J1222_nuc_offnuc_G140L_G130M (07))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 6 (J1222_nuc_offnuc_G140L_G130M (07))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 7 (J1222_nuc_offnuc_G140L_G130M (07))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 8 (J1222_nuc_offnuc_G140L_G130M (07))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

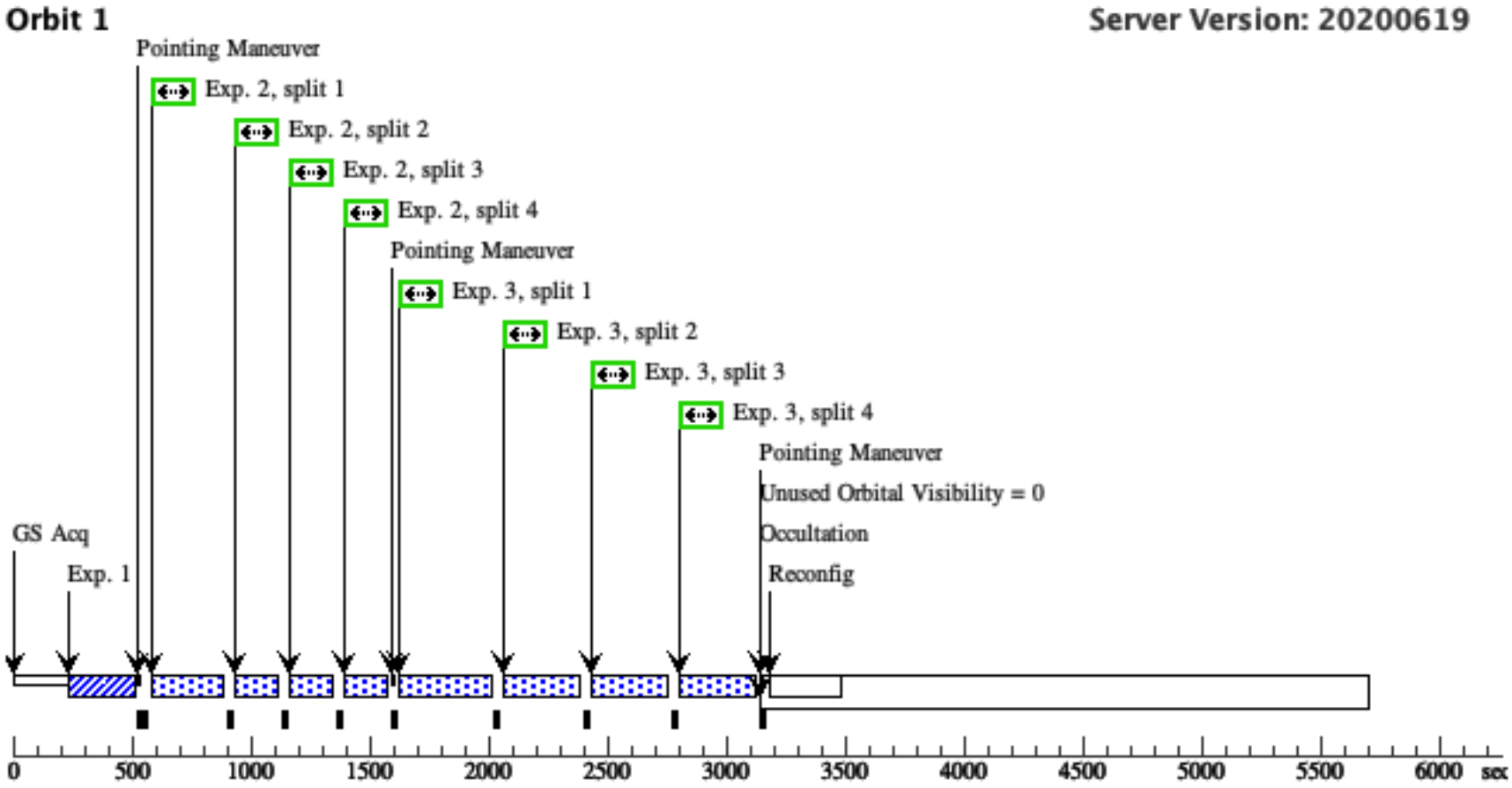
Fixed Targets

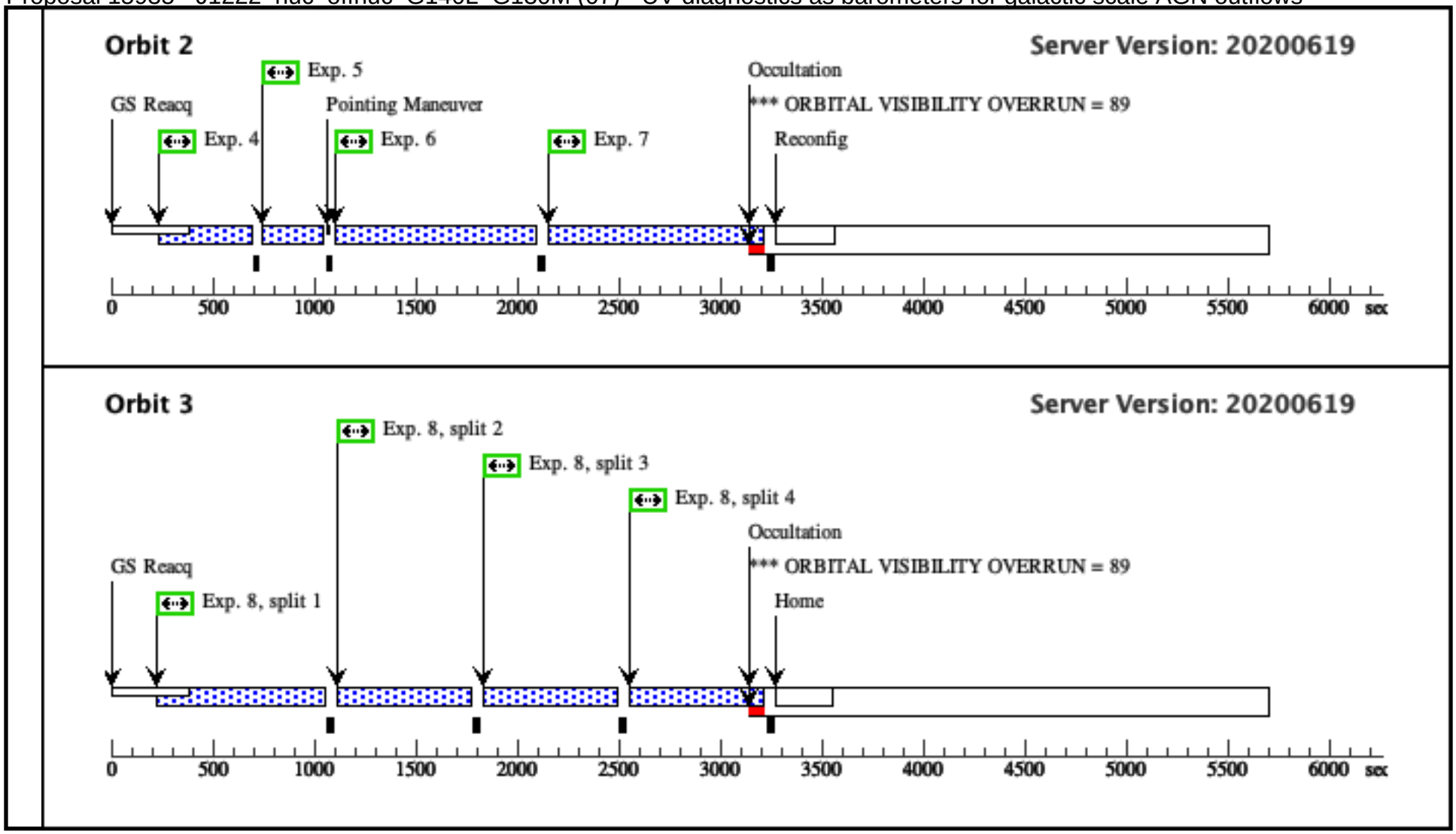
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(13)	J1222-0007-NUCLEUS	RA: 12 22 17.8600 (185.5744167d) Dec: -00 07 43.81 (-.12884d) Equinox: J2000		V=18.27	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, QUASAR, WIND]* *Extended=YES*					
(14)	J1222-0007-OFFNUCLEUS	RA: 12 22 17.8200 (185.5742500d) Dec: -00 07 40.48 (-.12791d) Equinox: J2000		V=22+/-1	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, WIND]* *Extended=YES*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1370283)	(13) J1222-0007-NUCLEUS	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				30 Secs (30 Secs) *[==>]*	*[1]*
2	(COS.sp.1369442)	(13) J1222-0007-NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=5084; FP-POS=ALL			125 Secs (500 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
3	(COS.sp.1369444)	(14) J1222-0007-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=5084; FP-POS=ALL			266 Secs (1064 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[1]*
4	(COS.sp.1370666)	(13) J1222-0007-NUCLEUS	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=5480; FP-POS=3			250 Secs (250 Secs) *[==>]*	*[2]*
5	(COS.sp.1370666)	(13) J1222-0007-NUCLEUS	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=5480; FP-POS=4			250 Secs (250 Secs) *[==>]*	*[2]*
6	(COS.sp.1370666)	(14) J1222-0007-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=5480; FP-POS=4			942 Secs (942 Secs) *[==>]*	*[2]*
7	(COS.sp.1370666)	(14) J1222-0007-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=5480; FP-POS=3			942 Secs (942 Secs) *[==>]*	*[2]*
8	(COS.sp.1369444)	(14) J1222-0007-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=5084; FP-POS=ALL			607 Secs (2428 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	*[3]*

