17111 - The winds of massive stars at the peak of the star formation history of the Universe

Cycle: 30, 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) TARGET-1	COS/FUV COS/NUV	3	14-Jul-2022 15:02:29.0	yes
02	(1) TARGET-1	COS/FUV COS/NUV	2	14-Jul-2022 15:02:30.0	yes
03	(1) TARGET-1	COS/FUV COS/NUV	2	14-Jul-2022 15:02:30.0	yes
04	(2) TARGET-2	COS/FUV COS/NUV	3	14-Jul-2022 15:02:31.0	yes
05	(2) TARGET-2	COS/FUV COS/NUV	3	14-Jul-2022 15:02:32.0	yes
06	(2) TARGET-2	COS/FUV COS/NUV	2	14-Jul-2022 15:02:33.0	yes
07	(3) TARGET-3	COS/FUV COS/NUV	3	14-Jul-2022 15:02:34.0	yes
08	(3) TARGET-3	COS/FUV COS/NUV	3	14-Jul-2022 15:02:34.0	yes
09	(3) TARGET-3	COS/FUV COS/NUV	2	14-Jul-2022 15:02:35.0	yes
10	(4) TARGET-4	COS/FUV COS/NUV	3	14-Jul-2022 15:02:36.0	yes
11	(4) TARGET-4	COS/FUV COS/NUV	2	14-Jul-2022 15:02:37.0	yes
12	(4) TARGET-4	COS/FUV COS/NUV	2	14-Jul-2022 15:02:37.0	yes

30 Total Orbits Used

ABSTRACT

Massive stars are powerful sources of ionizing radiation and kinetic energy that shape the interstellar medium and the UV spectral morphology of host galaxies. Their life-averaged feedback and their end as SN/GRB make them fundamental ingredients to galactic chemodynamical evolution models and population synthesis codes.

Feedback from massive stars is not constant along the history of the Universe: their evolution and pre-SN core size is determined to a large extent by radiation-driven winds, and these depend strongly on metallicity. In a Universe of ever-increasing metal content, metal-poor massive stars and their winds are a central piece to study star-forming galaxies in past cosmic epochs.

The HST archive, supported by the ULLYSES DDT program, stores a large collection of UV spectra of massive stars in the Milky Way and the Magellanic Clouds that will enable a thorough characterization of radiation-driven winds down to metallicities of 1/5 Zsun. Yet, this value is not representative of the composition of the Universe earlier than redshift=1, nor at such an important landmark as the peak of the Cosmic star formation history (redshift~2).

We request HST-COS UV spectroscopy of 4 OB-type stars in Sextans A, with 1/10 Zsun metallicity, akin to blue massive stars of that period. The selection has been crafted to cover uncharted parameter space in the upper HR-diagram, where radiation-driven winds are expected to be significant. Quantitative analysis of this sample together with archival data will allow us to characterize radiation-driven winds at very low metallicity and to produce the first prescriptions to be implemented into models of stellar evolution.

OBSERVING DESCRIPTION

General strategy & summary

This proposal consists of COS/FUV spectroscopy of 4 O-stars
in the dwarf irregular galaxy Sextans A (at ~1Mpc).
All targets are visited 3 times in order to accumulate exposure time.
Visits have 3 orbits or less to facilitate scheduling.

Science exposures:

The configuration is COS/FUV, PSA, G140L, TIMETAG, FLASH=YES, CENWAVE=800 and SEGMENT-A (B is off by default).

All FP-POS are used, although spread in several orbits/visits.

Acquisition strategy: ACQ/IMH
We checked that the sources are isolated in a radius of 2"
or that they are brighter than any other target in the r=2" circle by more than 1 mag in the UV.
To this aim we used WFPC3-F225W (preferred) or WFPC3-F275W phot. from program GO-16104
and imaging from Bianchi+ 2012.

Source ID, Phot. and astrometric catalogs:

Alternate-ID-1 from Massey+ 2007, AJ, 133, 2393
Alternate-ID-2 from Lorenzo, Garcia, Najarro et al. accepted at MNRAS
Source for optical photometry: Massey+ 2007, AJ, 133, 2393
Coordinates for the target stars were taken from Gaia eDR3.

Estimated exposure times, Buffer times, and UV fluxes (Flux at 1300 Angstroems)

The listed COS-ETC ID's for spectroscopy correspond to the ETC run with the following parameters.
- COS ETC v30.2
- G140L, CENWAVE 800, segment-B HV-low, PSA
- EXPTIME=2600s (roughly one full orbit)
- Castelli & Kurucz models with the appropriate spectral type
- LMC 30Dor supershell extinction law applied before normalization
- Normalization by WFC3/UVIS VEGAMAG (F225W or F275W) from program GO-16104
(although exposure times and F_1300 were also calculated with observed V-magnitudes as a double check)

These calculations provided
- the input spectrum, were the estimated fluxes at 1300\AA were taken from

- the buffer fill time (BFT), that was used to estimate the BUFFERTIME=2/3*BFT

Extinction E(B-V) was estimated from observed optical UBV photometry,
with intrinsic color (B-V)o calculated from the reddening-free Q-pseudo color
following the relation by Massey+ 2000.

For acquisition ETC quotes, the following parameters were used:
- ACQ/IMAGE
- PSA, MIRROR-A
- GOAL: S/N=20
- With same parameters as above for input stellar spectrum and extinction law.

Special requirements:

None requested.

BOT checks:

None of the ETC runs to estimate the exposure times for the spectroscopic science observations or the ACQ/IMAGE, returned any bright-object or count-rate warning.

We ran APT's BOT tool, both with GSC2 and GALEX. BOT finds no unsafe objects in either of them.
Only GSC2 showed Unknown sources. We queried UV photometry from program GO-16104 around
their location and checked that all of them were fainter in the UV than F225W=17.34, F275W=17.62

Since both the GSC2 and GALEX coverage of the field of view is poor in terms of limiting magnitude, and following the recommendation of Sect. 10.4.1 of COS-instrument handbook, we queried UV photometry from program GO-16104

to check whether the targets are clear from Unsafe objects within a 43" diameter circle.
The brightest source found has F225W=16.94, F275W=17.23. This target is Sextans-A-OB523 that was safely observed with COS-G140L in program GO-14245
and with COS-G130M in GO-15880.

Nonetheless we checked this source in the ETC with the following parameters:
Unreddened Kurucz models for O5V stars
High settings for airglow lines and zodiacal light, and extremely high for Earth shine.
EXPTIME=2700s for spectroscopy, EXPTIME=10s for ACQ/IMH

The count rate did not exceed the recommended values in any case.

COS2025

Observations with the G140L gratings are unaffected by the COS2025 policies.

IMPACT OF REDUCED GYRO MODE

The impact of 2-gyro operations on these observations would be limited since:
- The observations are not time critical in any way.
- No ORIENT constraints have been requested.
- We have arranged the exposures in visits of 3 orbits or less to facilitate scheduling.
- Accuracy of pointing is not critical as long as the observatory can ensure that the initial pointing of COS-NUV-ACQ/IMAGE already locates targets within the PSA, and that the COS-ACQ/IMAGE warrants centering the target with the required accuracy.

Other points that would impact our program (but just as any other program):
- Failed acquisitions, or increased target acquisition time that would reduce the net science exposure time per orbit.

REMAINING WARNINGS

The proposal contains warnings regarding the mandatory use of all FFPOS.

Some orbits use only 2 FPPOS, but we arranged the observations to make a balanced use of all 4 FPPOS.

Visit

Proposal 17111, TARGET1-V1 (01) Thu Jul 14 19:02:38 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

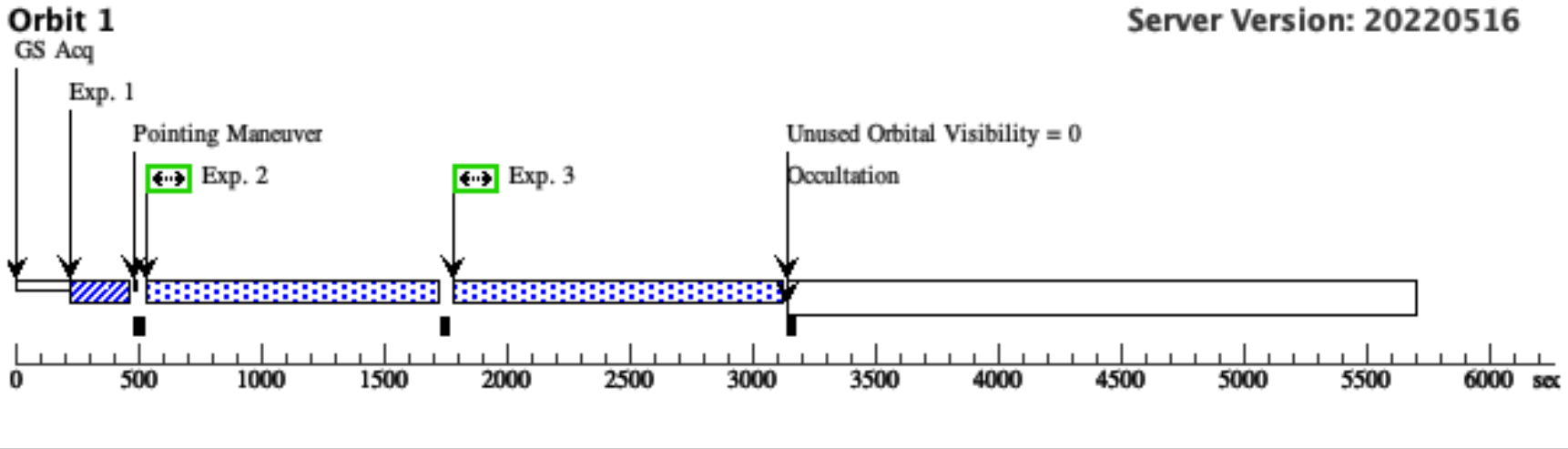
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	TARGET-1 Alt Name1: J101105.28-044238.3 Alt Name2: LGN-S002	RA: 10 11 5.2804 (152.7720017d) Dec: -04 42 38.36 (-4.71066d) Equinox: J2000		V=20.369+/-0.013 B-V=-0.279; E(B-V)=0.023; Sp T=O5Vz; WFC3/UVIS-F225W= 17.87; F_1300=1.6E-15 erg/cm2 /s/A	Reference Frame: ICRS

