17786 - Tracing the beginnings, endings, and rarity of Blue Ring Nebulae to a rare stage in post-stellar merger evolution

Cycle: 32, 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) SDSSCGB-73656.1	COS/FUV COS/NUV	3	20-Jun-2025 13:00:26.0	yes
51	(1) SDSSCGB-73656.1	COS/FUV COS/NUV	3	20-Jun-2025 13:00:26.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
02	(1) SDSSCGB-73656.1	COS/FUV COS/NUV	3	20-Jun-2025 13:00:27.0	yes
03	(1) SDSSCGB-73656.1	COS/FUV COS/NUV	3	20-Jun-2025 13:00:27.0	yes
04	(1) SDSSCGB-73656.1	COS/FUV COS/NUV	2	20-Jun-2025 13:00:28.0	yes
05	(1) SDSSCGB-73656.1	COS/FUV COS/NUV	3	20-Jun-2025 13:00:28.0	yes
06	(1) SDSSCGB-73656.1	COS/FUV COS/NUV	3	20-Jun-2025 13:00:29.0	yes
07	(1) SDSSCGB-73656.1	COS/FUV COS/NUV	3	20-Jun-2025 13:00:30.0	yes
08	(1) SDSSCGB-73656.1	COS/FUV COS/NUV	2	20-Jun-2025 13:00:31.0	yes

25 Total Orbits Used

ABSTRACT

We catch stellar mergers in the act as luminous red novae (LRNe), peaking several orders of magnitude at optical wavelengths, then decaying exponentially and reddening. LRNe are incredibly difficult to study immediately afterwards. Outflows launched by a merger expand quickly and cool rapidly, forming obstructing dust and molecules that block our view just days-weeks afterwards. Even suspected ancient mergers, like CK Vul, are still embedded in dusty envelopes. We have no observational evidence for what happens to stars after they merge. What do systems look like after merging? What are the long-term ramifications of stellar mergers?

The Blue Ring Nebula (BRN) is a rare example of an outflow, produced by a thousands of years old stellar merger, that has virtually no obstructing dust in it, thus revealing the star that created it, TYC 2597-735-1 (TYC). We propose to use HST-COS G130M and G160M spectra to characterize the BRN by observing a fortuitously-positioned background galaxy to probe it using absorption line spectroscopy. Far-UV observations are exclusively able to cover molecules, neutral, and ionized gas at a wide range of temperatures. Absorption line depths are sensitive to how much matter is in the sightline, so H2, HI, and residual gas in the BRN will stick out against the continuum source. The BRN is quickly expanding towards

us, so lines traditionally washed out by airglow or interstellar absorption (e.g., HI) will be velocity-shifted away from these contaminants. This powerful technique will uncover the composition, density, temperature, and motions of the BRN gas, answering key points about its origins, its lifetime, and the number of BRNs we might see.

OBSERVING DESCRIPTION

Program Overview: This Cycle 32 GO program requests 22 orbits in total, split between COS G130M/1291 and G160M/1533 (11 orbits in each mode), to observe the properties of neutral hydrogen (HI, H2) and reveal hidden residual species in the Blue Ring Nebula (BRN) using absorption line spectroscopy:

- COS G130M (1291) accesses both HI and cool/warm phases of H2 through the BRN;
- COS G160M (1533) accesses the warm/non-thermal populations of H2$ in the nebula.

Both G130M and G160M modes access many strong features of neutral and ionic C, N, Si, O, He, and other species that may be too sparse to show up in emission. These COS grating positions provide sufficient far-UV spectral coverage of HI-LyA in absorption (which is expected to be blue-shifted by >= 400 km/s from line center, avoiding geo-coronal emission and interstellar HI absorption, which is estimated to be ~10E20 cm-2, based on IRSA extinction maps) and numerous absorption bands of H2. Access to H2 absorption signatures depends strongly on the thermal temperature and non-thermal populations of the molecules in the BRN (H2 Lyman-Werner electronic transitions: 1120 - 1700 \AA). This information is currently unknown, so even a non-detection at our requested signal-to-noise (SN) places important constraints on the properties of the remaining molecular reservoir of the BRN and its properties. The COS G130M and G160M modes are sensitive enough to probe all the above features within our observing plan while achieving spectral resolutions (R ~ 17,000) necessary to sufficiently model the kinematics, density, and temperature of the nebular gas.

The galaxy SDSSCGB 73656.1 is the only FUV-bright source found behind the BRN, with a measured FUV flux = 19.6 mag (GALEX), making this absorption line study possible. SDSSCGB 73656.1 is redshifted slightly (z=0.0818), and its UV continuum is expected to peak in the FUV range covered by our COS observations. Any galactic absorption features will be redshifted from their rest frame wavelengths and treated as contamination in our analysis. We will avoid spectral regions around suspected contamination lines.

At the Galactic latitude of the BRN (+35 degrees), the HST viewing window is expected to be 55 minutes. Assuming 2550 seconds of science exposure per orbit, this allows for 740 seconds of slew and settle time. Each observing mode allows adequate time for guide star acquisition (using ACQ/SEARCH PSA), instrument acquisition, a single peak up, and a buffer dump prior to the science exposure. There are a number of guide stars

choices in the field of SDSSCGB 73656.1 that prove adequate for acquisition (e.g., TYC 2597-735-1: V = 11.1 mag).

COS Instrument Safety: We do not expect any bright features to show up in either G130M or G160M. The BRN itself, in emission, is very faint (F(FUV) ~ 8E-18 ergs/cm2/s/arcsec2). The galaxy continuum is expected to be the brightest astrophysical source, and will not peak more than ~ 1E-13 ergs/cm2/s. This results in ~$0.002 counts/second in the brightest pixel. Geocoronal LyA will be the brightest feature in G130M, at 0.095 counts/second in the brightest pixel (according to the COS ETC). In G160M, the brightest pixel will be the continuum of SDSSCGB 73656.1 at the most efficient part of the spectrum, which results in a max count rate of 2.260e-04 counts/second in the brightest pixel (verified with COS ETC). Since the count rate limit of the COS FUV XDL detector is ~ 0.67 counts/second/pixel for both modes, all fluxes are well within COS observing capabilities.

Visit

Proposal 17786, COS G130M 1291 Visit 1 (01), failed Fri Jun 20 17:00:31 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Orbits 1-3

Diagnostics

(Exposure 2 (COS G130M 1291 Visit 1 (01))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 3 (COS G130M 1291 Visit 1 (01))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (COS G130M 1291 Visit 1 (01))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

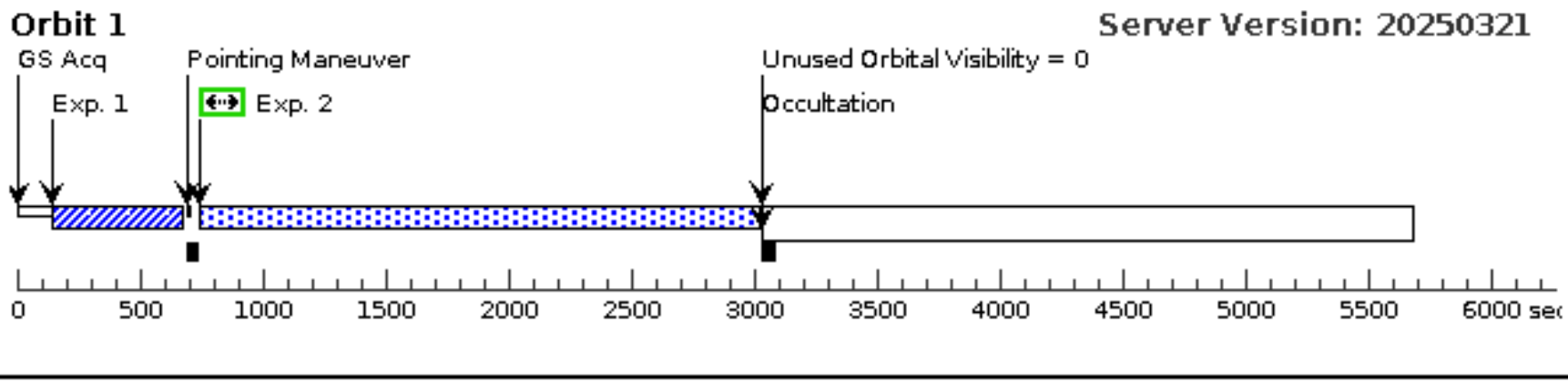
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SDSSCGB-73656.1 Alt Name1: WISEA-J164835.42+350939.0 Alt Name2: GALEXASC-J164835.47+350938.8	RA: 16 48 35.4300 (252.1476250d) Dec: +35 09 39.28 (35.16091d) Equinox: J2000	Epoch of Position: 2000 Redshift: 0.0818	V=17.8+/-0.2 GALEX FUV (AB): 19.6 +/-0.05, GALEX NUV (AB): 19.6 +/- 0.03, u(AB): 19.180 +/- 0.075, g(AB): 18.024 +/- 0.010, r(AB) 17.601 +/- 0.010, E(B-V) = 0.016	Reference Frame: ICRS