Orbit Structure




Orbit 2
Server Version: 20200619
GS Reacq
Exp. 4
Exp. 5
Pointing Maneuver
Exp. 6
Exp. 7
Occultation
*** ORBITAL VISIBILITY OVERRUN = 89
Reconfig
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec
Orbit 3
Server Version: 20200619
Exp. 8, split 2
Exp. 8, split 3
Exp. 8, split 4
Occultation
GS Reacq
*** ORBITAL VISIBILITY OVERRUN = 89
Exp. 8, split 1
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15935, J1255_nuc_offnuc_G140L_G130M (08), completed Thu Jul 16 21:01:25 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(J1255_nuc_offnuc_G140L_G130M (08)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Exposure 2 (J1255_nuc_offnuc_G140L_G130M (08))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 3 (J1255_nuc_offnuc_G140L_G130M (08))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (J1255_nuc_offnuc_G140L_G130M (08))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

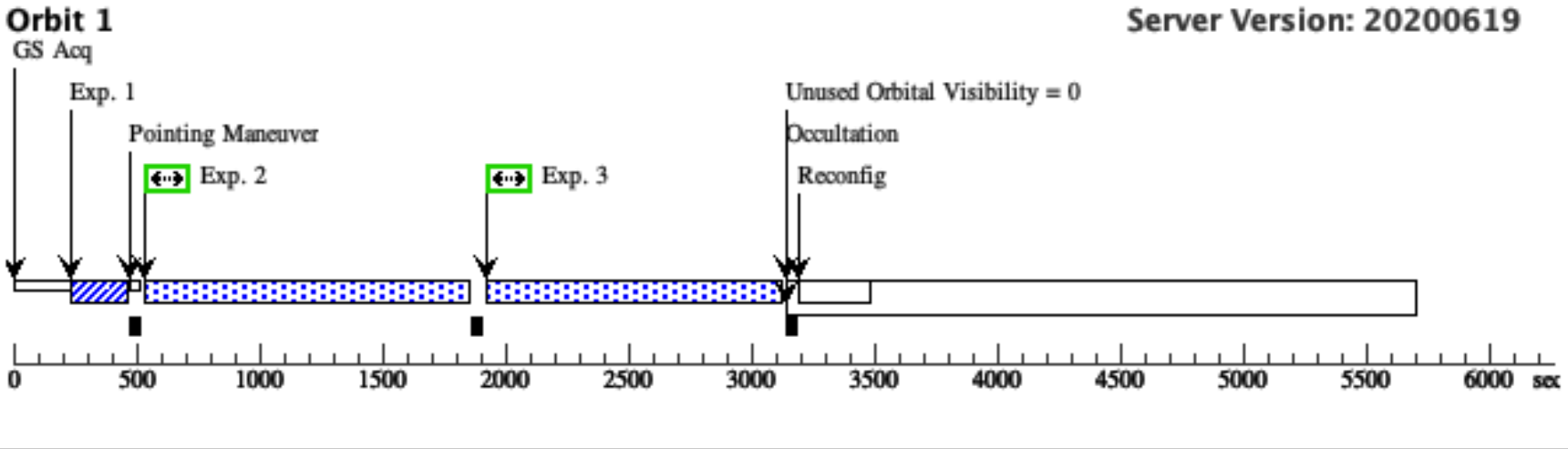
Fixed Targets

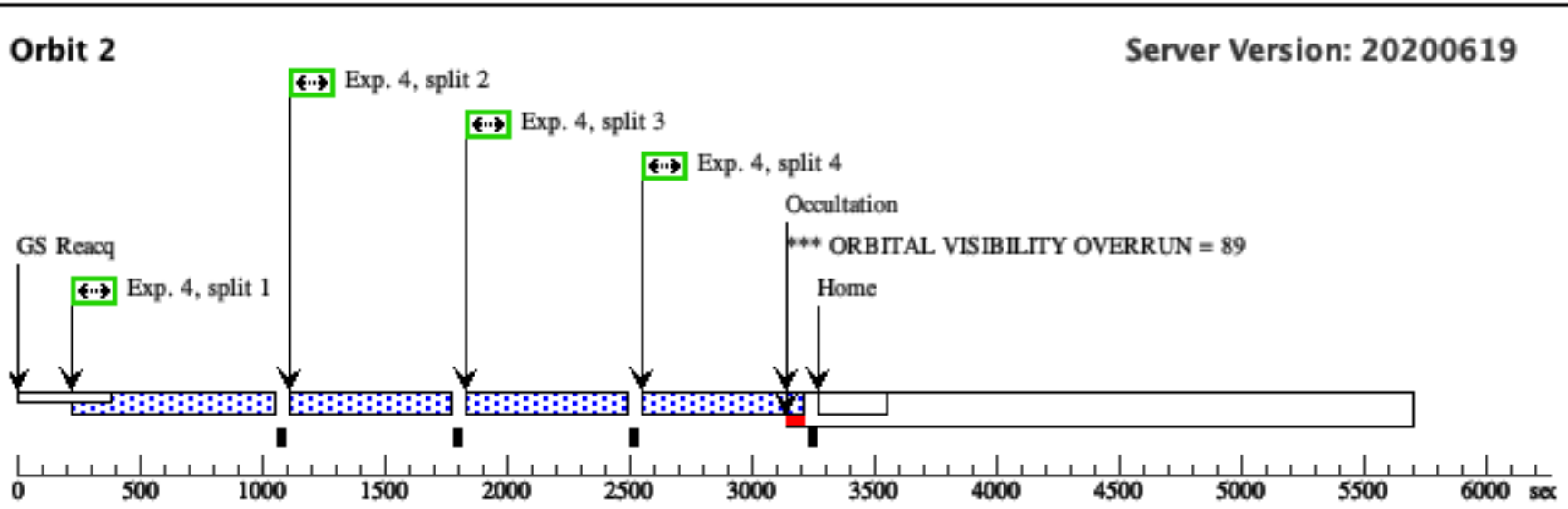
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(15)	J1255-0339-REFSTAR	RA: 12 55 52.6100 (193.9692083d) Dec: -03 39 31.76 (-3.65882d) Equinox: J2000		V=13.66 nuv=19.18	Reference Frame: ICRS
Comments: J1255-0339 offset star with GAIA coordinates. Teff=5900. G-star *Category=STAR* *Description=[G III-I]* *Extended=NO*					