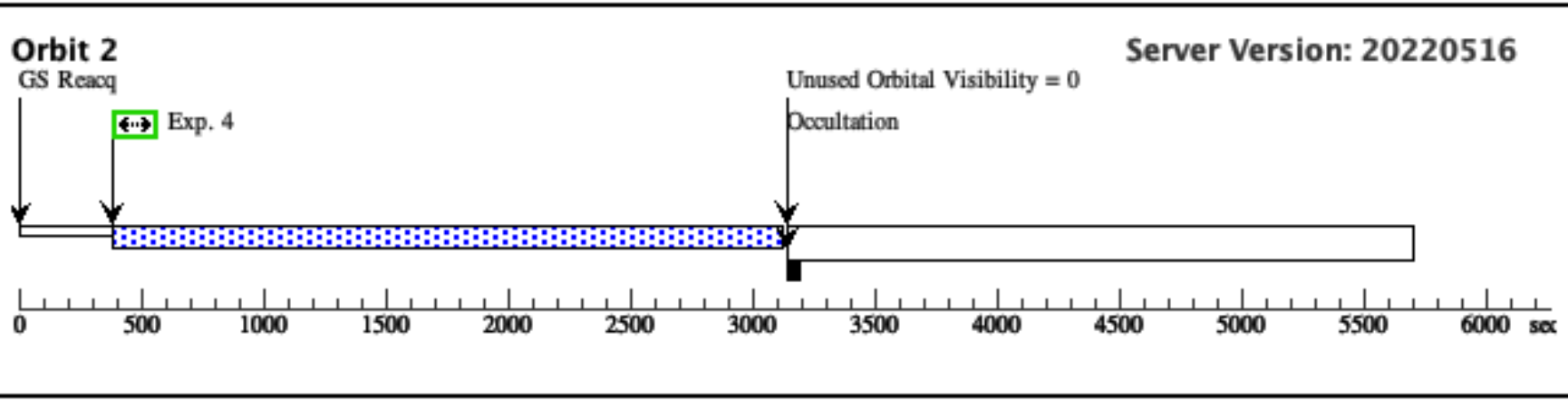
Comments:
Category=EXT-STAR
Description=[MAIN SEQUENCE O]
Extended=NO

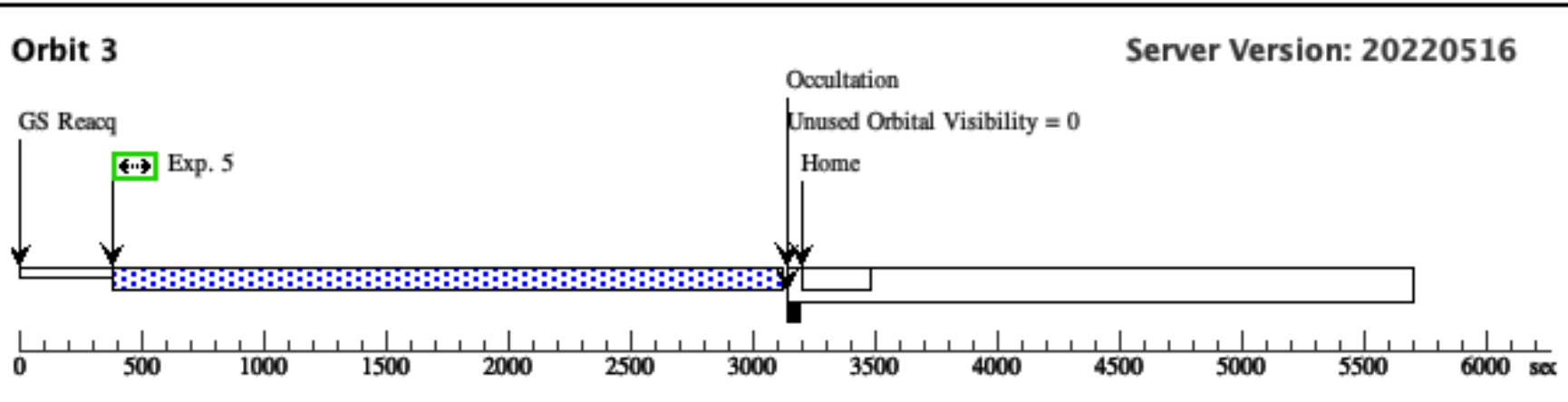
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TARGET1-V1-ACQ (COS.ta.1814281)	(1) TARGET-1	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				6.1 Secs (6.1 Secs) *[==>]*	***[1]***
2	TARGET1-V1-FPPOS1 (COS.sp.1814257)	(1) TARGET-1	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7732; FLASH=YES; FP-POS=1; SEGMENT=A			980 Secs (980 Secs) *[==>]*	***[1]***
3	TARGET1-V1-FPPOS2 (COS.sp.1814257)	(1) TARGET-1	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7732; FLASH=YES; FP-POS=2; SEGMENT=A			1290 Secs (1290 Secs) *[==>]*	***[1]***
4	TARGET1-V1-FFPOS3 (COS.sp.1814257)	(1) TARGET-1	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7732; FLASH=YES; FP-POS=3; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	***[2]***
5	TARGET1-V1-FFPOS4 (COS.sp.1814257)	(1) TARGET-1	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7732; FLASH=YES; FP-POS=4; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	***[3]***

Orbit Structure







Visit

Proposal 17111, TARGET1-V2 (02) Thu Jul 14 19:02:38 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(TARGET1-V2 (02)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.

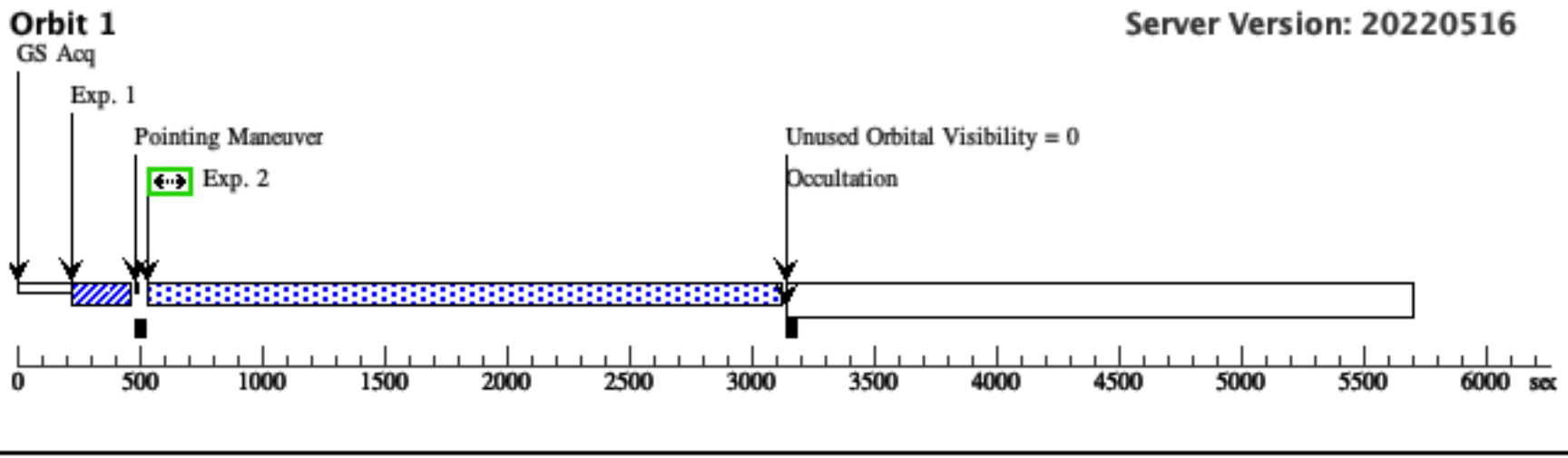
Fixed Targets

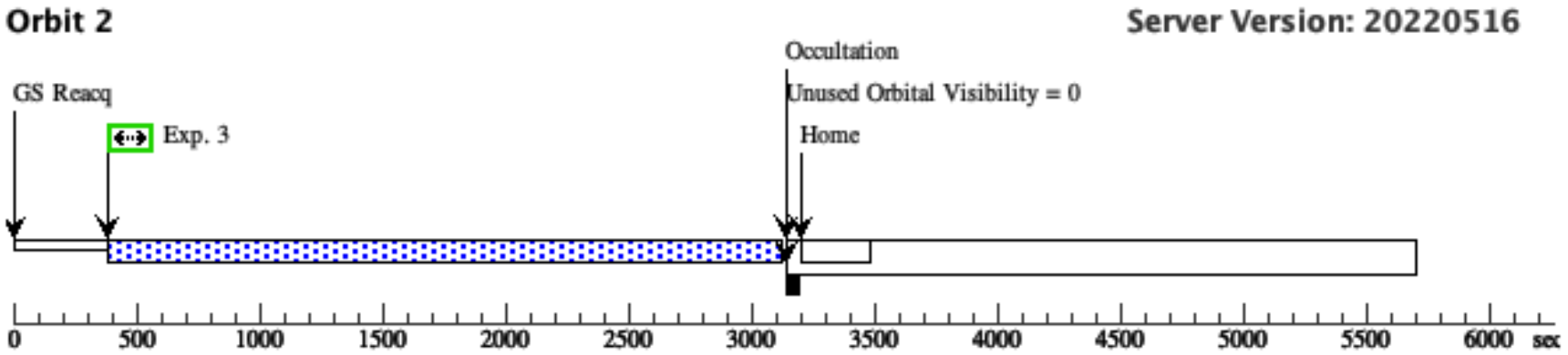
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	TARGET-1 Alt Name1: J101105.28-044238.3 Alt Name2: LGN-S002 *Comments:* *Category=EXT-STAR* *Description=[MAIN SEQUENCE O]* *Extended=NO*	RA: 10 11 5.2804 (152.7720017d) Dec: -04 42 38.36 (-4.71066d) Equinox: J2000		V=20.369+/-0.013 B-V=-0.279; E(B-V)=0.023; SpT=O5Vz; WFC3/UVIS-F225W=17.87; F_1300=1.6E-15 erg/cm2/s/A	Reference Frame: ICRS

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TARGET1-V2-ACQ (COS.ta.1814281)	(1) TARGET-1	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				6.1 Secs (6.1 Secs) *[==>]*	*[1]*
2	TARGET1-V2-FPPOS1 (COS.sp.1814257)	(1) TARGET-1	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7732; FLASH=YES; FP-POS=1; SEGMENT=A			2385 Secs (2385 Secs) *[==>]*	*[1]*
3	TARGET1-V2-FPPOS2 (COS.sp.1814257)	(1) TARGET-1	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7732; FLASH=YES; FP-POS=2; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	*[2]*

Orbit Structure





Visit

Proposal 17111, TARGET1-V3 (03) Thu Jul 14 19:02:38 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(TARGET1-V3 (03)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.

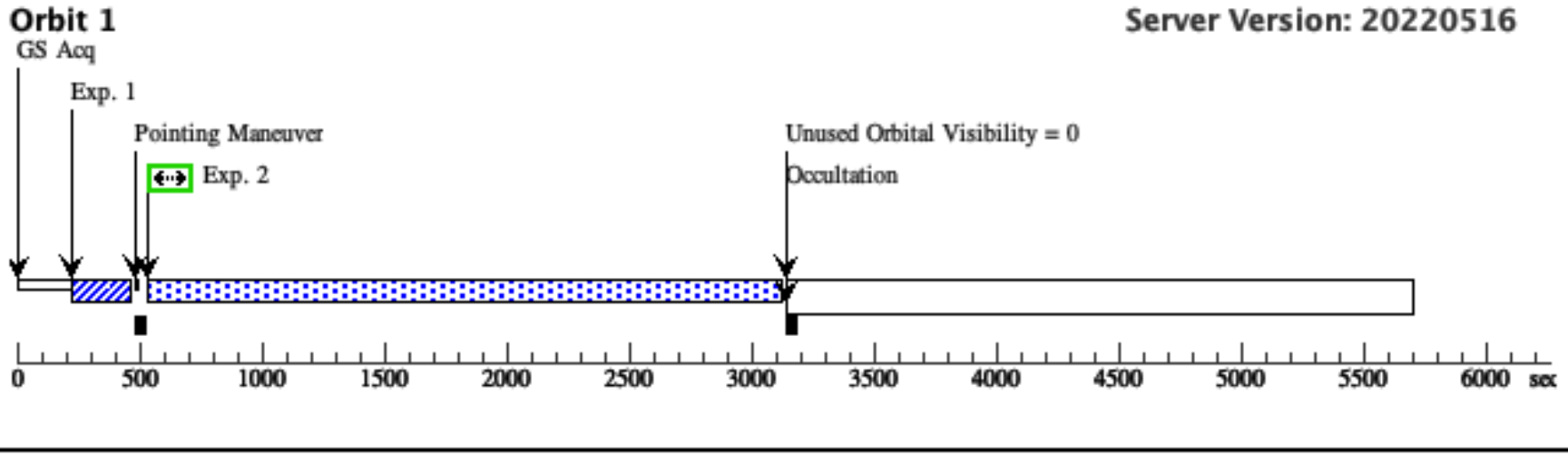
Fixed Targets

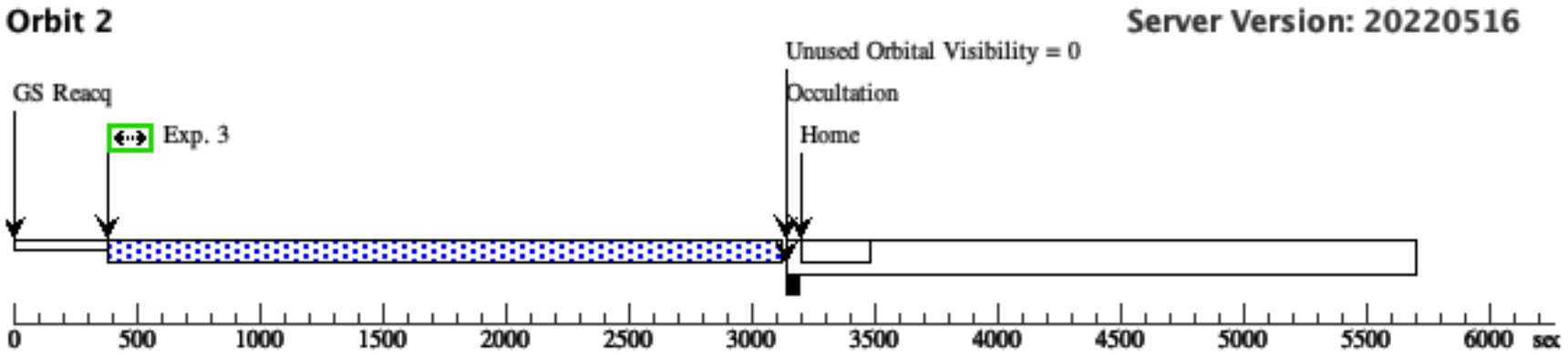
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	TARGET-1 Alt Name1: J101105.28-044238.3 Alt Name2: LGN-S002 *Comments:* *Category=EXT-STAR* *Description=[MAIN SEQUENCE O]* *Extended=NO*	RA: 10 11 5.2804 (152.7720017d) Dec: -04 42 38.36 (-4.71066d) Equinox: J2000		V=20.369+/-0.013 B-V=-0.279; E(B-V)=0.023; SpT=O5Vz; WFC3/UVIS-F225W=17.87; F_1300=1.6E-15 erg/cm2/s/A	Reference Frame: ICRS

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TARGET1-V3-ACQ (COS.ta.1814281)	(1) TARGET-1	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				6.1 Secs (6.1 Secs) *[==>]*	 ***[1]***
2	TARGET1-V3-FPPOS3 (COS.sp.1814257)	(1) TARGET-1	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7732; FLASH=YES; FP-POS=3; SEGMENT=A			2385 Secs (2385 Secs) *[==>]*	 ***[1]***
3	TARGET1-V3-FPPOS4 (COS.sp.1814257)	(1) TARGET-1	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7732; FLASH=YES; FP-POS=4; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	 ***[2]***

Orbit Structure





Visit

Proposal 17111, TARGET2-V1 (04) Thu Jul 14 19:02:38 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

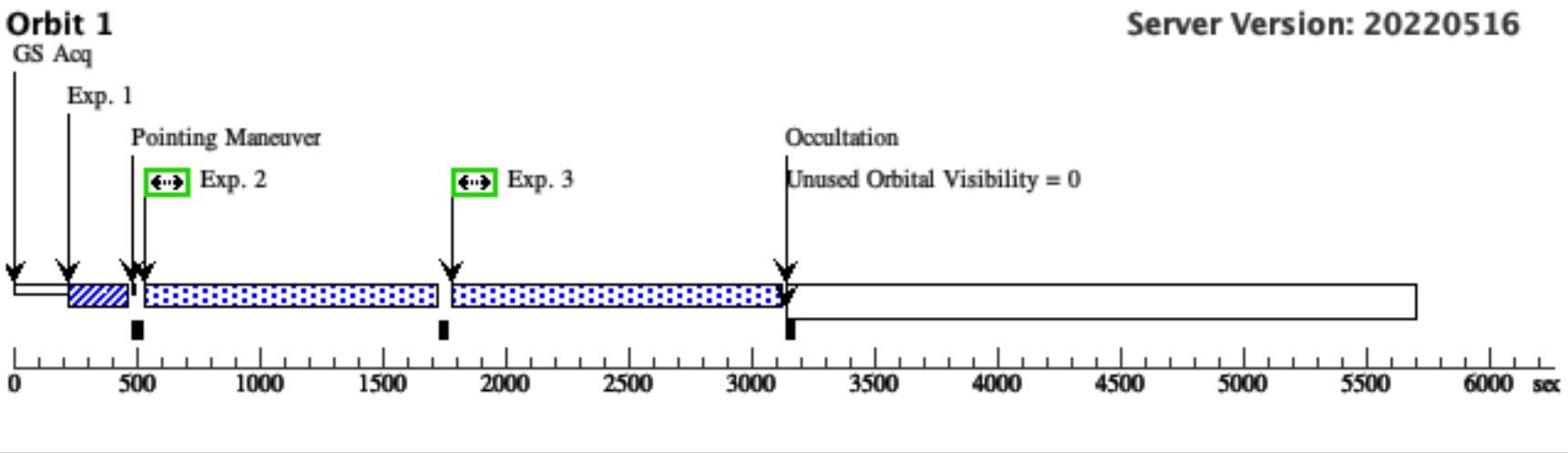
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	TARGET-2 Alt Name1: J101106.48-044237.1 Alt Name2: LGN-S007	RA: 10 11 6.4717 (152.7769654d) Dec: -04 42 37.23 (-4.71034d) Equinox: J2000		V=20.515+/-0.012 B-V=-0.28; E(B-V)=0.031; SpT =O6V; WFC3/UVIS-F225W= 17.93 ; F_1300=1.4E-15 erg/cm2/s/A	Reference Frame: ICRS

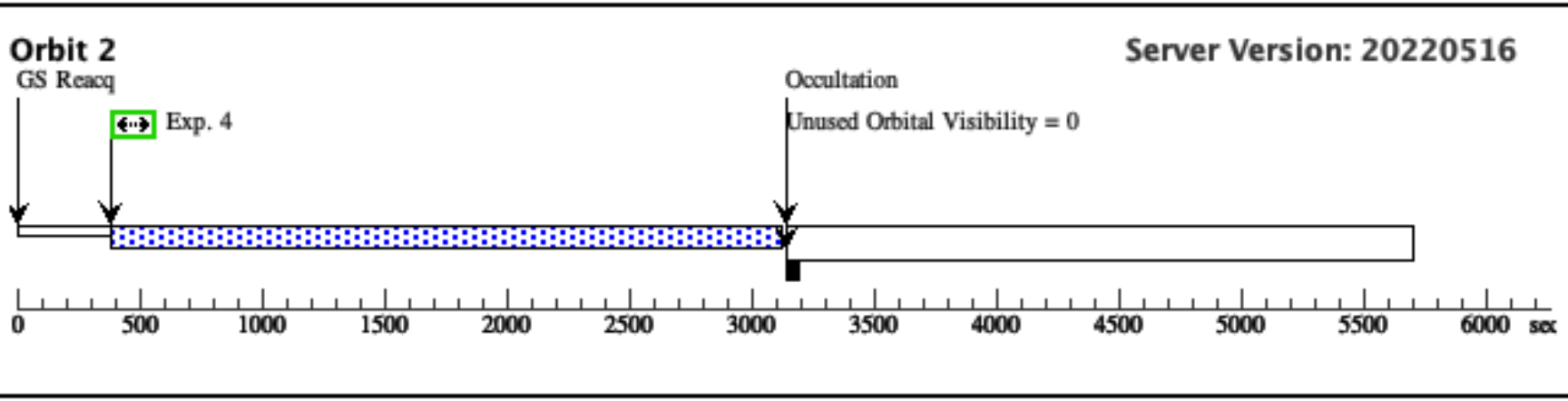
Comments:
Category=EXT-STAR
Description=[MAIN SEQUENCE O]
Extended=NO

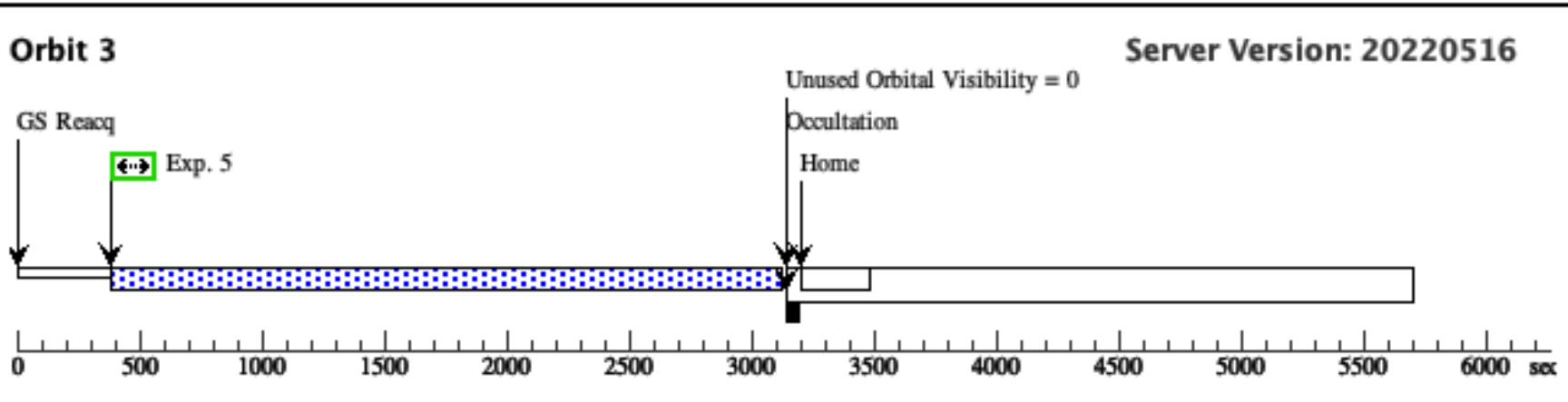
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TARGET2-V1-ACQ (COS.ta.1814311)	(2) TARGET-2	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				6.5 Secs (6.5 Secs) *[==>]*	***[1]***
2	TARGET2-V1-FPPOS1 (COS.sp.1814261)	(2) TARGET-2	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8057; FLASH=YES; FP-POS=1; SEGMENT=A			980 Secs (980 Secs) *[==>]*	***[1]***
3	TARGET2-V1-FPPOS2 (COS.sp.1814261)	(2) TARGET-2	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8057; FLASH=YES; FP-POS=2; SEGMENT=A			1290 Secs (1290 Secs) *[==>]*	***[1]***
4	TARGET2-V1-FFPOS3 (COS.sp.1814261)	(2) TARGET-2	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8057; FLASH=YES; FP-POS=3; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	***[2]***
5	TARGET2-V1-FFPOS4 (COS.sp.1814261)	(2) TARGET-2	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8057; FLASH=YES; FP-POS=4; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	***[3]***

Orbit Structure







Visit

Proposal 17111, TARGET2-V2 (05) Thu Jul 14 19:02:38 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

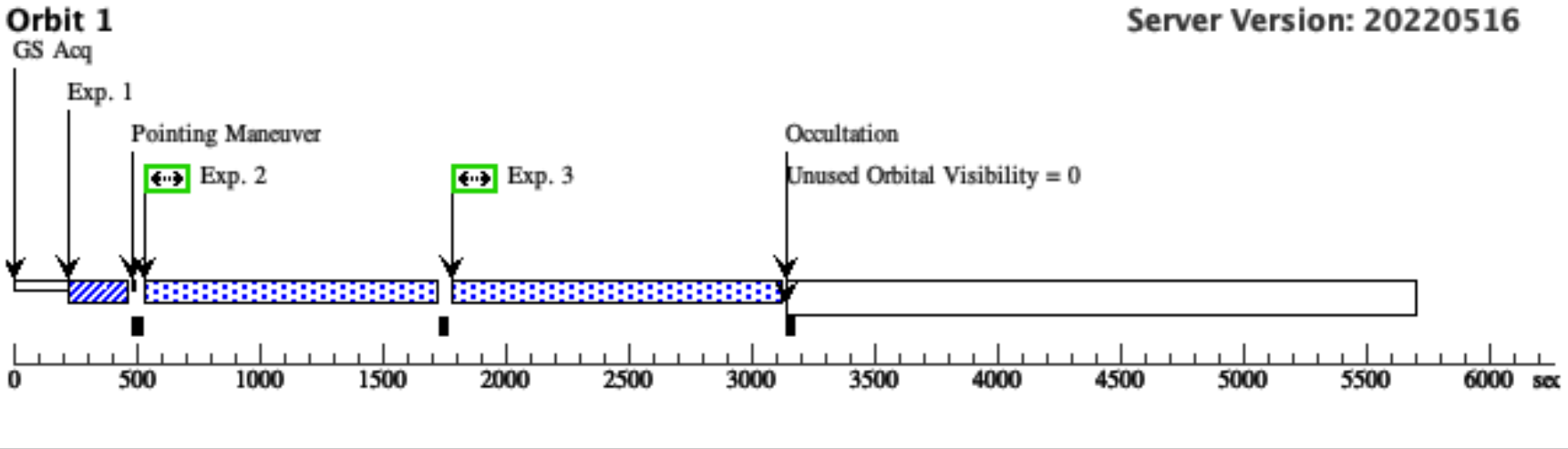
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	TARGET-2 Alt Name1: J101106.48-044237.1 Alt Name2: LGN-S007	RA: 10 11 6.4717 (152.7769654d) Dec: -04 42 37.23 (-4.71034d) Equinox: J2000		V=20.515+/-0.012 B-V=-0.28; E(B-V)=0.031; SpT =O6V; WFC3/UVIS-F225W= 17.93 ; F_1300=1.4E-15 erg/cm2/s/A	Reference Frame: ICRS

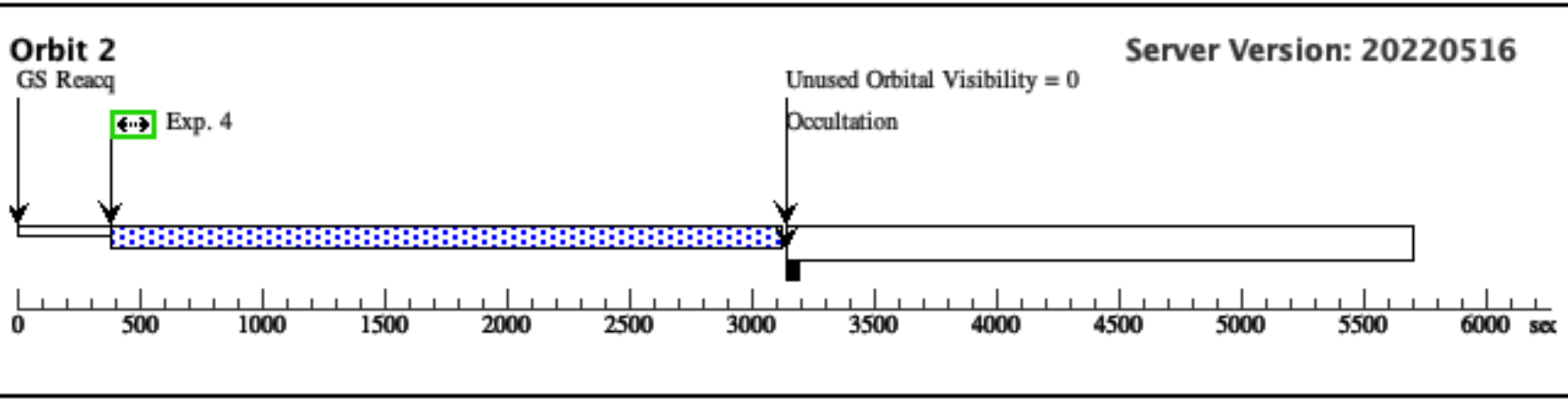
Comments:
Category=EXT-STAR
Description=[MAIN SEQUENCE O]
Extended=NO

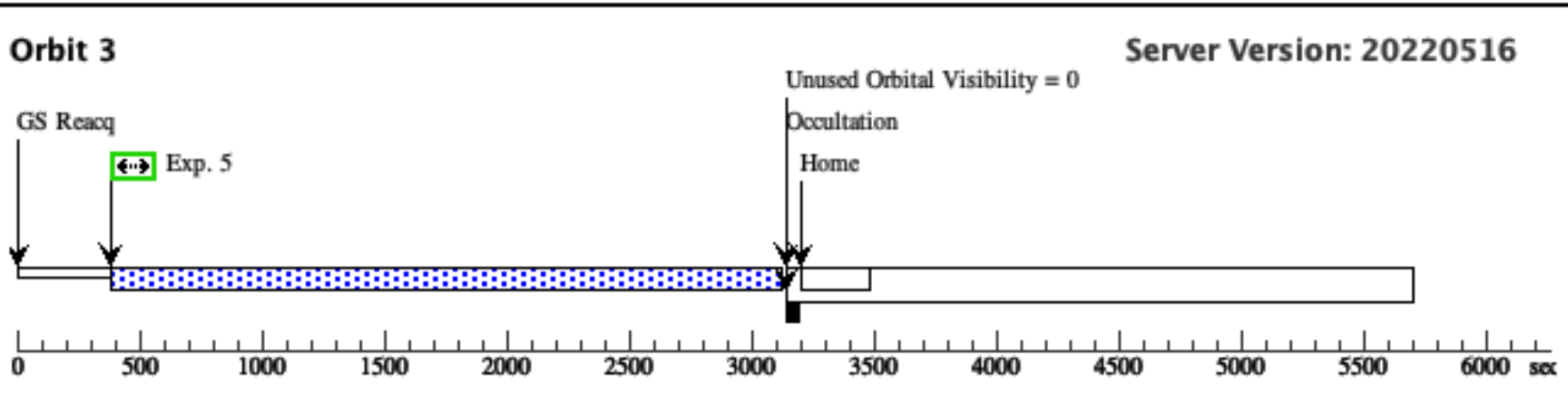
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TARGET2-V2-ACQ (COS.ta.1814311)	(2) TARGET-2	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				6.5 Secs (6.5 Secs) *[==>]*	***[1]***
2	TARGET2-V2-FPPOS1 (COS.sp.1814261)	(2) TARGET-2	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8057; FLASH=YES; FP-POS=1; SEGMENT=A			980 Secs (980 Secs) *[==>]*	***[1]***
3	TARGET2-V2-FPPOS2 (COS.sp.1814261)	(2) TARGET-2	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8057; FLASH=YES; FP-POS=2; SEGMENT=A			1290 Secs (1290 Secs) *[==>]*	***[1]***
4	TARGET2-V2-FFPOS3 (COS.sp.1814261)	(2) TARGET-2	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8057; FLASH=YES; FP-POS=3; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	***[2]***
5	TARGET2-V2-FFPOS4 (COS.sp.1814261)	(2) TARGET-2	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8057; FLASH=YES; FP-POS=4; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	***[3]***

Orbit Structure







Visit

Proposal 17111, TARGET2-V3 (06) Thu Jul 14 19:02:38 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(TARGET2-V3 (06)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.