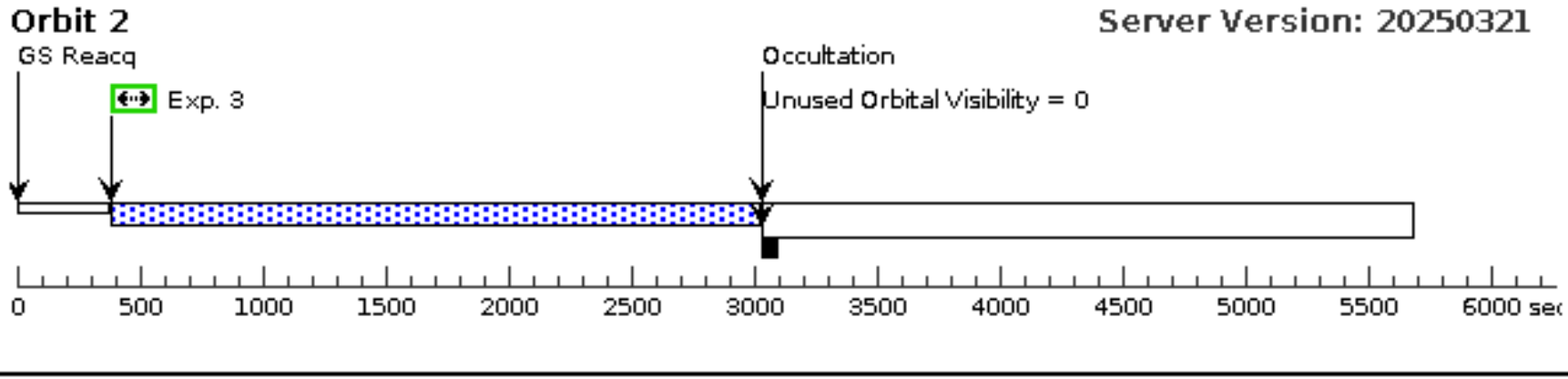
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[UNDESIGNATED]
Extended=YES

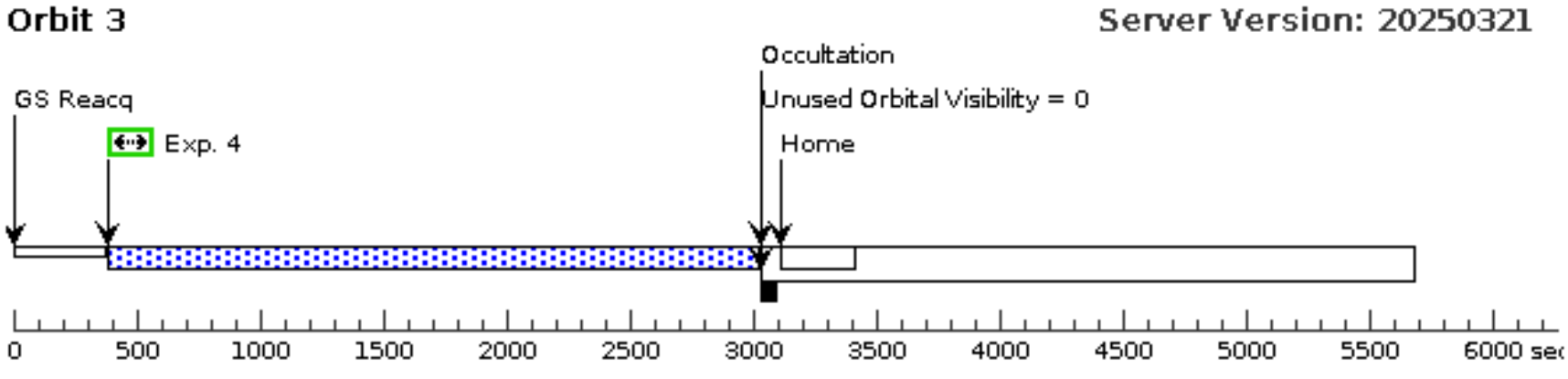
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1936 1201)	(1) SDSSCGB-73656.1	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				120 Secs (120 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1936 1175)	(1) SDSSCGB-73656.1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=5005			2106 Secs (2106 Secs) *[==>]*	 ***[1]***
3	(COS.sp.1936 1175)	(1) SDSSCGB-73656.1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=5005			2595 Secs (2595 Secs) *[==>]*	 ***[2]***
4	(COS.sp.1936 1175)	(1) SDSSCGB-73656.1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=5005			2595 Secs (2595 Secs) *[==>]*	 ***[3]***

Orbit Structure







Visit

Proposal 17786, COS G130M 1291 Visit 1 (51) Fri Jun 20 17:00:31 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Orbits 1-3

Diagnostics

(Exposure 2 (COS G130M 1291 Visit 1 (51))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 3 (COS G130M 1291 Visit 1 (51))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (COS G130M 1291 Visit 1 (51))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