(16)	J1255-0339-NUCLEUS	RA: 12 55 47.8400 (193.9493333d) Dec: -03 39 9.60 (-3.65267d) Equinox: J2000		V=17.28	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, QUASAR, WIND]* *Extended=YES*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1370278)	(15) J1255-0339-REFSTAR	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				5 Secs (5 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1370789)	(16) J1255-0339-NUCLEUS	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=5172			1152 Secs (1152 Secs) *[==>]*	 ***[1]***
3	(COS.sp.1370789)	(16) J1255-0339-NUCLEUS	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=5172			1151 Secs (1151 Secs) *[==>]*	 ***[1]***
4	(COS.sp.1369441)	(16) J1255-0339-NUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=ALL; BUFFER-TIME=5084			607 Secs (2428 Secs) *[==>(Split 1)]* *[==>(Split 2)]* *[==>(Split 3)]* *[==>(Split 4)]*	 ***[2]***

Orbit Structure





Visit

Proposal 15935, J1255_nuc_offnuc_G140L_G130M (10), failed Thu Jul 16 21:01:25 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SAME ORIENT AS 08

Diagnostics

(J1255_nuc_offnuc_G140L_G130M (10)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

(J1255_nuc_offnuc_G140L_G130M (10)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(J1255_nuc_offnuc_G140L_G130M (10)) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN

(Exposure 2 (J1255_nuc_offnuc_G140L_G130M (10))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 3 (J1255_nuc_offnuc_G140L_G130M (10))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (J1255_nuc_offnuc_G140L_G130M (10))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 5 (J1255_nuc_offnuc_G140L_G130M (10))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