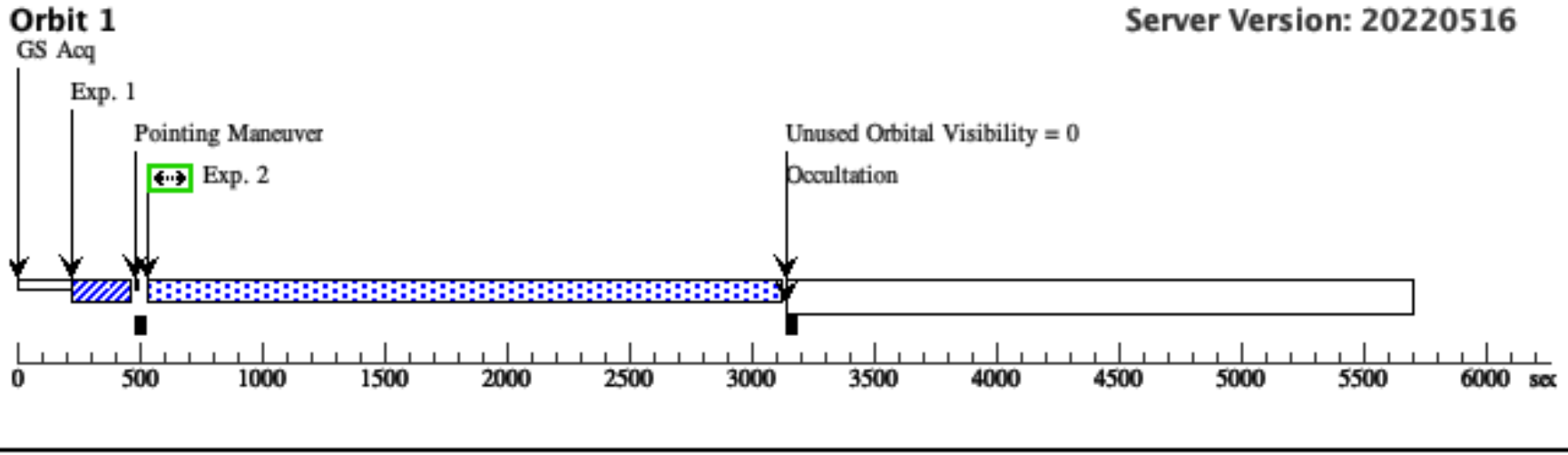
Fixed Targets

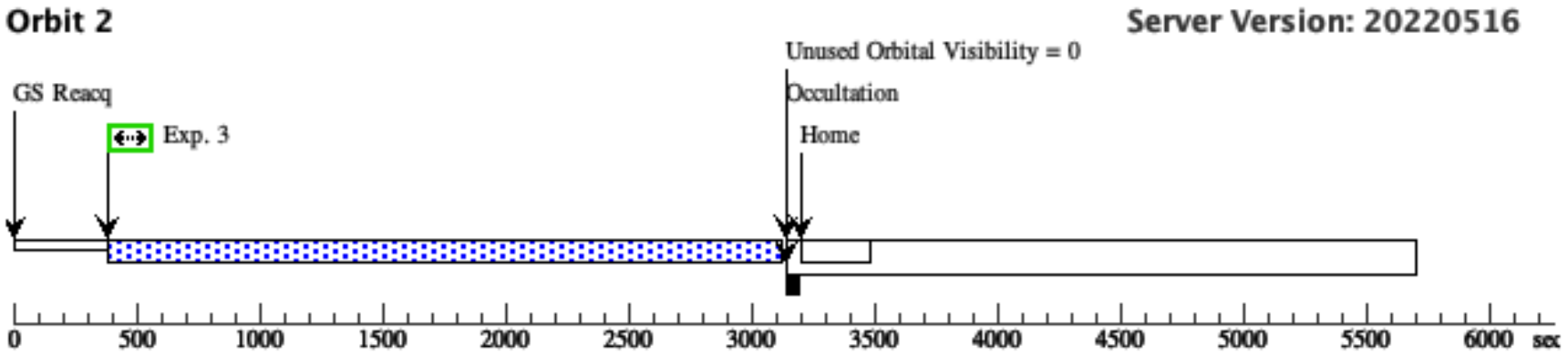
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	TARGET-2 Alt Name1: J101106.48-044237.1 Alt Name2: LGN-S007 *Comments:* *Category=EXT-STAR* *Description=[MAIN SEQUENCE O]* *Extended=NO*	RA: 10 11 6.4717 (152.7769654d) Dec: -04 42 37.23 (-4.71034d) Equinox: J2000		V=20.515+/-0.012 B-V=-0.28; E(B-V)=0.031; SpT=O6V; WFC3/UVIS-F225W= 17.93 ; F_1300=1.4E-15 erg/cm2/s/A	Reference Frame: ICRS

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TARGET2-V3-ACQ (COS.ta.1814311)	(2) TARGET-2	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				6.5 Secs (6.5 Secs) *[==>]*	*[1]*
2	TARGET2-V3-FFPOS3 (COS.sp.1814261)	(2) TARGET-2	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8057; FLASH=YES; FP-POS=3; SEGMENT=A			2385 Secs (2385 Secs) *[==>]*	*[1]*
3	TARGET2-V3-FFPOS4 (COS.sp.1814261)	(2) TARGET-2	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8057; FLASH=YES; FP-POS=4; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	*[2]*

Orbit Structure





Visit

Proposal 17111, TARGET3-V1 (07) Thu Jul 14 19:02:38 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

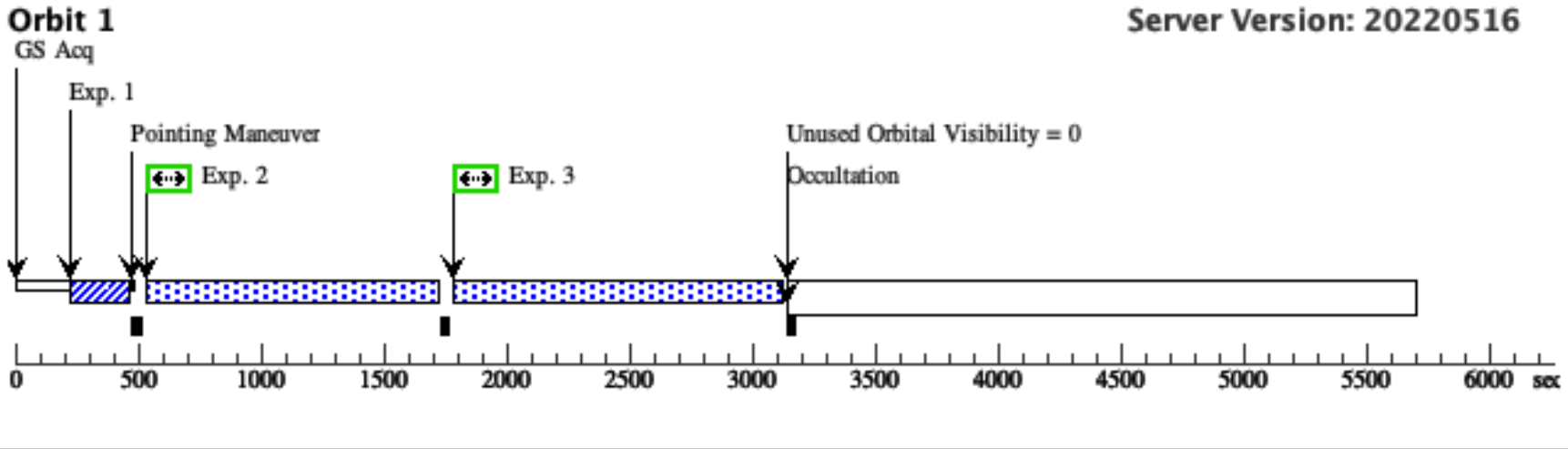
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	TARGET-3 Alt Name1: J101103.70-044234.2 Alt Name2: LGN-S011	RA: 10 11 3.6906 (152.7653775d) Dec: -04 42 34.33 (-4.70954d) Equinox: J2000		V=20.191+/-0.01 B-V=-0.22; E(B-V)=0.108; SpT=O7.5III; WFC3/UVIS-F275W=17.97; F_1300=1.3E-15 erg/cm2/s/A	Reference Frame: ICRS

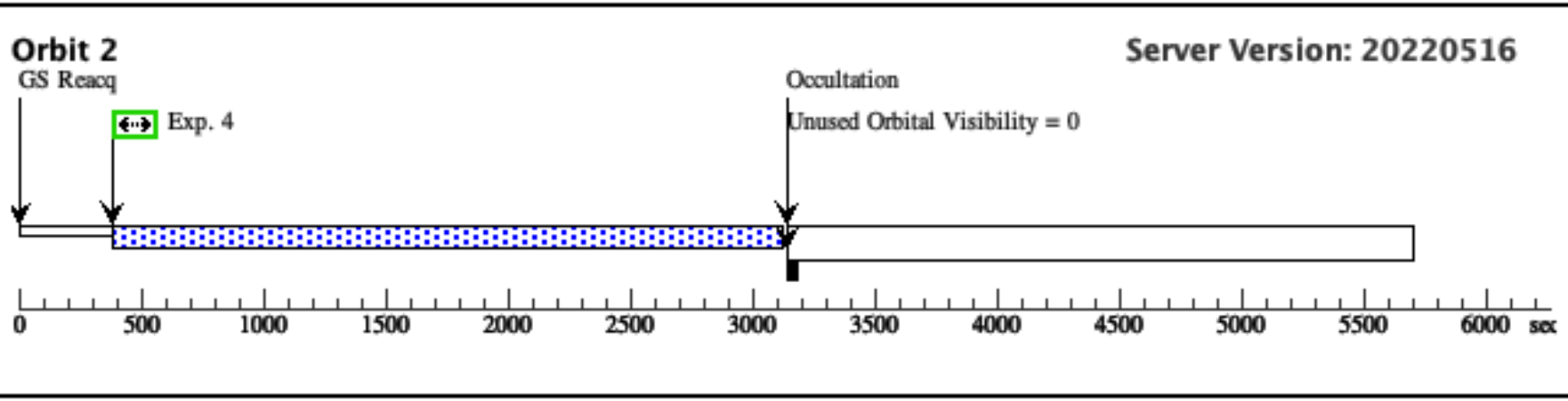
Comments:
Category=EXT-STAR
Description=[GIANT O]
Extended=NO

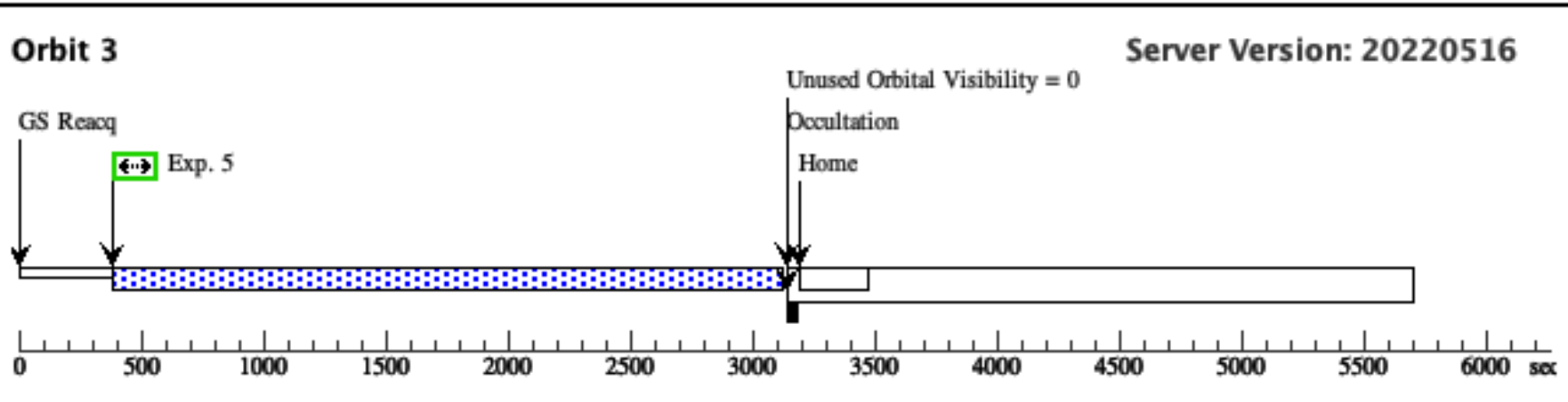
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TARGET3-V1-ACQ (COS.ta.1814314)	(3) TARGET-3	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				5.7 Secs (5.7 Secs) *[==>]*	***[1]***
2	TARGET3-V1-FPPOS1 (COS.sp.1814262)	(3) TARGET-3	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8194; FLASH=YES; FP-POS=1; SEGMENT=A			982 Secs (982 Secs) *[==>]*	***[1]***
3	TARGET3-V1-FPPOS2 (COS.sp.1814262)	(3) TARGET-3	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8194; FLASH=YES; FP-POS=2; SEGMENT=A			1290 Secs (1290 Secs) *[==>]*	***[1]***
4	TARGET3-V1-FPPOS3 (COS.sp.1814262)	(3) TARGET-3	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8194; FLASH=YES; FP-POS=3; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	***[2]***
5	TARGET3-V1-FPPOS4 (COS.sp.1814262)	(3) TARGET-3	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8194; FLASH=YES; FP-POS=4; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	***[3]***

Orbit Structure







Visit

Proposal 17111, TARGET3-V2 (08) Thu Jul 14 19:02:38 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

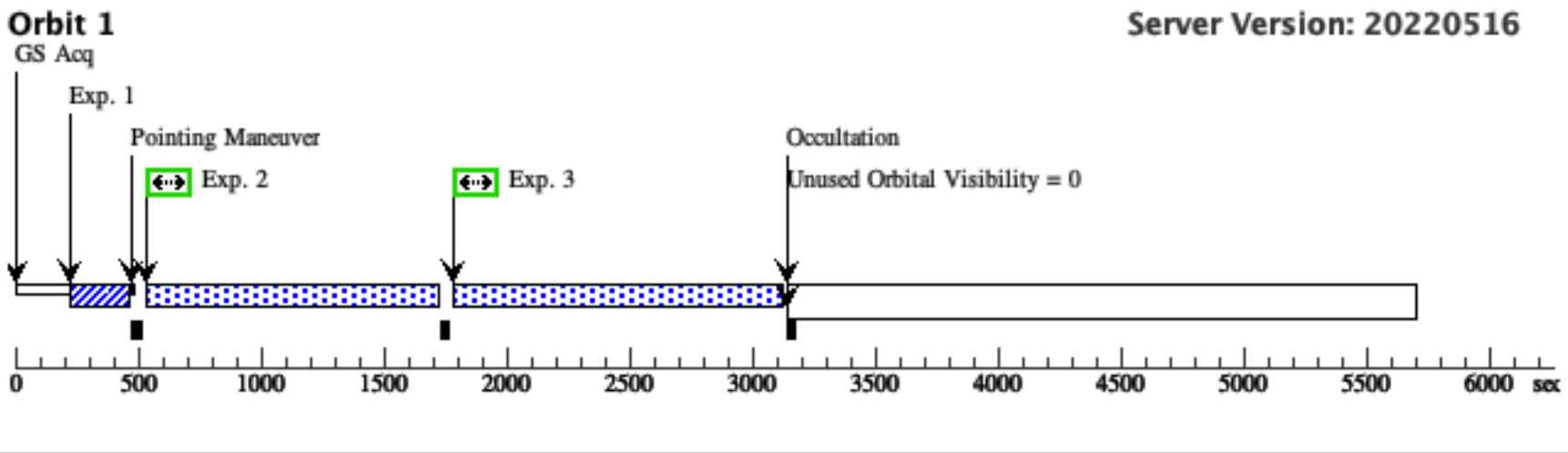
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	TARGET-3 Alt Name1: J101103.70-044234.2 Alt Name2: LGN-S011	RA: 10 11 3.6906 (152.7653775d) Dec: -04 42 34.33 (-4.70954d) Equinox: J2000		V=20.191+/-0.01 B-V=-0.22; E(B-V)=0.108; SpT =O7.5III; WFC3/UVIS-F275W= 17.97; F_1300=1.3E-15 erg/cm2 /s/A	Reference Frame: ICRS

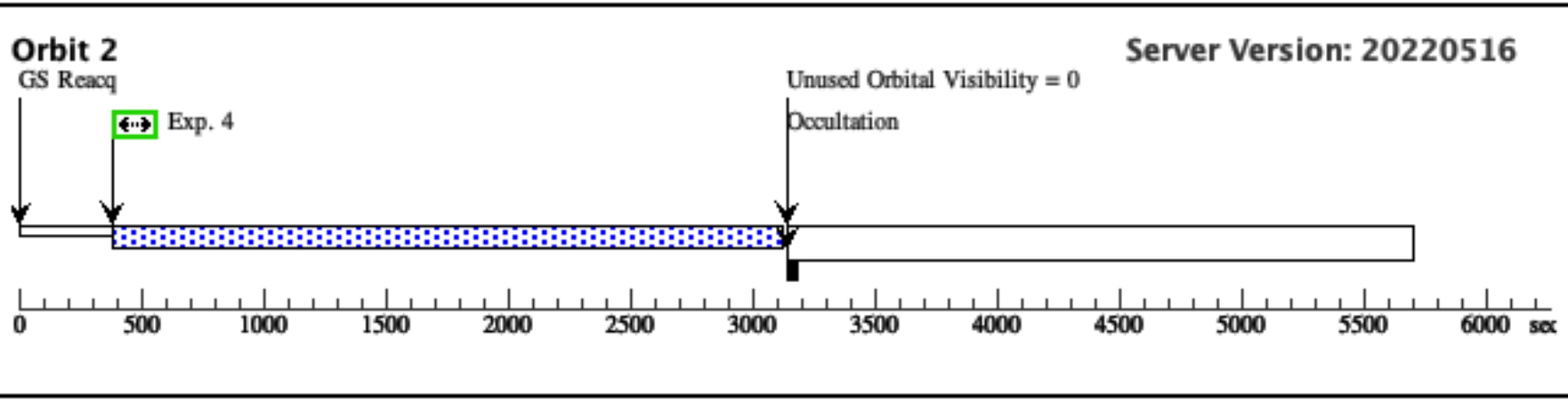
Comments:
Category=EXT-STAR
Description=[GIANT O]
Extended=NO

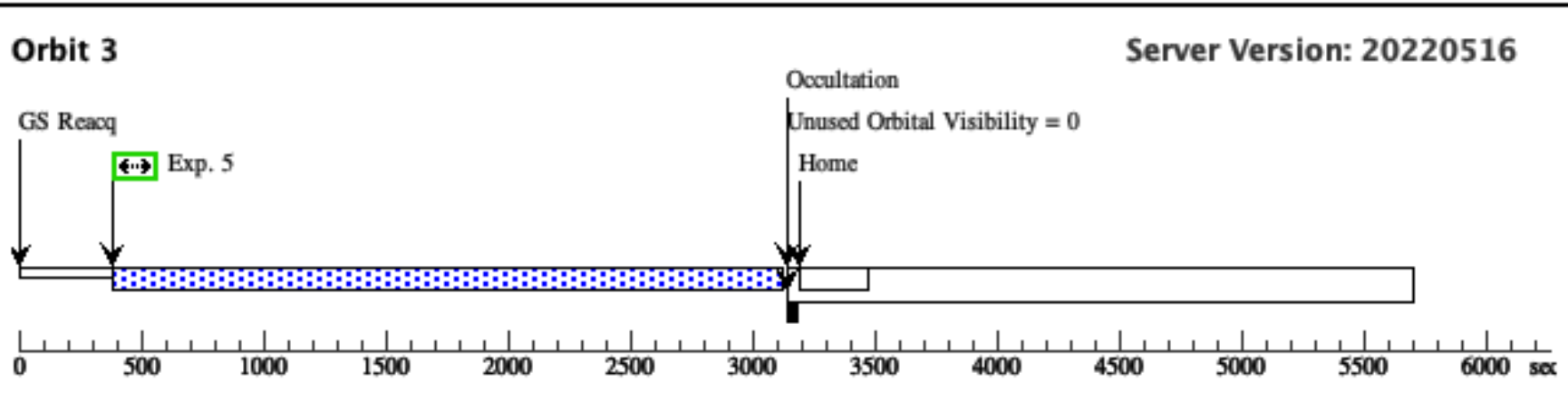
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TARGET3-V2-ACQ (COS.ta.1814314)	(3) TARGET-3	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				5.7 Secs (5.7 Secs) *[==>]*	***[1]***
2	TARGET3-V2-FPPOS1 (COS.sp.1814262)	(3) TARGET-3	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8194; FLASH=YES; FP-POS=1; SEGMENT=A			982 Secs (982 Secs) *[==>]*	***[1]***
3	TARGET3-V2-FPPOS2 (COS.sp.1814262)	(3) TARGET-3	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8194; FLASH=YES; FP-POS=2; SEGMENT=A			1290 Secs (1290 Secs) *[==>]*	***[1]***
4	TARGET3-V2-FPPOS3 (COS.sp.1814262)	(3) TARGET-3	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8194; FLASH=YES; FP-POS=3; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	***[2]***
5	TARGET3-V2-FPPOS4 (COS.sp.1814262)	(3) TARGET-3	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8194; FLASH=YES; FP-POS=4; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	***[3]***

Orbit Structure







Visit

Proposal 17111, TARGET3-V3 (09) Thu Jul 14 19:02:38 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(TARGET3-V3 (09)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.

Fixed Targets

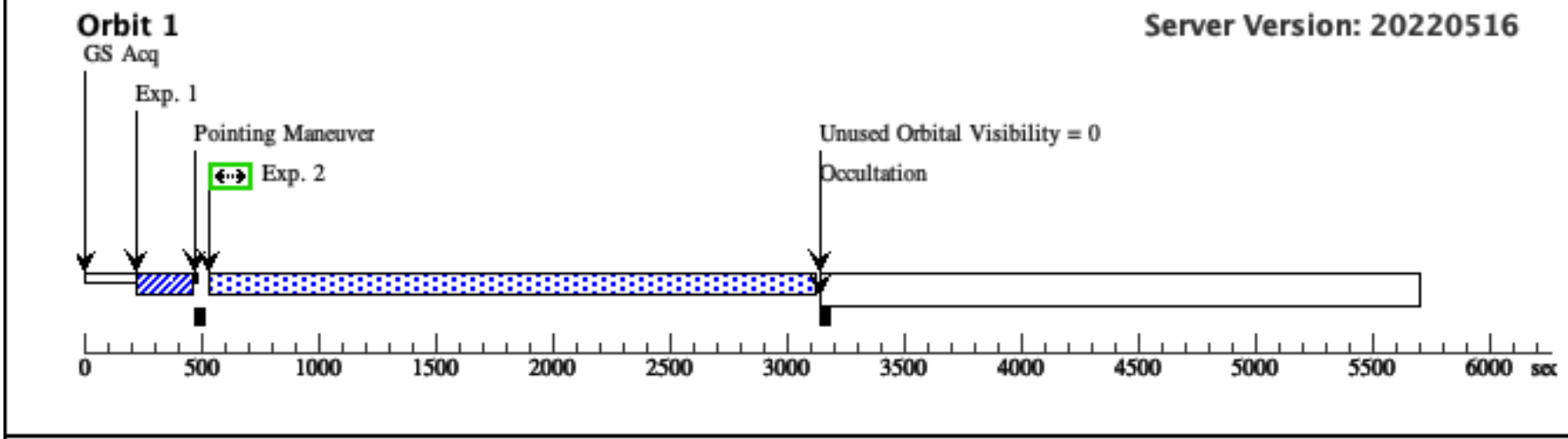
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(3)	TARGET-3 Alt Name1: J101103.70-044234.2 Alt Name2: LGN-S011	RA: 10 11 3.6906 (152.7653775d) Dec: -04 42 34.33 (-4.70954d) Equinox: J2000		V=20.191+/-0.01 B-V=-0.22; E(B-V)=0.108; SpT=O7.5III; WFC3/UVIS-F275W=17.97; F_1300=1.3E-15 erg/cm2/s/A	Reference Frame: ICRS

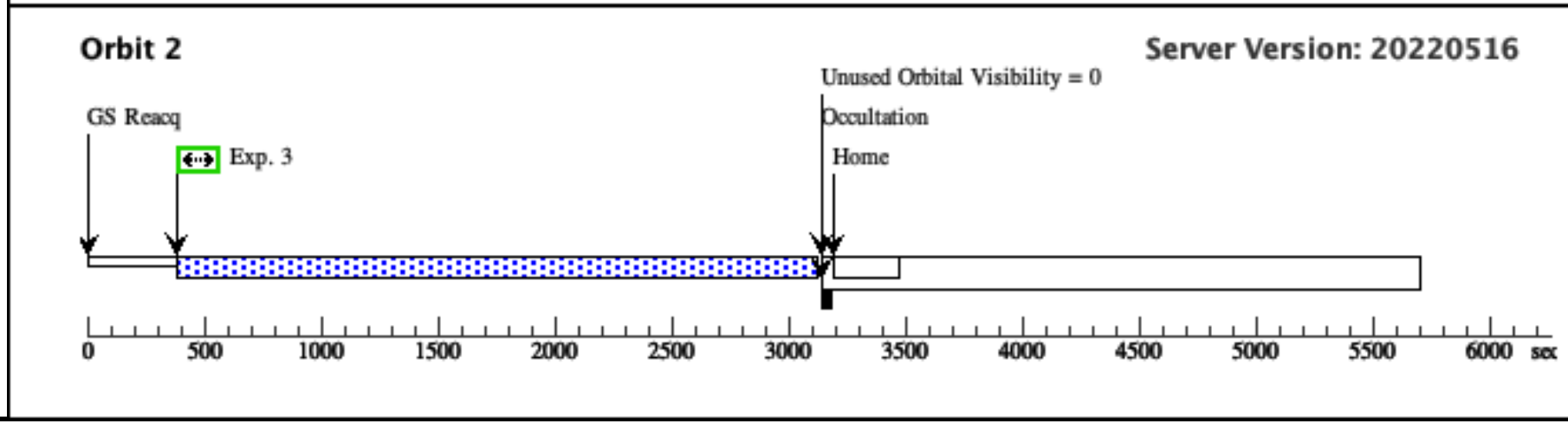
Comments:
Category=EXT-STAR
Description=[GIANT O]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TARGET3-V3-ACQ (COS.ta.1814314)	(3) TARGET-3	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				5.7 Secs (5.7 Secs) *[==>]*	 ***[1]***
2	TARGET3-V3-FPPOS3 (COS.sp.1814262)	(3) TARGET-3	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8194; FLASH=YES; FP-POS=3; SEGMENT=A			2387 Secs (2387 Secs) *[==>]*	 ***[1]***
3	TARGET3-V3-FPPOS4 (COS.sp.1814262)	(3) TARGET-3	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=8194; FLASH=YES; FP-POS=4; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	 ***[2]***

Orbit Structure





Visit

Proposal 17111, TARGET4-V1 (10) Thu Jul 14 19:02:38 GMT 2022

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Fixed Targets

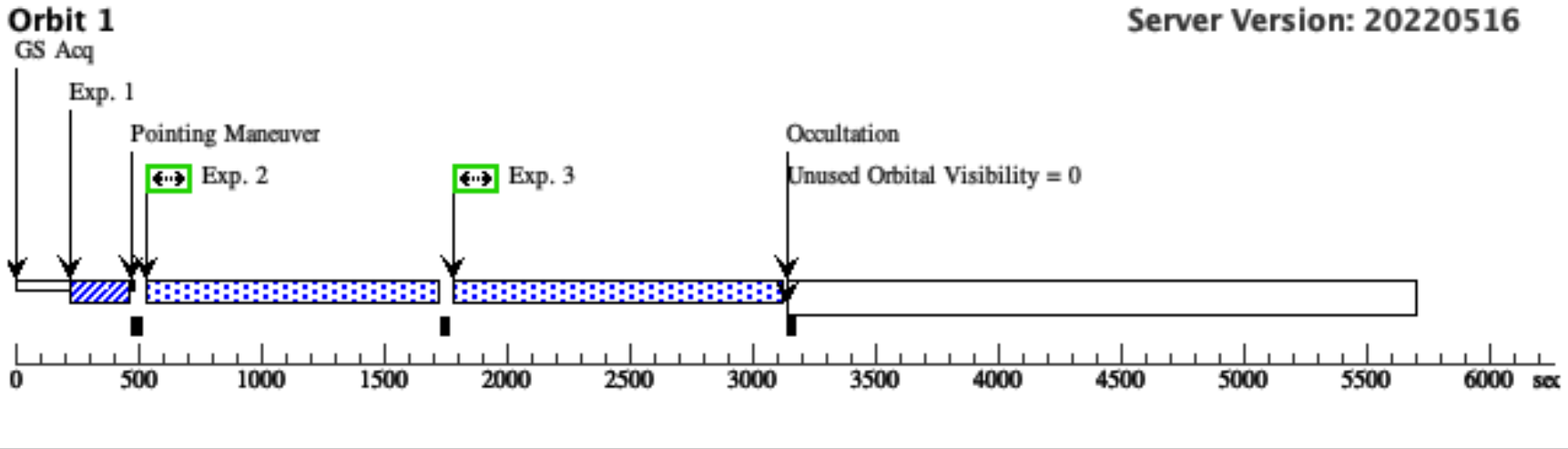
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	TARGET-4 Alt Name1: J101105.30-044210.1 Alt Name2: LGN-S049	RA: 10 11 5.2860 (152.7720250d) Dec: -04 42 10.26 (-4.70285d) Equinox: J2000		V=19.976+/-0.008 B-V=-0.268; E(B-V)=0.031; SpT=O9.7I; WFC3/UVIS-F225W=17.58; F_1300=1.8E-15 erg/cm2/s/A	Reference Frame: ICRS

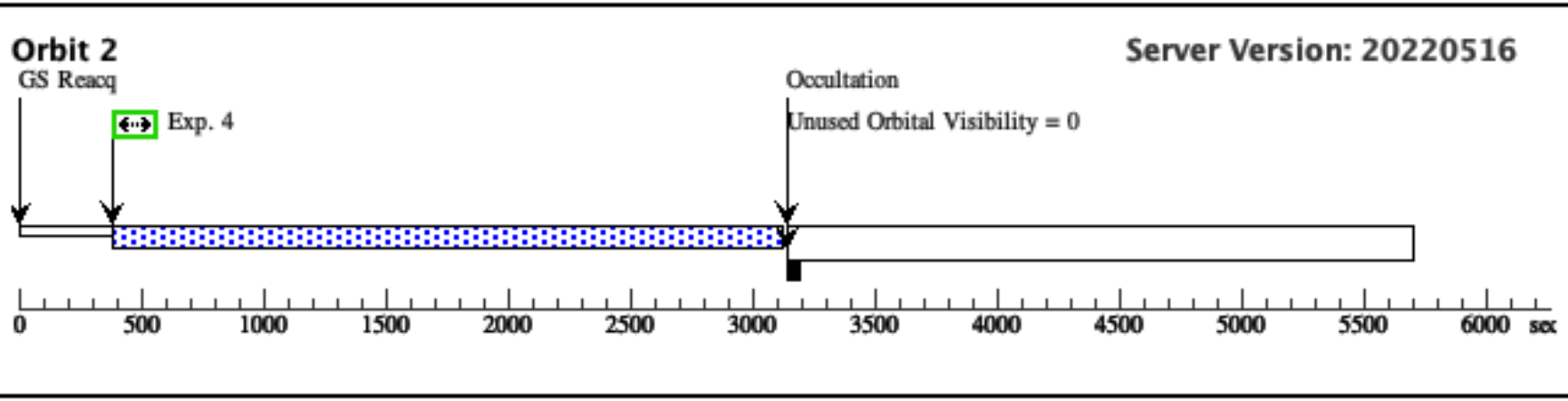
Comments:
Category=EXT-STAR
Description=[SUPERGIANT O]
Extended=NO

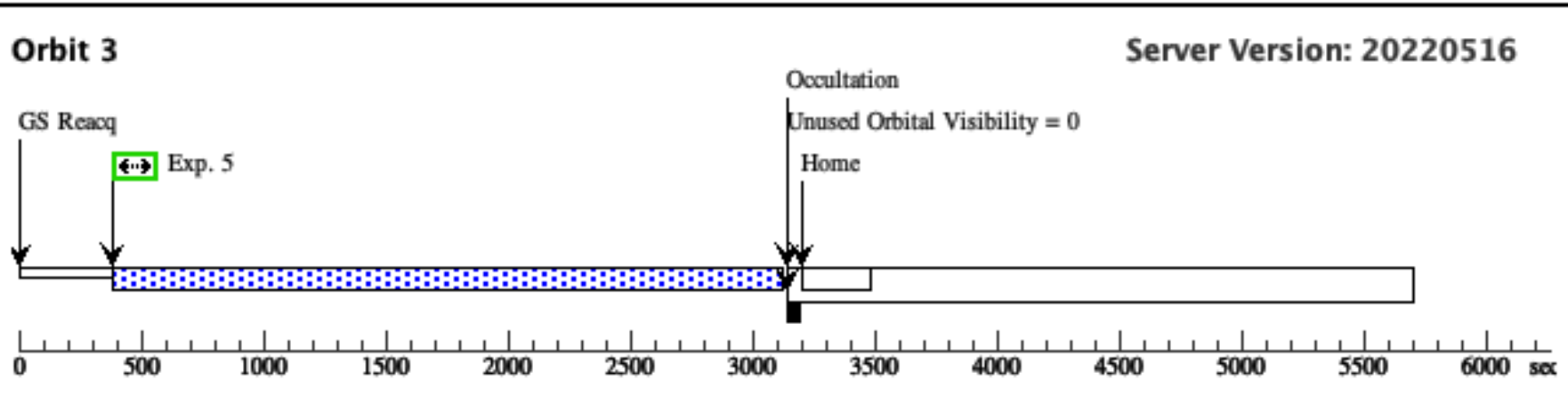
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TARGET4-V1-ACQ (COS.ta.1814316)	(4) TARGET-4	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				4.9 Secs (4.9 Secs) *[==>]*	*[1]*
2	TARGET4-V1-FPPOS1 (COS.sp.1814272)	(4) TARGET-4	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7613; FLASH=YES; FP-POS=1; SEGMENT=A			984 Secs (984 Secs) *[==>]*	*[1]*
3	TARGET4-V1-FPPOS2 (COS.sp.1814272)	(4) TARGET-4	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7613; FLASH=YES; FP-POS=2; SEGMENT=A			1290 Secs (1290 Secs) *[==>]*	*[1]*
4	TARGET4-V1-FPPOS3 (COS.sp.1814272)	(4) TARGET-4	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7613; FLASH=YES; FP-POS=3; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	*[2]*
5	TARGET4-V1-FPPOS4 (COS.sp.1814272)	(4) TARGET-4	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7613; FLASH=YES; FP-POS=4; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	*[3]*

Orbit Structure







Visit

Proposal 17111, TARGET4-V2 (11) Thu Jul 14 19:02:38 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(TARGET4-V2 (11)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.

Fixed Targets

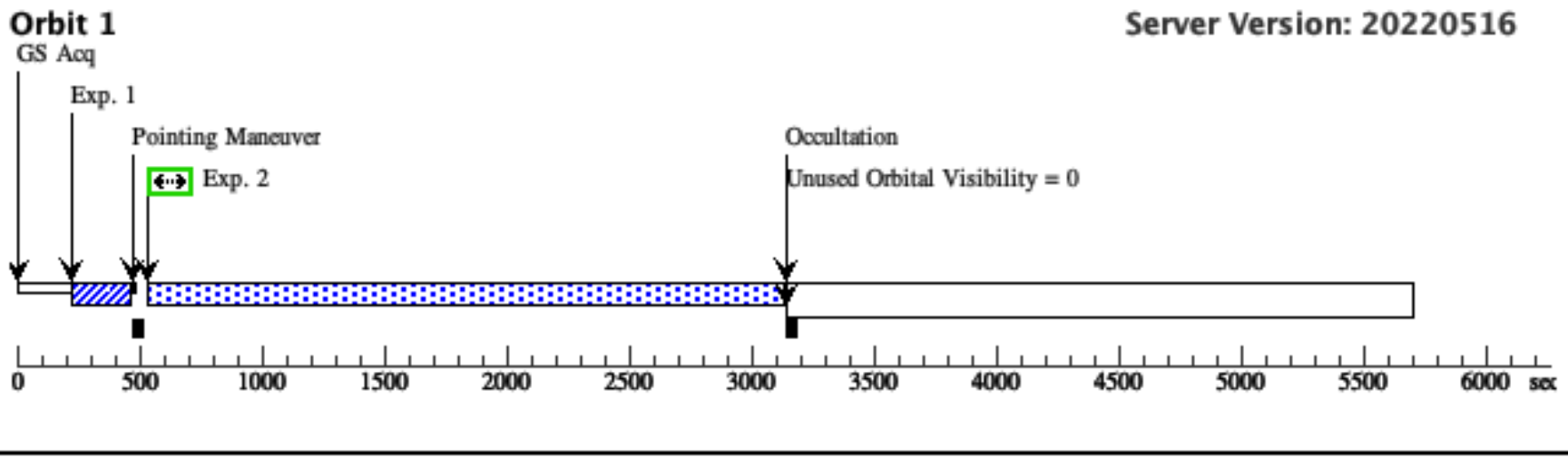
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	TARGET-4 Alt Name1: J101105.30-044210.1 Alt Name2: LGN-S049	RA: 10 11 5.2860 (152.7720250d) Dec: -04 42 10.26 (-4.70285d) Equinox: J2000		V=19.976+/-0.008 B-V=-0.268; E(B-V)=0.031; SpT=O9.7I; WFC3/UVIS-F225W=17.58; F_1300=1.8E-15 erg/cm2/s/A	Reference Frame: ICRS

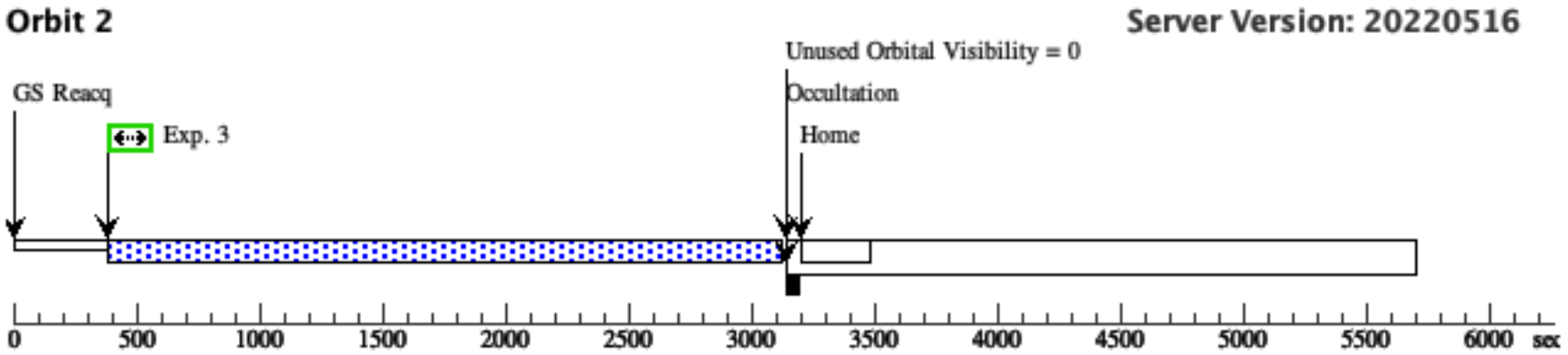
Comments:
Category=EXT-STAR
Description=[SUPERGIANT O]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TARGET4-V2-ACQ (COS.ta.1814316)	(4) TARGET-4	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				4.9 Secs (4.9 Secs) *[==>]*	*[1]*
2	TARGET4-V2-FPPOS1 (COS.sp.1814272)	(4) TARGET-4	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7613; FLASH=YES; FP-POS=1; SEGMENT=A			2389 Secs (2389 Secs) *[==>]*	*[1]*
3	TARGET4-V2-FPPOS2 (COS.sp.1814272)	(4) TARGET-4	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7613; FLASH=YES; FP-POS=2; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	*[2]*

Orbit Structure





Visit

Proposal 17111, TARGET4-V3 (12) Thu Jul 14 19:02:38 GMT 2022

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Diagnostics

(TARGET4-V3 (12)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions when observing at a given COS cenwave. See the COS Instrument Handbook for exceptions that may apply to observations with G130M/1291 or G160M.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(4)	TARGET-4 Alt Name1: J101105.30-044210.1 Alt Name2: LGN-S049	RA: 10 11 5.2860 (152.7720250d) Dec: -04 42 10.26 (-4.70285d) Equinox: J2000		V=19.976+/-0.008 B-V=-0.268; E(B-V)=0.031; SpT=O9.7I; WFC3/UVIS-F225W=17.58; F_1300=1.8E-15 erg/cm2/s/A	Reference Frame: ICRS

Comments:
Category=EXT-STAR
Description=[SUPERGIANT O]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	TARGET4-V3-ACQ (COS.ta.1814316)	(4) TARGET-4	COS/NUV, ACQ/IMAGE, PSA	MIRRORA				4.9 Secs (4.9 Secs) *[==>]*	*[1]*
2	TARGET4-V3-FPPOS3 (COS.sp.1814272)	(4) TARGET-4	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7613; FLASH=YES; FP-POS=3; SEGMENT=A			2389 Secs (2389 Secs) *[==>]*	*[1]*
3	TARGET4-V3-FPPOS4 (COS.sp.1814272)	(4) TARGET-4	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=7613; FLASH=YES; FP-POS=4; SEGMENT=A			2686 Secs (2686 Secs) *[==>]*	*[2]*

Orbit Structure