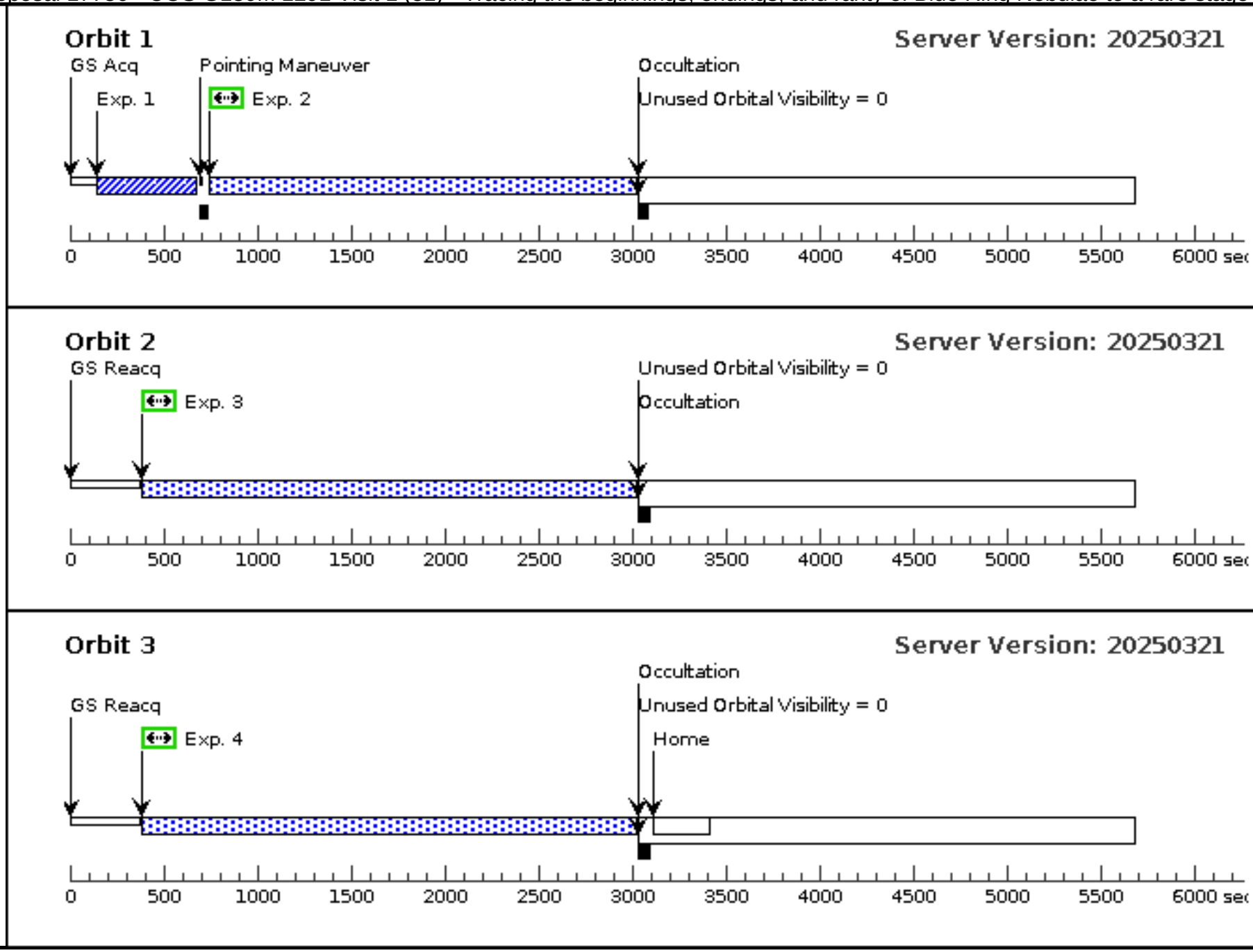
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SDSSCGB-73656.1 Alt Name1: WISEA-J164835.42+350939.0 Alt Name2: GALEXASC-J164835.47+350938.8	RA: 16 48 35.4300 (252.1476250d) Dec: +35 09 39.28 (35.16091d) Equinox: J2000	Epoch of Position: 2000 Redshift: 0.0818	V=17.8+/-0.2 GALEX FUV (AB): 19.6 +/-0.05, GALEX NUV (AB): 19.6 +/- 0.03, u(AB): 19.180 +/- 0.075, g(AB): 18.024 +/- 0.010, r(AB) 17.601 +/- 0.010, E(B-V) = 0.016	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[UNDESIGNATED]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1931201)	(1) SDSSCGB-736546.1	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				120 Secs (120 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1931175)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=5005			2106 Secs (2106 Secs) *[==>]*	 ***[1]***
3	(COS.sp.1931175)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=5005			2595 Secs (2595 Secs) *[==>]*	 ***[2]***
4	(COS.sp.1931175)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=5005			2595 Secs (2595 Secs) *[==>]*	 ***[3]***

Orbit Structure



Visit

Proposal 17786, COS G130M 1291 Visit 2 (02), scheduling Fri Jun 20 17:00:31 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Orbits 4-6

Diagnostics

(Exposure 2 (COS G130M 1291 Visit 2 (02))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 3 (COS G130M 1291 Visit 2 (02))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (COS G130M 1291 Visit 2 (02))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

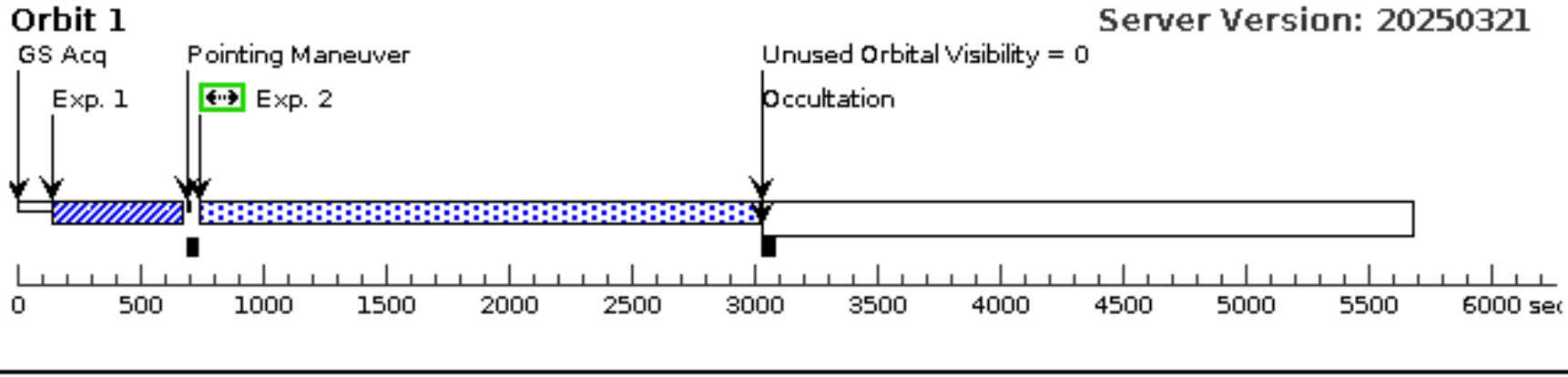
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SDSSCGB-73656.1 Alt Name1: WISEA-J164835.42+350939.0 Alt Name2: GALEXASC-J164835.47+350938.8	RA: 16 48 35.4300 (252.1476250d) Dec: +35 09 39.28 (35.16091d) Equinox: J2000	Epoch of Position: 2000 Redshift: 0.0818	V=17.8+/-0.2 GALEX FUV (AB): 19.6 +/-0.05, GALEX NUV (AB): 19.6 +/- 0.03, u(AB): 19.180 +/- 0.075, g(AB): 18.024 +/- 0.010, r(AB) 17.601 +/- 0.010, E(B-V) = 0.016	Reference Frame: ICRS

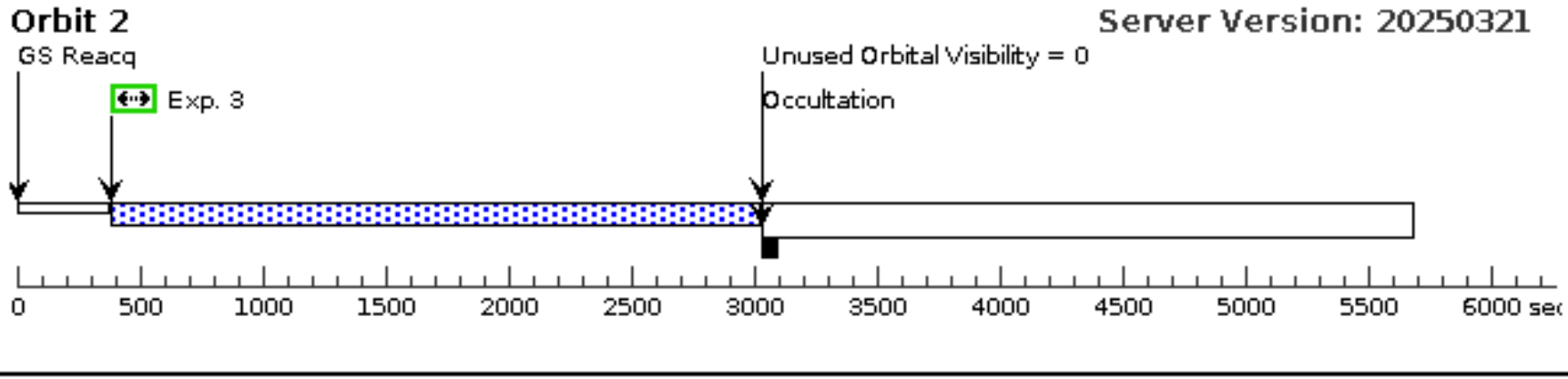
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[UNDESIGNATED]
Extended=YES