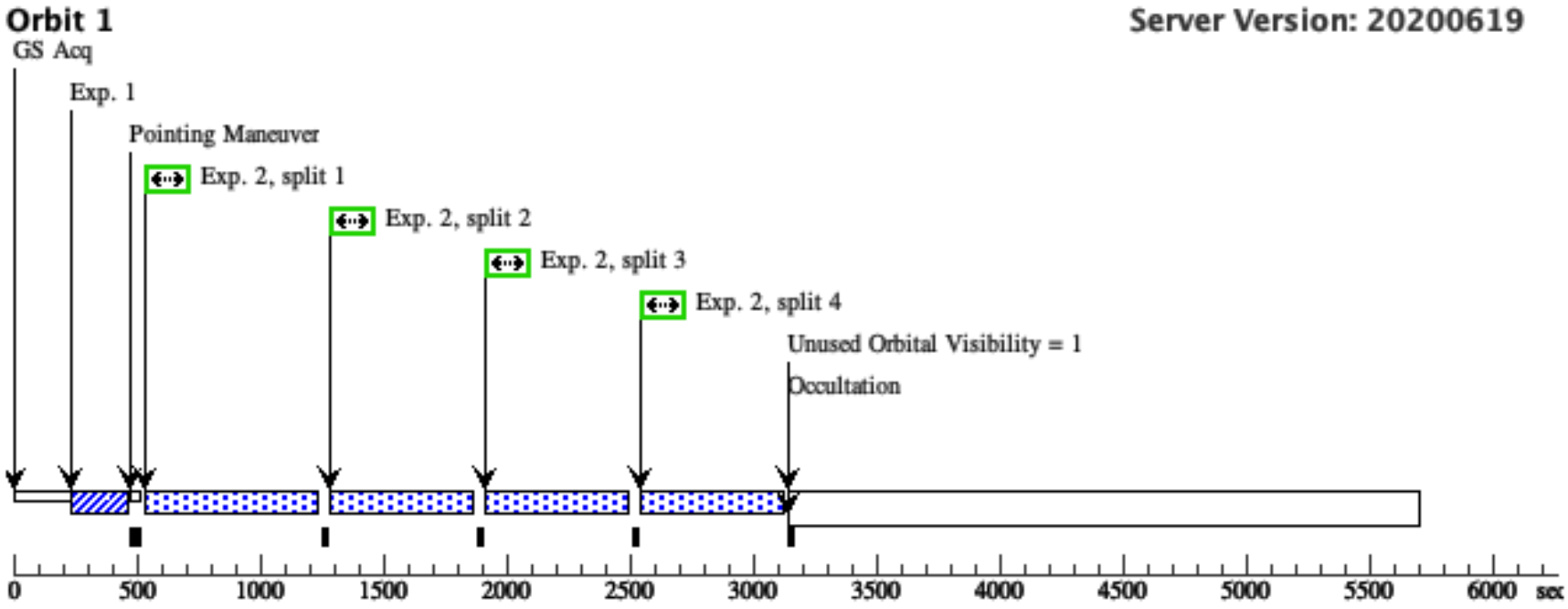
Fixed Targets

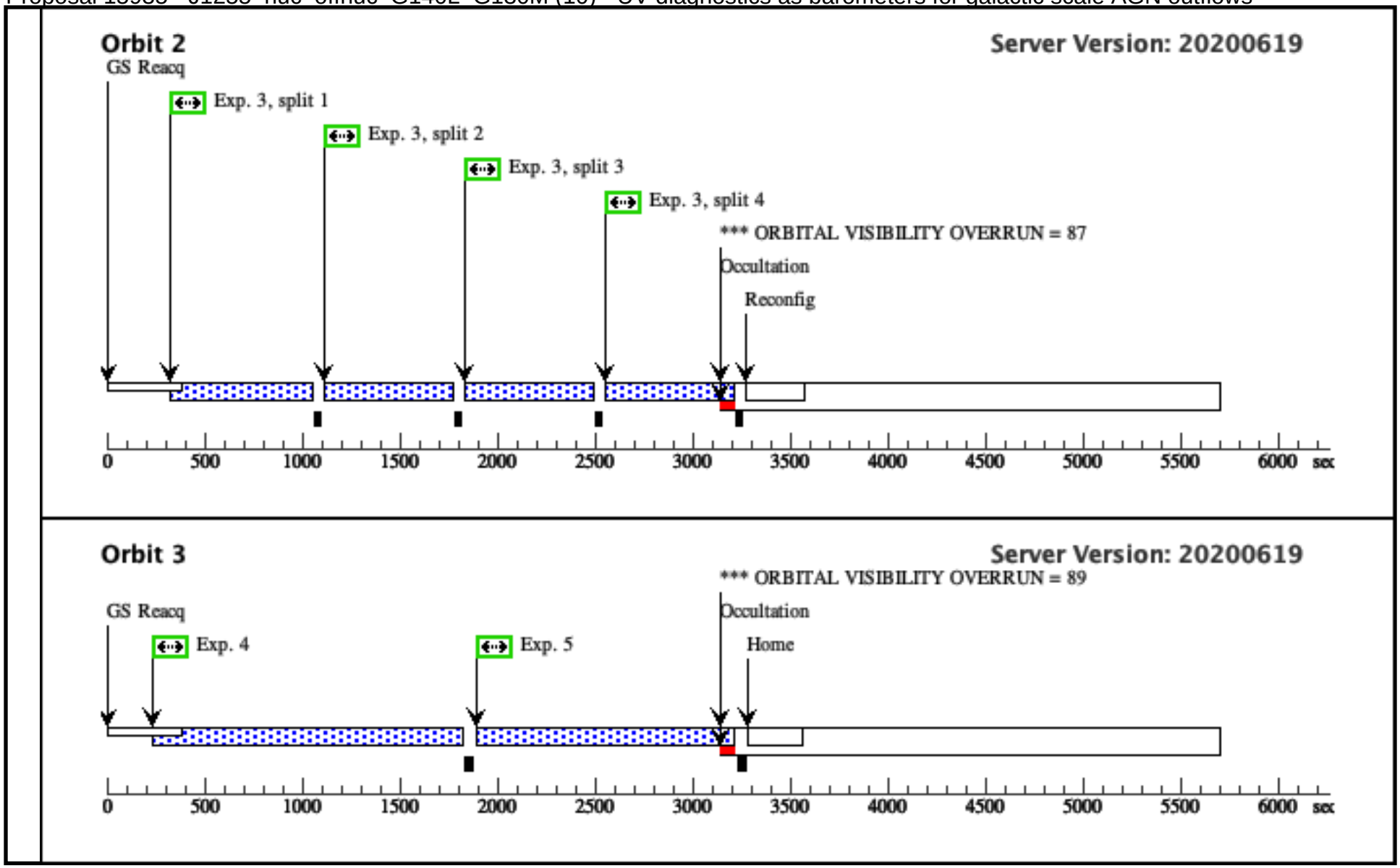
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(15)	J1255-0339-REFSTAR	RA: 12 55 52.6100 (193.9692083d) Dec: -03 39 31.76 (-3.65882d) Equinox: J2000		V=13.66 nuv=19.18	Reference Frame: ICRS
Comments: J1255-0339 offset star with GAIA coordinates. Teff=5900. G-star *Category=STAR* *Description=[G III-I]* *Extended=NO*					
(17)	J1255-0339-OFFNUCLEUS	RA: 12 55 47.9814 (193.9499225d) Dec: -03 39 11.67 (-3.65324d) Equinox: J2000		V=22+/-1	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, WIND]* *Extended=YES*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1370278)	(15) J1255-0339-REFSTAR	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				5 Secs (5 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1370802)	(17) J1255-0339-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=ALL; BUFFER-TIME=5084			500 Secs (2100 Secs) *[==>525.0 Secs (Split 1)]* *[==>525.0 Secs (Split 2)]* *[==>525.0 Secs (Split 3)]* *[==>525.0 Secs (Split 4)]*	 ***[1]***
3	(COS.sp.1370802)	(17) J1255-0339-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=ALL; BUFFER-TIME=5084			500 Secs (2428 Secs) *[==>607.0 Secs (Split 1)]* *[==>607.0 Secs (Split 2)]* *[==>607.0 Secs (Split 3)]* *[==>607.0 Secs (Split 4)]*	 ***[2]***
