16679 - Mainly on the Plane: Solving the Milky Way CGM Anomaly with Low-Galactic-Latitude QSOs

Cycle: 29, 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) J0809-2026	COS/FUV COS/NUV	3	05-Apr-2022 11:01:16.0	yes
02	(1) J0809-2026	COS/FUV COS/NUV	3	05-Apr-2022 11:01:17.0	yes
03	(1) J0809-2026	COS/FUV COS/NUV	3	05-Apr-2022 11:01:18.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
04	(2) J0843-2640	COS/FUV COS/NUV	5	05-Apr-2022 11:01:19.0	yes
05	(2) J0843-2640	COS/FUV COS/NUV	5	05-Apr-2022 11:01:20.0	yes
06	(3) J0554-2805	COS/FUV	2	05-Apr-2022 11:01:21.0	yes
07	(4) J0601-2611	COS/FUV	2	05-Apr-2022 11:01:22.0	yes
08	(5) J0640-2556	COS/FUV	3	05-Apr-2022 11:01:23.0	yes
58	(5) J0640-2556	COS/FUV	3	05-Apr-2022 11:01:24.0	yes
68	(5) J0640-2556	COS/FUV	3	05-Apr-2022 11:01:25.0	yes
09	(6) J0825-1351	COS/FUV COS/NUV	3	05-Apr-2022 11:01:26.0	yes
10	(7) J0911-1348	COS/FUV COS/NUV	3	05-Apr-2022 11:01:27.0	yes
11	(7) J0911-1348	COS/FUV COS/NUV	2	05-Apr-2022 11:01:28.0	yes
12	(8) J0623-4413	COS/FUV COS/NUV	3	05-Apr-2022 11:01:29.0	yes
13	(8) J0623-4413	COS/FUV COS/NUV	2	05-Apr-2022 11:01:30.0	yes
14	(9) J1846+6351	COS/FUV COS/NUV	3	05-Apr-2022 11:01:31.0	yes
15	(10) J1858+4850	COS/FUV COS/NUV	2	05-Apr-2022 11:01:32.0	yes
16	(10) J1858+4850	COS/FUV COS/NUV	2	05-Apr-2022 11:01:33.0	yes
17	(11) J1938+5408	COS/FUV COS/NUV	2	05-Apr-2022 11:01:34.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
18	(11) J1938+5408	COS/FUV COS/NUV	2	05-Apr-2022 11:01:35.0	yes
19	(12) J1939+7007	COS/FUV COS/NUV	2	05-Apr-2022 11:01:36.0	yes
20	(13) J2109+3532	COS/FUV COS/NUV	2	05-Apr-2022 11:01:36.0	yes
21	(13) J2109+3532	COS/FUV COS/NUV	2	05-Apr-2022 11:01:37.0	yes
22	(14) J2141+3151	COS/FUV	2	05-Apr-2022 11:01:39.0	yes
23	(14) J2141+3151	COS/FUV	2	05-Apr-2022 11:01:40.0	yes
24	(15) J2203+3145	COS/FUV COS/NUV	2	05-Apr-2022 11:01:41.0	yes
25	(16) J2206+2757	COS/FUV COS/NUV	3	05-Apr-2022 11:01:41.0	yes
26	(17) J2215+2902	COS/FUV COS/NUV	2	05-Apr-2022 11:01:42.0	yes
27	(18) J2251+3419	COS/FUV COS/NUV	2	05-Apr-2022 11:01:43.0	yes
28	(18) J2251+3419	COS/FUV COS/NUV	2	05-Apr-2022 11:01:44.0	yes

77 Total Orbits Used

ABSTRACT

Either the Milky Way's ionized CGM is an outlier compared to the CGM of other L* galaxies, or our primary method used to measure its content - hundreds of QSO sightlines that pierce its halo - is fundamentally biased. The latter possibility cannot yet be convincingly ruled out because 95% of existing UV-bright QSO sightlines with archival high-resolution UV spectra lie at Galactic latitudes |b| > 25 degrees. We now have a unique opportunity to address this huge low-latitude gap in UV-bright QSO lines of sight with our proposed sample of newly discovered, rare QSOs at |b| < 25 degrees. We argue that a key requirement to determining the structure, mass, and dynamics of the CGM is understanding its distribution along the

disk axis. For the first time, we will be able to use these novel Milky Way sightlines to test the latest hydrodynamical, cosmological simulations that suggest extended, ionized disk-like structures in galaxies may persist out to ~100 kpc. Our study, which will combine high-resolution HST/COS G160M spectra of these new low-|b| QSOs with > 100 high-quality archival G160M QSO spectra, is designed to address two primary questions: (1) With an unbiased view of the halo, is the Milky Way truly an anomaly? (2) Does the MWCGM show evidence for an extended, outer, ionized disk morphology, and if so, what are its properties? Finally, if we find evidence for an extended disk, it would represent one of the largest structures on the sky ever discovered, covering nearly half of the sky.

OBSERVING DESCRIPTION

We will observe 18 UV-bright (16.2 < NUV < 18.5) newly-discovered, low-Galactic-latitude QSOs with HST/COS G160M to look for the observational signatures of an extended, ionized gas disk in the Milky Way. Each target requires between 2 and 10 orbits, amounting to 71 orbits in total for the program.

S/N Requirements:

Our primary science goal requires the measurement of absorption features from the doublets SiIV (1393, 1402) and CIV (1548, 1550), the highest ionization state transitions available with COS at z = 0. Our experiment requires us to measure both gas kinematics (absorption-line profiles as a function of velocity, e.g. Doppler b widths, velocity centroids) and gas column densities for high-velocity features. Our models and previous extragalactic results (e.g. COS-Halos) suggest we must probe column density limits of log NSiIV ~ 12.8 cm^-2, and log NCIV ~13.2 cm^-2 . A column density limit of log NCIV ~13.2 cm^-2 (the most constraining requirement) corresponds to being able to detect a 40 mA feature at 2sigma. To achieve these values, we require a minimum S/N of ~ 12 at the wavelengths of the CIV (1548, 1550) doublet in our COS G160M spectra. The S/N at the wavelengths of the SiIV doublet (1393, 1402) is > 15 under this requirement for the same QSOs, which allows us to detect features down to log NSiIV of ~ 12.8, consistent with our requirements.

Instrument Set-up:

In order to adequately model the absorption features and detect their component structure, we choose the highest spectral resolution of COS (G160M) with a central wavelength of 1577 A. In addition to detecting CIV and SiIV, other transitions we probe will be SiII (1526), FeII (1608, 1611), AlII

(1670), and CI (1656). Saturation of the higher ionization state transitions should not be a problem at these Galactic coordinates; we expect the absorption to span a range of velocities 80 < |vLSR| < 250 due to the rotation of the Milky Way and its possible extended outer disk.

Exposure times:

Our QSOs have NUV magnitudes of 16.2 - 18.4 and redshifts ranging from 0.03 - 0.7. Using the COS Spectroscopic ETC, we model the QSOs as COS-based QSOs, adding in the appropriate extinction for each sightline, and normalizing the spectra to the QSO's GALEX NUV AB magnitude (e.g. COS.sp.1488159, COS.sp.1488162). To achieve a minimum S/N of ~12 at 1550 Angstroms and at 1400, our targets require between 2 and 10 orbits each in G160M with a central wavelength of 1577 A. None of these QSOs will pose a bright limit threat to COS and we have no timing or orientation constraints.

Phase II Strategy:

We are using the G160M grating centered at 1577 Angstroms. We require only one CENWAVE setting for this experiment since we are targeting specific absorption lines that will not fall near the gap between segments nor will they fall in the regions of siginficant gain sag with this set up in LP4. Because we have coordinates that are accurate to within 0.4", generally from GALEX (with one from SDSS), we skip the ACQ/SEARCH step. For our faint, non-extended targets, we use a NUV ACQ/IMAGE target acquisition strategy which maximizes the science exposure times for these faint sources. To calculate acquisition exposure times using the ETC, we require a S/N of 20 in these NUV acquisition images, and model the QSOs as FOS-based QSOs to be sure our input spectrum covers the full instrument throughput band. For extended sources and/or sources that trigger the BOT, we acquire the targets with a PEAKXD exposure followed by a PEAKD exposure. Most of our targets are QSOs at z ~> 0.1, and are effectively point sources in the FUV. The exposure times for our point-source target acquisitions are set by requiring a S/N of 40 for both segments and both types of acquistions, respectively using the target's GALEX FUV magnitude (when available) or the NUV magnitude.

Four of our low-z QSO targets have z < 0.07, and appear as moderately extended galaxies in the target confirmation charts (but are still unresolved in GALEX images). For these sources, we have selected the "EXTENDED" target keyword and have modified the acquisition process slightly, increasing the NUM-POS to 5, decreasing the STEP-SIZE to 0.9, and centering using FLUX-WT-FLR. Additionally, we have increased the acquisiton exposure times to achieve a S/N of 100 for these extended sources (which also happen to be some of our brightest targets in the program). Because all of these extended sources are spectroscopically-confirmed, low-z AGN we still expect their FUV flux to be centrally concentrated in the unresolved galaxy bulges and for their extended structure to impact the program science goals (e.g. required spectral resolution) minimally.

We generally split our observations of each target into visits each of 3 orbits or fewer. One exception is for target 2, our faintest target, which requires 10 orbits and is split into 2 visits of 5 orbits each. We have added an additional justification to the 5-orbit visits for this target, explaining that our total exposure time required can only be achieved with this schedule to reduce the overheads and help us achieve our sensitivity requirements for this faint but scientifically critical target -- being able to carry out two 5-orbit visits buys us an additional 2000 seconds of on-source exposure time compared to other visit arrangements.

None of these QSOs will pose a bright limit threat to COS and we have no timing or orientation constraints. In general, the buffer times are quite long, and we thus set the buffer time in the exposure manually to be approximately 100 seconds shorter than the exposure time. We proceed by attempting to maximize exposure times while keeping to a minimum of four FP-POS settings per visit.

In our final set-up, we achieve S/N of between 11 - 15 across 1400 - 1550 Angstroms for all of our targets, which is in generally line with the requirements we outlined in the science case of Phase 1. For our faintest target (Target 2), the ETC indicates that we will reach only S/N of ~10.5 at CIV (even with the 4 orbit visits), which is somewhat lower than anticipated, but will be >12 at SiIV -- this target, at the lowest Galactic latitude, is one of our most crucial targets for our science case.

Visit

Proposal 16679, Target 1 (3 orb) (01), implementation Tue Apr 05 15:01:45 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

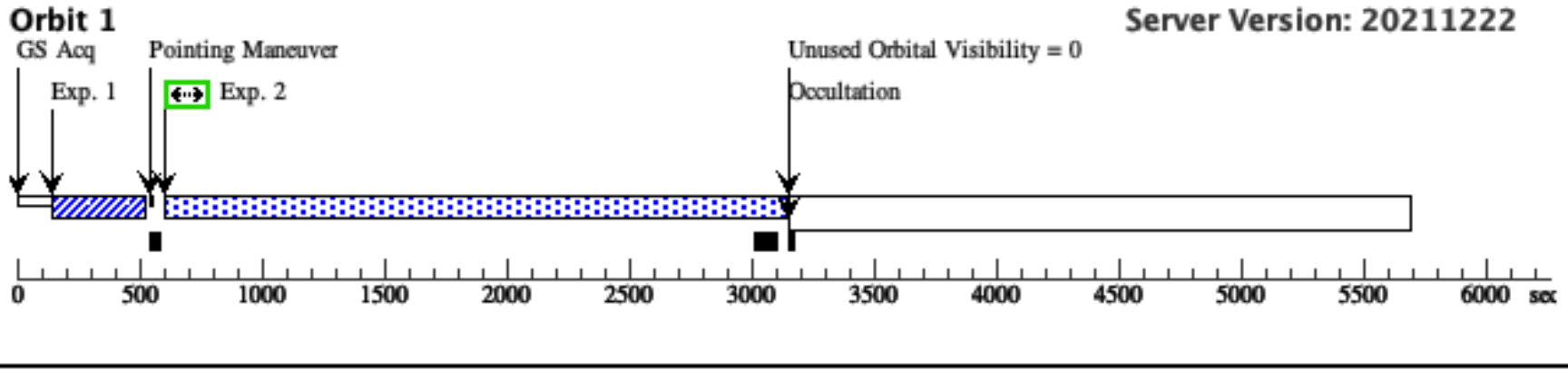
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	J0809-2026	RA: 08 09 19.3440 (122.3306000d) Dec: -20 26 53.88 (-20.44830d) Equinox: J2000	Redshift: 0.5298	V=17.3 NUV =18.32	Reference Frame: ICRS

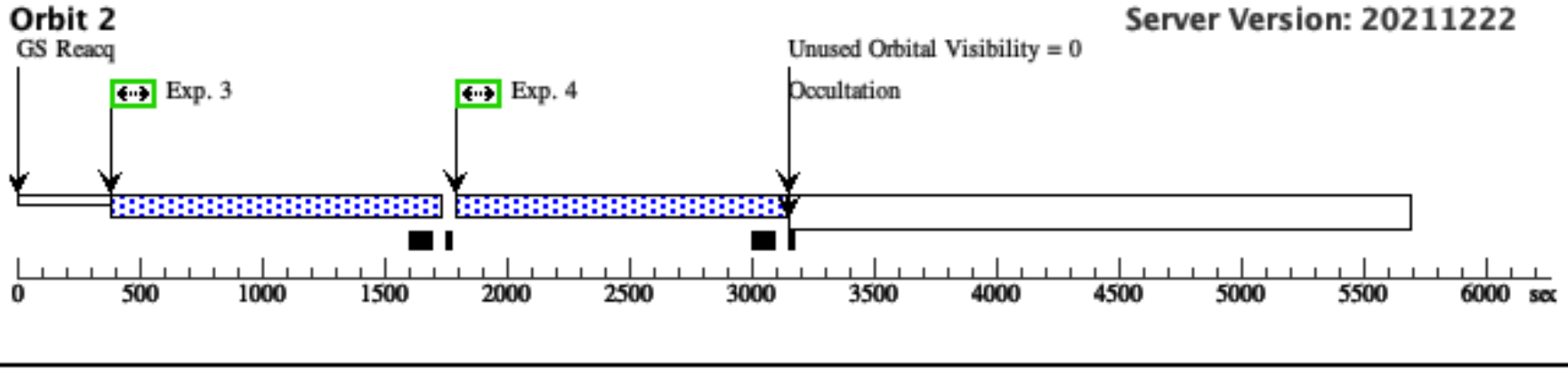
Comments: One of our faintest targets. GALEX CAUSE, no FUV mag. Looks spot on in Target conf. chart.
SFD ebv = 0.14
acq ETC: COS.sa.1528282 (92 seconds)
img acq: COS.ta.1530544 (39 seconds)
spec ETC: COS.sp.1528281 (24000 seconds)
Category=GALAXY
Description=[QSO]
Extended=NO

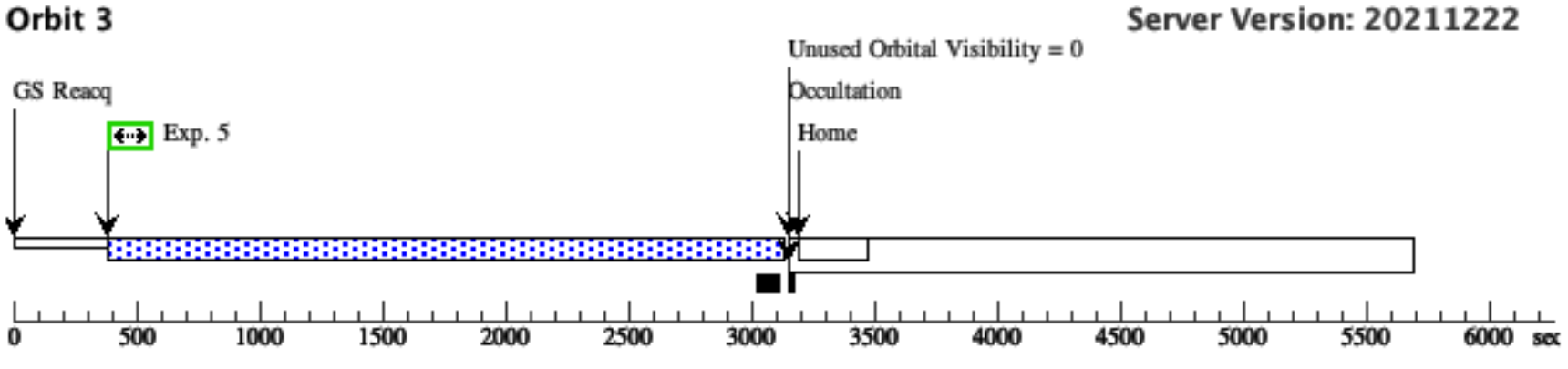
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530544)	(1) J0809-2026	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				39 Secs (39 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528281)	(1) J0809-2026	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=2223			1800 Secs (2333 Secs) *[==>2333.0 Secs]*	*[1]*
3	FP2 (COS.sp.1528281)	(1) J0809-2026	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1298 Secs) *[==>1298.0 Secs]*	*[2]*
4	FP3 (COS.sp.1528281)	(1) J0809-2026	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1298 Secs) *[==>1298.0 Secs]*	*[2]*
5	FP4 (COS.sp.1528281)	(1) J0809-2026	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=2601			2400 Secs (2701 Secs) *[==>2701.0 Secs]*	*[3]*

Orbit Structure







Visit

Proposal 16679, Target 1 (3 orb) (02), scheduling Tue Apr 05 15:01:45 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

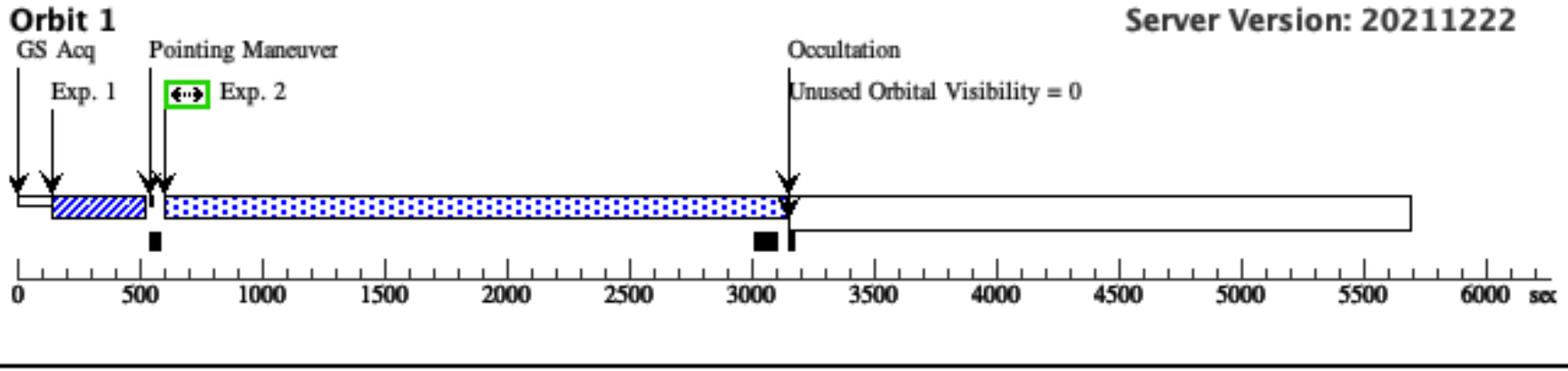
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	J0809-2026	RA: 08 09 19.3440 (122.3306000d) Dec: -20 26 53.88 (-20.44830d) Equinox: J2000	Redshift: 0.5298	V=17.3 NUV =18.32	Reference Frame: ICRS

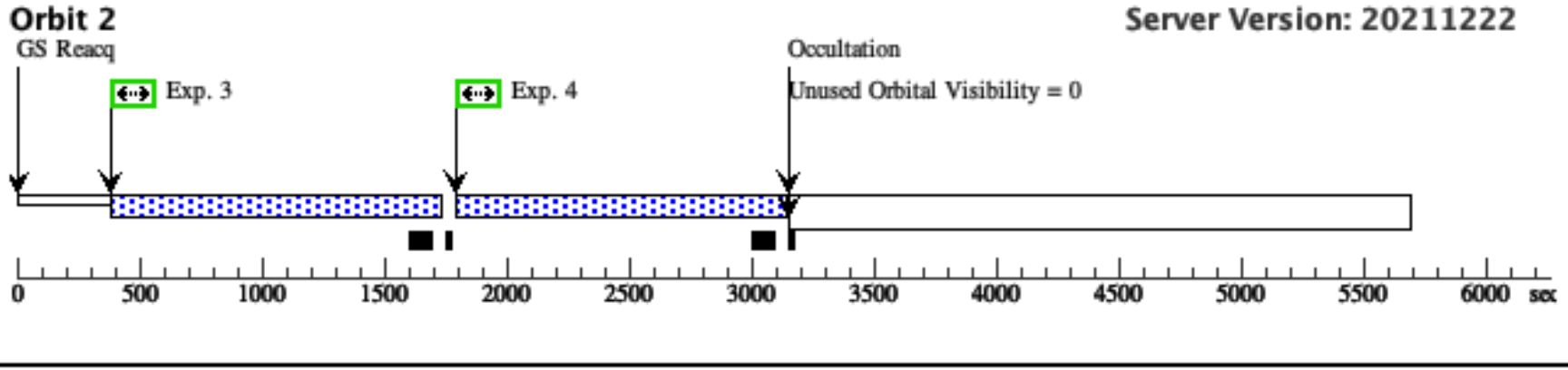
Comments: One of our faintest targets. GALEX CAUSE, no FUV mag. Looks spot on in Target conf. chart.
SFD ebv = 0.14
acq ETC: COS.sa.1528282 (92 seconds)
img acq: COS.ta.1530544 (39 seconds)
spec ETC: COS.sp.1528281 (24000 seconds)
Category=GALAXY
Description=[QSO]
Extended=NO

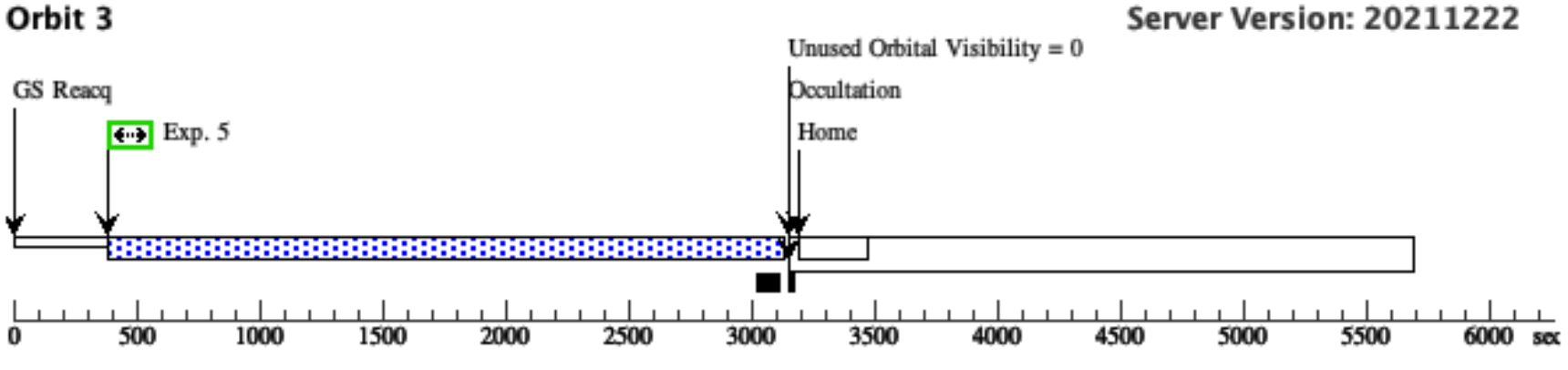
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530544)	(1) J0809-2026	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				39 Secs (39 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528281)	(1) J0809-2026	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=2223			1800 Secs (2333 Secs) *[==>2333.0 Secs]*	*[1]*
3	FP2 (COS.sp.1528281)	(1) J0809-2026	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1298 Secs) *[==>1298.0 Secs]*	*[2]*
4	FP3 (COS.sp.1528281)	(1) J0809-2026	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1298 Secs) *[==>1298.0 Secs]*	*[2]*
5	FP4 (COS.sp.1528281)	(1) J0809-2026	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=2601			2400 Secs (2701 Secs) *[==>2701.0 Secs]*	*[3]*

Orbit Structure







Visit

Proposal 16679, Target 1 (3 orb) (03), scheduling Tue Apr 05 15:01:45 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

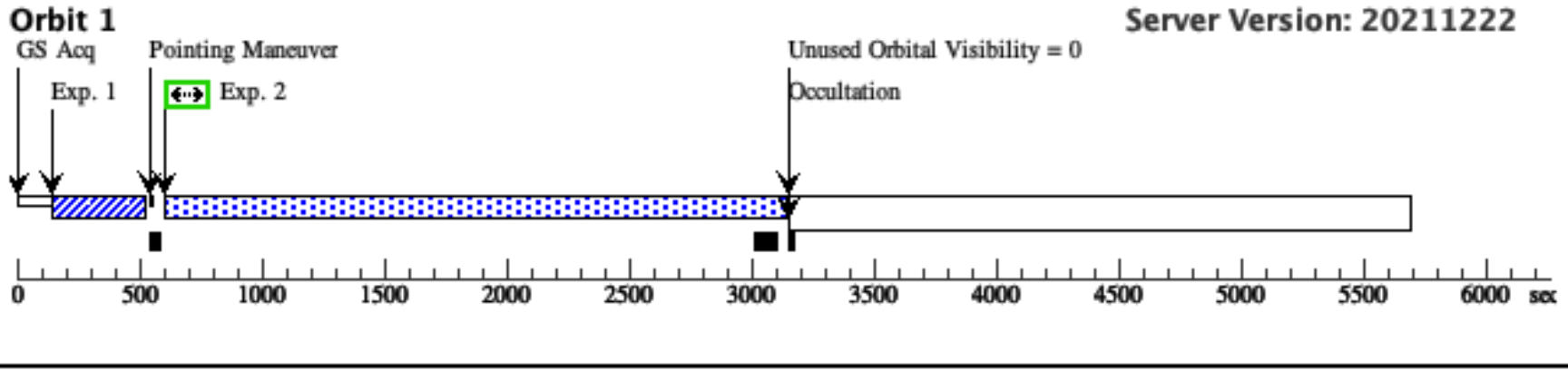
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	J0809-2026	RA: 08 09 19.3440 (122.3306000d) Dec: -20 26 53.88 (-20.44830d) Equinox: J2000	Redshift: 0.5298	V=17.3 NUV =18.32	Reference Frame: ICRS

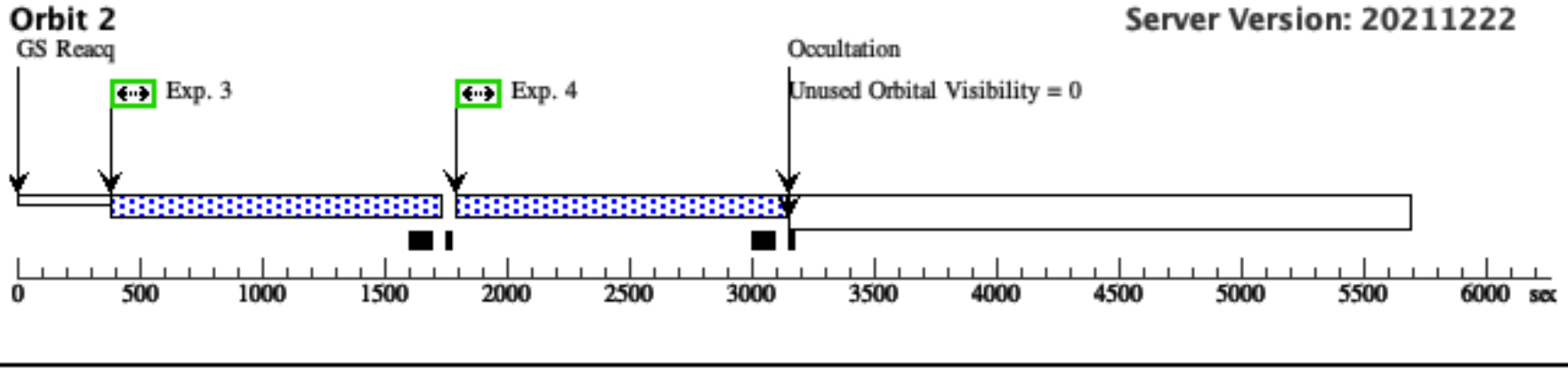
Comments: One of our faintest targets. GALEX CAUSE, no FUV mag. Looks spot on in Target conf. chart.
SFD ebv = 0.14
acq ETC: COS.sa.1528282 (92 seconds)
img acq: COS.ta.1530544 (39 seconds)
spec ETC: COS.sp.1528281 (24000 seconds)
Category=GALAXY
Description=[QSO]
Extended=NO

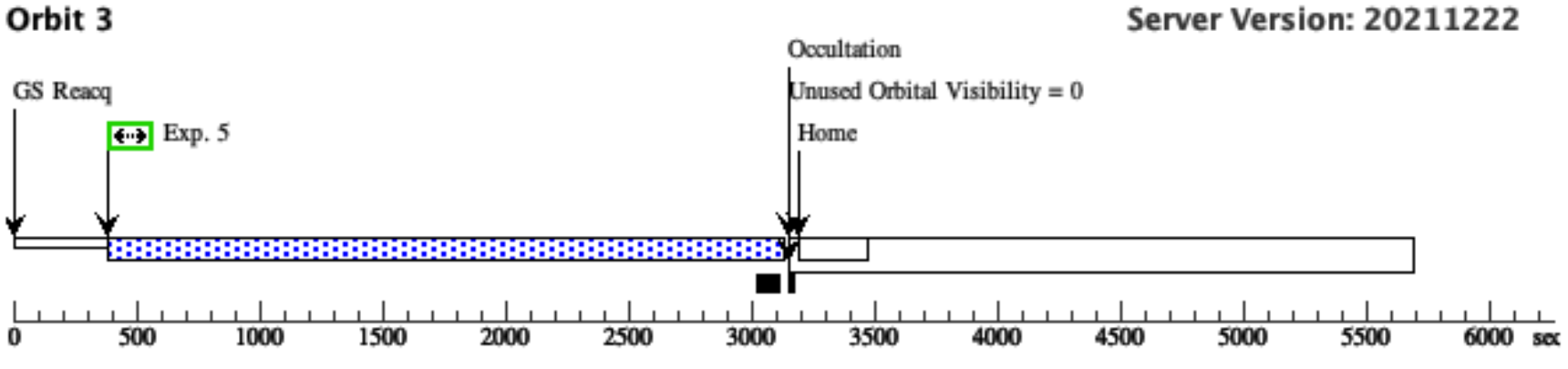
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530544)	(1) J0809-2026	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				39 Secs (39 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528281)	(1) J0809-2026	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=2223			1800 Secs (2333 Secs) *[==>2333.0 Secs]*	*[1]*
3	FP2 (COS.sp.1528281)	(1) J0809-2026	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1298 Secs) *[==>1298.0 Secs]*	*[2]*
4	FP3 (COS.sp.1528281)	(1) J0809-2026	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1298 Secs) *[==>1298.0 Secs]*	*[2]*
5	FP4 (COS.sp.1528281)	(1) J0809-2026	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=2601			2400 Secs (2701 Secs) *[==>2701.0 Secs]*	*[3]*

Orbit Structure







Visit

Proposal 16679, Target 2 (5 orb) (04), scheduling Tue Apr 05 15:01:45 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: This is our faintest target, but also one of our lowest latitude QSOs and is thus crucial for this experiment. Our original calculations included 10 orbits for this target. To maximize the amount of on-source time, we gain approximately 2000 seconds by configuring the exposures into two visits of 5 orbits each. This allows us to meet our science goals in 10 orbits.

Fixed Targets

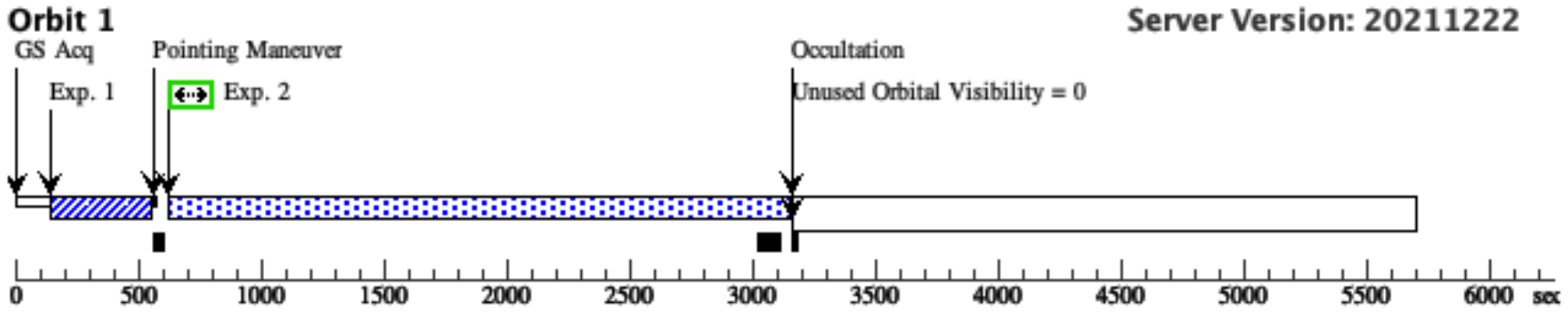
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	J0843-2640	RA: 08 43 20.2600 (130.8344167d) Dec: -26 40 18.12 (-26.67170d) Equinox: J2000	Redshift: 0.6482	V=17.13 NUV=18.50	Reference Frame: ICRS

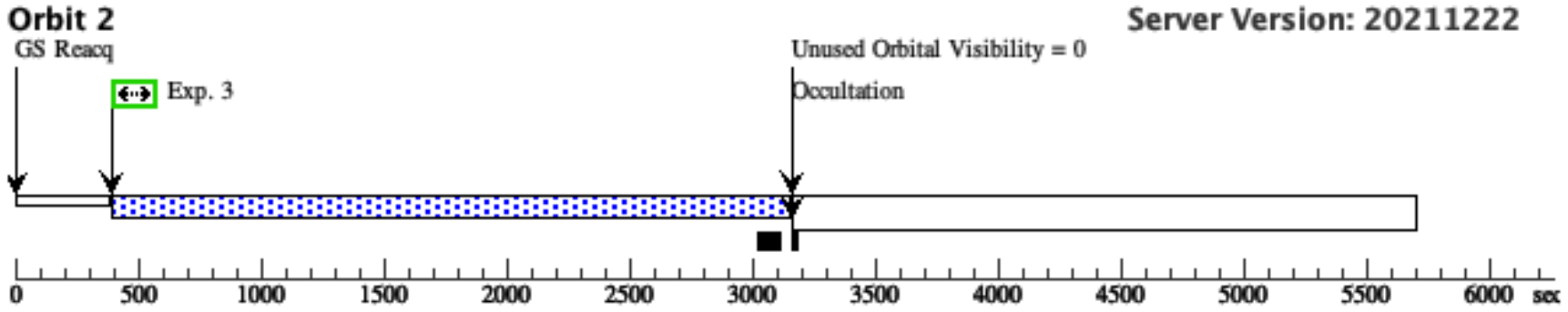
Comments: double checked GALEX. bad FUV coverage. NUV may be as faint as 18.53; ebv = 0.10
acq ETC: COS.sa.1528293 (140 sec)
img acq: COS.ta.1530545 (51 seconds)
spec ETC: COS.sp.1528289
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

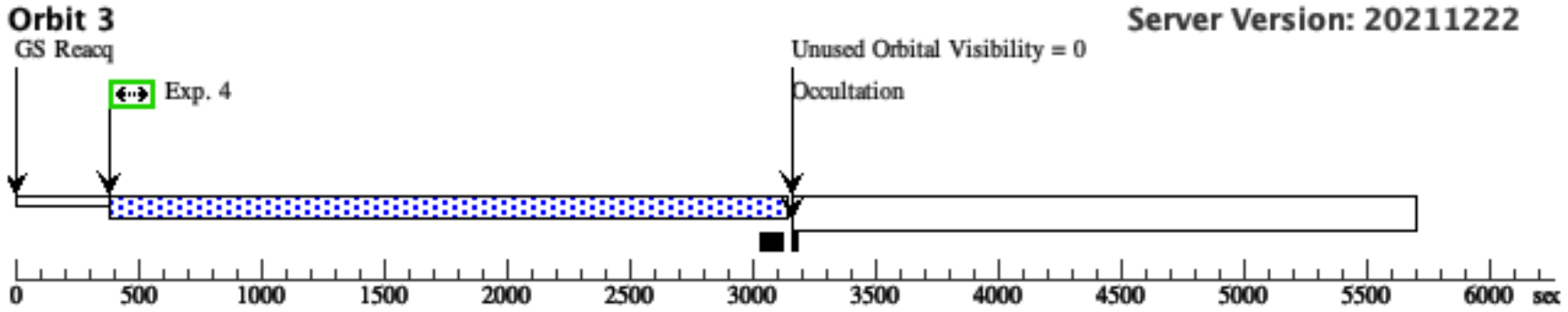
Exposures

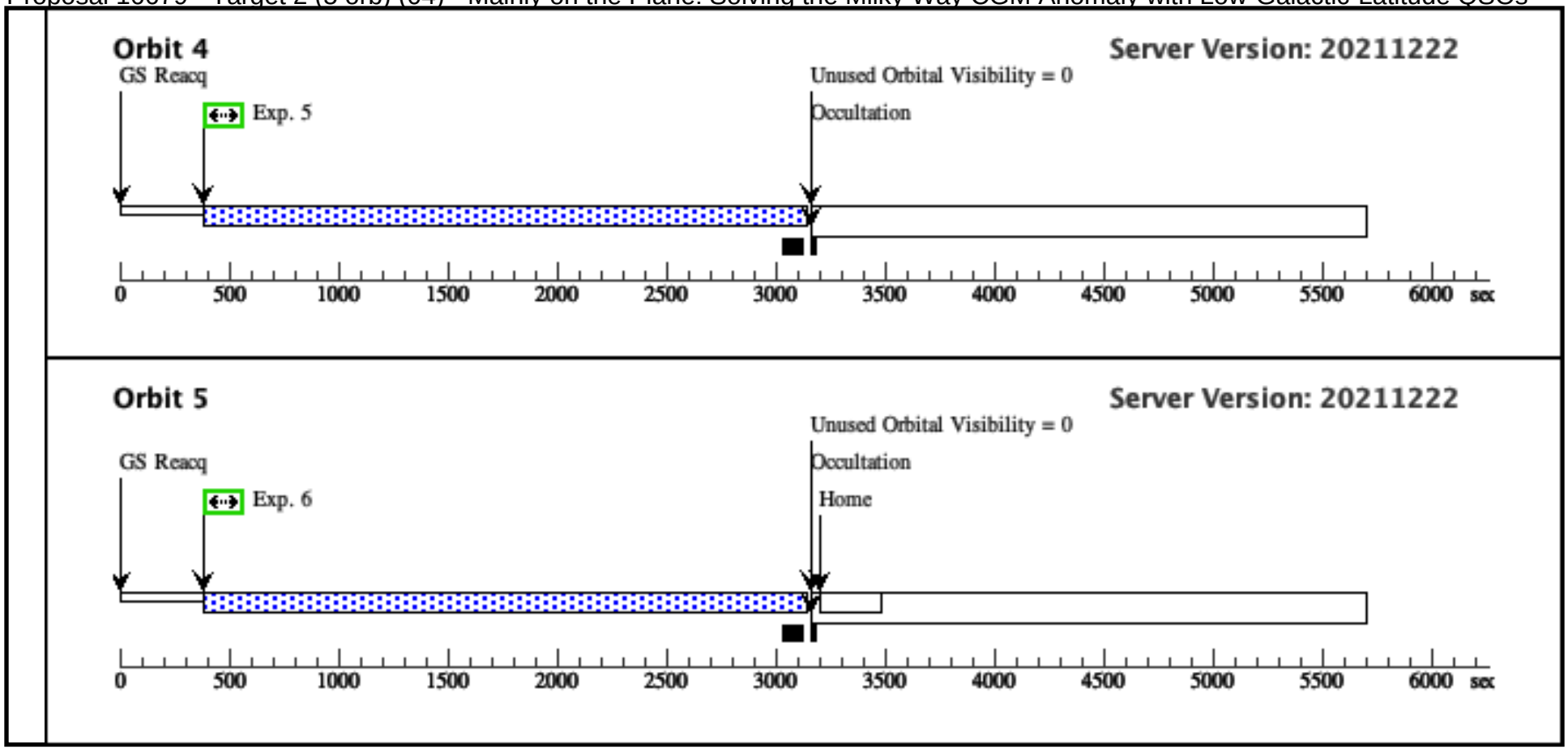
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530545)	(2) J0843-2640	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				51 Secs (51 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528289)	(2) J0843-2640	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=2210; FP-POS=1; SEGMENT=BOTH			2000 Secs (2317 Secs) *[==>2317.0 Secs]*	*[1]*
3	FP1 (COS.sp.1528289)	(2) J0843-2640	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=2600; FP-POS=1; SEGMENT=BOTH			2600 Secs (2709 Secs) *[==>2709.0 Secs]*	*[2]*
4	FP2 (COS.sp.1528289)	(2) J0843-2640	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=2609; FP-POS=2; SEGMENT=BOTH			2600 Secs (2709 Secs) *[==>2709.0 Secs]*	*[3]*
5	FP3 (COS.sp.1528289)	(2) J0843-2640	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=2609; FP-POS=3; SEGMENT=BOTH			2600 Secs (2709 Secs) *[==>2709.0 Secs]*	*[4]*
6	FP4 (COS.sp.1528289)	(2) J0843-2640	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=2609; FP-POS=4; SEGMENT=BOTH			2600 Secs (2709 Secs) *[==>2709.0 Secs]*	*[5]*

Orbit Structure








Orbit 4
Server Version: 20211222
GS Reacq
Exp. 5
Unused Orbital Visibility = 0
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec
Orbit 5
Server Version: 20211222
Unused Orbital Visibility = 0
GS Reacq
Occultation
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16679, Target 2 (5 orb) (05), scheduling Tue Apr 05 15:01:45 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: This is our faintest target, but also one of our lowest latitude QSOs and is thus crucial for this experiment. Our original calculations included 10 orbits for this target. To maximize the amount of on-source time, we gain approximately 2000 seconds by configuring the exposures into two visits of 5 orbits each. This allows us to meet our science goals in 10 orbits.

Fixed Targets

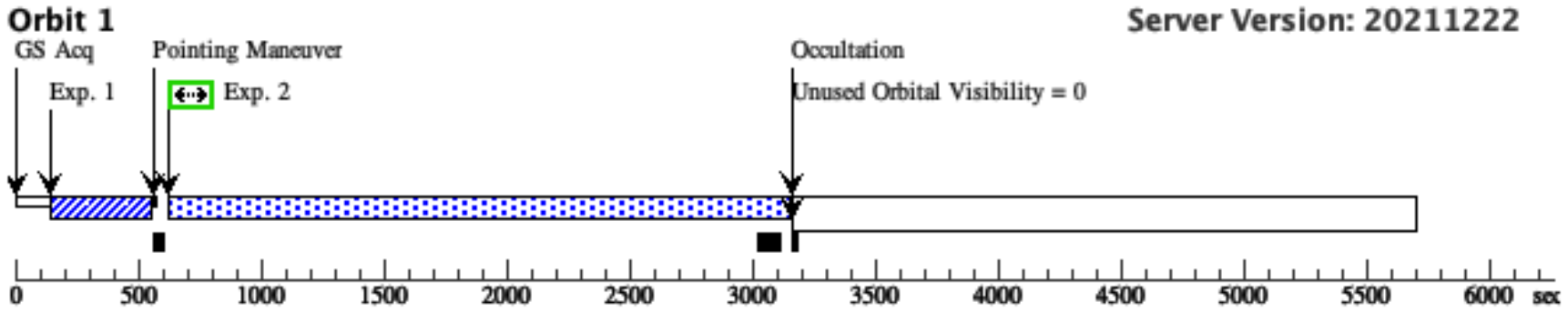
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	J0843-2640	RA: 08 43 20.2600 (130.8344167d) Dec: -26 40 18.12 (-26.67170d) Equinox: J2000	Redshift: 0.6482	V=17.13 NUV=18.50	Reference Frame: ICRS

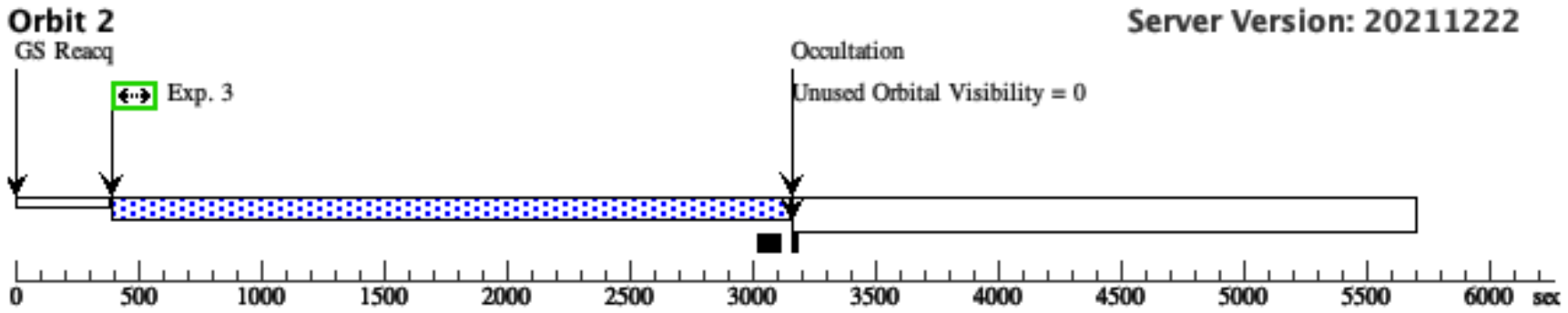
Comments: double checked GALEX. bad FUV coverage. NUV may be as faint as 18.53; ebv = 0.10
acq ETC: COS.sa.1528293 (140 sec)
img acq: COS.ta.1530545 (51 seconds)
spec ETC: COS.sp.1528289
Category=GALAXY
Description=[QSO, QUASAR]
Extended=NO

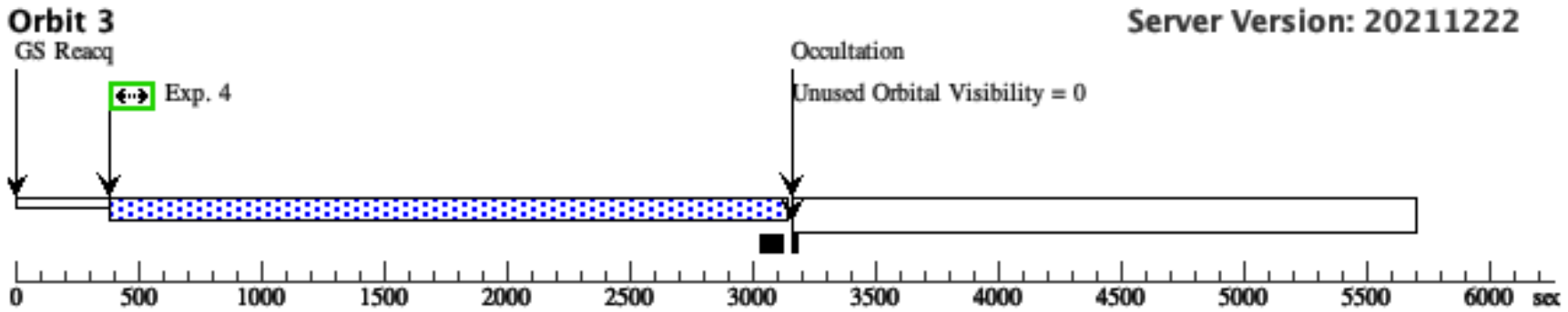
Exposures

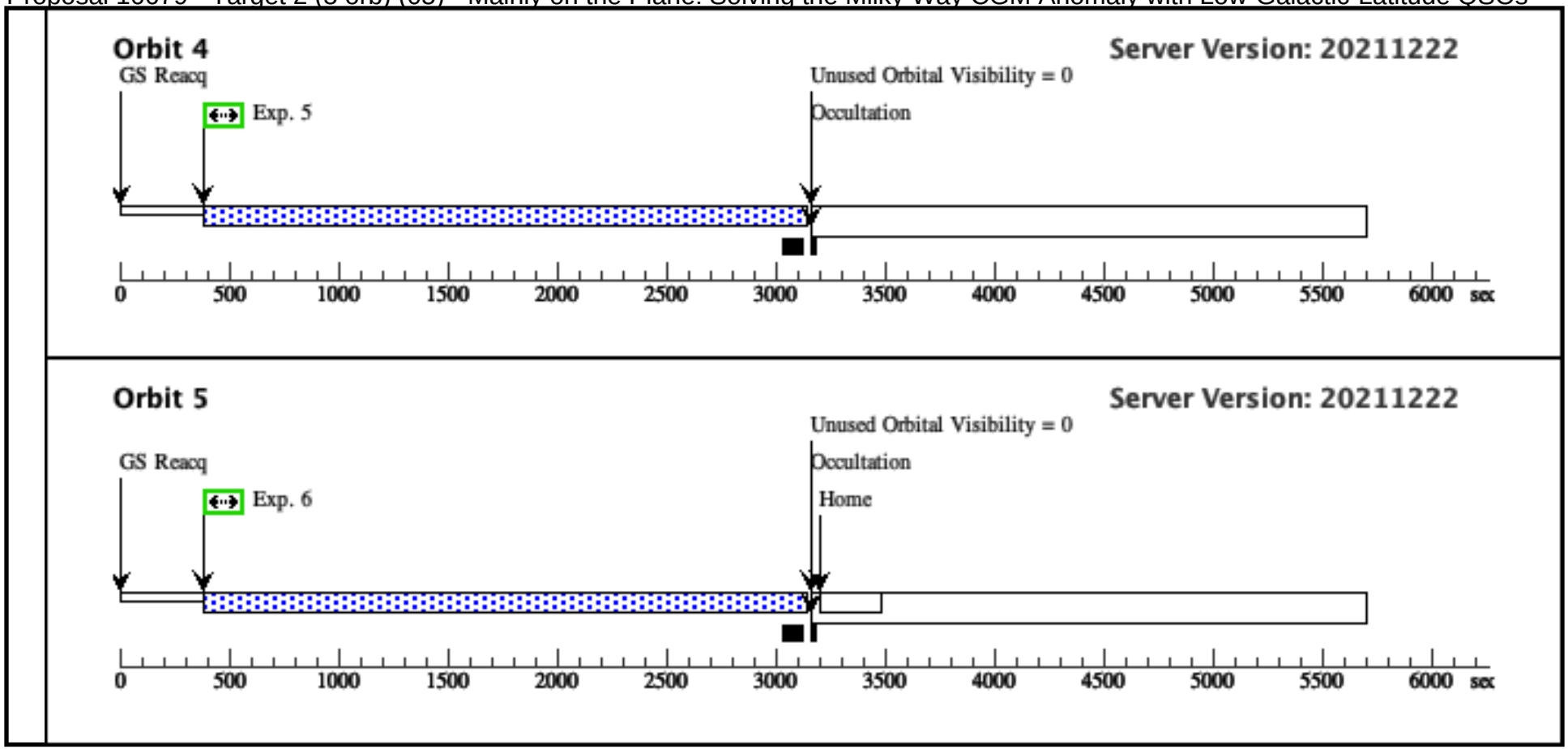
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530545)	(2) J0843-2640	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				51 Secs (51 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528289)	(2) J0843-2640	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=2210; FP-POS=1; SEGMENT=BOTH			2000 Secs (2317 Secs) *[==>2317.0 Secs]*	*[1]*
3	FP1 (COS.sp.1528289)	(2) J0843-2640	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=2600; FP-POS=1; SEGMENT=BOTH			2600 Secs (2709 Secs) *[==>2709.0 Secs]*	*[2]*
4	FP2 (COS.sp.1528289)	(2) J0843-2640	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=2609; FP-POS=2; SEGMENT=BOTH			2600 Secs (2709 Secs) *[==>2709.0 Secs]*	*[3]*
5	FP3 (COS.sp.1528289)	(2) J0843-2640	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=2609; FP-POS=3; SEGMENT=BOTH			2600 Secs (2709 Secs) *[==>2709.0 Secs]*	*[4]*
6	FP4 (COS.sp.1528289)	(2) J0843-2640	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=2609; FP-POS=4; SEGMENT=BOTH			2600 Secs (2709 Secs) *[==>2709.0 Secs]*	*[5]*

Orbit Structure








Orbit 4
Server Version: 20211222
GS Reacq
Exp. 5
Unused Orbital Visibility = 0
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec
Orbit 5
Server Version: 20211222
Unused Orbital Visibility = 0
GS Reacq
Occultation
Exp. 6
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16679, Target 3 (2 orb) (06), completed Tue Apr 05 15:01:45 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: (none)

Diagnostics

(FP1 (06.003)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP2 (06.004)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP3 (06.005)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP4 (06.006)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

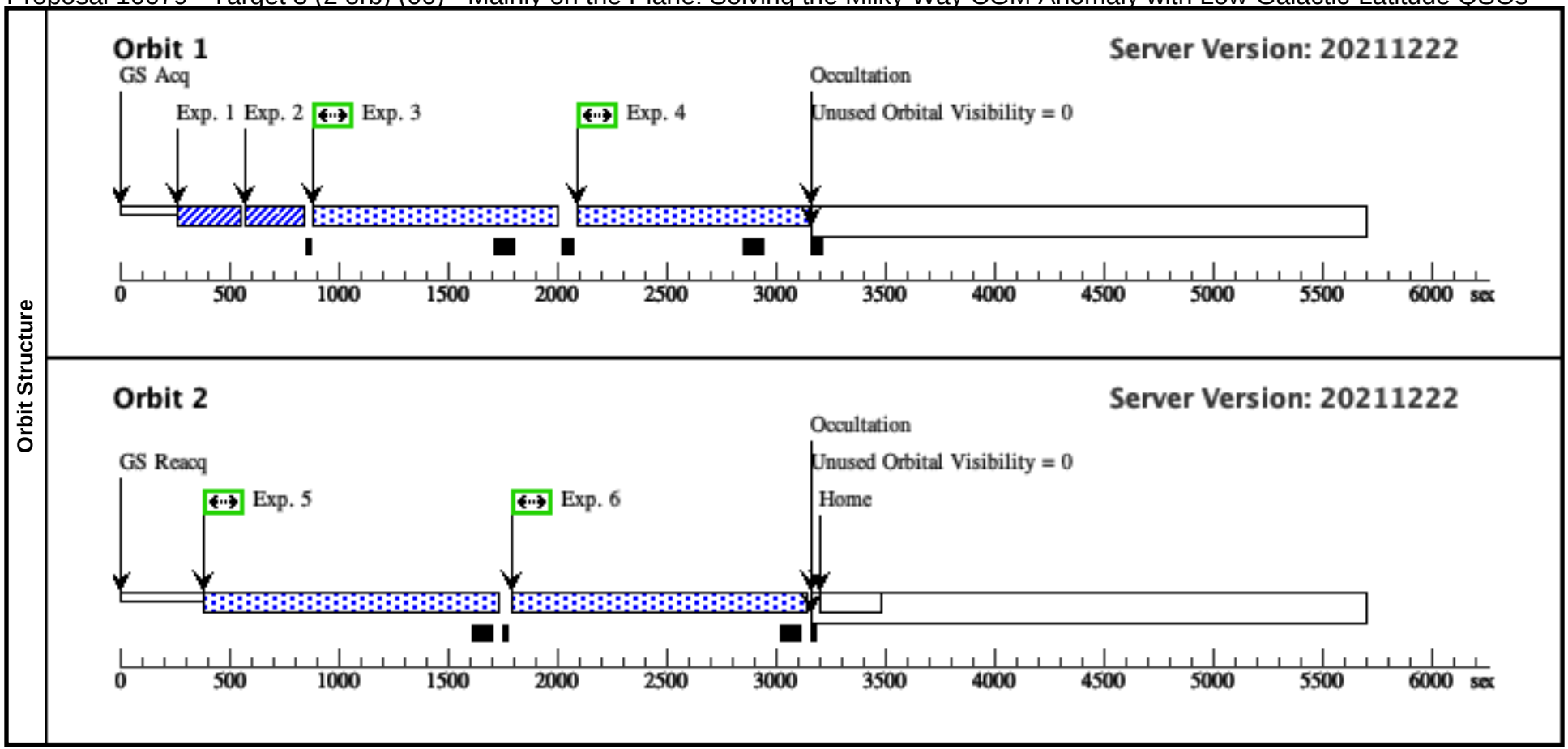
Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	J0554-2805	RA: 05 54 25.2700 (88.6052917d) Dec: -28 05 44.84 (-28.09579d) Equinox: J2000	Redshift: 0.062	V=16.30 NUV=16.65	Reference Frame: ICRS

Comments: FUV = 17.64, SFD ebv = 0.03.
low-z QSO, looks very compact, but selected extended out of caution.
acq ETC: COS.sa.1528310 (24 seconds)
spec ETC: COS.sp.1528308
Category=GALAXY
Description=[QSO]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.sa.1528310)	(3) J0554-2805	COS/FUV, ACQ/PEAKXD, PSA	G160M 1577 A				24 Secs (24 Secs) *[==>]*	***[1]***
2	acq (COS.sa.1528310)	(3) J0554-2805	COS/FUV, ACQ/PEAKD, PSA	G160M 1577 A	NUM-POS=5; CENTER=FLUX-WT-FLR; STEP-SIZE=0.9			24 Secs (24 Secs) *[==>]*	***[1]***
3	FP1 (COS.sp.1528308)	(3) J0554-2805	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=7200; FP-POS=1; SEGMENT=BOTH			700 Secs (1004 Secs) *[==>1004.0 Secs]*	***[1]***
Comments: target does not appear extended, but considering low-z, have selected extended out of caution.									
4	FP2 (COS.sp.1528308)	(3) J0554-2805	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=7200; FP-POS=2; SEGMENT=BOTH			700 Secs (1004 Secs) *[==>1004.0 Secs]*	***[1]***
5	FP3 (COS.sp.1528308)	(3) J0554-2805	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1194; FP-POS=3; SEGMENT=BOTH			1100 Secs (1302 Secs) *[==>1302.0 Secs]*	***[2]***
6	FP4 (COS.sp.1528308)	(3) J0554-2805	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1194; FP-POS=4; SEGMENT=BOTH			1100 Secs (1302 Secs) *[==>1302.0 Secs]*	***[2]***


Orbit Structure
Orbit 1
Server Version: 20211222
GS Acq
Exp. 1
Exp. 2
Exp. 3
Exp. 4
Occultation
Unused Orbital Visibility = 0
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec
Orbit 2
Server Version: 20211222
GS Reacq
Exp. 5
Exp. 6
Occultation
Unused Orbital Visibility = 0
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16679, Target 4 (2 orb) (07), completed Tue Apr 05 15:01:45 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: (none)

Comments: this is our most extended target, which even appears mildly extended in GALEX images. Adjusting acquisition process accordingly.

Diagnostics

(FP1 (07.003)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP2 (07.004)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP3 (07.005)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP4 (07.006)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

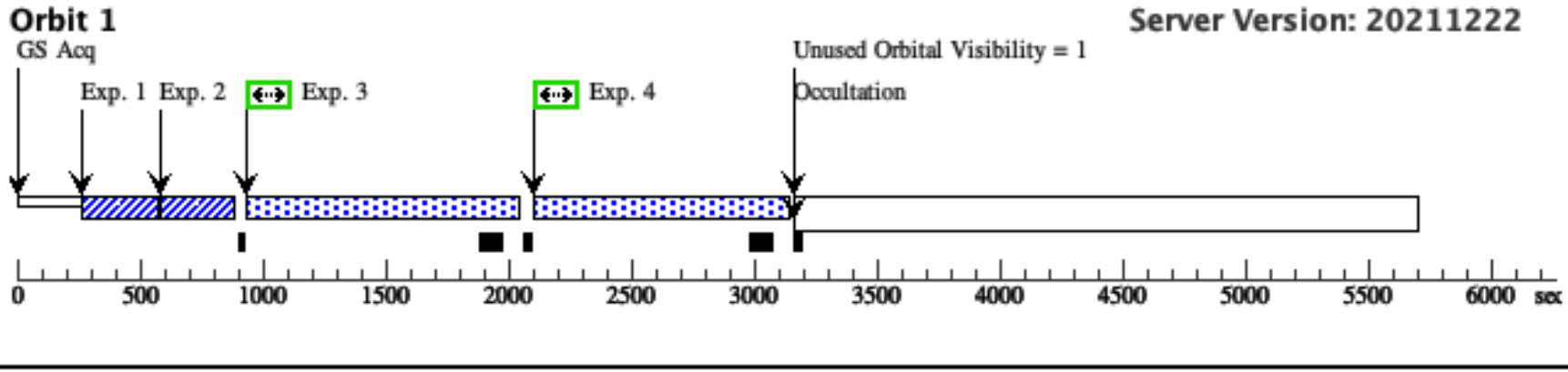
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	J0601-2611	RA: 06 01 5.7089 (90.2737871d) Dec: -26 11 9.00 (-26.18583d) Equinox: J2000	Redshift: 0.0385	V=16.27 NUV = 16.47	Reference Frame: ICRS

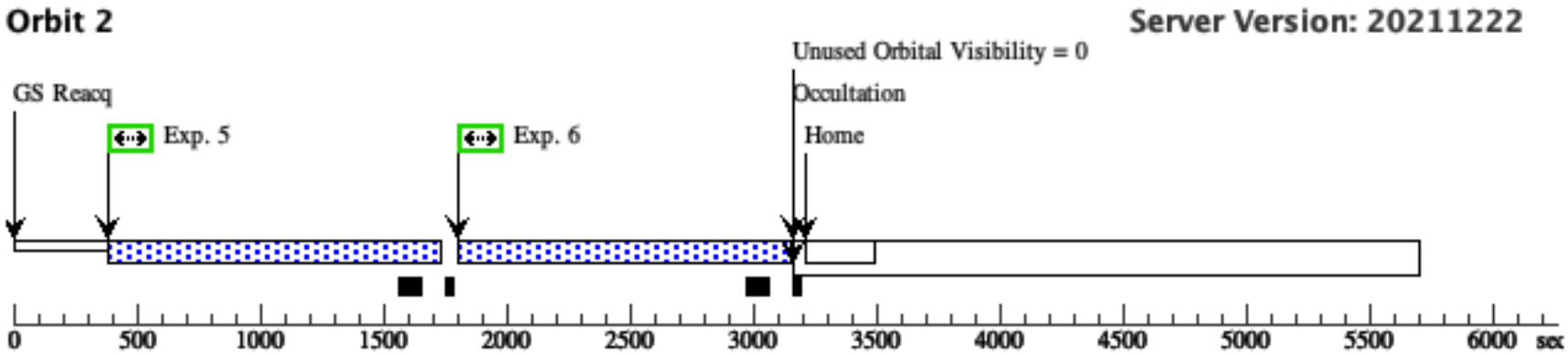
Comments: definitely an extended galaxy. UV should be fairly compact, however.
FUV = 16.72
SFD ebv = 0.03
acq ETC: COS.sa.1528311 (10 seconds) --> adjusting for total extent! COS.sa.1529136 to 30 seconds.
spec ETC: COS.sp.1528316
Category=GALAXY
Description=[QSO]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.sa.1529136)	(4) J0601-2611	COS/FUV, ACQ/PEAKXD, PSA	G160M 1577 A				30 Secs (30 Secs) *[==>]*	***[1]***
Comments: exp time adjusted for extended source to S/N of 100.									
2	acq (COS.sa.1529136)	(4) J0601-2611	COS/FUV, ACQ/PEAKD, PSA	G160M 1577 A	NUM-POS=5; CENTER=FLUX-WT-FLR; STEP-SIZE=0.9			30 Secs (30 Secs) *[==>]*	***[1]***
Comments: exp time adjusted for extended source to S/N of 100. acquisition peakd process increased to 5 steps and slightly modified centering.									
3	FP1 (COS.sp.1528316)	(4) J0601-2611	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=8400; FP-POS=1; SEGMENT=BOTH			700 Secs (989 Secs) *[==>989.0 Secs]*	***[1]***
Comments: target does appear somewhat extended.									
4	FP2 (COS.sp.1528316)	(4) J0601-2611	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=8400; FP-POS=2; SEGMENT=BOTH			700 Secs (989 Secs) *[==>989.0 Secs]*	***[1]***
5	FP3 (COS.sp.1528316)	(4) J0601-2611	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1140; FP-POS=3; SEGMENT=BOTH			1100 Secs (1297 Secs) *[==>1297.0 Secs]*	***[2]***
6	FP4 (COS.sp.1528316)	(4) J0601-2611	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1140; FP-POS=4; SEGMENT=BOTH			1100 Secs (1297 Secs) *[==>1297.0 Secs]*	***[2]***

Orbit Structure





Visit

Proposal 16679, Target 5 (3 orb) (08), failed Tue Apr 05 15:01:45 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: (none)

Comments: this another extended target, although does not appear terribly extended in GALEX image. Adjusting acquisition process accordingly.

Diagnostics

(FP1 (08.003)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP2 (08.004)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP3 (08.005)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP4 (08.006)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

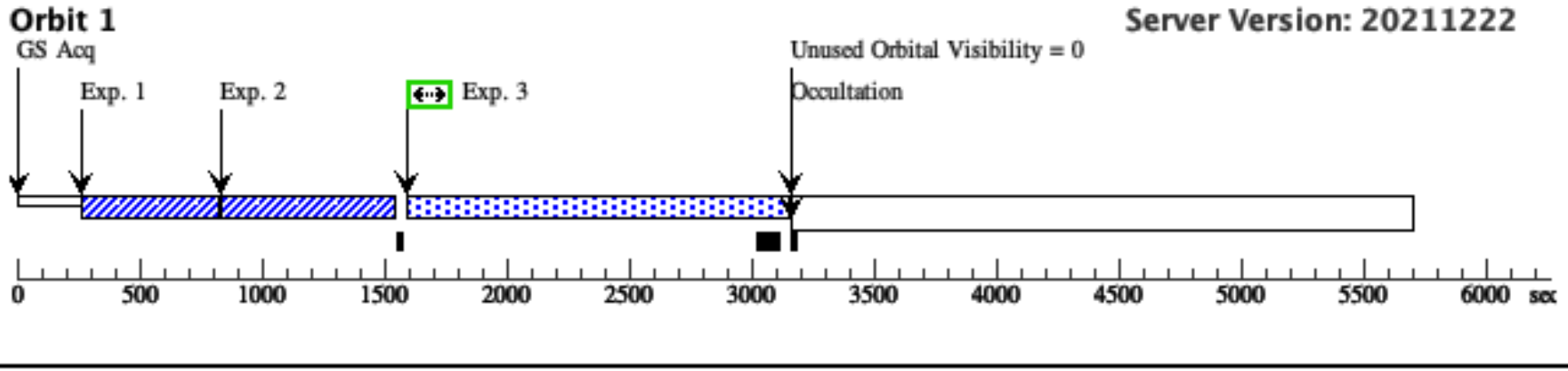
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	J0640-2556	RA: 06 40 11.7696 (100.0490400d) Dec: -25 53 42.15 (-25.89504d) Equinox: J2000	Redshift: 0.0261	V=18.5 NUV = 17.23	Reference Frame: ICRS

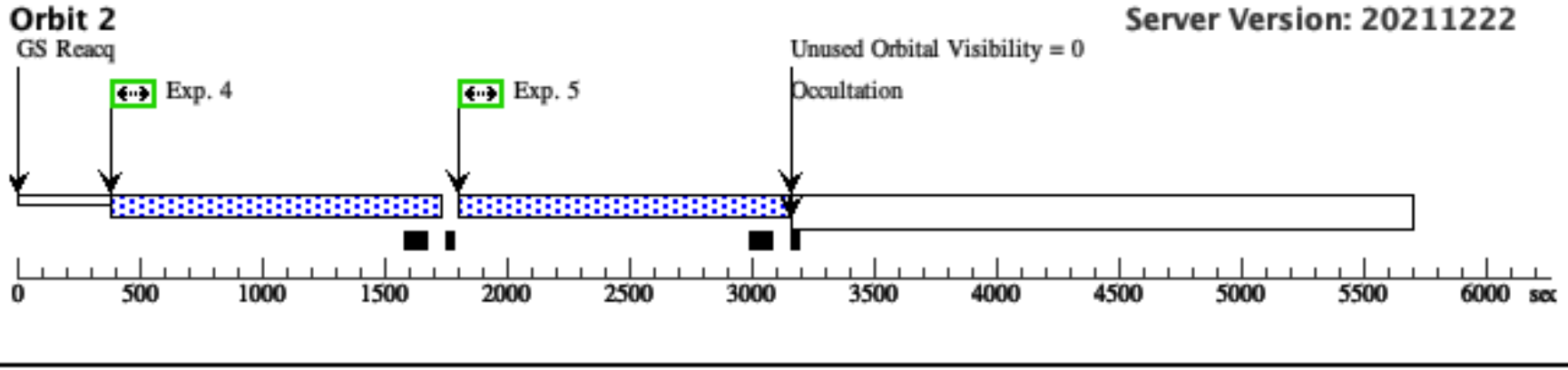
Comments: extended-ish, compact in UV GALEX image.
FUV = 18.07, SFD ebv = 0.09
acq ETC: COS.sa.1528318 (38 seconds) --> modifying for extended source COS.sa.1529139 to 112 seconds S/N of 100.
spec ETC: COS.sp.1528317
Category=GALAXY
Description=[QSO]
Extended=YES

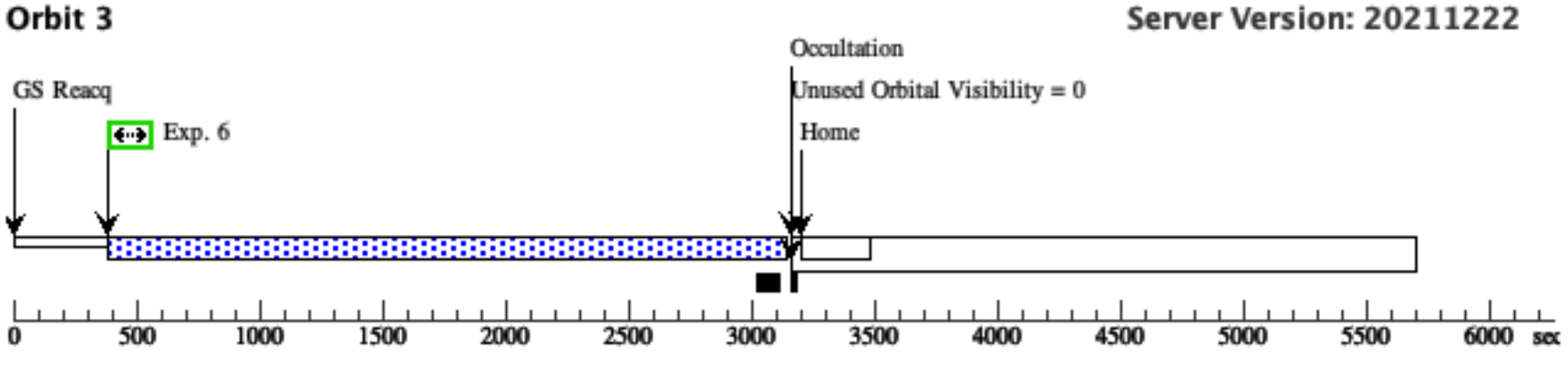
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.sa.1529139)	(5) J0640-2556	COS/FUV, ACQ/PEAKXD, PSA	G160M 1577 A				112 Secs (112 Secs) *[==>]*	*[1]*
Comments: exp time adjusted for extended source to S/N of 100.									
2	acq (COS.sa.1529139)	(5) J0640-2556	COS/FUV, ACQ/PEAKD, PSA	G160M 1577 A	NUM-POS=5; CENTER=FLUX-WT-FLR; STEP-SIZE=0.9			112 Secs (112 Secs) *[==>]*	*[1]*
Comments: exp time adjusted for extended source to S/N of 100. acquisition peakd process increased to 5 steps and slightly modified centering.									
3	FP1 (COS.sp.1528317)	(5) J0640-2556	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1330; FP-POS=1; SEGMENT=BOTH			1400 Secs (1438 Secs) *[==>1438.0 Secs]*	*[1]*
Comments: target does appear somewhat extended.									
4	FP2 (COS.sp.1528317)	(5) J0640-2556	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1160; FP-POS=2; SEGMENT=BOTH			1200 Secs (1297 Secs) *[==>1297.0 Secs]*	*[2]*
5	FP3 (COS.sp.1528317)	(5) J0640-2556	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1160; FP-POS=3; SEGMENT=BOTH			1200 Secs (1297 Secs) *[==>1297.0 Secs]*	*[2]*
6	FP4 (COS.sp.1528317)	(5) J0640-2556	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=2600; FP-POS=4; SEGMENT=BOTH			2600 Secs (2709 Secs) *[==>2709.0 Secs]*	*[3]*

Orbit Structure







Visit

Proposal 16679, Target 5 (3 orb) (58), failed Tue Apr 05 15:01:45 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: (none)

Comments: this another extended target, although does not appear terribly extended in GALEX image. Adjusting acquisition process accordingly.

This is HOPR repeat of visit 08.

Diagnostics

(FP1 (58.003)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP2 (58.004)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP3 (58.005)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP4 (58.006)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

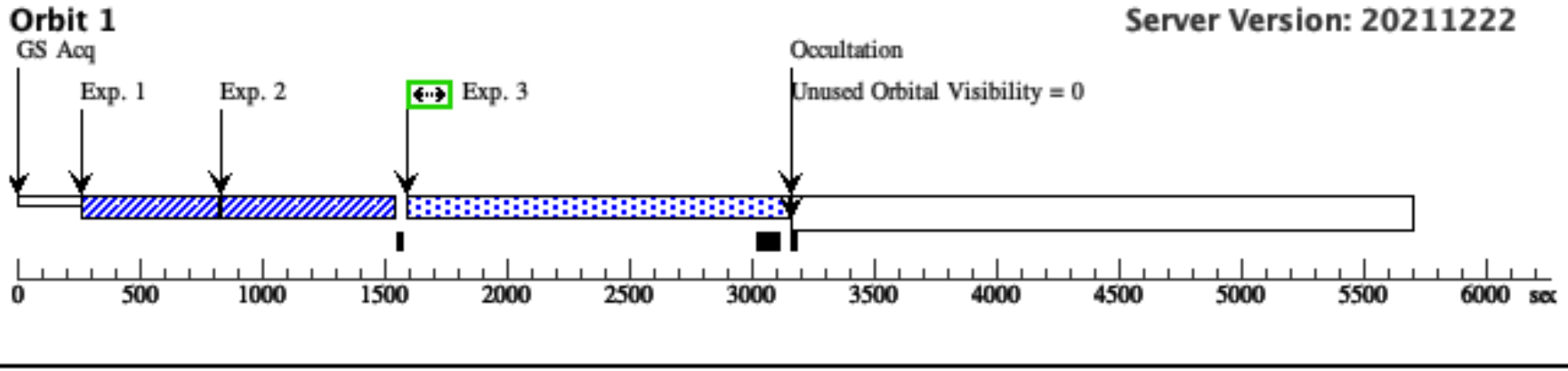
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	J0640-2556	RA: 06 40 11.7696 (100.0490400d) Dec: -25 53 42.15 (-25.89504d) Equinox: J2000	Redshift: 0.0261	V=18.5 NUV = 17.23	Reference Frame: ICRS

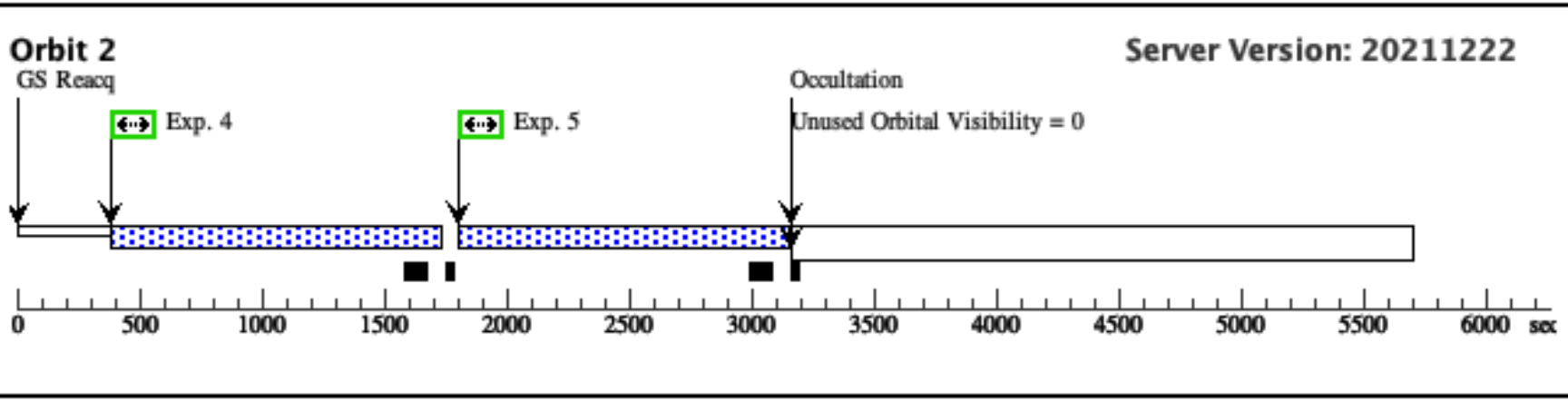
Comments: extended-ish, compact in UV GALEX image.
FUV = 18.07, SFD ebv = 0.09
acq ETC: COS.sa.1528318 (38 seconds) --> modifying for extended source COS.sa.1529139 to 112 seconds S/N of 100.
spec ETC: COS.sp.1528317
Category=GALAXY
Description=[QSO]
Extended=YES

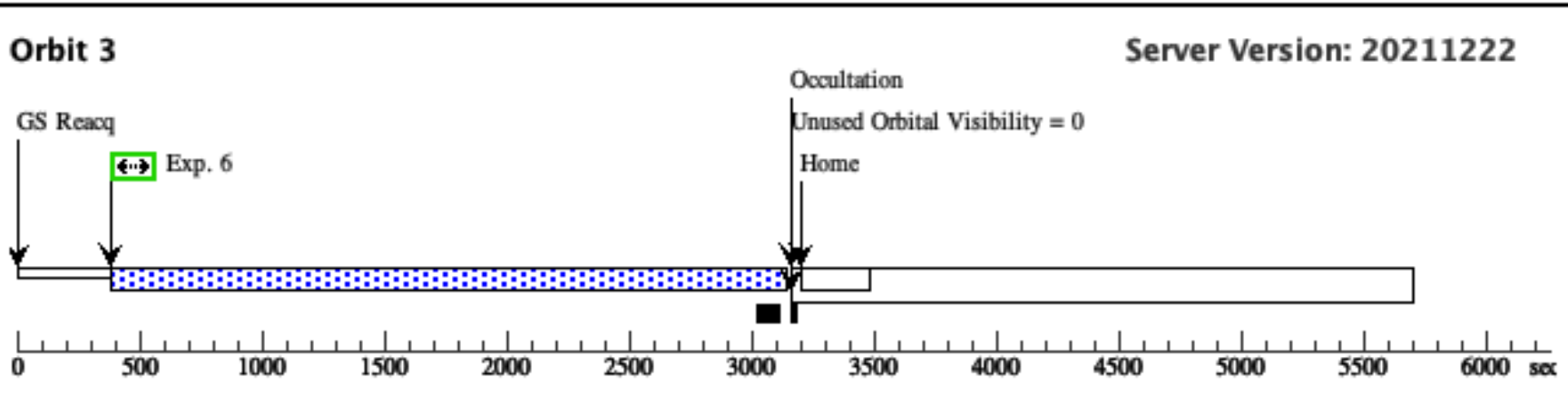
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.sa.1529139)	(5) J0640-2556	COS/FUV, ACQ/PEAKXD, PSA	G160M 1577 A				112 Secs (112 Secs) [==>]	[1]
Comments: exp time adjusted for extended source to S/N of 100.									
2	acq (COS.sa.1529139)	(5) J0640-2556	COS/FUV, ACQ/PEAKD, PSA	G160M 1577 A	NUM-POS=5; CENTER=FLUX-WT-FLR; STEP-SIZE=0.9			112 Secs (112 Secs) [==>]	[1]
Comments: exp time adjusted for extended source to S/N of 100. acquisition peakd process increased to 5 steps and slightly modified centering.									
3	FP1 (COS.sp.1528317)	(5) J0640-2556	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1330; FP-POS=1; SEGMENT=BOTH			1400 Secs (1438 Secs) [==>1438.0 Secs]	[1]
Comments: target does appear somewhat extended.									
4	FP2 (COS.sp.1528317)	(5) J0640-2556	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1160; FP-POS=2; SEGMENT=BOTH			1200 Secs (1297 Secs) [==>1297.0 Secs]	[2]
5	FP3 (COS.sp.1528317)	(5) J0640-2556	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1160; FP-POS=3; SEGMENT=BOTH			1200 Secs (1297 Secs) [==>1297.0 Secs]	[2]
6	FP4 (COS.sp.1528317)	(5) J0640-2556	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=2600; FP-POS=4; SEGMENT=BOTH			2600 Secs (2709 Secs) [==>2709.0 Secs]	[3]

Orbit Structure







Visit

Proposal 16679, Target 5 (3 orb) (68) Tue Apr 05 15:01:45 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: (none)

Comments: this another extended target, although does not appear terribly extended in GALEX image. Adjusting acquisition process accordingly.

This is HOPR repeat of visit 58.

Diagnostics

(FP1 (68.003)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP2 (68.004)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP3 (68.005)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP4 (68.006)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

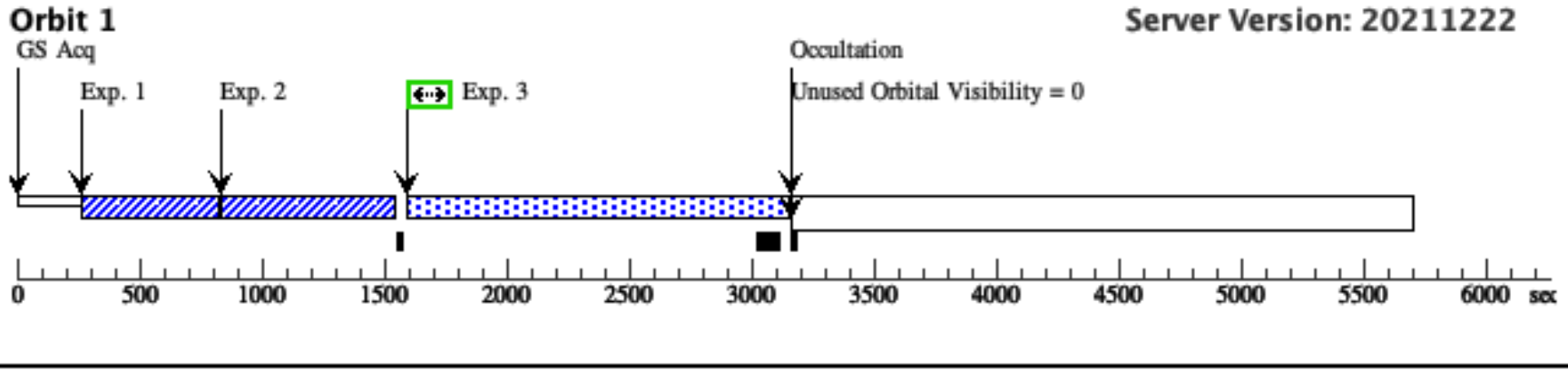
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(5)	J0640-2556	RA: 06 40 11.7696 (100.0490400d) Dec: -25 53 42.15 (-25.89504d) Equinox: J2000	Redshift: 0.0261	V=18.5 NUV = 17.23	Reference Frame: ICRS

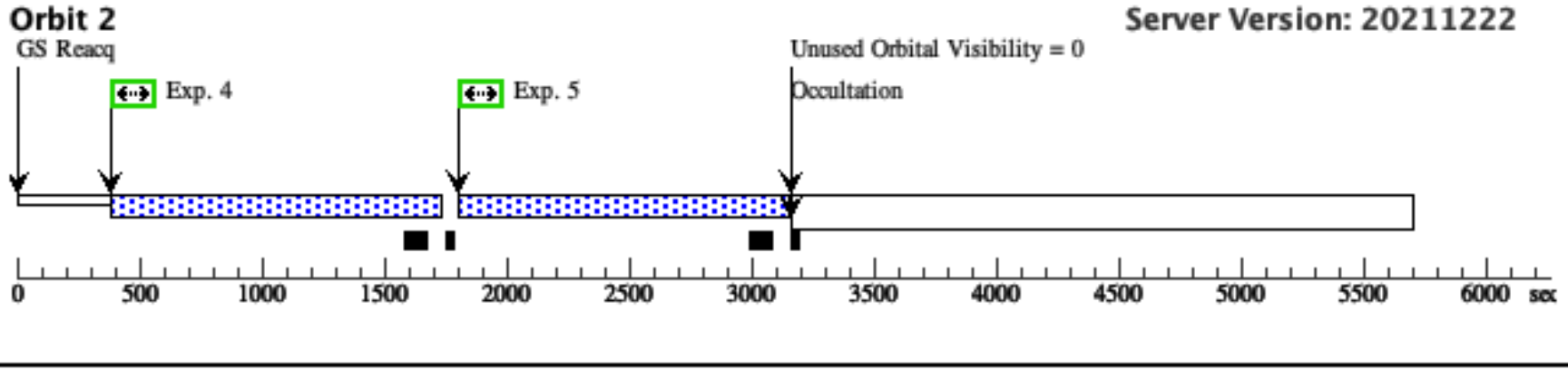
Comments: extended-ish, compact in UV GALEX image.
FUV = 18.07, SFD ebv = 0.09
acq ETC: COS.sa.1528318 (38 seconds) --> modifying for extended source COS.sa.1529139 to 112 seconds S/N of 100.
spec ETC: COS.sp.1528317
Category=GALAXY
Description=[QSO]
Extended=YES

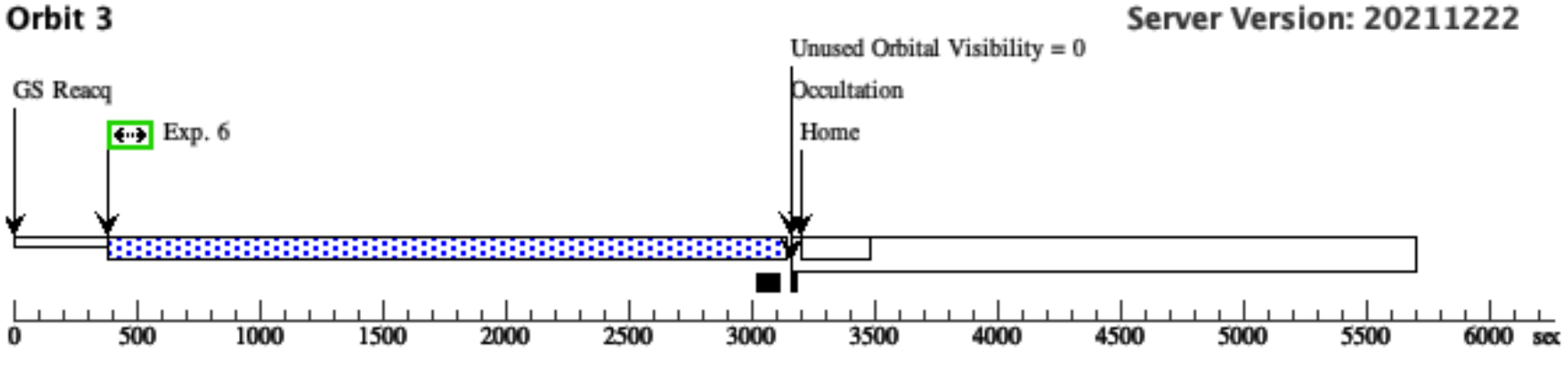
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.sa.1529139)	(5) J0640-2556	COS/FUV, ACQ/PEAKXD, PSA	G160M 1577 A				112 Secs (112 Secs) *[==>]*	*[1]*
Comments: exp time adjusted for extended source to S/N of 100.									
2	acq (COS.sa.1529139)	(5) J0640-2556	COS/FUV, ACQ/PEAKD, PSA	G160M 1577 A	NUM-POS=5; CENTER=FLUX-WT-FLR; STEP-SIZE=0.9			112 Secs (112 Secs) *[==>]*	*[1]*
Comments: exp time adjusted for extended source to S/N of 100. acquisition peakd process increased to 5 steps and slightly modified centering.									
3	FP1 (COS.sp.1528317)	(5) J0640-2556	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1330; FP-POS=1; SEGMENT=BOTH			1400 Secs (1438 Secs) *[==>1438.0 Secs]*	*[1]*
Comments: target does appear somewhat extended.									
4	FP2 (COS.sp.1528317)	(5) J0640-2556	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1160; FP-POS=2; SEGMENT=BOTH			1200 Secs (1297 Secs) *[==>1297.0 Secs]*	*[2]*
5	FP3 (COS.sp.1528317)	(5) J0640-2556	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1160; FP-POS=3; SEGMENT=BOTH			1200 Secs (1297 Secs) *[==>1297.0 Secs]*	*[2]*
6	FP4 (COS.sp.1528317)	(5) J0640-2556	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=2600; FP-POS=4; SEGMENT=BOTH			2600 Secs (2709 Secs) *[==>2709.0 Secs]*	*[3]*

Orbit Structure







Visit

Proposal 16679, Target 6 (3 orb) (09), completed Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

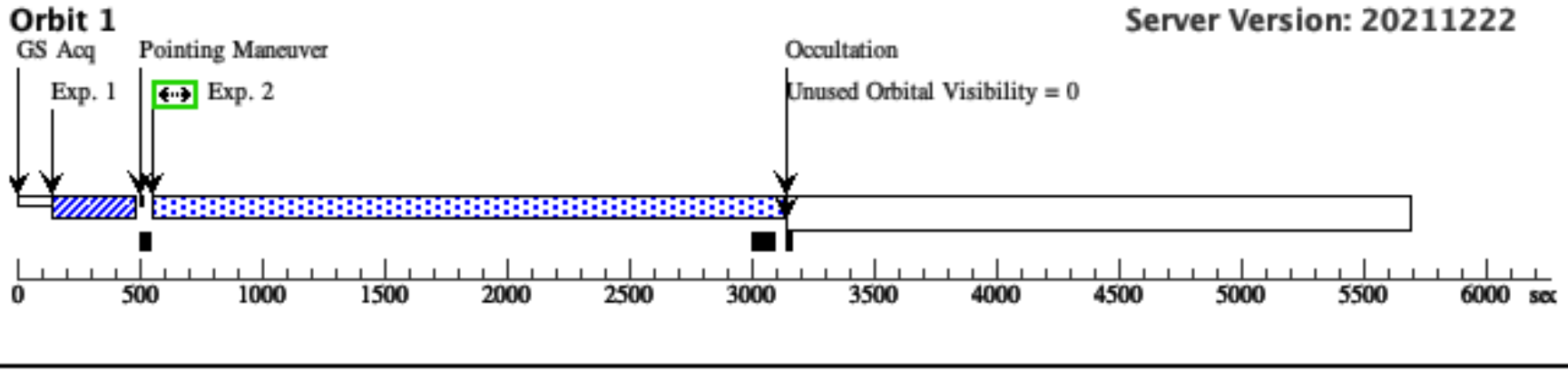
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	J0825-1351	RA: 08 25 59.3400 (126.4972500d) Dec: -13 51 42.52 (-13.86181d) Equinox: J2000	Redshift: 0.319	V=16.75 NUV = 17.42	Reference Frame: ICRS

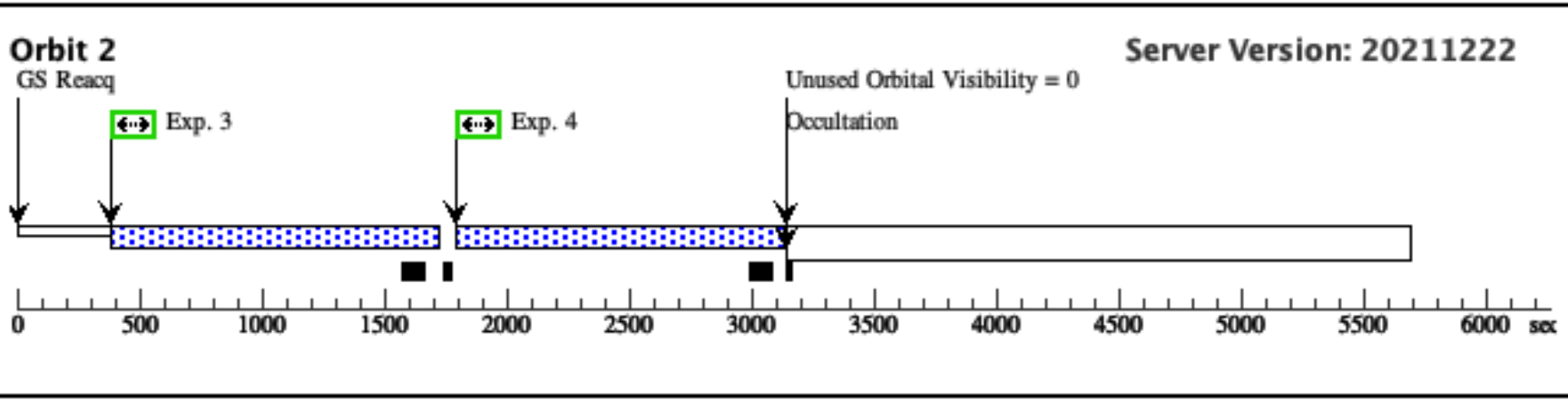
Comments: FUV = 17.83, SFD ebv = 0.05
acq ETC: COS.sa.1528322 (33 sec)
acq image ETC: COS.ta.1530551 (17 seconds)
spec ETC: COS.sp.1528321 (7900 sec)
Category=GALAXY
Description=[QSO]
Extended=NO

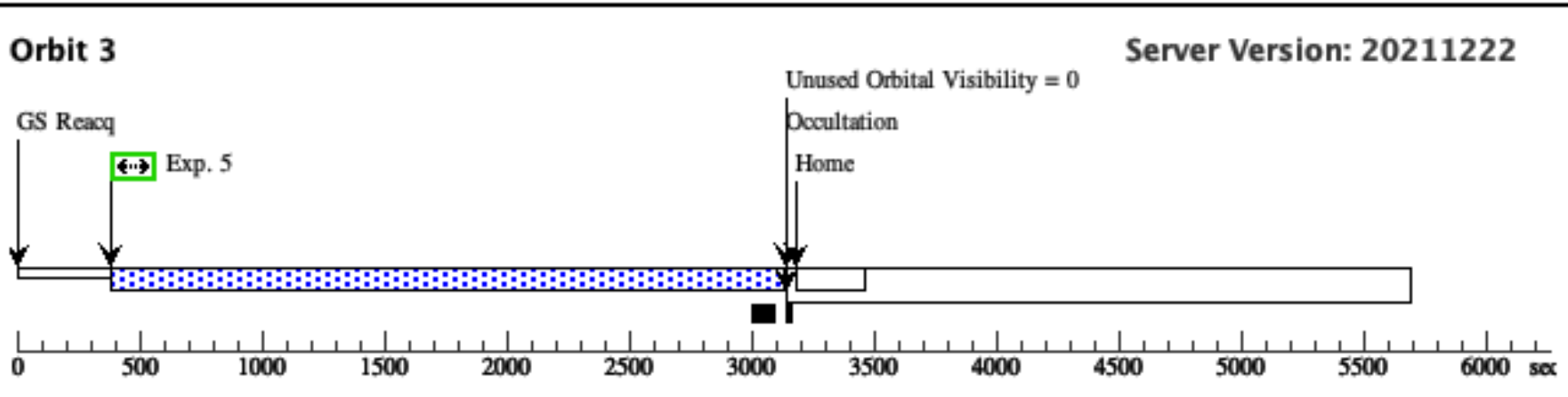
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530551)	(6) J0825-1351	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				17 Secs (17 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528321)	(6) J0825-1351	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=2255			1800 Secs (2369 Secs) *[==>2369.0 Secs]*	*[1]*
3	FP2 (COS.sp.1528321)	(6) J0825-1351	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1150			1200 Secs (1289 Secs) *[==>1289.0 Secs]*	*[2]*
4	FP3 (COS.sp.1528321)	(6) J0825-1351	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1170			1200 Secs (1289 Secs) *[==>1289.0 Secs]*	*[2]*
5	FP4 (COS.sp.1528321)	(6) J0825-1351	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=2583			2400 Secs (2693 Secs) *[==>2693.0 Secs]*	*[3]*

Orbit Structure







Visit

Proposal 16679, Target 7 (3 orb) (10), scheduling Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

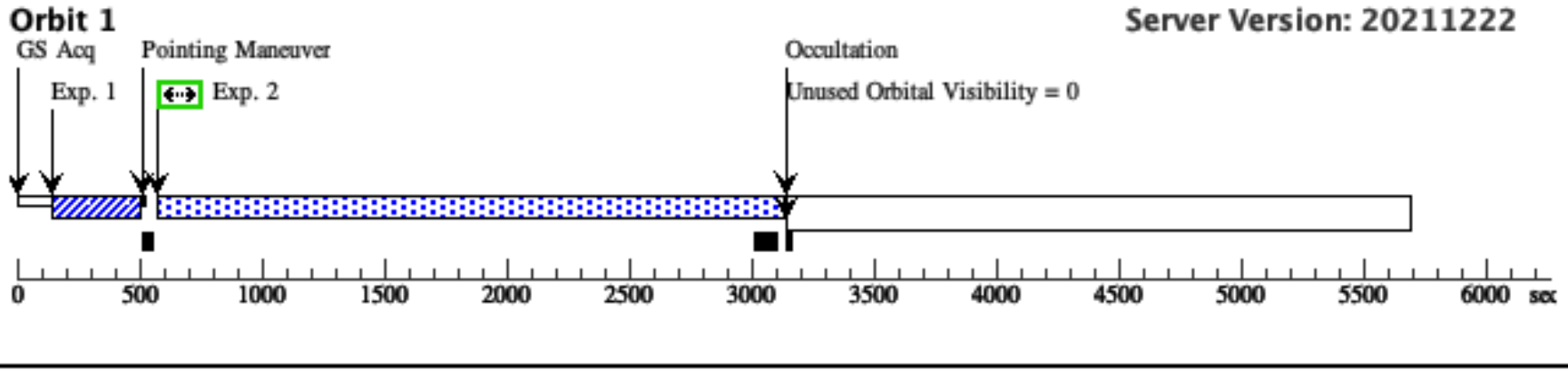
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	J0911-1348	RA: 09 11 34.8680 (137.8952833d) Dec: -13 48 1.60 (-13.80044d) Equinox: J2000	Redshift: 0.2166	V=17.2 NUV=17.92	Reference Frame: ICRS

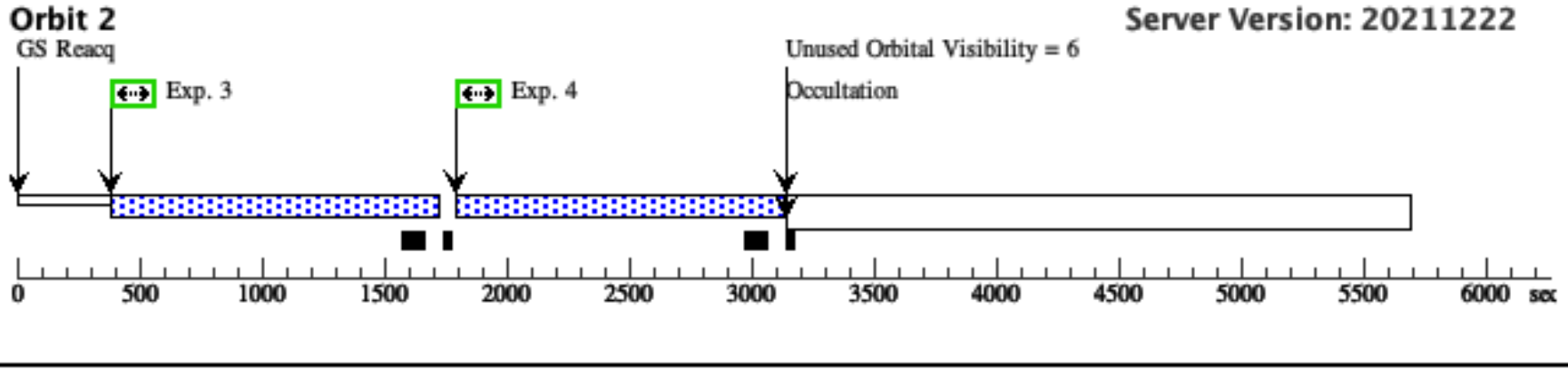
Comments: FUV = 17.89, SFD ebv = 0.05
acq ETC: COS.sa.1528325 (28 seconds)
spec ETC: COS.sp.1528324 (13000 sec)
acq image:COS.ta.1530552 (25 sec)
Category=GALAXY
Description=[QSO]
Extended=NO

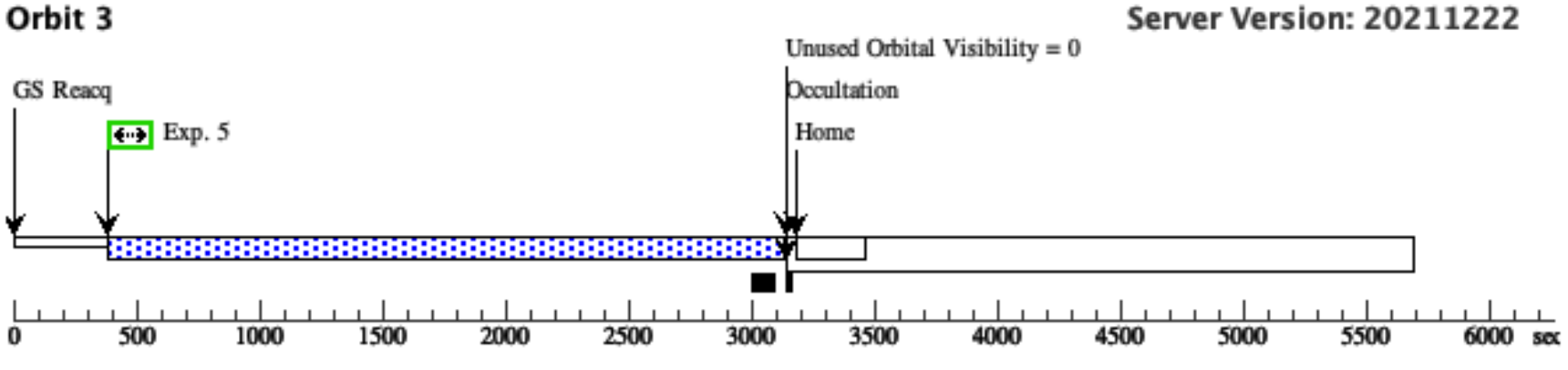
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530552)	(7) J0911-1348	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				25 Secs (25 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528324)	(7) J0911-1348	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=2250			1800 Secs (2353 Secs) *[==>2353.0 Secs]*	*[1]*
3	FP2 (COS.sp.1528324)	(7) J0911-1348	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1150			1200 Secs (1286 Secs) *[==>1286.0 Secs]*	*[2]*
4	FP3 (COS.sp.1528324)	(7) J0911-1348	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1150			1200 Secs (1286 Secs) *[==>1286.0 Secs]*	*[2]*
5	FP4 (COS.sp.1528324)	(7) J0911-1348	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=2583			2400 Secs (2693 Secs) *[==>2693.0 Secs]*	*[3]*

Orbit Structure







Visit

Proposal 16679, Target 7 (2 orb) (11), scheduling Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

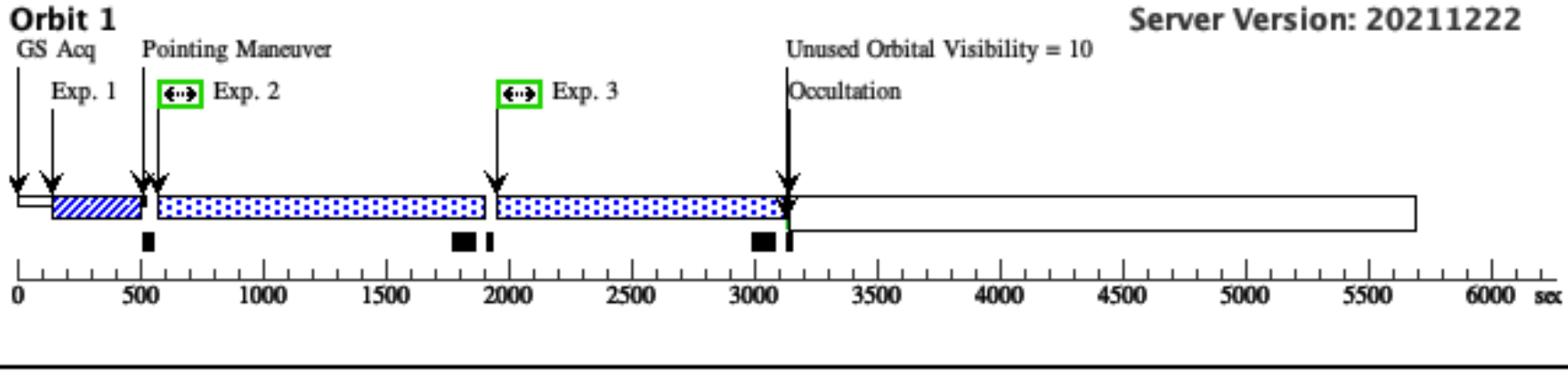
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(7)	J0911-1348	RA: 09 11 34.8680 (137.8952833d) Dec: -13 48 1.60 (-13.80044d) Equinox: J2000	Redshift: 0.2166	V=17.2 NUV=17.92	Reference Frame: ICRS

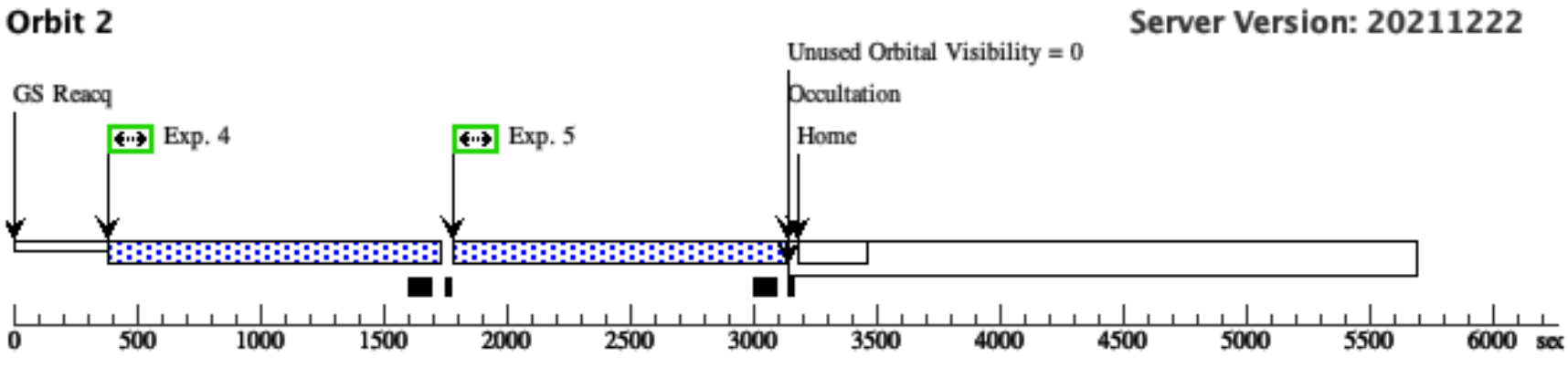
Comments: FUV = 17.89, SFD ebv = 0.05
acq ETC: COS.sa.1528325 (28 seconds)
spec ETC: COS.sp.1528324 (13000 sec)
acq image:COS.ta.1530552 (25 sec)
Category=GALAXY
Description=[QSO]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530552)	(7) J0911-1348	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				25 Secs (25 Secs) *[==>]*	***[1]***
2	FP1 (COS.sp.1528324)	(7) J0911-1348	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=1010			700 Secs (1119 Secs) *[==>1119.0 Secs]*	***[1]***
3	FP2 (COS.sp.1528324)	(7) J0911-1348	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1010			700 Secs (1119 Secs) *[==>1119.0 Secs]*	***[1]***
4	FP3 (COS.sp.1528324)	(7) J0911-1348	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1294 Secs) *[==>1294.0 Secs]*	***[2]***
5	FP4 (COS.sp.1528324)	(7) J0911-1348	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1294 Secs) *[==>1294.0 Secs]*	***[2]***

Orbit Structure





Visit

Proposal 16679, Target 8 (3 orb) (12), completed Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

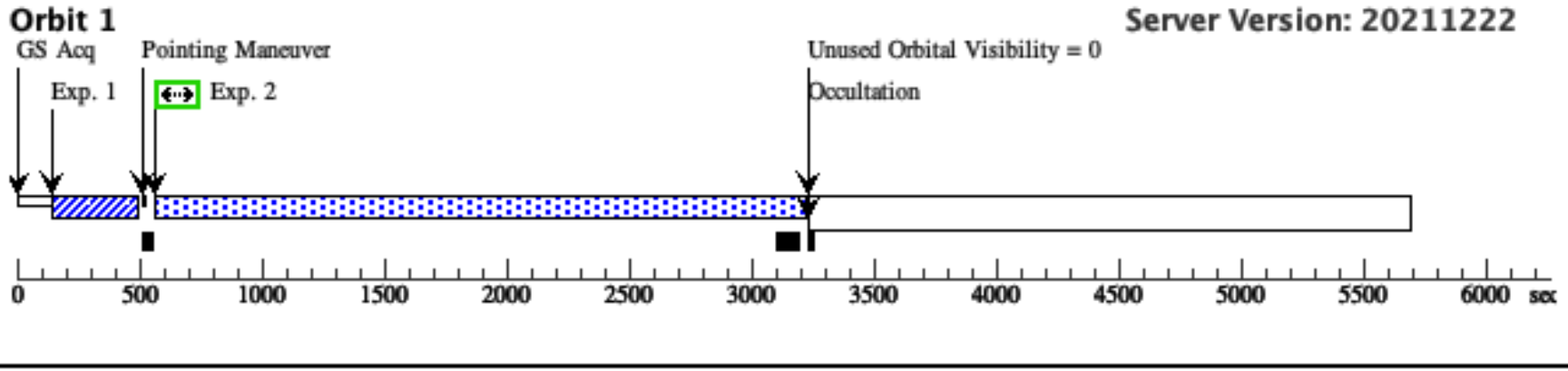
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	J0623-4413	RA: 06 23 31.7800 (95.8824167d) Dec: -44 13 2.50 (-44.21736d) Equinox: J2000	Redshift: 0.677	V=16.93 NUV = 17.62	Reference Frame: ICRS

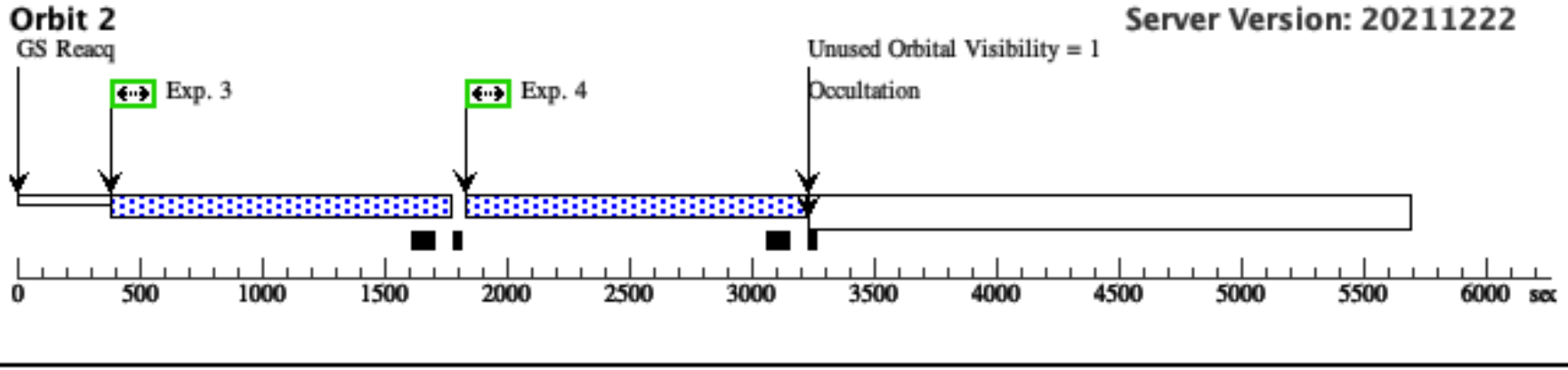
Comments: FUV = 18.31, SFD ebv = 0.05
acq ETC: COS.sa.1528327 (47 seconds)
spec ETC: COS.sp.1528326 (13000 sec)
img acq:COS.ta.1530553 (23 seconds)
Category=GALAXY
Description=[QSO]
Extended=NO

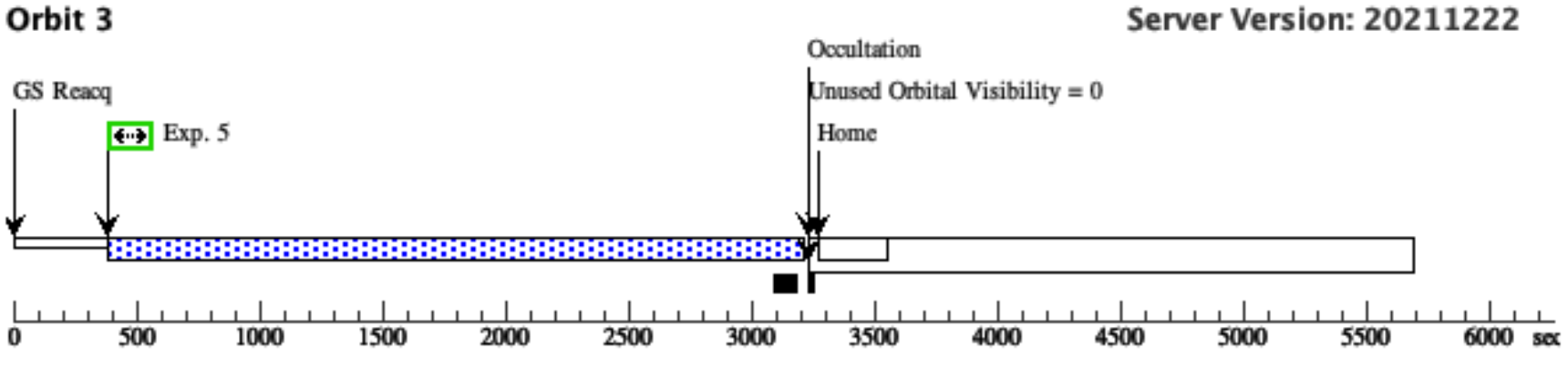
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530553)	(8) J0623-4413	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				23 Secs (23 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528326)	(8) J0623-4413	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=2340			1800 Secs (2446 Secs) *[==>2446.0 Secs]*	*[1]*
3	FP2 (COS.sp.1528326)	(8) J0623-4413	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1190			1200 Secs (1333 Secs) *[==>1333.0 Secs]*	*[2]*
4	FP3 (COS.sp.1528326)	(8) J0623-4413	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1190			1200 Secs (1333 Secs) *[==>1333.0 Secs]*	*[2]*
5	FP4 (COS.sp.1528326)	(8) J0623-4413	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=2672			2400 Secs (2782 Secs) *[==>2782.0 Secs]*	*[3]*

Orbit Structure







Visit

Proposal 16679, Target 8 (2 orb) (13), completed Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

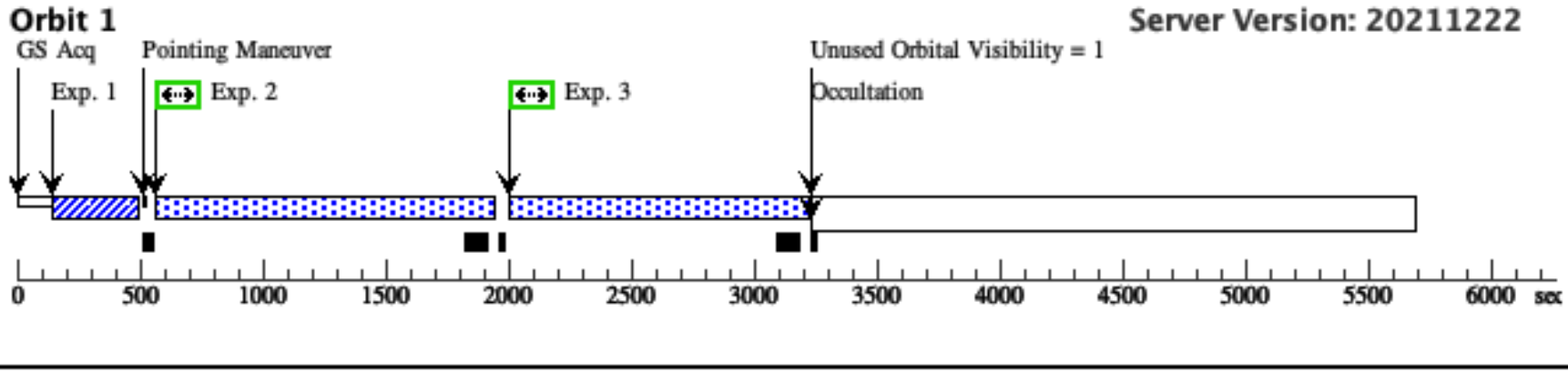
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(8)	J0623-4413	RA: 06 23 31.7800 (95.8824167d) Dec: -44 13 2.50 (-44.21736d) Equinox: J2000	Redshift: 0.677	V=16.93 NUV = 17.62	Reference Frame: ICRS

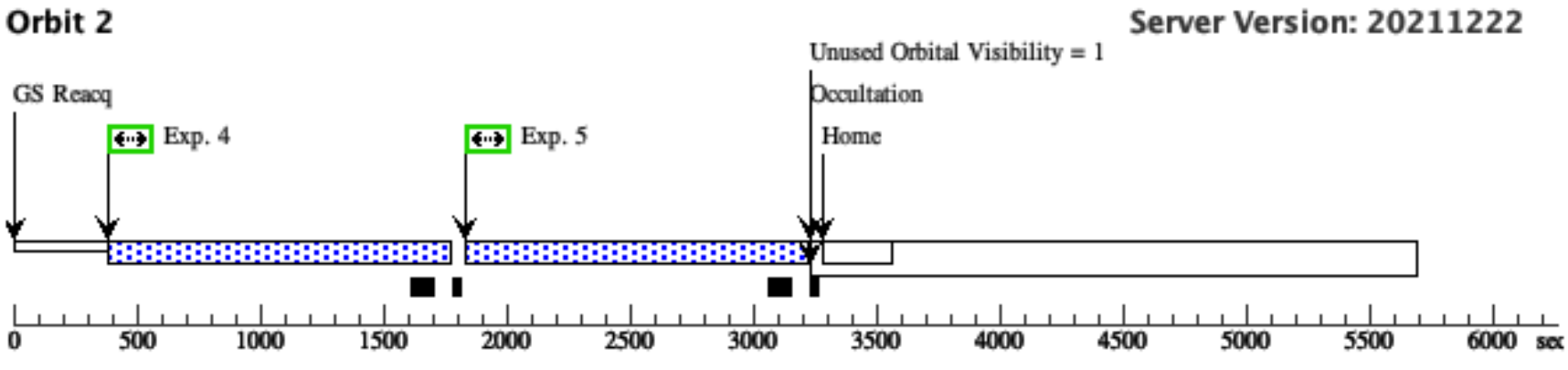
Comments: FUV = 18.31, SFD ebv = 0.05
acq ETC: COS.sa.1528327 (47 seconds)
spec ETC: COS.sp.1528326 (13000 sec)
img acq:COS.ta.1530553 (23 seconds)
Category=GALAXY
Description=[QSO]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530553)	(8) J0623-4413	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				23 Secs (23 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528326)	(8) J0623-4413	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=1060			800 Secs (1170 Secs) *[==>1170.0 Secs]*	*[1]*
3	FP2 (COS.sp.1528326)	(8) J0623-4413	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1060			800 Secs (1170 Secs) *[==>1170.0 Secs]*	*[1]*
4	FP3 (COS.sp.1528326)	(8) J0623-4413	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1190			1200 Secs (1333 Secs) *[==>1333.0 Secs]*	*[2]*
5	FP4 (COS.sp.1528326)	(8) J0623-4413	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=1190			1200 Secs (1333 Secs) *[==>1333.0 Secs]*	*[2]*

Orbit Structure





Visit

Proposal 16679, Target 9 (3 orb) (14), completed Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

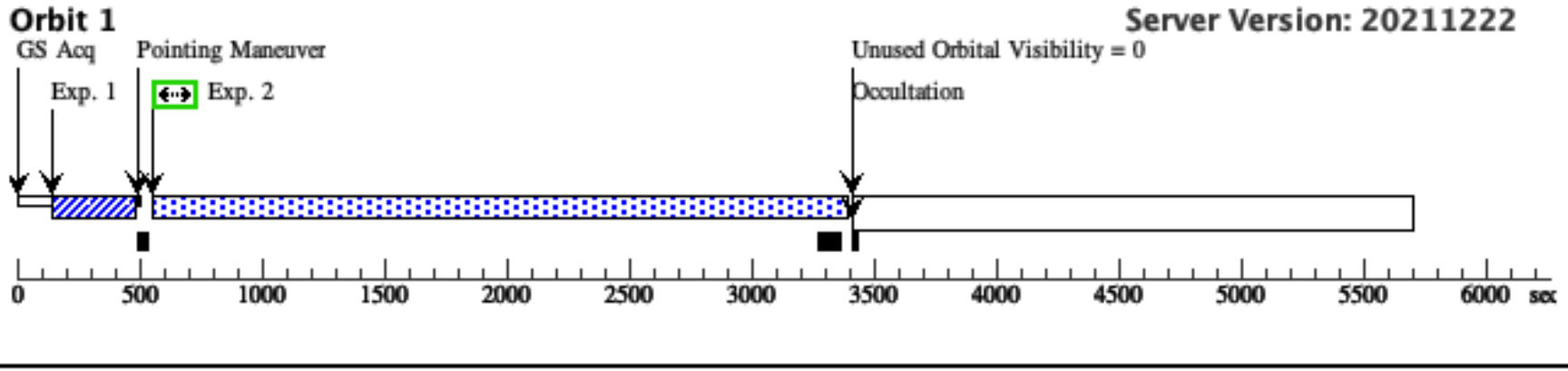
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(9)	J1846+6351	RA: 18 46 40.7300 (281.6697083d) Dec: +63 51 28.53 (63.85793d) Equinox: J2000	Redshift: 0.4082	V=17 NUV = 17.25	Reference Frame: ICRS

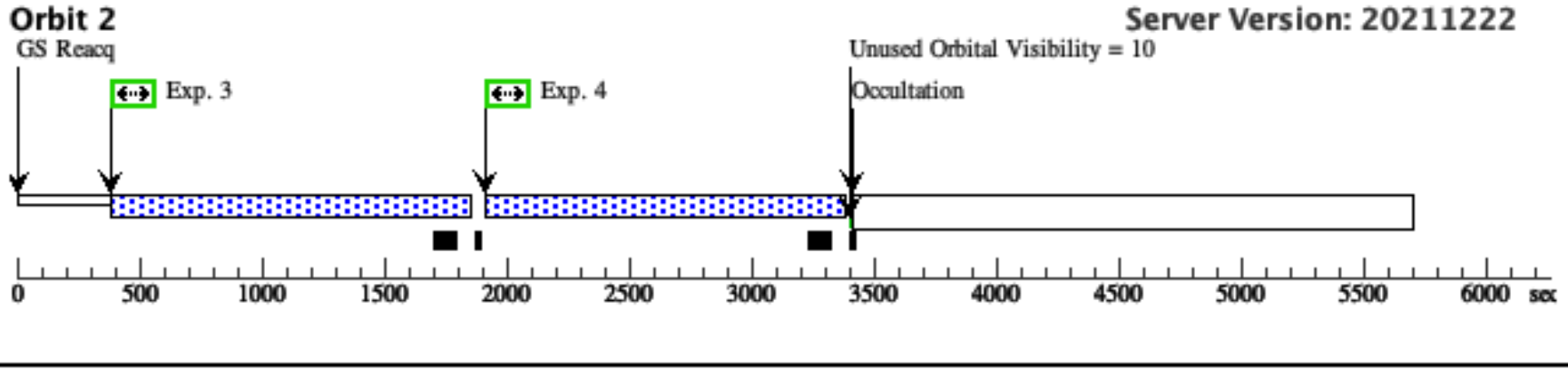
Comments: checked SDSS updated to accurate coords; SFD ebv = 0.06 GALEX FUV = 17.73.
acq ETC: COS.sa.1528069 --> 25 seconds
spec ETC:COS.sp.1528075-- > 7500 seconds (S/N 15 at 1400).
Category=GALAXY
Description=[QSO]
Extended=NO

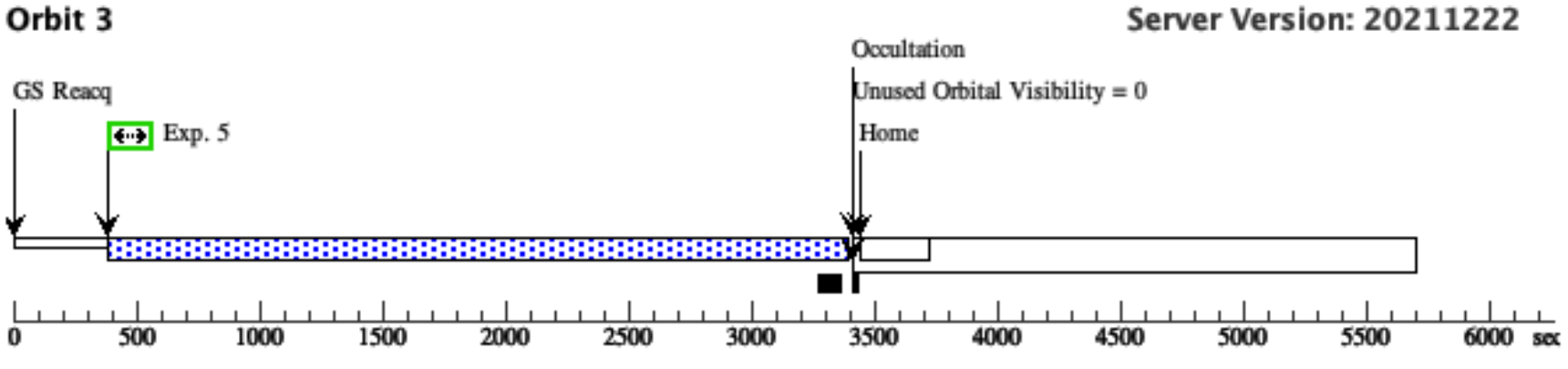
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530554)	(9) J1846+6351	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				15 Secs (15 Secs) *[==>]*	***[1]***
2	FP1 (COS.sp.1528075)	(9) J1846+6351	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=2530			1800 Secs (2635 Secs) *[==>2635.0 Secs]*	***[1]***
3	FP2 (COS.sp.1528075)	(9) J1846+6351	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1280			1200 Secs (1420 Secs) *[==>1420.0 Secs]*	***[2]***
4	FP3 (COS.sp.1528075)	(9) J1846+6351	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1280			1200 Secs (1420 Secs) *[==>1420.0 Secs]*	***[2]***
5	FP4 (COS.sp.1528075)	(9) J1846+6351	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=2845			2400 Secs (2955 Secs) *[==>2955.0 Secs]*	***[3]***

Orbit Structure







Visit

Proposal 16679, Target 10 (2 orb) (15), completed Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

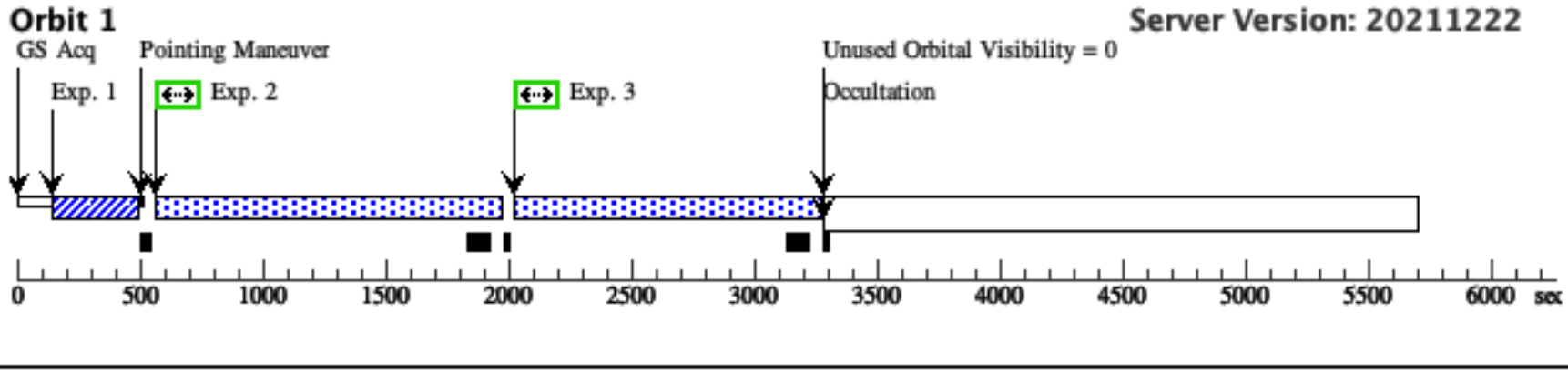
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	J1858+4850	RA: 18 58 1.1500 (284.5047917d) Dec: +48 50 23.39 (48.83983d) Equinox: J2000	Redshift: 0.0787	V=16.50 NUV = 17.68	Reference Frame: ICRS

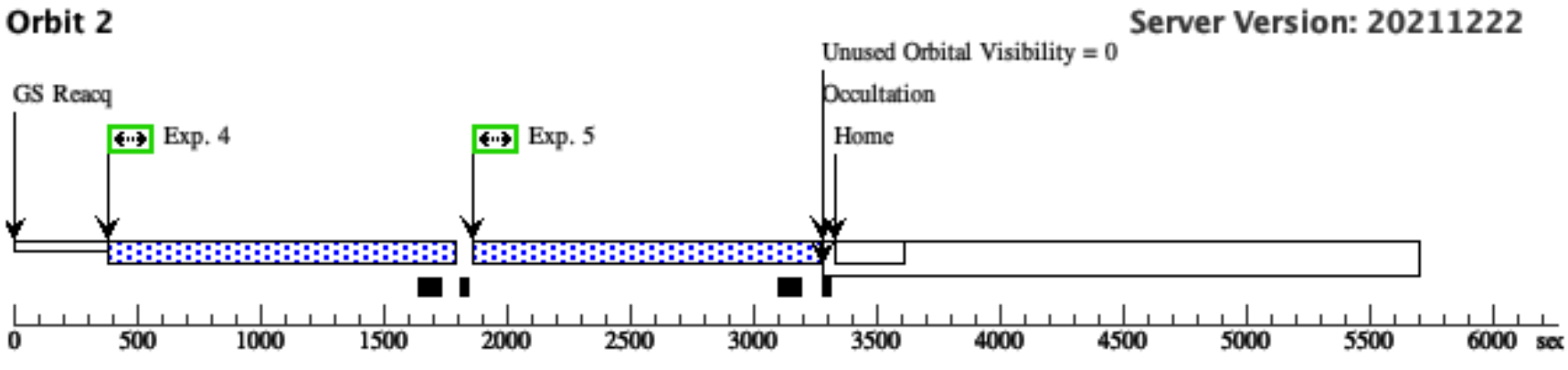
Comments: Despite low redshift, there is zero evidence this is a spatially extended source.
FUV = 17.75, SFD ebv = 0.05
acq ETC: COS.sa.1528094 (36 seconds)
spec ETC: COS.sp.1528091 (11,000 sec)
Category=GALAXY
Description=[QSO]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530555)	(10) J1858+4850	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				20 Secs (20 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528091)	(10) J1858+4850	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=1080			700 Secs (1197 Secs) *[==>1197.0 Secs]*	*[1]*
3	FP2 (COS.sp.1528091)	(10) J1858+4850	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1080			700 Secs (1197 Secs) *[==>1197.0 Secs]*	*[1]*
4	FP3 (COS.sp.1528091)	(10) J1858+4850	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1220			1200 Secs (1357 Secs) *[==>1357.0 Secs]*	*[2]*
5	FP4 (COS.sp.1528091)	(10) J1858+4850	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=1210			1200 Secs (1357 Secs) *[==>1357.0 Secs]*	*[2]*

Orbit Structure





Visit

Proposal 16679, Target 10 (2 orb) (16), completed Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

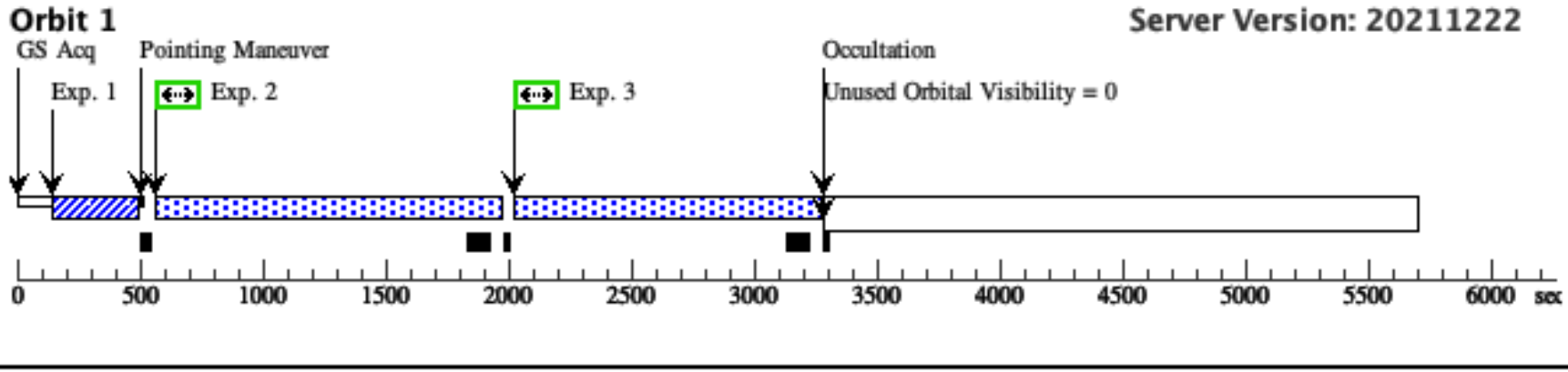
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(10)	J1858+4850	RA: 18 58 1.1500 (284.5047917d) Dec: +48 50 23.39 (48.83983d) Equinox: J2000	Redshift: 0.0787	V=16.50 NUV = 17.68	Reference Frame: ICRS

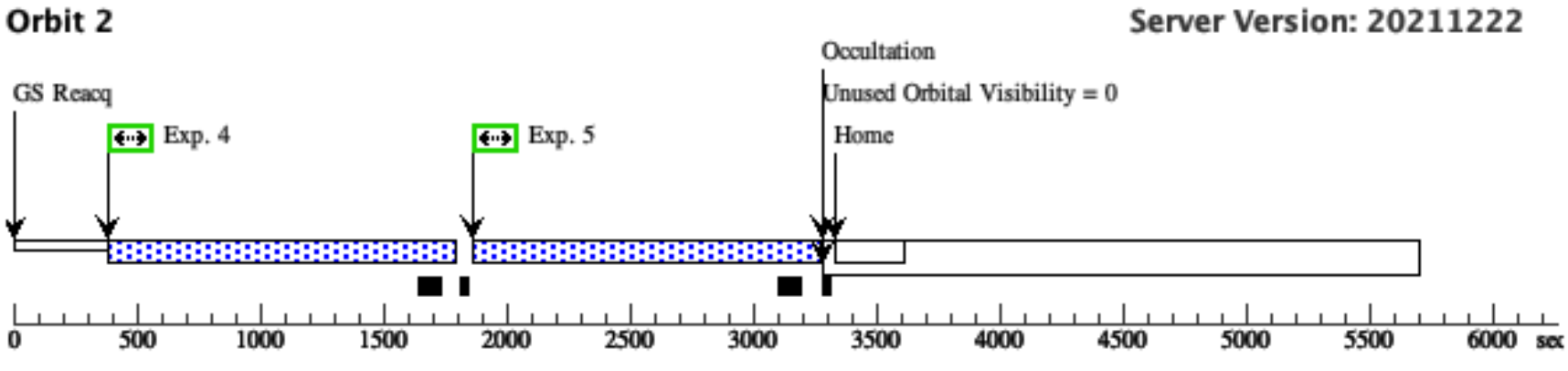
Comments: Despite low redshift, there is zero evidence this is a spatially extended source.
FUV = 17.75, SFD ebv = 0.05
acq ETC: COS.sa.1528094 (36 seconds)
spec ETC: COS.sp.1528091 (11,000 sec)
Category=GALAXY
Description=[QSO]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530555)	(10) J1858+4850	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				20 Secs (20 Secs) *[==>]*	***[1]***
2	FP1 (COS.sp.1528091)	(10) J1858+4850	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=1080			700 Secs (1197 Secs) *[==>1197.0 Secs]*	***[1]***
3	FP2 (COS.sp.1528091)	(10) J1858+4850	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1080			700 Secs (1197 Secs) *[==>1197.0 Secs]*	***[1]***
4	FP3 (COS.sp.1528091)	(10) J1858+4850	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1220			1200 Secs (1357 Secs) *[==>1357.0 Secs]*	***[2]***
5	FP4 (COS.sp.1528091)	(10) J1858+4850	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=1210			1200 Secs (1357 Secs) *[==>1357.0 Secs]*	***[2]***

Orbit Structure





Visit

Proposal 16679, Target 11 (2 orb) (17), completed Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

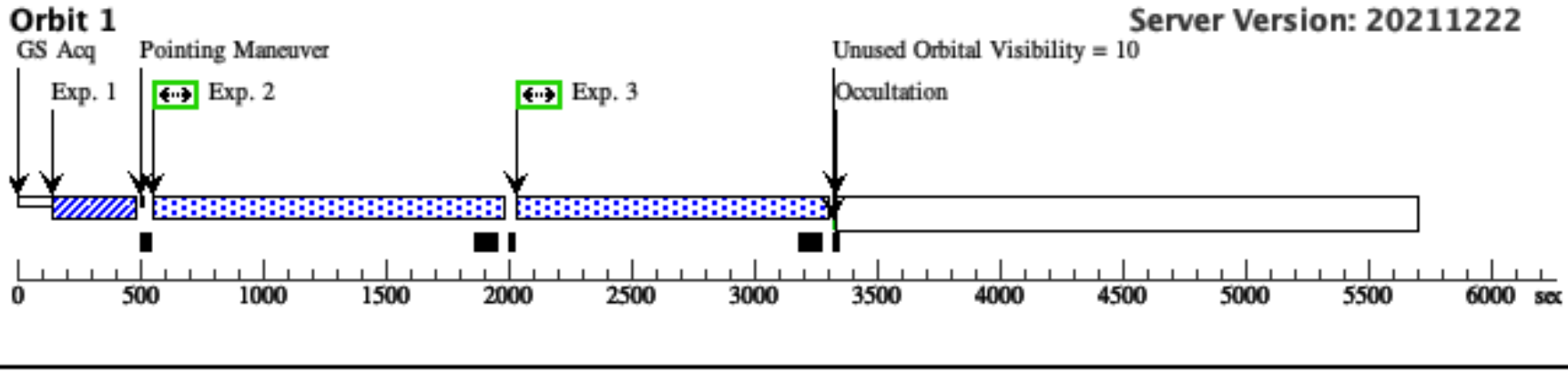
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	J1938+5408	RA: 19 38 10.7500 (294.5447917d) Dec: +54 08 56.07 (54.14891d) Equinox: J2000	Redshift: 0.2724	V=15.31 NUV = 17.55	Reference Frame: ICRS

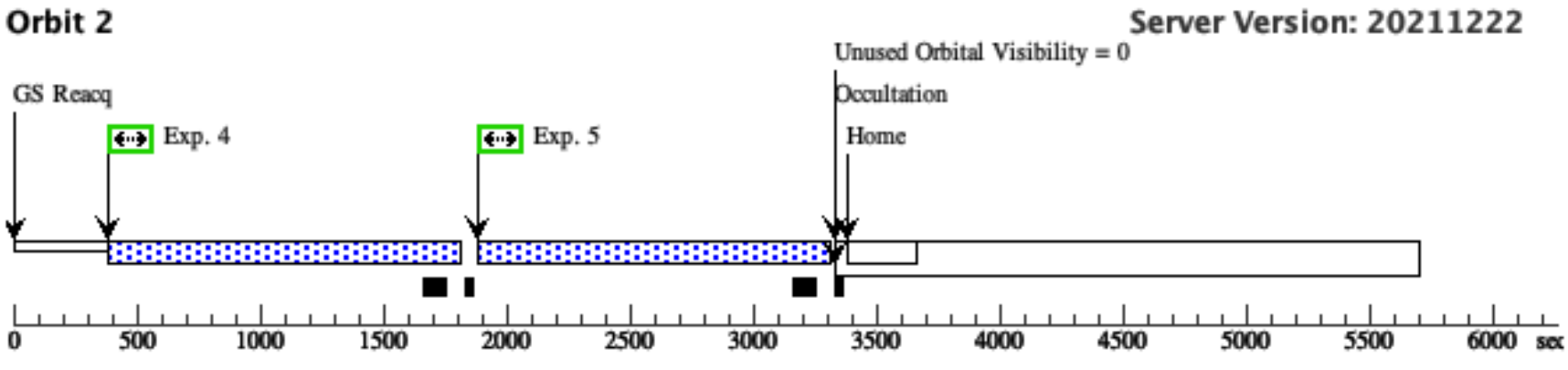
Comments: FUV = 17.71, verified coordinates in GALEX. since z > 0.1, saying not extended. looks point source like in every image.
spec etc: COS.sp.1528101 (12000 sec) and COS.sp.1528103 (11500).
acq ETC: COS.sa.1528105 (27 seconds)
Category=GALAXY
Description=[QSO]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530556)	(11) J1938+5408	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				18 Secs (18 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528101)	(11) J1938+5408	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=1110			700 Secs (1218 Secs) *[==>1218.0 Secs]*	*[1]*
3	FP2 (COS.sp.1528101)	(11) J1938+5408	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1110			700 Secs (1218 Secs) *[==>1218.0 Secs]*	*[1]*
4	FP3 (COS.sp.1528101)	(11) J1938+5408	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1240			1200 Secs (1381 Secs) *[==>1381.0 Secs]*	*[2]*
5	FP4 (COS.sp.1528101)	(11) J1938+5408	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=1240			1200 Secs (1381 Secs) *[==>1381.0 Secs]*	*[2]*

Orbit Structure





Visit

Proposal 16679, Target 11 (2 orb) (18), completed Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

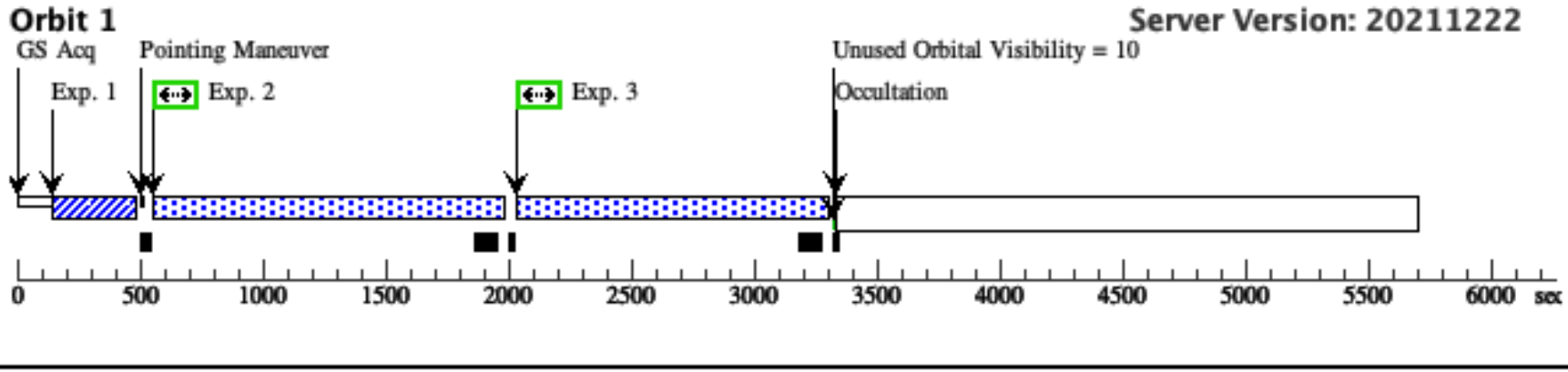
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	J1938+5408	RA: 19 38 10.7500 (294.5447917d) Dec: +54 08 56.07 (54.14891d) Equinox: J2000	Redshift: 0.2724	V=15.31 NUV = 17.55	Reference Frame: ICRS

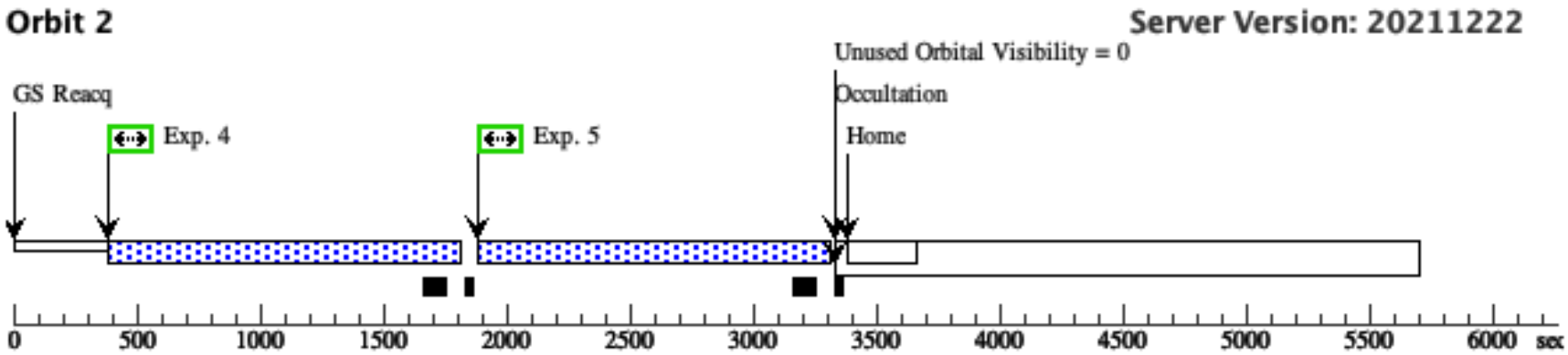
Comments: FUV = 17.71, verified coordinates in GALEX. since z > 0.1, saying not extended. looks point source like in every image.
spec etc: COS.sp.1528101 (12000 sec) and COS.sp.1528103 (11500).
acq ETC: COS.sa.1528105 (27 seconds)
Category=GALAXY
Description=[QSO]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530556)	(11) J1938+5408	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				18 Secs (18 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528101)	(11) J1938+5408	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=1110			700 Secs (1218 Secs) *[==>1218.0 Secs]*	*[1]*
3	FP2 (COS.sp.1528101)	(11) J1938+5408	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1110			700 Secs (1218 Secs) *[==>1218.0 Secs]*	*[1]*
4	FP3 (COS.sp.1528101)	(11) J1938+5408	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1240			1200 Secs (1381 Secs) *[==>1381.0 Secs]*	*[2]*
5	FP4 (COS.sp.1528101)	(11) J1938+5408	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=1240			1200 Secs (1381 Secs) *[==>1381.0 Secs]*	*[2]*

Orbit Structure





Visit

Proposal 16679, Target 12 (2 orb) (19), completed Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

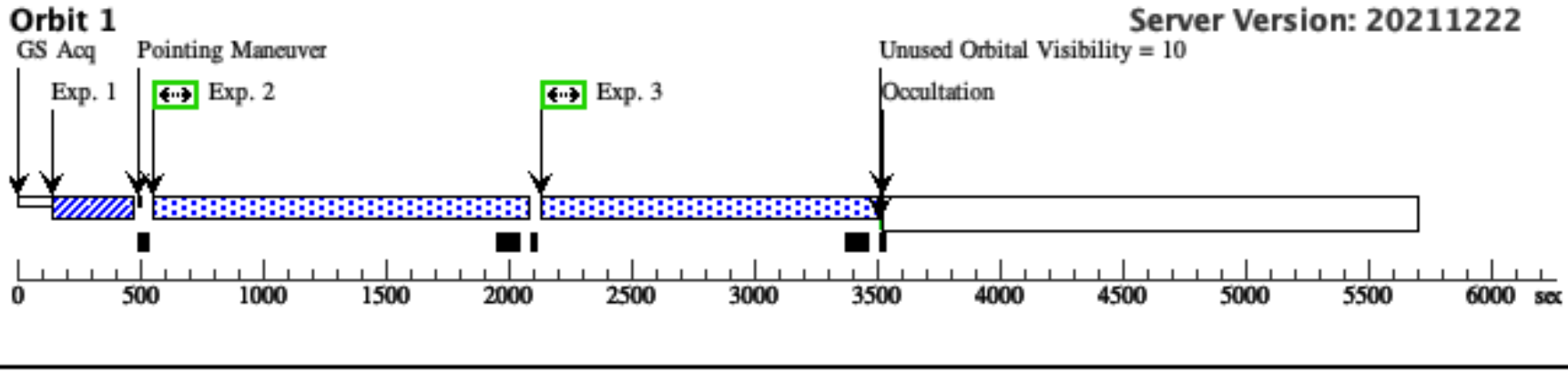
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(12)	J1939+7007	RA: 19 39 29.4000 (294.8725000d) Dec: +70 07 48.83 (70.13023d) Equinox: J2000	Redshift: 0.1163	V=15.58 NUV = 17.29	Reference Frame: ICRS

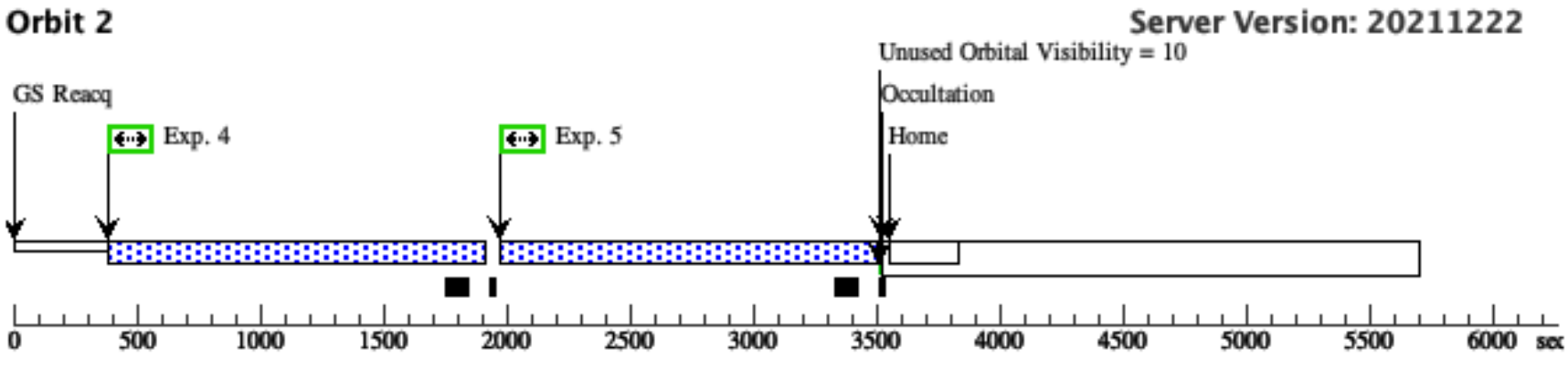
Comments: GALEX coords, point-source like. FUV = 17.47, SFD ebv = 0.15
acq ETC: COS.sa.1528117 (24 seconds)
spec ETC: COS.sp.1528112 (6400 sec) and COS.sp.1528114 (5700) for NUV and FUV.
Category=GALAXY
Description=[QSO]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530557)	(12) J1939+7007	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				14 Secs (14 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528114)	(12) J1939+7007	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=1210			700 Secs (1318 Secs) *[==>1318.0 Secs]*	*[1]*
3	FP2 (COS.sp.1528114)	(12) J1939+7007	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1210			700 Secs (1318 Secs) *[==>1318.0 Secs]*	*[1]*
4	FP3 (COS.sp.1528114)	(12) J1939+7007	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1330			1200 Secs (1477 Secs) *[==>1477.0 Secs]*	*[2]*
5	FP4 (COS.sp.1528114)	(12) J1939+7007	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=1330			1200 Secs (1477 Secs) *[==>1477.0 Secs]*	*[2]*

Orbit Structure





Visit

Proposal 16679, Target 13 (2 orb) (20), scheduling Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

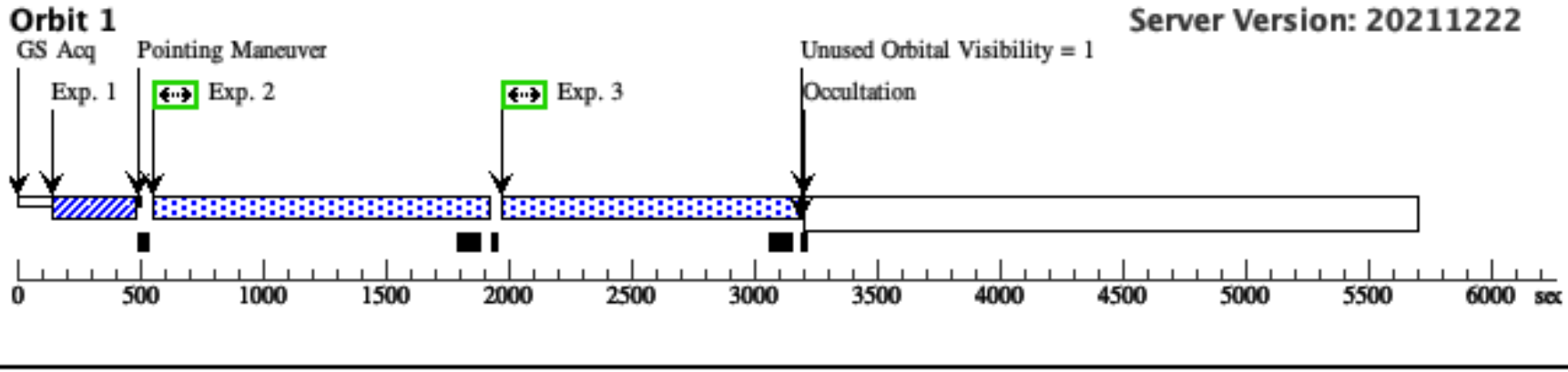
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(13)	J2109+3532	RA: 21 09 31.8800 (317.3828333d) Dec: +35 32 57.38 (35.54927d) Equinox: J2000	Redshift: 0.20192	V=20.10 NUV =17.44	Reference Frame: ICRS

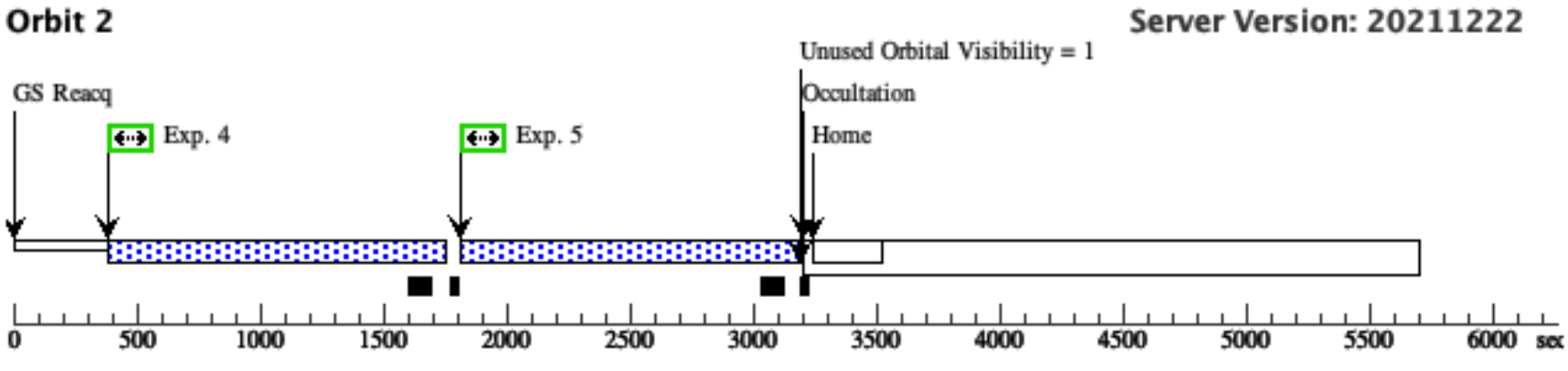
Comments: no FUV observation (GALEX CAUSE). Used GALEX coords, reasonable upon double checking.
SFD ebv = 0.16. There are two other sources nearby in target conf. chart from Aladin, but neither shows up in GALEX image so I think it's fine.
acq ETC: COS.sa.1528126 (20 seconds)
spec ETC: COS.sp.1528143 (9800 seconds)
Category=GALAXY
Description=[QSO]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530558)	(13) J2109+3532	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				16 Secs (16 Secs) *[==>]*	***[1]***
2	FP1 (COS.sp.1528143)	(13) J2109+3532	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=1050			700 Secs (1158 Secs) *[==>1158.0 Secs]*	***[1]***
3	FP2 (COS.sp.1528143)	(13) J2109+3532	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1050			700 Secs (1158 Secs) *[==>1158.0 Secs]*	***[1]***
4	FP3 (COS.sp.1528143)	(13) J2109+3532	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1314 Secs) *[==>1314.0 Secs]*	***[2]***
5	FP4 (COS.sp.1528143)	(13) J2109+3532	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1314 Secs) *[==>1314.0 Secs]*	***[2]***

Orbit Structure





Visit

Proposal 16679, Target 13 (2 orb) (21), completed Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

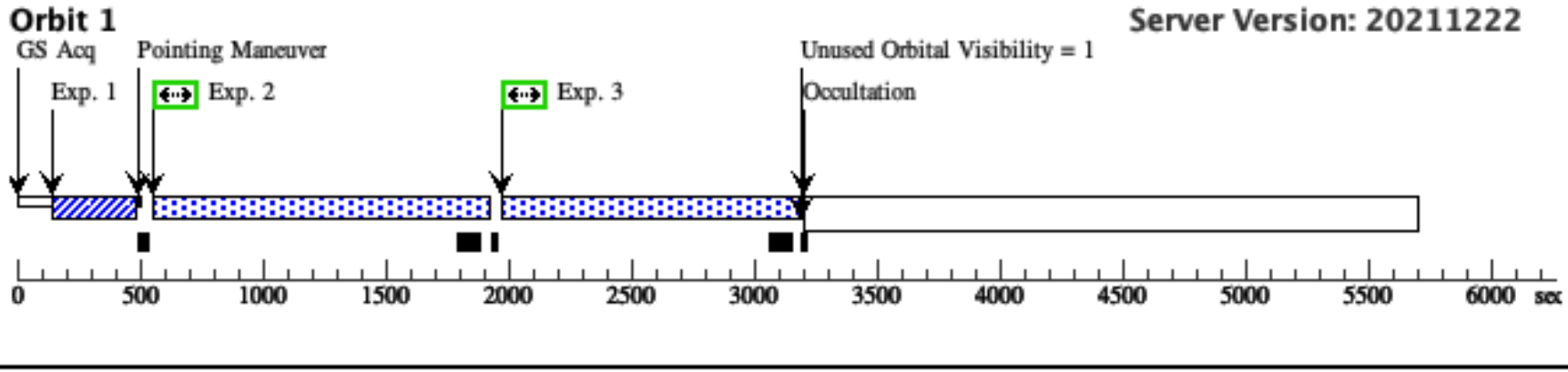
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(13)	J2109+3532	RA: 21 09 31.8800 (317.3828333d) Dec: +35 32 57.38 (35.54927d) Equinox: J2000	Redshift: 0.20192	V=20.10 NUV =17.44	Reference Frame: ICRS

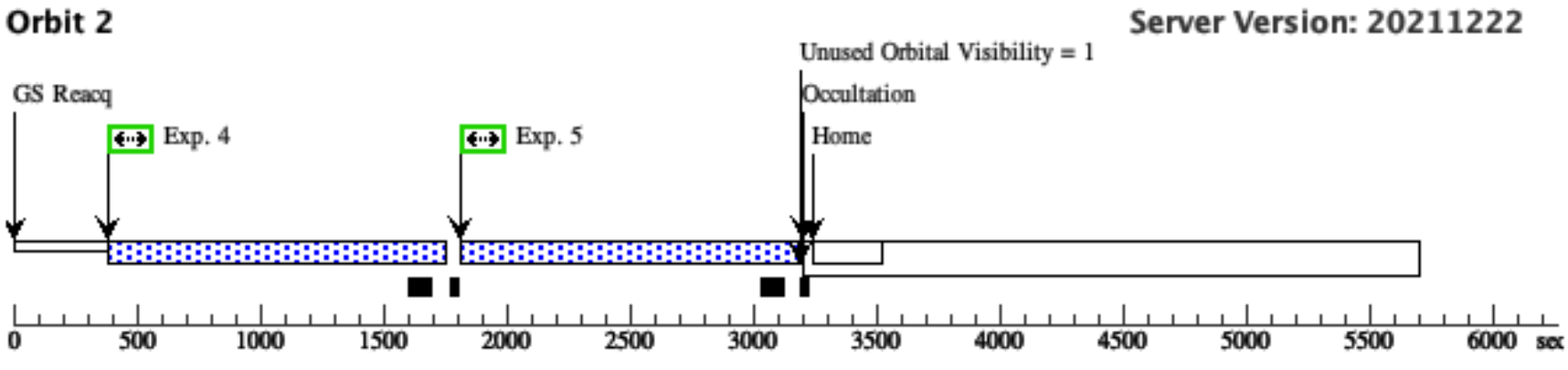
Comments: no FUV observation (GALEX CAUSE). Used GALEX coords, reasonable upon double checking.
SFD ebv = 0.16. There are two other sources nearby in target conf. chart from Aladin, but neither shows up in GALEX image so I think it's fine.
acq ETC: COS.sa.1528126 (20 seconds)
spec ETC: COS.sp.1528143 (9800 seconds)
Category=GALAXY
Description=[QSO]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530558)	(13) J2109+3532	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				16 Secs (16 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528143)	(13) J2109+3532	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=1050			700 Secs (1158 Secs) *[==>1158.0 Secs]*	*[1]*
3	FP2 (COS.sp.1528143)	(13) J2109+3532	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1050			700 Secs (1158 Secs) *[==>1158.0 Secs]*	*[1]*
4	FP3 (COS.sp.1528143)	(13) J2109+3532	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1314 Secs) *[==>1314.0 Secs]*	*[2]*
5	FP4 (COS.sp.1528143)	(13) J2109+3532	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1314 Secs) *[==>1314.0 Secs]*	*[2]*

Orbit Structure





Visit

Proposal 16679, Target 14 (2 orb) (22), completed Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: (none)

Diagnostics

(FP1 (22.003)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP2 (22.004)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP3 (22.005)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP4 (22.006)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

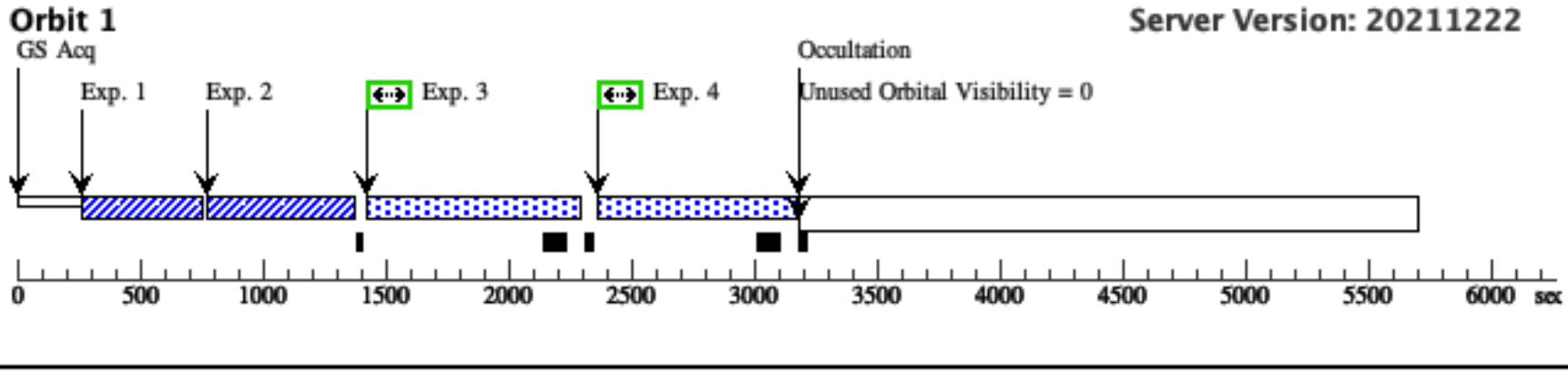
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(14)	J2141+3151	RA: 21 41 53.4500 (325.4727083d) Dec: +31 51 27.14 (31.85754d) Equinox: J2000	Redshift: 0.04331	V=16.66 NUV = 17.55	Reference Frame: ICRS

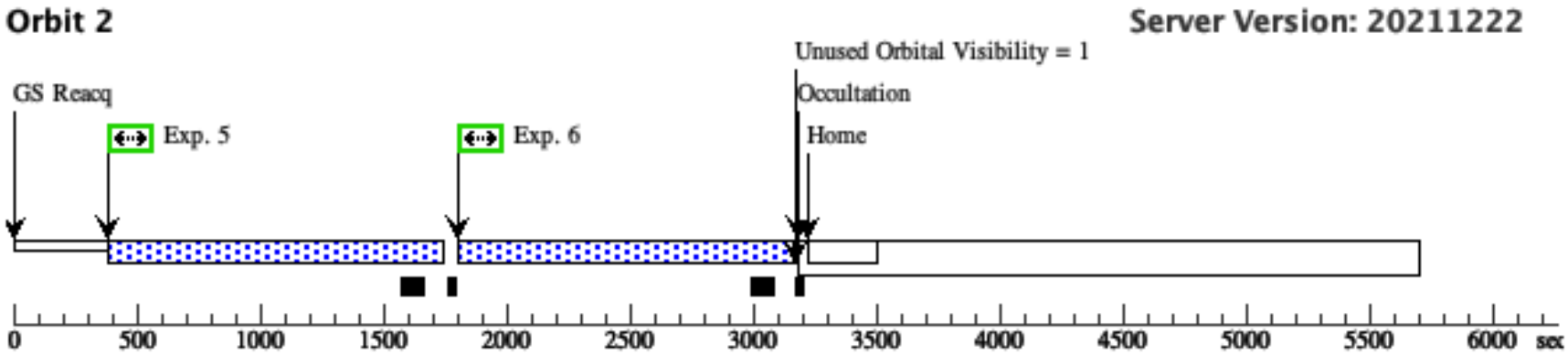
Comments: low-z QSO, looks a little extended in GALEX image, but FUV light is very centrally concentrated. beautiful S-shape galaxy in target conf. chart from Aladin.
FUV = 18.03, SFD ebv = 0.16
acq ETC: COS.sa.1528154 (31 seconds) --> modified for S/N =100 for extended source out of caution: COS.sa.1529622 (91 seconds)
spec ETC: COS.sp.1528149 (11,250), S/N of 12 or so at 1550 in 4 orbits: COS.sp.1528153
Category=GALAXY
Description=[QSO]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.sa.1529622)	(14) J2141+3151	COS/FUV, ACQ/PEAKXD, PSA	G160M 1577 A				91 Secs (91 Secs) *[==>]*	*[1]*
2	acq (COS.sa.1529622)	(14) J2141+3151	COS/FUV, ACQ/PEAKD, PSA	G160M 1577 A	NUM-POS=5; CENTER=FLUX-WT-FLR; STEP-SIZE=0.9			91 Secs (91 Secs) *[==>]*	*[1]*
Comments: S/N = 100, for extended source.									
3	FP1 (COS.sp.1528153)	(14) J2141+3151	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=620; FP-POS=1; SEGMENT=BOTH			700 Secs (753 Secs) *[==>753.0 Secs]*	*[1]*
Comments: target does not appear extended, but considering low-z, have selected extended out of caution.									
4	FP2 (COS.sp.1528153)	(14) J2141+3151	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=620; FP-POS=2; SEGMENT=BOTH			700 Secs (753 Secs) *[==>753.0 Secs]*	*[1]*
5	FP3 (COS.sp.1528153)	(14) J2141+3151	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1150; FP-POS=3; SEGMENT=BOTH			1100 Secs (1304 Secs) *[==>1304.0 Secs]*	*[2]*
6	FP4 (COS.sp.1528153)	(14) J2141+3151	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1150; FP-POS=4; SEGMENT=BOTH			1100 Secs (1304 Secs) *[==>1304.0 Secs]*	*[2]*

Orbit Structure





Visit

Proposal 16679, Target 14 (2 orb) (23), scheduling Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV

Special Requirements: (none)

Diagnostics

(FP1 (23.003)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP2 (23.004)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP3 (23.005)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(FP4 (23.006)) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

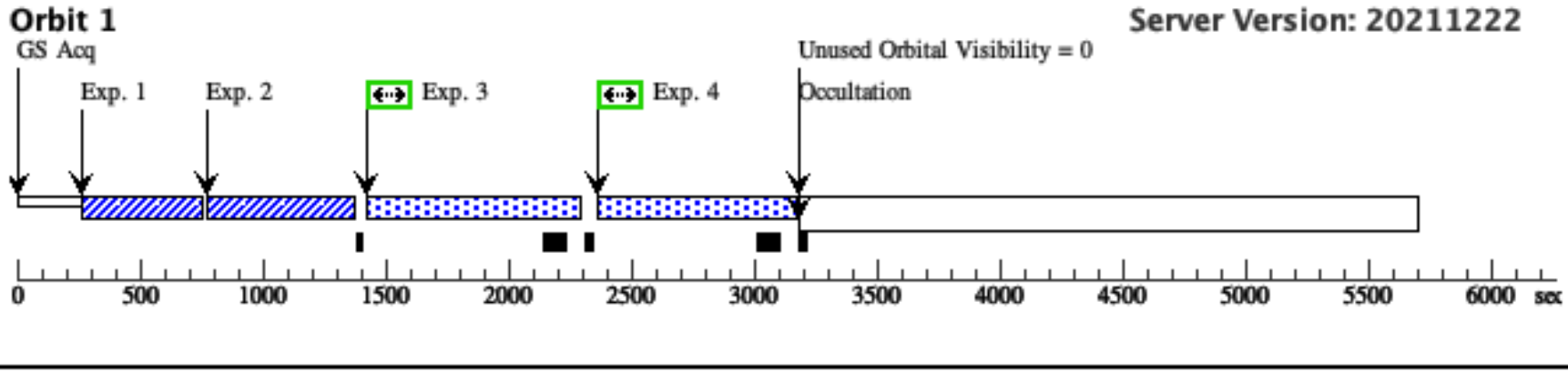
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(14)	J2141+3151	RA: 21 41 53.4500 (325.4727083d) Dec: +31 51 27.14 (31.85754d) Equinox: J2000	Redshift: 0.04331	V=16.66 NUV = 17.55	Reference Frame: ICRS

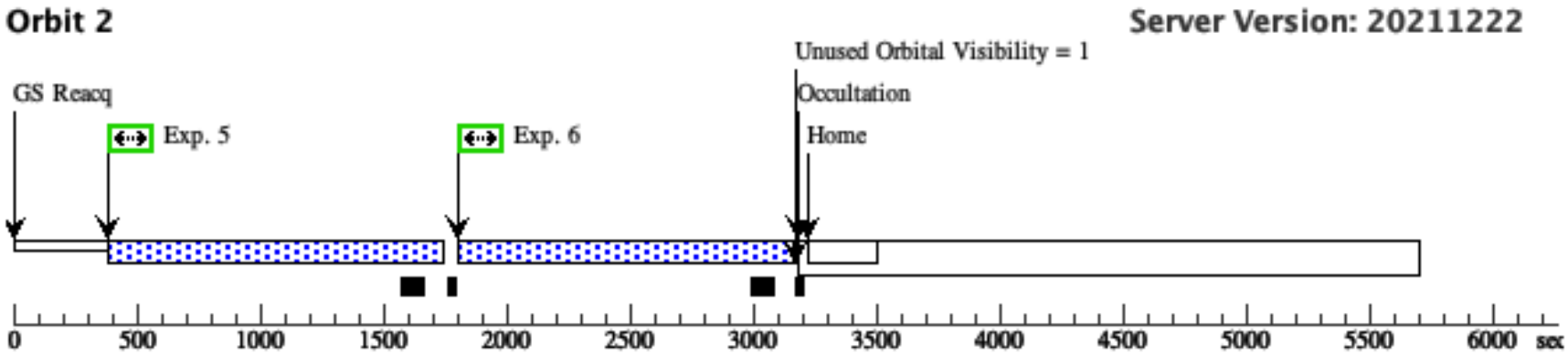
Comments: low-z QSO, looks a little extended in GALEX image, but FUV light is very centrally concentrated. beautiful S-shape galaxy in target conf. chart from Aladin.
FUV = 18.03, SFD ebv = 0.16
acq ETC: COS.sa.1528154 (31 seconds) --> modified for S/N =100 for extended source out of caution: COS.sa.1529622 (91 seconds)
spec ETC: COS.sp.1528149 (11,250), S/N of 12 or so at 1550 in 4 orbits: COS.sp.1528153
Category=GALAXY
Description=[QSO]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.sa.1529622)	(14) J2141+3151	COS/FUV, ACQ/PEAKXD, PSA	G160M 1577 A				91 Secs (91 Secs) *[==>]*	*[1]*
2	acq (COS.sa.1529622)	(14) J2141+3151	COS/FUV, ACQ/PEAKD, PSA	G160M 1577 A	NUM-POS=5; CENTER=FLUX-WT-FLR; STEP-SIZE=0.9			91 Secs (91 Secs) *[==>]*	*[1]*
Comments: S/N = 100, for extended source.									
3	FP1 (COS.sp.1528153)	(14) J2141+3151	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=620; FP-POS=1; SEGMENT=BOTH			700 Secs (753 Secs) *[==>753.0 Secs]*	*[1]*
Comments: target does not appear extended, but considering low-z, have selected extended out of caution.									
4	FP2 (COS.sp.1528153)	(14) J2141+3151	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=620; FP-POS=2; SEGMENT=BOTH			700 Secs (753 Secs) *[==>753.0 Secs]*	*[1]*
5	FP3 (COS.sp.1528153)	(14) J2141+3151	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1150; FP-POS=3; SEGMENT=BOTH			1100 Secs (1304 Secs) *[==>1304.0 Secs]*	*[2]*
6	FP4 (COS.sp.1528153)	(14) J2141+3151	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=1150; FP-POS=4; SEGMENT=BOTH			1100 Secs (1304 Secs) *[==>1304.0 Secs]*	*[2]*

Orbit Structure





Visit

Proposal 16679, Target 15 (2 orb) (24), completed Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

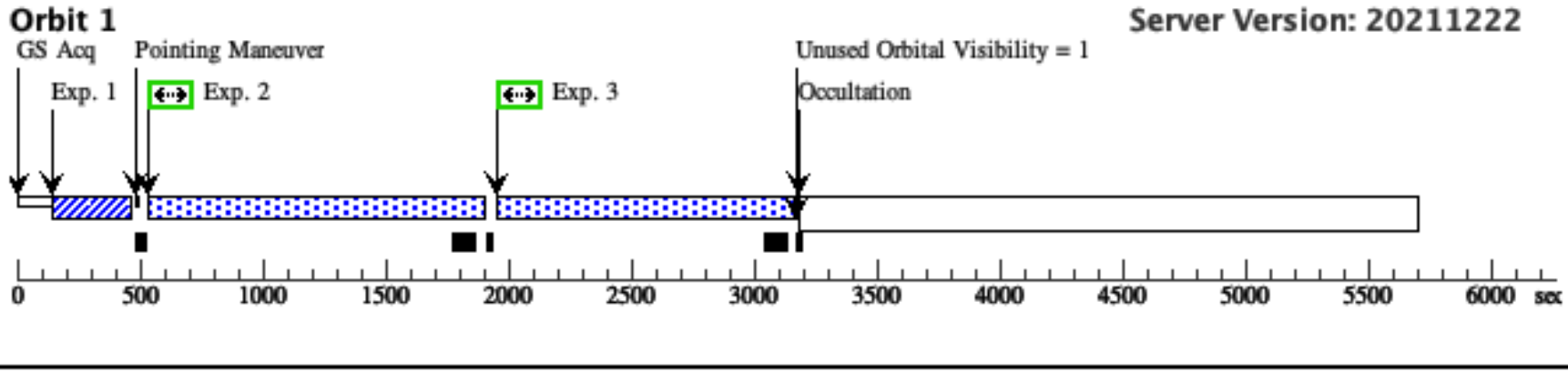
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(15)	J2203+3145	RA: 22 03 14.9700 (330.8123750d) Dec: +31 45 38.55 (31.76071d) Equinox: J2000	Redshift: 0.29472	V=15.40 NUV = 16.24	Reference Frame: ICRS

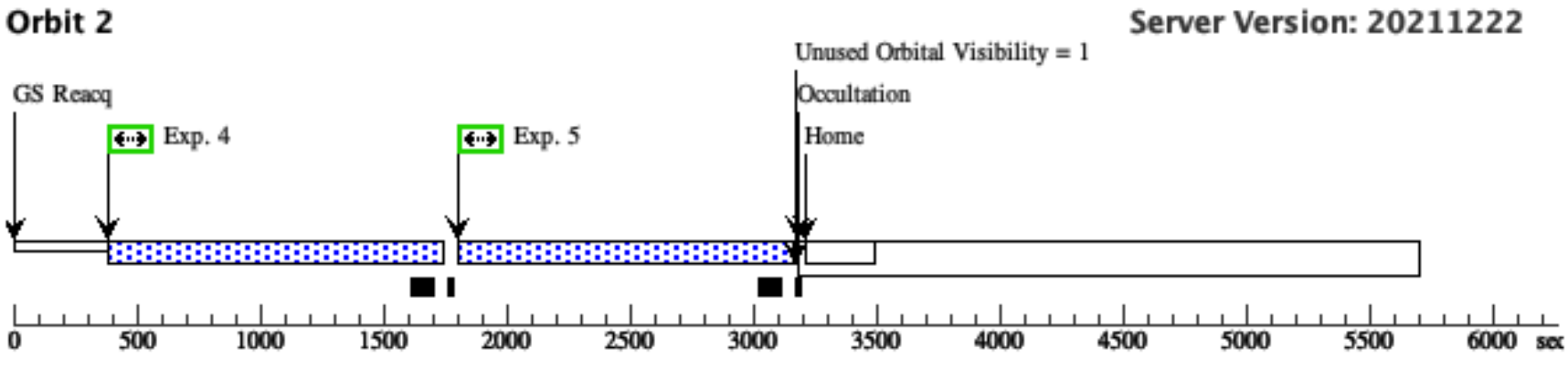
Comments: checked GALEX coords.
FUV = 16.53
SFD ebv = 0.12
acq ETC: COS.sa.1528157 (9 seconds)
spec ETC: COS.sp.1528158 (3400 seconds)
Category=GALAXY
Description=[QSO]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530559)	(15) J2203+3145	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				7 Secs (7 Secs) *[==>]*	 ***[1]***
2	FP1 (COS.sp.1528158)	(15) J2203+3145	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=1050			700 Secs (1157 Secs) *[==>1157.0 Secs]*	 ***[1]***
3	FP2 (COS.sp.1528158)	(15) J2203+3145	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1050			700 Secs (1157 Secs) *[==>1157.0 Secs]*	 ***[1]***
4	FP3 (COS.sp.1528158)	(15) J2203+3145	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1190			1200 Secs (1309 Secs) *[==>1309.0 Secs]*	 ***[2]***
5	FP4 (COS.sp.1528158)	(15) J2203+3145	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=1190			1200 Secs (1309 Secs) *[==>1309.0 Secs]*	 ***[2]***

Orbit Structure





Visit

Proposal 16679, Target 16 (3 orb) (25), completed Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

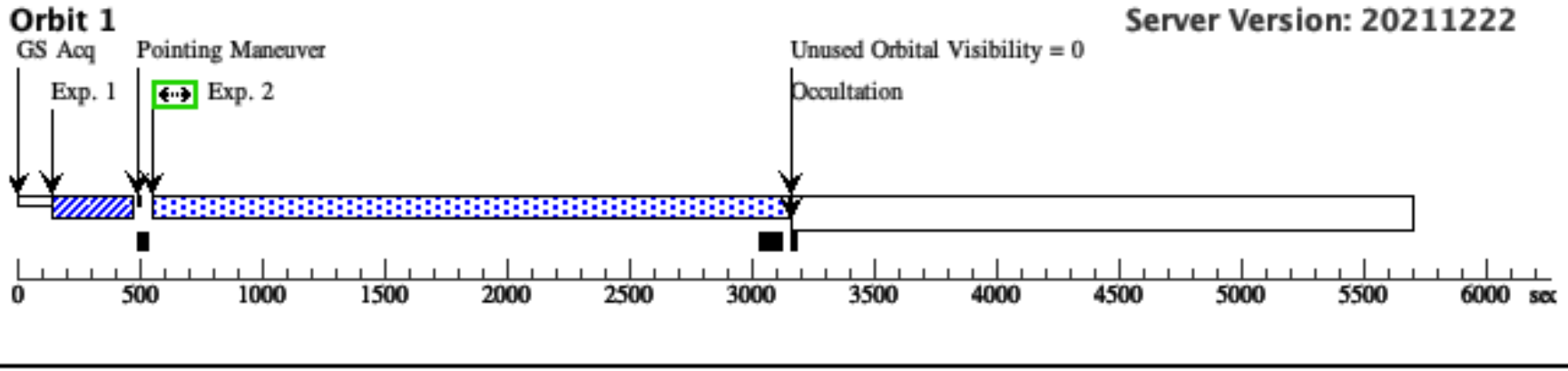
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(16)	J2206+2757	RA: 22 06 51.8500 (331.7160417d) Dec: +27 57 58.64 (27.96629d) Equinox: J2000	Redshift: 0.253	V=16.35 NUV = 17.23	Reference Frame: ICRS

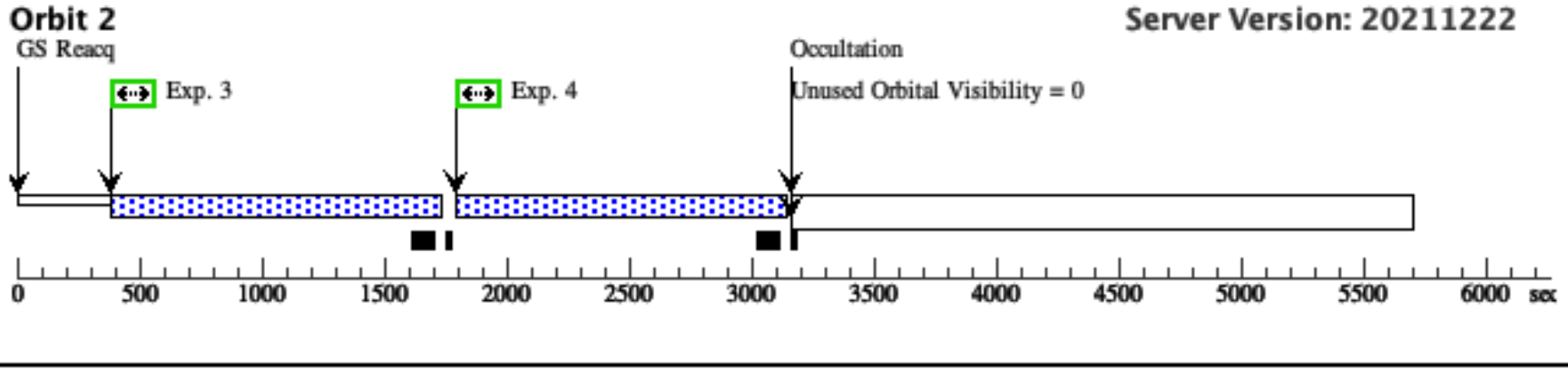
Comments: FUV = 17.46, SFD ebv = 0.08
acq ETC: COS.sa.1528161 (18 seconds)
spec ETC: COS.sp.1528160 (7950 seconds)
Category=GALAXY
Description=[QSO]
Extended=NO

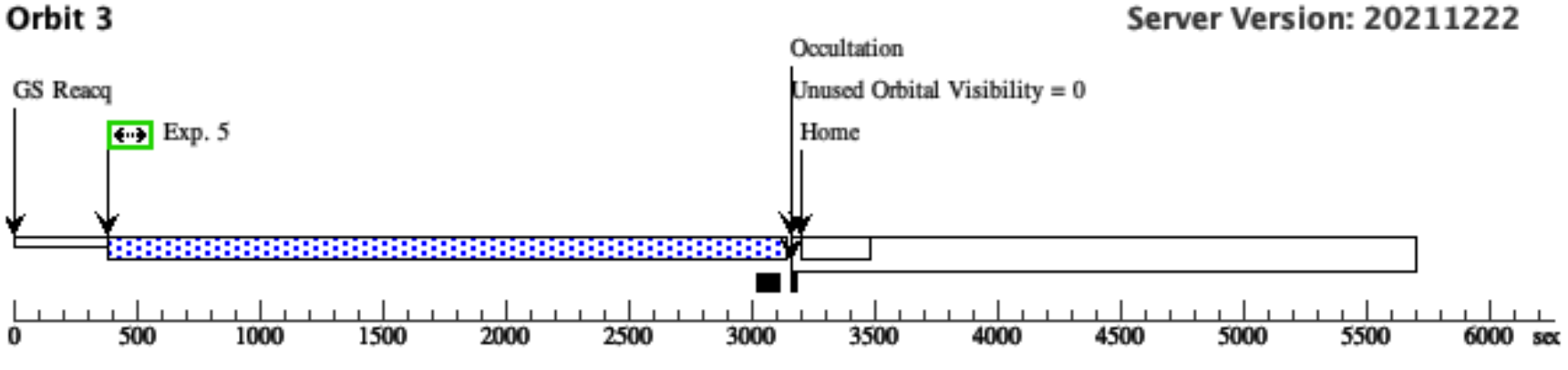
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530560)	(16) J2206+2757	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				14 Secs (14 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528160)	(16) J2206+2757	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=2290			1800 Secs (2391 Secs) *[==>2391.0 Secs]*	*[1]*
3	FP2 (COS.sp.1528160)	(16) J2206+2757	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1190			1200 Secs (1302 Secs) *[==>1302.0 Secs]*	*[2]*
4	FP3 (COS.sp.1528160)	(16) J2206+2757	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1190			1200 Secs (1302 Secs) *[==>1302.0 Secs]*	*[2]*
5	FP4 (COS.sp.1528160)	(16) J2206+2757	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=2600			2400 Secs (2709 Secs) *[==>2709.0 Secs]*	*[3]*

Orbit Structure







Visit

Proposal 16679, Target 17 (2 orb) (26), scheduling Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

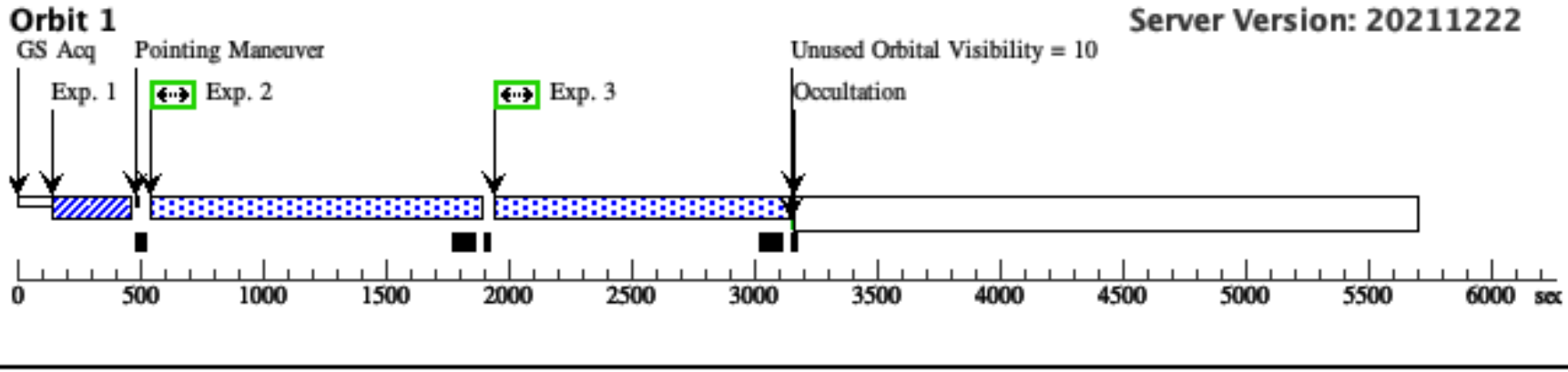
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(17)	J2215+2902	RA: 22 15 36.8300 (333.9034583d) Dec: +29 02 35.46 (29.04318d) Equinox: J2000	Redshift: 0.229	V=16.22 NUV = 16.69	Reference Frame: ICRS

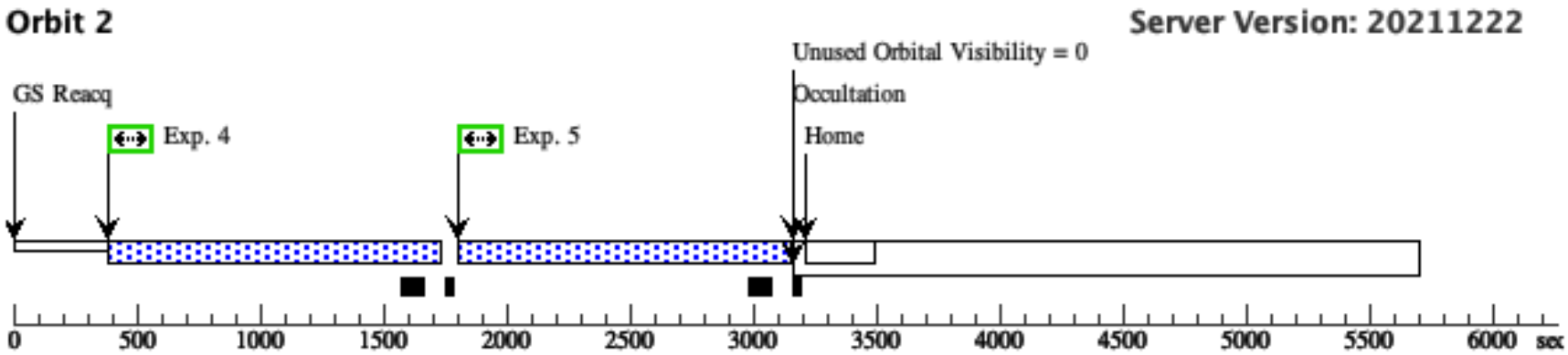
Comments: FUV = 16.68, SFD ebv = 0.09
acq ETC: COS.sa.1528193 (10 sec)
spec ETC: COS.sp.1528190 (5100 sec)
Category=GALAXY
Description=[QSO]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530561)	(17) J2215+2902	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				9 Secs (9 Secs) *[==>]*	*[1]*
2	FP1 (COS.sp.1528190)	(17) J2215+2902	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=1040			700 Secs (1143 Secs) *[==>1143.0 Secs]*	*[1]*
3	FP2 (COS.sp.1528190)	(17) J2215+2902	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1040			700 Secs (1143 Secs) *[==>1143.0 Secs]*	*[1]*
4	FP3 (COS.sp.1528190)	(17) J2215+2902	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1150			1200 Secs (1297 Secs) *[==>1297.0 Secs]*	*[2]*
5	FP4 (COS.sp.1528190)	(17) J2215+2902	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=1150			1200 Secs (1297 Secs) *[==>1297.0 Secs]*	*[2]*

Orbit Structure





Visit

Proposal 16679, Target 18 (2 orb) (27), completed Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

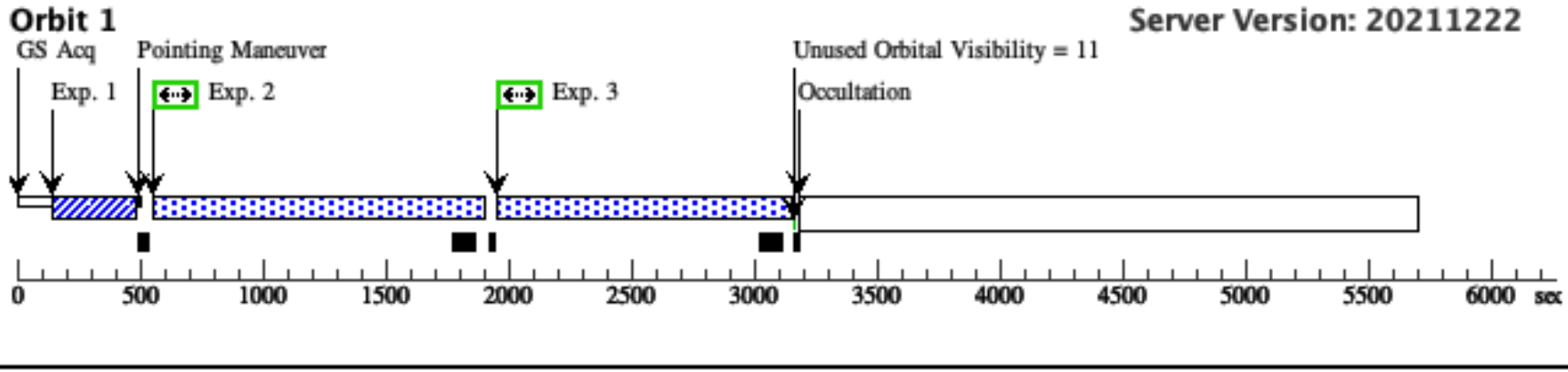
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(18)	J2251+3419	RA: 22 51 47.7000 (342.9487500d) Dec: +34 19 30.60 (34.32517d) Equinox: J2000	Redshift: 0.132	V=16.24 NUV = 17.42	Reference Frame: ICRS

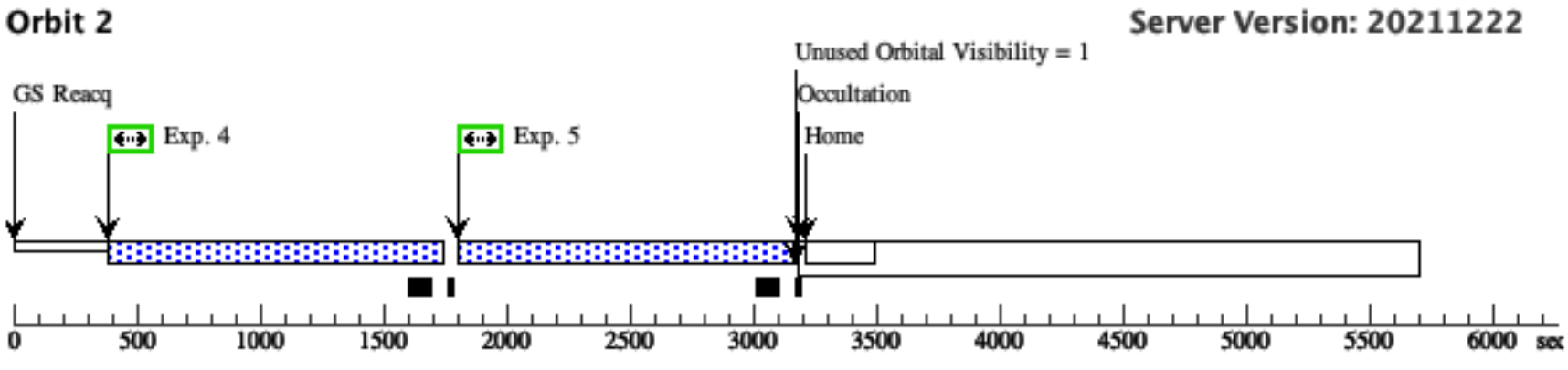
Comments: FUV = 17.75, SFD ebv = 0.10
acq ETC: COS.sa.1528234 (28 seconds)
spec ETC: COS.sp.1528236 (11000 seconds)
Category=GALAXY
Description=[QSO]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530563)	(18) J2251+3419	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				16 Secs (16 Secs) *[==>]*	***[1]***
2	FP1 (COS.sp.1528236)	(18) J2251+3419	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=1030			700 Secs (1143 Secs) *[==>1143.0 Secs]*	***[1]***
3	FP2 (COS.sp.1528236)	(18) J2251+3419	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1030			700 Secs (1143 Secs) *[==>1143.0 Secs]*	***[1]***
4	FP3 (COS.sp.1528236)	(18) J2251+3419	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1309 Secs) *[==>1309.0 Secs]*	***[2]***
5	FP4 (COS.sp.1528236)	(18) J2251+3419	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1309 Secs) *[==>1309.0 Secs]*	***[2]***

Orbit Structure





Visit

Proposal 16679, Target 18 (2 orb) (28), completed Tue Apr 05 15:01:46 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(18)	J2251+3419	RA: 22 51 47.7000 (342.9487500d) Dec: +34 19 30.60 (34.32517d) Equinox: J2000	Redshift: 0.132	V=16.24 NUV = 17.42	Reference Frame: ICRS

Comments: FUV = 17.75, SFD ebv = 0.10
acq ETC: COS.sa.1528234 (28 seconds)
spec ETC: COS.sp.1528236 (11000 seconds)
Category=GALAXY
Description=[QSO]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	acq (COS.ta.1530563)	(18) J2251+3419	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				16 Secs (16 Secs) *[==>]*	***[1]***
2	FP1 (COS.sp.1528236)	(18) J2251+3419	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=1; SEGMENT=BOTH; BUFFER-TIME=1030			700 Secs (1143 Secs) *[==>1143.0 Secs]*	***[1]***
3	FP2 (COS.sp.1528236)	(18) J2251+3419	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=2; SEGMENT=BOTH; BUFFER-TIME=1030			700 Secs (1143 Secs) *[==>1143.0 Secs]*	***[1]***
4	FP3 (COS.sp.1528236)	(18) J2251+3419	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1309 Secs) *[==>1309.0 Secs]*	***[2]***
5	FP4 (COS.sp.1528236)	(18) J2251+3419	COS/FUV, TIME-TAG, PSA	G160M 1577 A	FP-POS=4; SEGMENT=BOTH; BUFFER-TIME=1180			1200 Secs (1309 Secs) *[==>1309.0 Secs]*	***[2]***

Orbit Structure