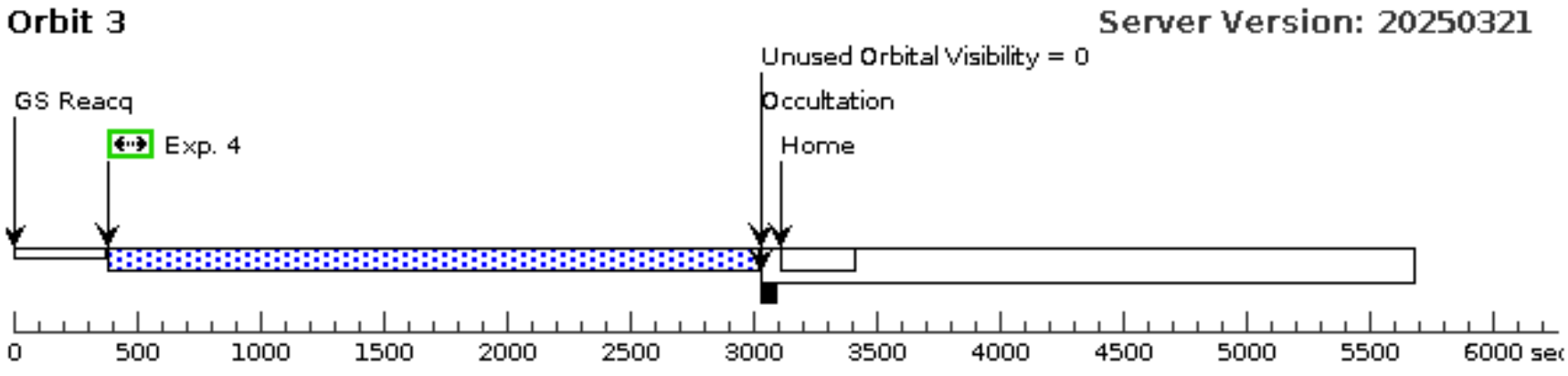
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1931201)	(1) SDSSCGB-736546.1	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				120 Secs (120 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1931175)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=5005			2106 Secs (2106 Secs) *[==>]*	 ***[1]***
3	(COS.sp.1931175)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=5005			2595 Secs (2595 Secs) *[==>]*	 ***[2]***
4	(COS.sp.1931175)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=5005			2595 Secs (2595 Secs) *[==>]*	 ***[3]***

Orbit Structure







Visit

Proposal 17786, COS G130M 1291 Visit 3 (03), scheduling Fri Jun 20 17:00:32 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Orbits 7-9

Diagnostics

(Exposure 2 (COS G130M 1291 Visit 3 (03))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 3 (COS G130M 1291 Visit 3 (03))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (COS G130M 1291 Visit 3 (03))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

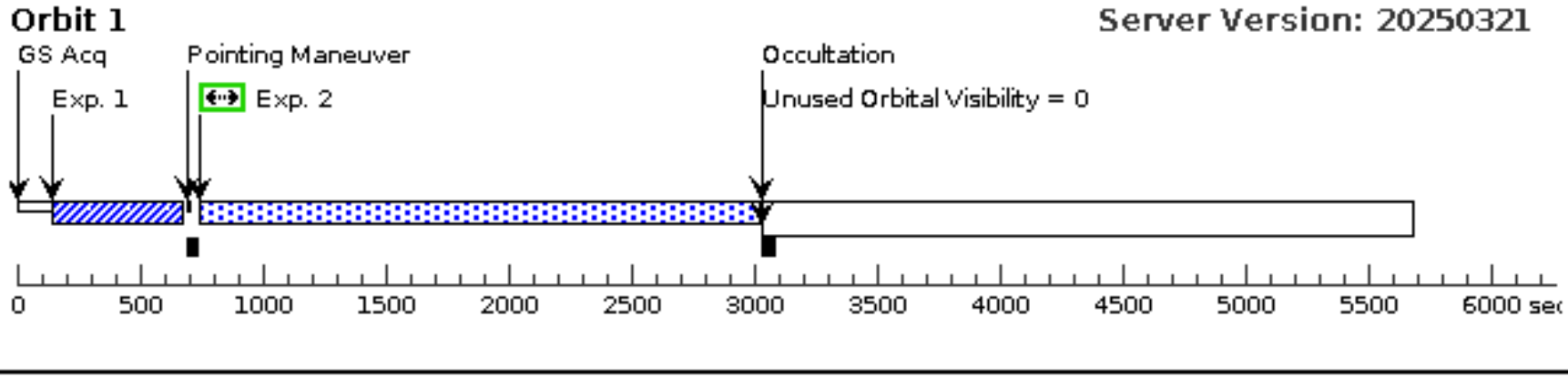
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SDSSCGB-73656.1 Alt Name1: WISEA-J164835.42+350939.0 Alt Name2: GALEXASC-J164835.47+350938.8	RA: 16 48 35.4300 (252.1476250d) Dec: +35 09 39.28 (35.16091d) Equinox: J2000	Epoch of Position: 2000 Redshift: 0.0818	V=17.8+/-0.2 GALEX FUV (AB): 19.6 +/-0.05, GALEX NUV (AB): 19.6 +/- 0.03, u(AB): 19.180 +/- 0.075, g(AB): 18.024 +/- 0.010, r(AB) 17.601 +/- 0.010, E(B-V) = 0.016	Reference Frame: ICRS

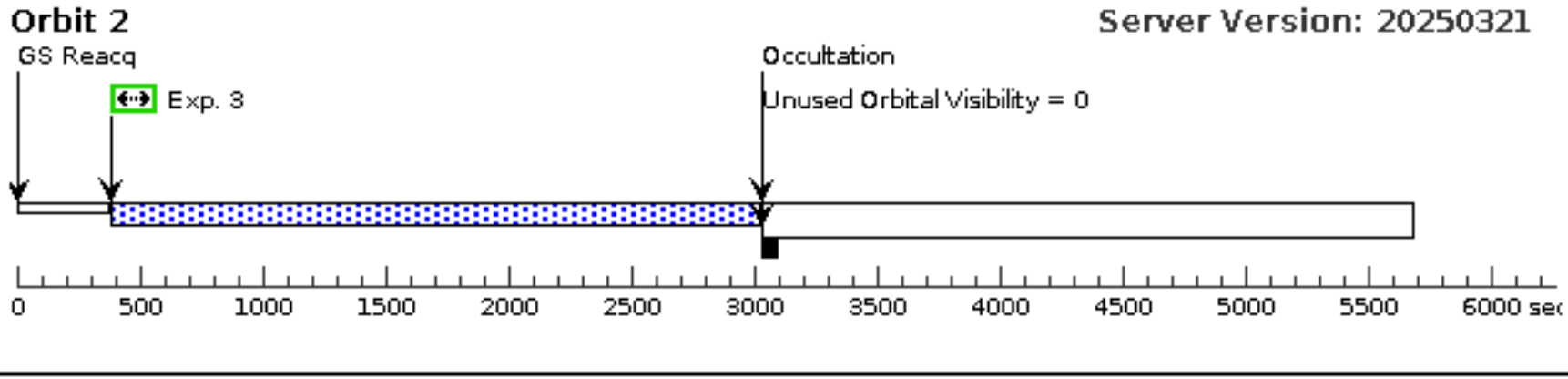
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[UNDESIGNATED]
Extended=YES

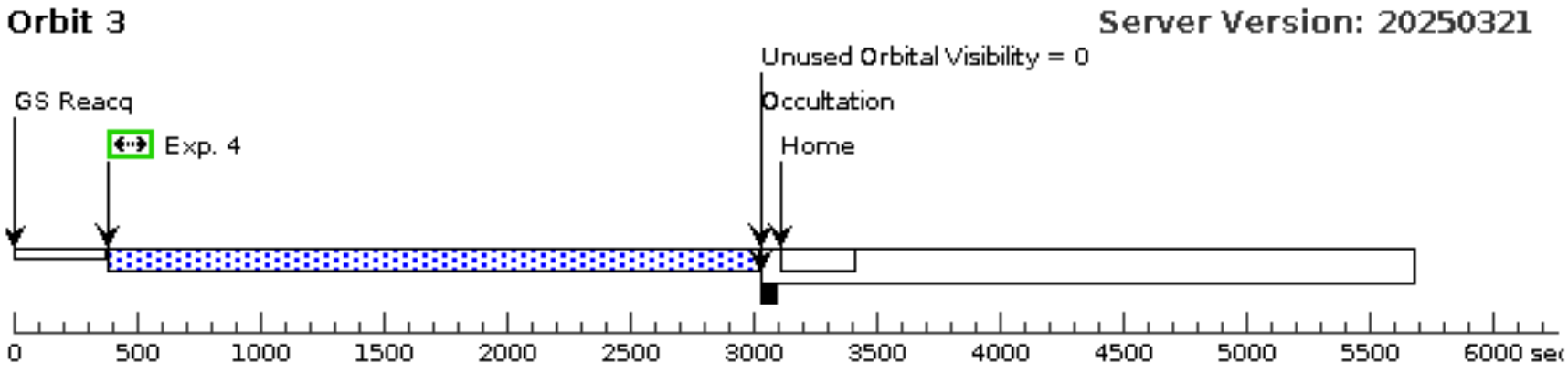
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1931201)	(1) SDSSCGB-736546.1	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				120 Secs (120 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1931175)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=5005			2106 Secs (2106 Secs) *[==>]*	 ***[1]***
3	(COS.sp.1931175)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=5005			2595 Secs (2595 Secs) *[==>]*	 ***[2]***
4	(COS.sp.1931175)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=5005			2595 Secs (2595 Secs) *[==>]*	 ***[3]***

Orbit Structure







Visit

Proposal 17786, COS G130M 1291 Visit 4 (04), scheduling Fri Jun 20 17:00:32 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Orbits 10-11

Diagnostics

(Exposure 2 (COS G130M 1291 Visit 4 (04))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 3 (COS G130M 1291 Visit 4 (04))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

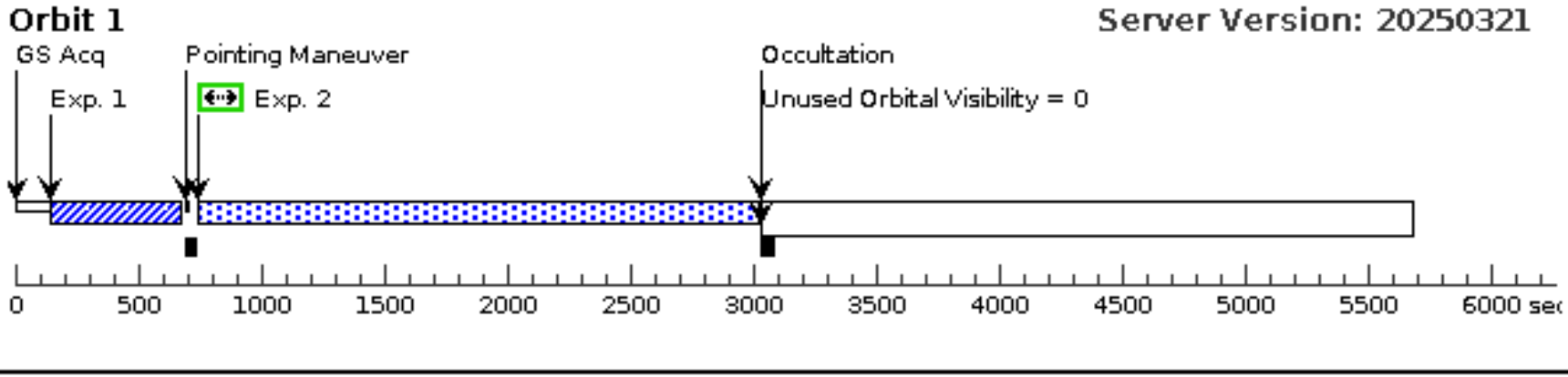
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SDSSCGB-73656.1 Alt Name1: WISEA-J164835.42+350939.0 Alt Name2: GALEXASC-J164835.47+350938.8	RA: 16 48 35.4300 (252.1476250d) Dec: +35 09 39.28 (35.16091d) Equinox: J2000	Epoch of Position: 2000 Redshift: 0.0818	V=17.8+/-0.2 GALEX FUV (AB): 19.6 +/-0.05, GALEX NUV (AB): 19.6 +/- 0.03, u(AB): 19.180 +/- 0.075, g(AB): 18.024 +/- 0.010, r(AB) 17.601 +/- 0.010, E(B-V) = 0.016	Reference Frame: ICRS

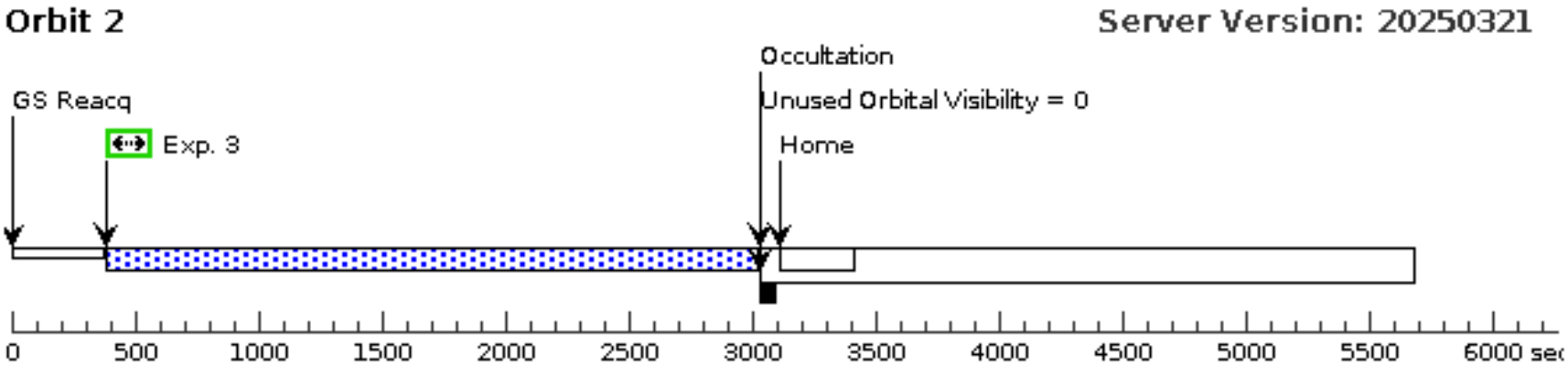
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[UNDESIGNATED]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1931201)	(1) SDSSCGB-736546.1	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				120 Secs (120 Secs) *[==>]*	***[1]***
2	(COS.sp.1931175)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=5005			2106 Secs (2106 Secs) *[==>]*	***[1]***
3	(COS.sp.1931175)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=4; BUFFER-TIME=5005			2595 Secs (2595 Secs) *[==>]*	***[2]***

Orbit Structure





Visit

Proposal 17786, COS G160M 1533 Visit 1 (05), scheduling Fri Jun 20 17:00:32 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Orbits 1-3

Diagnostics

(Exposure 2 (COS G160M 1533 Visit 1 (05))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 3 (COS G160M 1533 Visit 1 (05))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (COS G160M 1533 Visit 1 (05))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

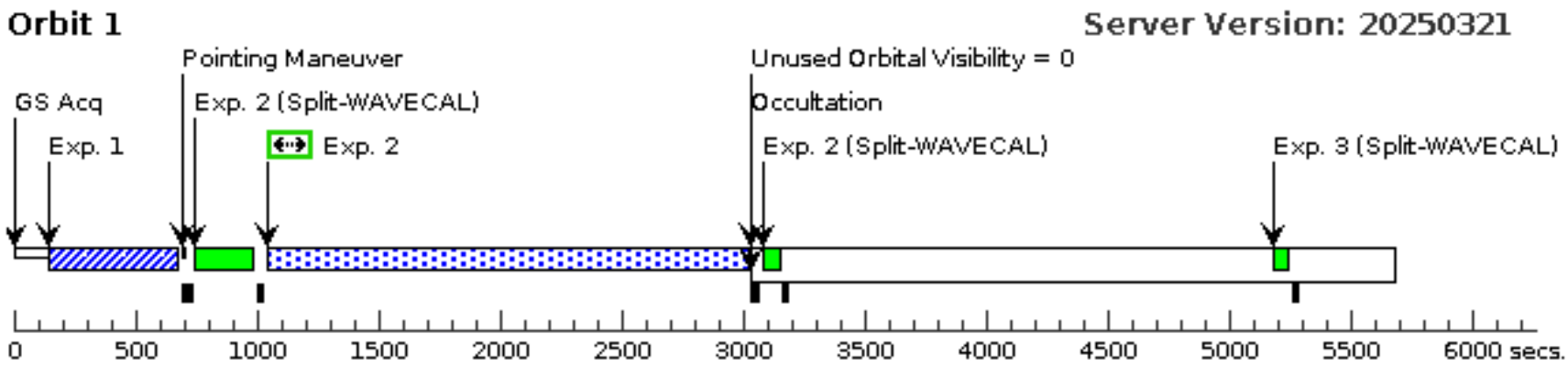
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SDSSCGB-73656.1 Alt Name1: WISEA-J164835.42+350939.0 Alt Name2: GALEXASC-J164835.47+350938.8	RA: 16 48 35.4300 (252.1476250d) Dec: +35 09 39.28 (35.16091d) Equinox: J2000	Epoch of Position: 2000 Redshift: 0.0818	V=17.8+/-0.2 GALEX FUV (AB): 19.6 +/-0.05, GALEX NUV (AB): 19.6 +/- 0.03, u(AB): 19.180 +/- 0.075, g(AB): 18.024 +/- 0.010, r(AB) 17.601 +/- 0.010, E(B-V) = 0.016	Reference Frame: ICRS

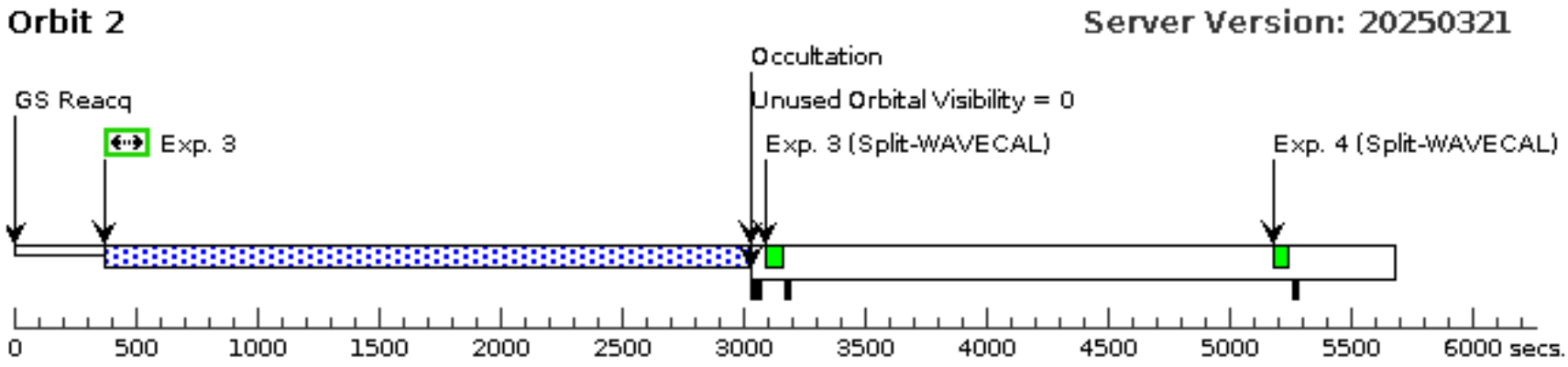
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[UNDESIGNATED]
Extended=YES

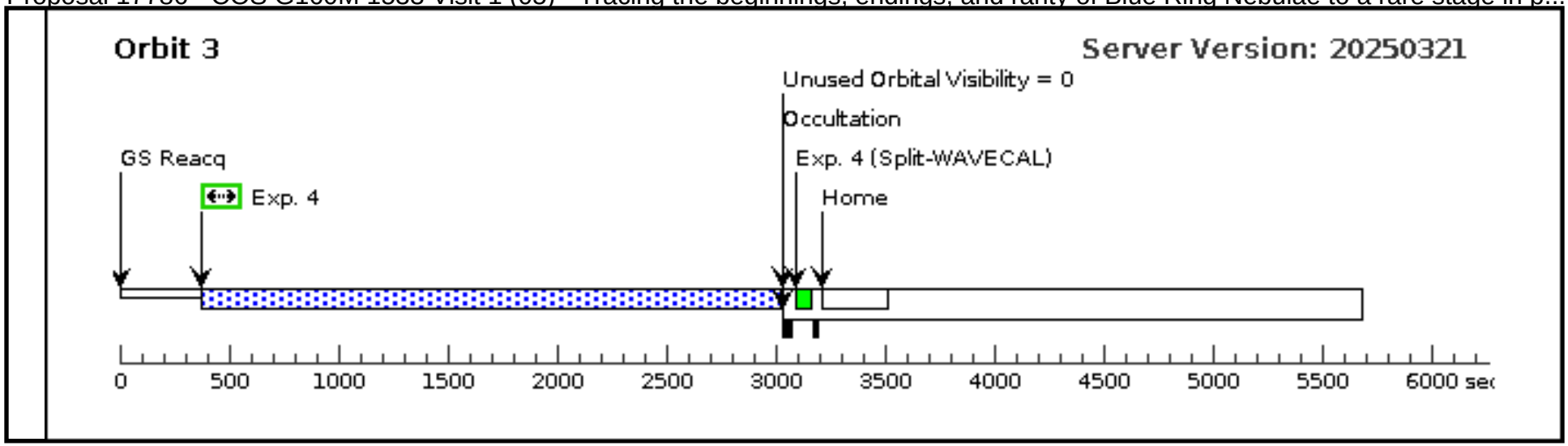
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1931201)	(1) SDSSCGB-736546.1	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				120 Secs (120 Secs) *[==>]*	***[1]***
2	(COS.sp.1933773)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G160M 1533 A	FP-POS=1; BUFFER-TIME=11400			1933 Secs (1933 Secs) *[==>]*	***[1]***
3	(COS.sp.1933773)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G160M 1533 A	FP-POS=1; BUFFER-TIME=11400			2599 Secs (2599 Secs) *[==>]*	***[2]***
4	(COS.sp.1933773)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G160M 1533 A	FP-POS=1; BUFFER-TIME=11400			2599 Secs (2599 Secs) *[==>]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20250321
Unused Orbital Visibility = 0
Occultation
GS Reacq
Exp. 4 (Split-WAVECAL)
Exp. 4
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17786, COS G160M 1533 Visit 2 (06), scheduling Fri Jun 20 17:00:32 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Orbits 4-6

Diagnostics

(Exposure 2 (COS G160M 1533 Visit 2 (06))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 3 (COS G160M 1533 Visit 2 (06))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (COS G160M 1533 Visit 2 (06))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

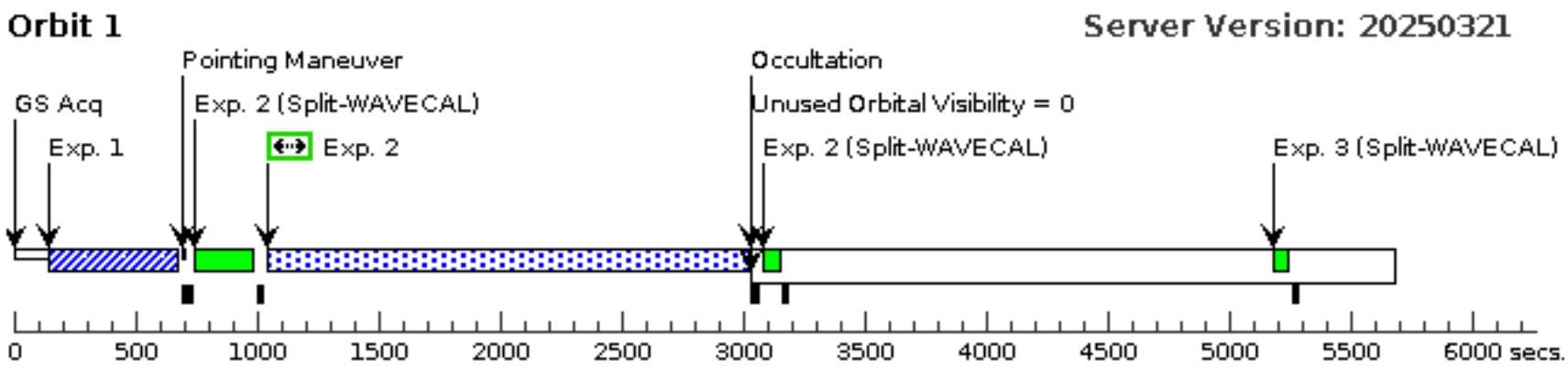
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SDSSCGB-73656.1 Alt Name1: WISEA-J164835.42+350939.0 Alt Name2: GALEXASC-J164835.47+350938.8	RA: 16 48 35.4300 (252.1476250d) Dec: +35 09 39.28 (35.16091d) Equinox: J2000	Epoch of Position: 2000 Redshift: 0.0818	V=17.8+/-0.2 GALEX FUV (AB): 19.6 +/-0.05, GALEX NUV (AB): 19.6 +/- 0.03, u(AB): 19.180 +/- 0.075, g(AB): 18.024 +/- 0.010, r(AB) 17.601 +/- 0.010, E(B-V) = 0.016	Reference Frame: ICRS

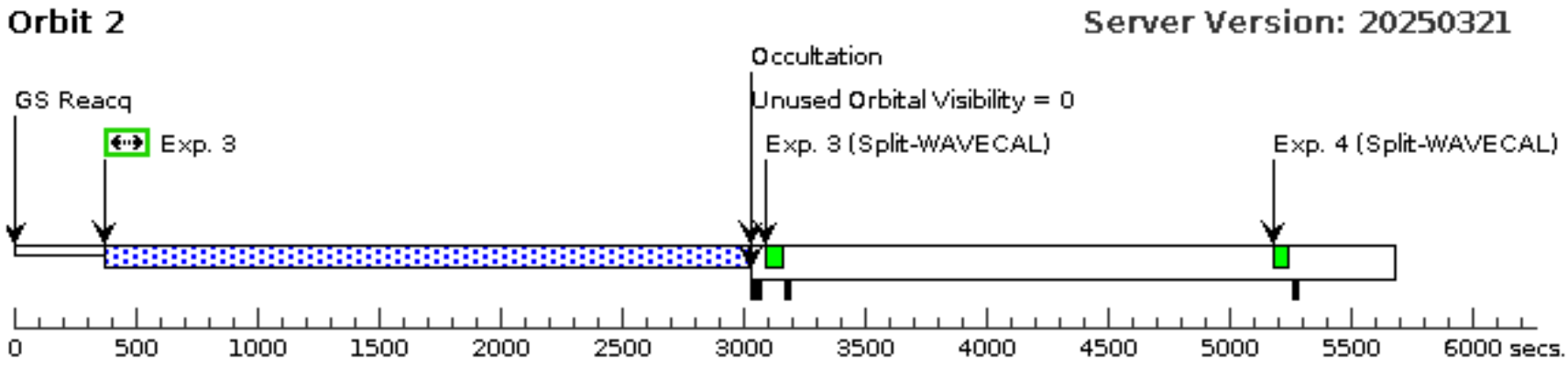
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[UNDESIGNATED]
Extended=YES

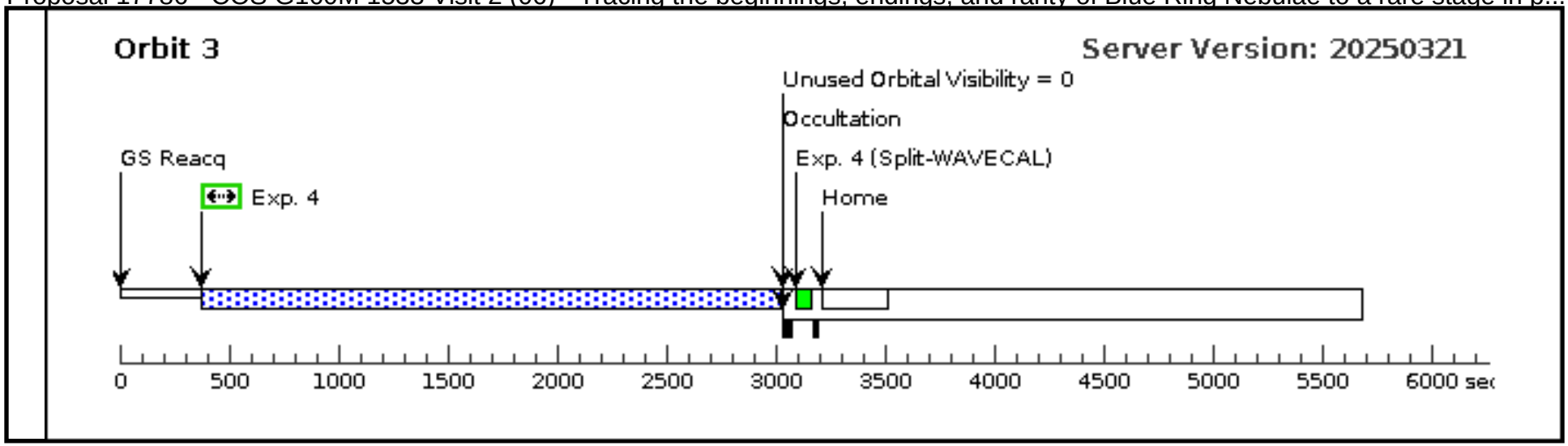
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1931201)	(1) SDSSCGB-736546.1	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				120 Secs (120 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1933773)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G160M 1533 A	FP-POS=2; BUFFER-TIME=11400			1933 Secs (1933 Secs) *[==>]*	 ***[1]***
3	(COS.sp.1933773)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G160M 1533 A	FP-POS=2; BUFFER-TIME=11400			2599 Secs (2599 Secs) *[==>]*	 ***[2]***
4	(COS.sp.1933773)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G160M 1533 A	FP-POS=2; BUFFER-TIME=11400			2599 Secs (2599 Secs) *[==>]*	 ***[3]***

Orbit Structure






Orbit 3
Server Version: 20250321
Unused Orbital Visibility = 0
Occultation
GS Reacq
Exp. 4 (Split-WAVECAL)
Exp. 4
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17786, COS G160M 1533 Visit 3 (07), scheduling Fri Jun 20 17:00:32 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Orbits 7-9

Diagnostics

(Exposure 2 (COS G160M 1533 Visit 3 (07))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 3 (COS G160M 1533 Visit 3 (07))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 4 (COS G160M 1533 Visit 3 (07))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

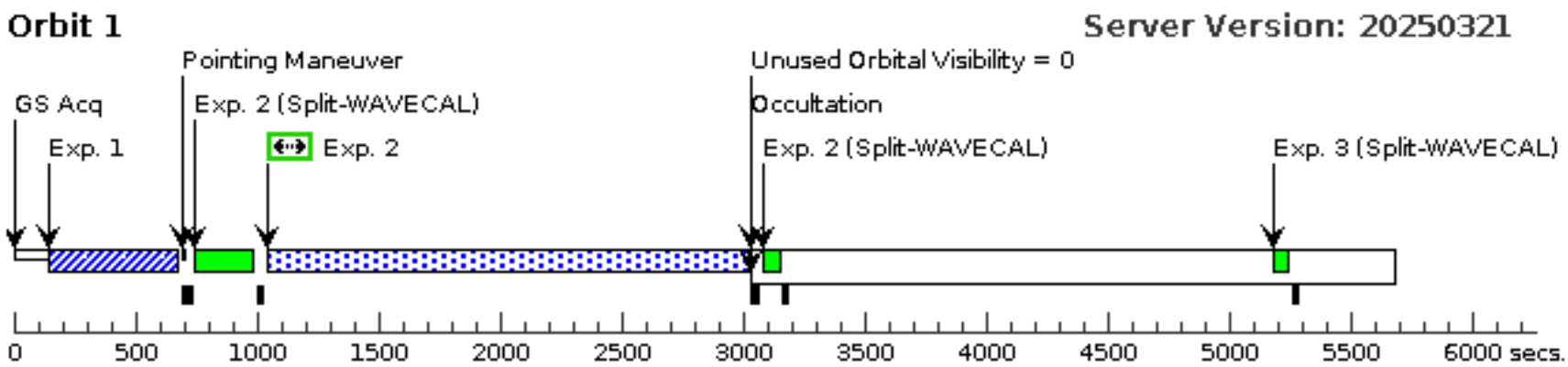
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SDSSCGB-73656.1 Alt Name1: WISEA-J164835.42+350939.0 Alt Name2: GALEXASC-J164835.47+350938.8	RA: 16 48 35.4300 (252.1476250d) Dec: +35 09 39.28 (35.16091d) Equinox: J2000	Epoch of Position: 2000 Redshift: 0.0818	V=17.8+/-0.2 GALEX FUV (AB): 19.6 +/-0.05, GALEX NUV (AB): 19.6 +/- 0.03, u(AB): 19.180 +/- 0.075, g(AB): 18.024 +/- 0.010, r(AB) 17.601 +/- 0.010, E(B-V) = 0.016	Reference Frame: ICRS

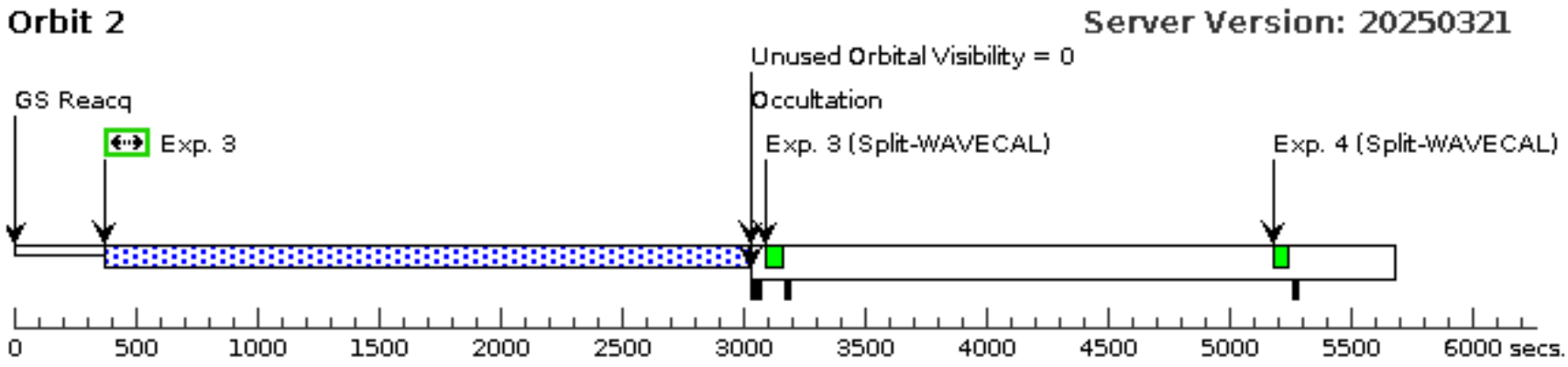
Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[UNDESIGNATED]
Extended=YES

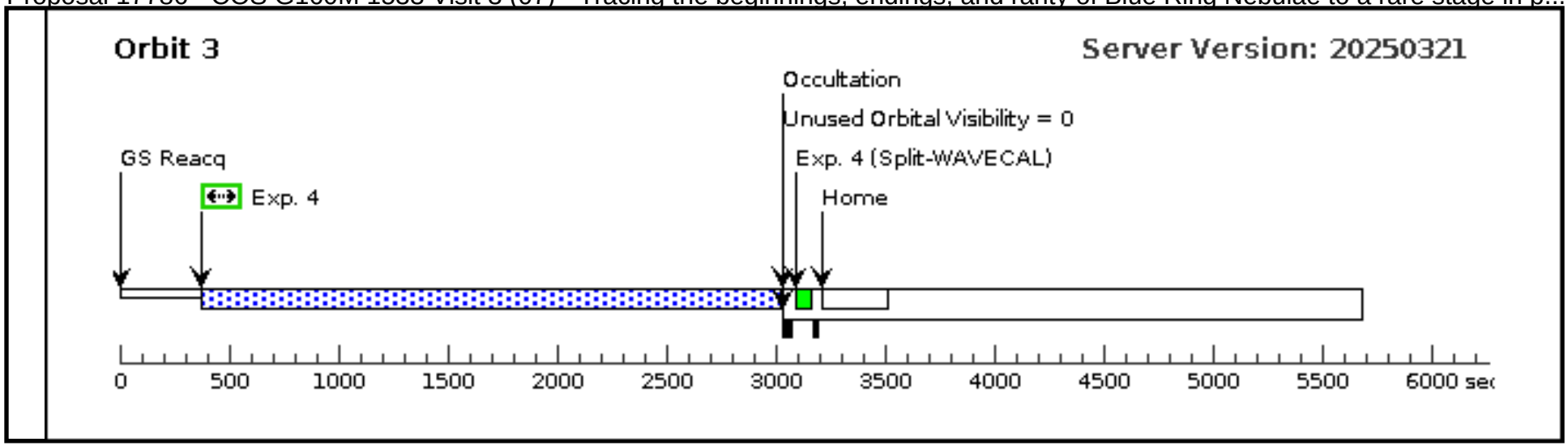
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1931201)	(1) SDSSCGB-736546.1	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				120 Secs (120 Secs) *[==>]*	***[1]***
2	(COS.sp.1933773)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G160M 1533 A	FP-POS=3; BUFFER-TIME=11400			1933 Secs (1933 Secs) *[==>]*	***[1]***
3	(COS.sp.1933773)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G160M 1533 A	FP-POS=3; BUFFER-TIME=11400			2599 Secs (2599 Secs) *[==>]*	***[2]***
4	(COS.sp.1933773)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G160M 1533 A	FP-POS=3; BUFFER-TIME=11400			2599 Secs (2599 Secs) *[==>]*	***[3]***

Orbit Structure






Orbit 3
Server Version: 20250321
Occultation
Unused Orbital Visibility = 0
GS Reacq
Exp. 4 (Split-WAVECAL)
Exp. 4
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec

Visit

Proposal 17786, COS G160M 1533 Visit 4 (08), scheduling Fri Jun 20 17:00:32 GMT 2025

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: (none)

Comments: Orbits 10-11

Diagnostics

(Exposure 2 (COS G160M 1533 Visit 4 (08))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

(Exposure 3 (COS G160M 1533 Visit 4 (08))) Warning (Form): COS FUV PSA science exposures with extended targets have special calibration limitations. See "Errors and Warnings" for more details.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	SDSSCGB-73656.1 Alt Name1: WISEA-J164835.42+350939.0 Alt Name2: GALEXASC-J164835.47+350938.8	RA: 16 48 35.4300 (252.1476250d) Dec: +35 09 39.28 (35.16091d) Equinox: J2000	Epoch of Position: 2000 Redshift: 0.0818	V=17.8+/-0.2 GALEX FUV (AB): 19.6 +/-0.05, GALEX NUV (AB): 19.6 +/- 0.03, u(AB): 19.180 +/- 0.075, g(AB): 18.024 +/- 0.010, r(AB) 17.601 +/- 0.010, E(B-V) = 0.016	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=GALAXY
Description=[UNDESIGNATED]
Extended=YES

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1931201)	(1) SDSSCGB-736546.1	COS/NUV, ACQ/IMAGE, PSA	MIRRORB				120 Secs (120 Secs) *[==>]*	 ***[1]***
2	(COS.sp.1933773)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G160M 1533 A	FP-POS=4; BUFFER-TIME=11400			1933 Secs (1933 Secs) *[==>]*	 ***[1]***
3	(COS.sp.1933773)	(1) SDSSCGB-736546.1	COS/FUV, TIME-TAG, PSA	G160M 1533 A	FP-POS=4; BUFFER-TIME=11400			2599 Secs (2599 Secs) *[==>]*	 ***[2]***

Orbit Structure