4	(COS.sp.1370797)	(17) J1255-0339-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=5084			500 Secs (1378 Secs) *[==>1378.0 Secs]*	 ***[3]***
5	(COS.sp.1370797)	(17) J1255-0339-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=5084			500 Secs (1271 Secs) *[==>1271.0 Secs]*	 ***[3]***

Orbit Structure




Orbit 2
Server Version: 20200619
GS Reacq
Exp. 3, split 1
Exp. 3, split 2
Exp. 3, split 3
Exp. 3, split 4
*** ORBITAL VISIBILITY OVERRUN = 87
Occultation
Reconfig
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec
Orbit 3
Server Version: 20200619
*** ORBITAL VISIBILITY OVERRUN = 89
GS Reacq
Occultation
Exp. 4
Exp. 5
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 15935, J1255_nuc_offnuc_G140L_G130M (60), implementation Thu Jul 16 21:01:25 GMT 2020

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: ORIENT 110D TO 113 D

Diagnostics

(J1255_nuc_offnuc_G140L_G130M (60)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS

(Exposure 2 (J1255_nuc_offnuc_G140L_G130M (60))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 3 (J1255_nuc_offnuc_G140L_G130M (60))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (J1255_nuc_offnuc_G140L_G130M (60))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 5 (J1255_nuc_offnuc_G140L_G130M (60))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

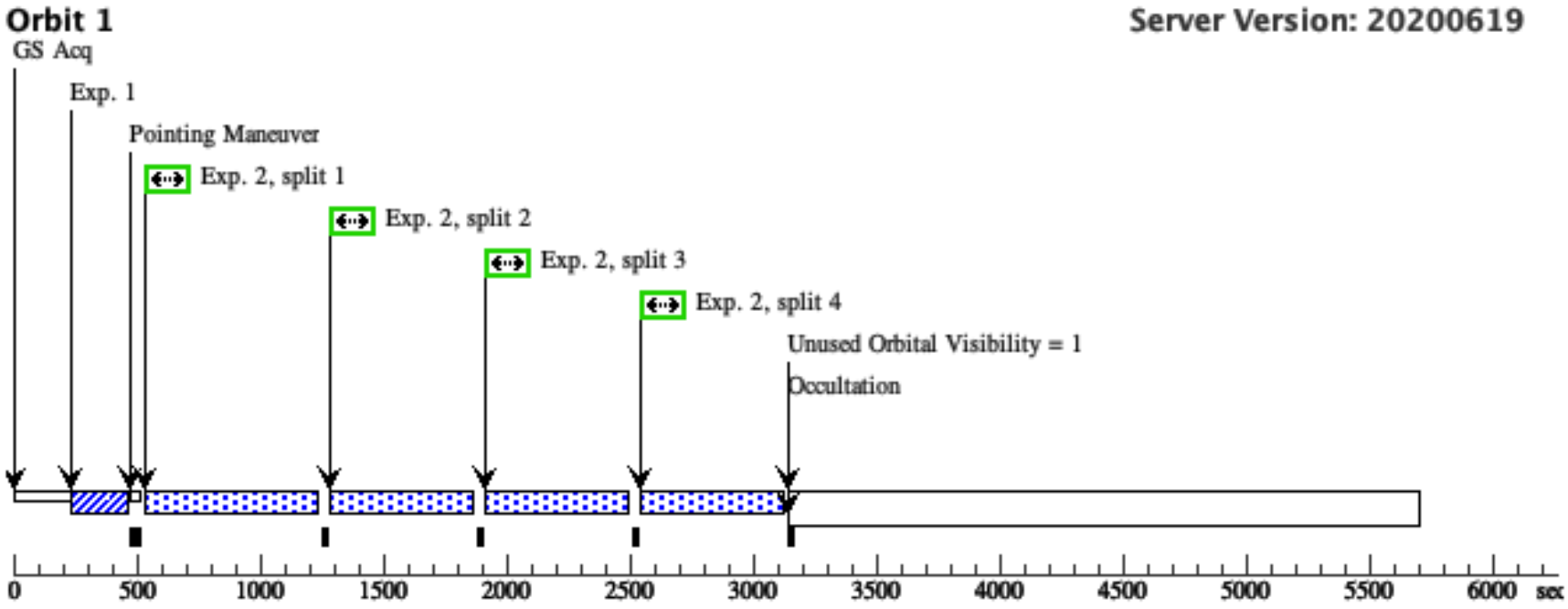
Fixed Targets

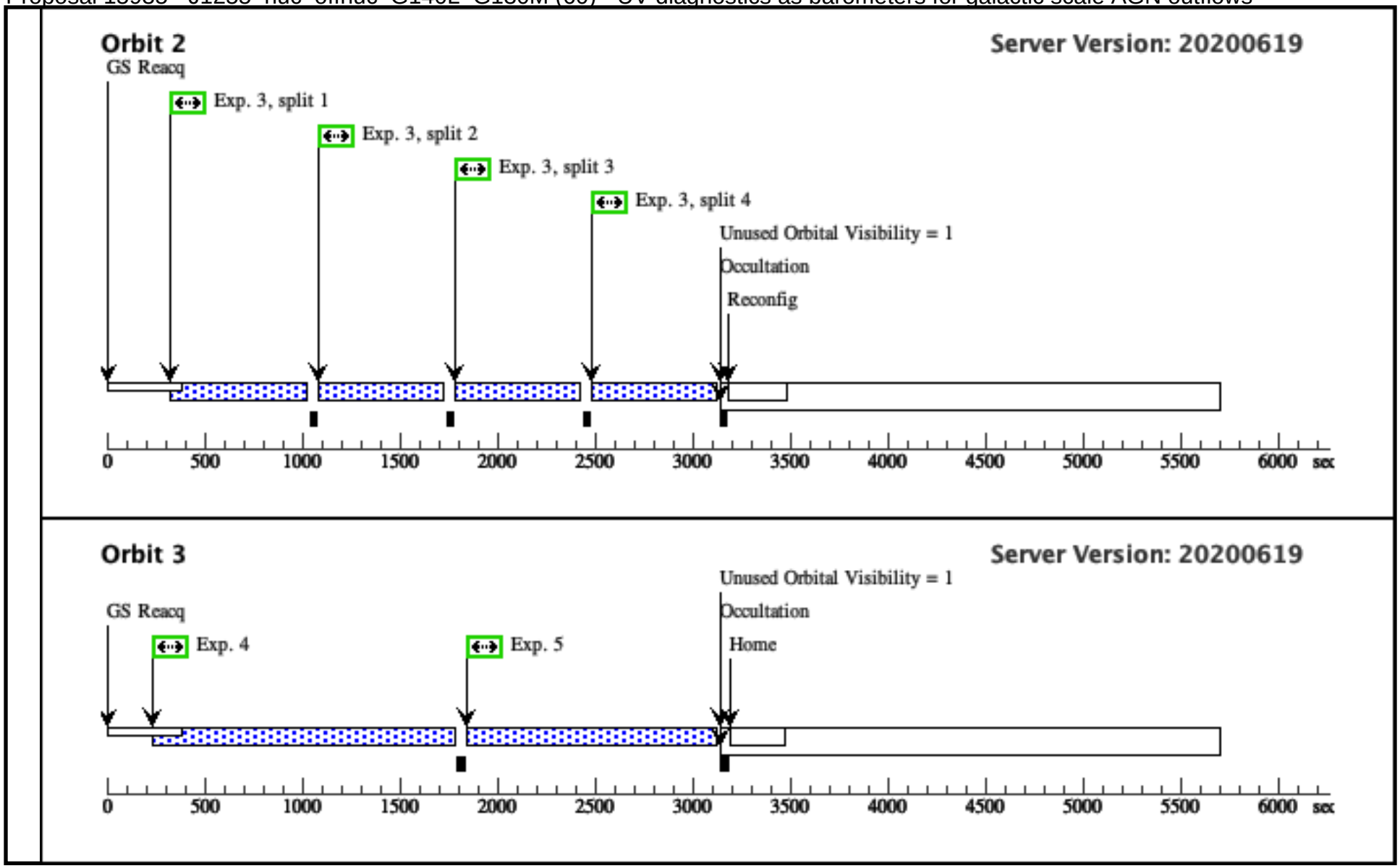
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(15)	J1255-0339-REFSTAR	RA: 12 55 52.6100 (193.9692083d) Dec: -03 39 31.76 (-3.65882d) Equinox: J2000		V=13.66 nuv=19.18	Reference Frame: ICRS
Comments: J1255-0339 offset star with GAIA coordinates. Teff=5900. G-star *Category=STAR* *Description=[G III-I]* *Extended=NO*					
(17)	J1255-0339-OFFNUCLEUS	RA: 12 55 47.9814 (193.9499225d) Dec: -03 39 11.67 (-3.65324d) Equinox: J2000		V=22+/-1	Reference Frame: ICRS
Comments: *Category=GALAXY* *Description=[NLR, WIND]* *Extended=YES*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1370278)	(15) J1255-0339-REFSTAR	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				5 Secs (5 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1370802)	(17) J1255-0339-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=ALL; BUFFER-TIME=5084			500 Secs (2100 Secs) *[==>525.0 Secs (Split 1)]* *[==>525.0 Secs (Split 2)]* *[==>525.0 Secs (Split 3)]* *[==>525.0 Secs (Split 4)]*	 ***[1]***
3	(COS.sp.1370802)	(17) J1255-0339-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G140L 1105 A	FP-POS=ALL; BUFFER-TIME=5084			500 Secs (2340 Secs) *[==>585.0 Secs (Split 1)]* *[==>585.0 Secs (Split 2)]* *[==>585.0 Secs (Split 3)]* *[==>585.0 Secs (Split 4)]*	 ***[2]***
4	(COS.sp.1370797)	(17) J1255-0339-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=5084			500 Secs (1333 Secs) *[==>1333.0 Secs]*	 ***[3]***
5	(COS.sp.1370797)	(17) J1255-0339-OFFNUCLEUS	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=5084			500 Secs (1226 Secs) *[==>1226.0 Secs]*	 ***[3]***

Orbit Structure




Orbit 2
Server Version: 20200619
GS Reacq
Exp. 3, split 1
Exp. 3, split 2
Exp. 3, split 3
Exp. 3, split 4
Unused Orbital Visibility = 1
Occultation
Reconfig
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec
Orbit 3
Server Version: 20200619
Unused Orbital Visibility = 1
GS Reacq
Occultation
Exp. 4
Exp. 5
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec