18201 - Cycle 33 COS FUV Wavelength Scale Monitor

Cycle: 33, Proposal Category: CAL/COS

(Availability Mode: RESTRICTED)

INVESTIGATORS

Name	*Institution*
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Dr. Svea S Hernandez (CoI) (ESA Member) (Contact)	Space Telescope Science Institute - ESA - JWST

VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) AV75	COS/FUV COS/NUV	1	20-Jul-2026 17:00:14.0	yes
02	(1) AV75	COS/FUV COS/NUV	1	20-Jul-2026 17:00:14.0	yes
52	(1) AV75	COS/FUV COS/NUV	1	20-Jul-2026 17:00:15.0	yes
03	(1) AV75	COS/FUV COS/NUV	2	20-Jul-2026 17:00:16.0	yes

5 Total Orbits Used

ABSTRACT

This program monitors the stability of the constant terms in the FUV dispersion solutions. To monitor for any changes, the program observes AV 75 at selected cenwaves at multiple FP-POS positions for all FUV gratings. Via cross-correlation, spectra are compared to those obtained in previous

iterations of the program, to STIS spectra obtained in-orbit, and to a model.

OBSERVING DESCRIPTION

To monitor the constant terms in the COS/FUV dispersion solutions in Cycle 33, we take spectra with the cenwaves 1096, 1222, 1291, and 1327 in G130M, cenwaves 1577 and 1623 in G160M, and cenwaves 1105 and 1280 in G140L. In accordance with the COS 2025 rules, changes were made for Cycle 25 and going forward: FP-POS 2 of cenwave 1291 was changed to 3, segment B of cenwave 1327 is not observed, and exposures were rearranged due to the overhead associated with turning a segment off. With the M gratings, FP-POS are alternated between exposures to fulfill our S/N requirements and mitigate the effects of gain sag. The enabling of LP7 and LP10 for Cycle 33 requires G130M spectra at both LP5 and LP7. Orients have been put in place to avoid field objects that are too bright for the PSA/MIRRORA when performing the TA with the BOA. The detailed clearance of the target and crowded field was done in the CS review of calibration program 13070. Due to past GS acquisition issues (e.g., Visit 01 of Cycle 23 program 14437; see HOPR 83980), there is an ACQ/SEARCH in the TA sequence. Data from previous iterations of this program were used to update the ETC calculations for Cycle 25; mild adjustments were made to the exposure times in Cycle 29 to allow for increased overheads due to LP changes. Cycle 32 includes new ETC runs, with some exposure times slightly reduced to account for RGM. The original ETC runs are added to exposure comments. To maintain a regular interval of about 12 months since the last visit, the program will ideally be carried out in June-July 2026. The schedulability is set to 80% to fit all the observations in four orbits.

For Cycle 33 this program has been split into two single orbit visits and one 2 orbit visit to help mitigate failures. An additional G140L exposure with cenwave 800 was also added, as the zero points for this mode have not been verified since commissioning.

Visit

Proposal 18201, Single orbit 1 (01), completed Mon Jul 20 21:00:17 GMT 2026

Diagnostic Status: No Diagnostics

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 80%; ORIENT 275D TO 60 D; ORIENT 160D TO 165 D; BETWEEN 01-JUN-2026:00:00:00 AND 31-JUL-2026:00:00:00

Comments: An ACQ/SEARCH was added to the TA sequence in Cycle 23 and should be carried over each cycle to avoid GS issues. This is a crowded field. The window in June-July 2026 is preferred to maintain a pattern of about 12 months between visits. The schedulability is set to 80% to fit all the observations in four orbits.

Fixed Targets

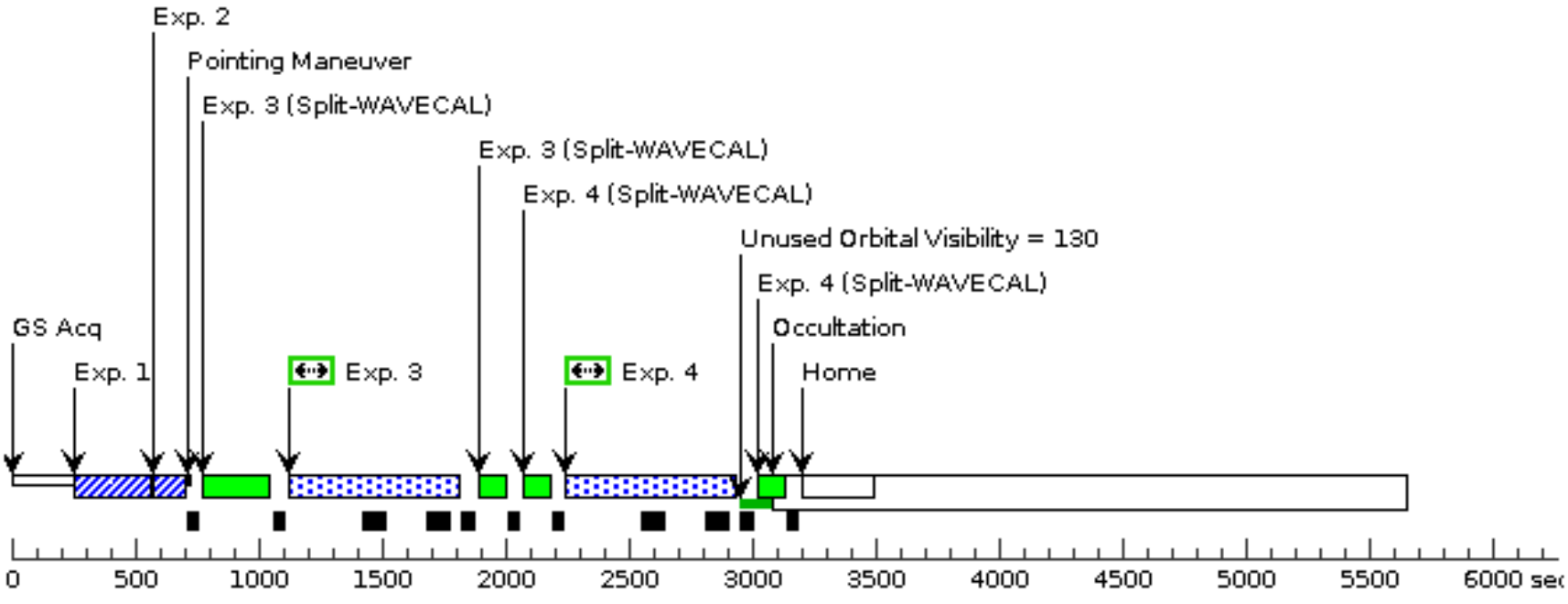
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	AV75	RA: 00 50 32.3900 (12.6349583d) Dec: -72 52 36.48 (-72.87680d) Equinox: J2000	Proper Motion RA: 0.746 mas/yr Proper Motion Dec: -1.256 mas/yr Epoch of Position: 2000	V=12.79	Reference Frame: ICRS

Comments: This object was generated by the target selector and retrieved from the SIMBAD database.
Category=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	ACQ/SEARCH (COS.ta.1925963)	(1) AV75	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	STEP-SIZE=1.767; SCAN-SIZE=2; CENTER=FLUX-WT			8.3 Secs (8.3 Secs) *[==>]*	 ***[1]***
	Comments: Increased exposure time by 1s based on updated ETC: COS.ta.1823225 *Pre-RGM ETC: COS.ta.1025824*								
2	ACQ/IMAGE (COS.ta.1925965)	(1) AV75	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				13.0 Secs (13 Secs) *[==>]*	 ***[1]***
	Comments: Pre-RGM ETC: COS.ta.1025825								
3	G130M/1096/FP2 (COS.sp.1925967)	(1) AV75	COS/FUV, TIME-TAG, PSA	G130M 1096 A	BUFFER-TIME=264; FP-POS=2; LIFETIME-POS=LP7			638 Secs (638 Secs) *[==>]*	 ***[1]***
	Comments: Buffer-time has been reduced based on updated ETC run: COS.sp.1823228. New time is calculated via (EXP - 110)/N to minimize overheads. Exposure time remains unchanged from cycle 29. Buffer time remains unchanged from cycle 30. *Pre-RGM ETC: COS.sp.1025732*								
4	G130M/1096/FP4 (COS.sp.1925967)	(1) AV75	COS/FUV, TIME-TAG, PSA	G130M 1096 A	BUFFER-TIME=264; FP-POS=4; LIFETIME-POS=LP7			638 Secs (638 Secs) *[==>]*	 ***[1]***
	Comments: Buffer-time has been reduced based on updated ETC run: COS.sp.1823228. New time is calculated via (EXP - 110)/N to minimize overheads. Exposure time remains unchanged from cycle 29. Buffer time remains unchanged from cycle 30. *Pre-RGM ETC: COS.sp.1025732*								

Orbit Structure



Visit

Proposal 18201, Single orbit 2 (02), failed Mon Jul 20 21:00:17 GMT 2026

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 80%; ORIENT 275D TO 60 D; ORIENT 160D TO 165 D; BETWEEN 01-JUN-2026:00:00:00 AND 31-JUL-2026:00:00:00

Comments: An ACQ/SEARCH was added to the TA sequence in Cycle 23 and should be carried over each cycle to avoid GS issues. This is a crowded field. The window in June-July 2026 is preferred to maintain a pattern of about 12 months between visits. The schedulability is set to 80% to fit all the observations in four orbits.

Diagnostics

(Single orbit 2 (02)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

Fixed Targets

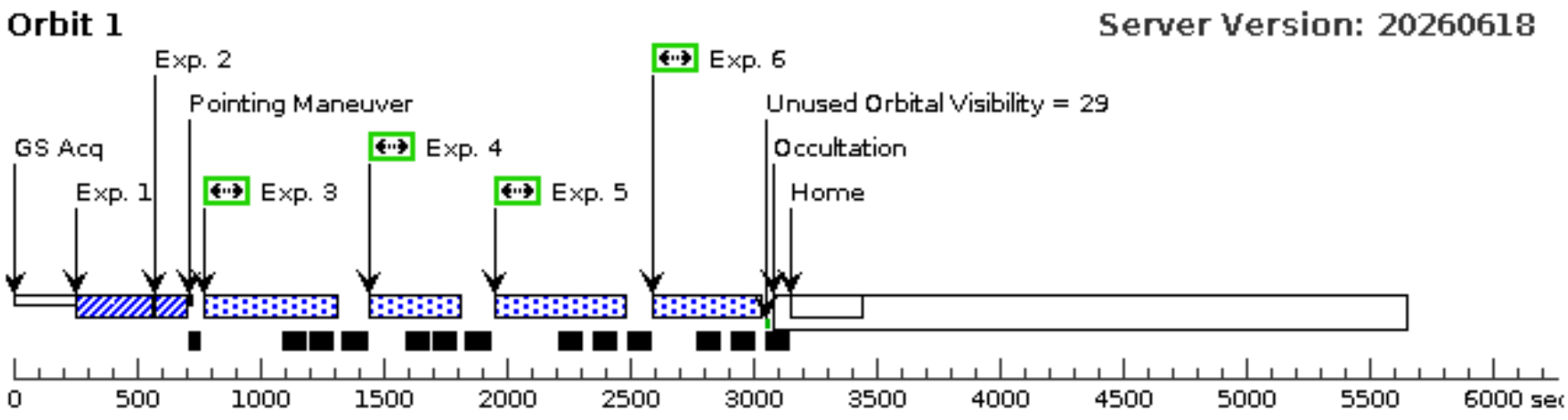
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	AV75	RA: 00 50 32.3900 (12.6349583d)	Proper Motion RA: 0.746 mas/yr	V=12.79	Reference Frame: ICRS
		Dec: -72 52 36.48 (-72.87680d)	Proper Motion Dec: -1.256 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

Comments: This object was generated by the target selector and retrieved from the SIMBAD database.
Category=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	ACQ/SEARCH (COS.ta.1925963)	(1) AV75	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	STEP-SIZE=1.767; SCAN-SIZE=2; CENTER=FLUX-WT			8.3 Secs (8.3 Secs) *[==>]*	***[1]***
	Comments: Increased exposure time by 1s based on updated ETC: COS.ta.1823225 Pre-RGM ETC: COS.ta.1025824								
2	ACQ/IMAGE (COS.ta.1925965)	(1) AV75	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				13.0 Secs (13 Secs) *[==>]*	***[1]***
	Comments: Pre-RGM ETC: COS.ta.1025825								
3	G160M/1577/FP2/LP10 (COS.sp.1925968)	(1) AV75	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=111; FP-POS=2; LIFETIME-POS=LP10			322 Secs (322 Secs) *[==>]*	***[1]***
	Comments: Buffer-time has been reduced based on updated ETC run: COS.sp.1824304. New time is calculated via (EXP - 110)/N, set to the minimum of 111s to minimize overheads. Exposure time remains unchanged from cycle 29. Buffer time remains unchanged from Cycle 30. Pre-RGM ETC: COS.sp.1025737								
4	G160M/1577/FP4/LP10 (COS.sp.1925968)	(1) AV75	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=111; FP-POS=4; LIFETIME-POS=LP10			322 Secs (322 Secs) *[==>]*	***[1]***
	Comments: Buffer-time has been reduced based on updated ETC run: COS.sp.1824304. New time is calculated via (EXP - 110)/N, set to the minimum of 111s to minimize overheads. Exposure time remains unchanged from cycle 29. Buffer time remains unchanged from Cycle 30. Pre-RGM ETC: COS.sp.1025737								
5	G160M/1623/FP1/LP10 (COS.sp.1925969)	(1) AV75	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=139; FP-POS=1; LIFETIME-POS=LP10			389 Secs (389 Secs) *[==>]*	***[1]***
	Comments: Buffer-time has been reduced based on updated ETC run: COS.sp.1824318. New time is calculated via (EXP - 110)/N to minimize overheads. Exposure time remains unchanged from Cycle 29. Buffer time remains unchanged from Cycle 30. Pre-RGM ETC: COS.sp.1025738								
6	G160M/1623/FP3/LP10 (COS.sp.1925969)	(1) AV75	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=139; FP-POS=3; LIFETIME-POS=LP10			389 Secs (389 Secs) *[==>]*	***[1]***
	Comments: Buffer-time has been reduced based on updated ETC run: COS.sp.1824318. New time is calculated via (EXP - 110)/N to minimize overheads. Exposure time remains unchanged from Cycle 29. Buffer time remains unchanged from Cycle 30. Pre-RGM ETC: COS.sp.1025738								

Orbit Structure



Visit

Proposal 18201, Single orbit 2 (52), implementation Mon Jul 20 21:00:17 GMT 2026

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 80%; ORIENT 275D TO 60 D; ORIENT 160D TO 165 D; BETWEEN 01-JUN-2026:00:00:00 AND 30-SEP-2026:00:00:00

Comments: An ACQ/SEARCH was added to the TA sequence in Cycle 23 and should be carried over each cycle to avoid GS issues. This is a crowded field. The window in June-July 2026 is preferred to maintain a pattern of about 12 months between visits. The schedulability is set to 80% to fit all the observations in four orbits.

Repeat of visit 02

Diagnostics

(Single orbit 2 (52)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

Fixed Targets

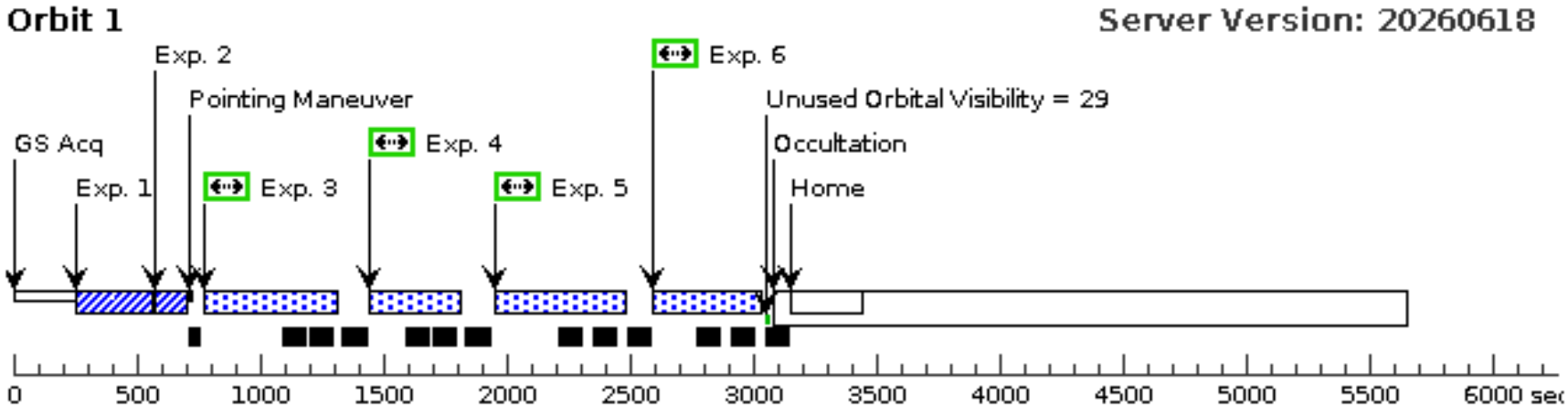
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	AV75	RA: 00 50 32.3900 (12.6349583d)	Proper Motion RA: 0.746 mas/yr	V=12.79	Reference Frame: ICRS
		Dec: -72 52 36.48 (-72.87680d)	Proper Motion Dec: -1.256 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

Comments: This object was generated by the target selector and retrieved from the SIMBAD database.
Category=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	ACQ/SEARCH (COS.ta.1925963)	(1) AV75	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	STEP-SIZE=1.767; SCAN-SIZE=2; CENTER=FLUX-WT			8.3 Secs (8.3 Secs) *[==>]*	***[1]***
	Comments: Increased exposure time by 1s based on updated ETC: COS.ta.1823225 Pre-RGM ETC: COS.ta.1025824								
2	ACQ/IMAGE (COS.ta.1925965)	(1) AV75	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				13.0 Secs (13 Secs) *[==>]*	***[1]***
	Comments: Pre-RGM ETC: COS.ta.1025825								
3	G160M/1577/FP2/LP10 (COS.sp.1925968)	(1) AV75	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=111; FP-POS=2; LIFETIME-POS=LP10			322 Secs (322 Secs) *[==>]*	***[1]***
	Comments: Buffer-time has been reduced based on updated ETC run: COS.sp.1824304. New time is calculated via (EXP - 110)/N, set to the minimum of 111s to minimize overheads. Exposure time remains unchanged from cycle 29. Buffer time remains unchanged from Cycle 30. Pre-RGM ETC: COS.sp.1025737								
4	G160M/1577/FP4/LP10 (COS.sp.1925968)	(1) AV75	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=111; FP-POS=4; LIFETIME-POS=LP10			322 Secs (322 Secs) *[==>]*	***[1]***
	Comments: Buffer-time has been reduced based on updated ETC run: COS.sp.1824304. New time is calculated via (EXP - 110)/N, set to the minimum of 111s to minimize overheads. Exposure time remains unchanged from cycle 29. Buffer time remains unchanged from Cycle 30. Pre-RGM ETC: COS.sp.1025737								
5	G160M/1623/FP1/LP10 (COS.sp.1925969)	(1) AV75	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=139; FP-POS=1; LIFETIME-POS=LP10			389 Secs (389 Secs) *[==>]*	***[1]***
	Comments: Buffer-time has been reduced based on updated ETC run: COS.sp.1824318. New time is calculated via (EXP - 110)/N to minimize overheads. Exposure time remains unchanged from Cycle 29. Buffer time remains unchanged from Cycle 30. Pre-RGM ETC: COS.sp.1025738								
6	G160M/1623/FP3/LP10 (COS.sp.1925969)	(1) AV75	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=139; FP-POS=3; LIFETIME-POS=LP10			389 Secs (389 Secs) *[==>]*	***[1]***
	Comments: Buffer-time has been reduced based on updated ETC run: COS.sp.1824318. New time is calculated via (EXP - 110)/N to minimize overheads. Exposure time remains unchanged from Cycle 29. Buffer time remains unchanged from Cycle 30. Pre-RGM ETC: COS.sp.1025738								

Orbit Structure



Visit

Proposal 18201, Double orbit 3 w/ c800 (03), scheduled Mon Jul 20 21:00:17 GMT 2026

Diagnostic Status: Warning

Scientific Instruments: COS/FUV, COS/NUV

Special Requirements: SCHED 80%; ORIENT 275D TO 60 D; ORIENT 160D TO 165 D; BETWEEN 01-JUN-2026:00:00:00 AND 31-JUL-2026:00:00:00

Comments: An ACQ/SEARCH was added to the TA sequence in Cycle 23 and should be carried over each cycle to avoid GS issues. This is a crowded field. The window in June-July 2026 is preferred to maintain a pattern of about 12 months between visits. The schedulability is set to 80% to fit all the observations in four orbits.

Diagnostics

(Double orbit 3 w/ c800 (03)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	AV75	RA: 00 50 32.3900 (12.6349583d)	Proper Motion RA: 0.746 mas/yr	V=12.79	Reference Frame: ICRS
		Dec: -72 52 36.48 (-72.87680d)	Proper Motion Dec: -1.256 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		

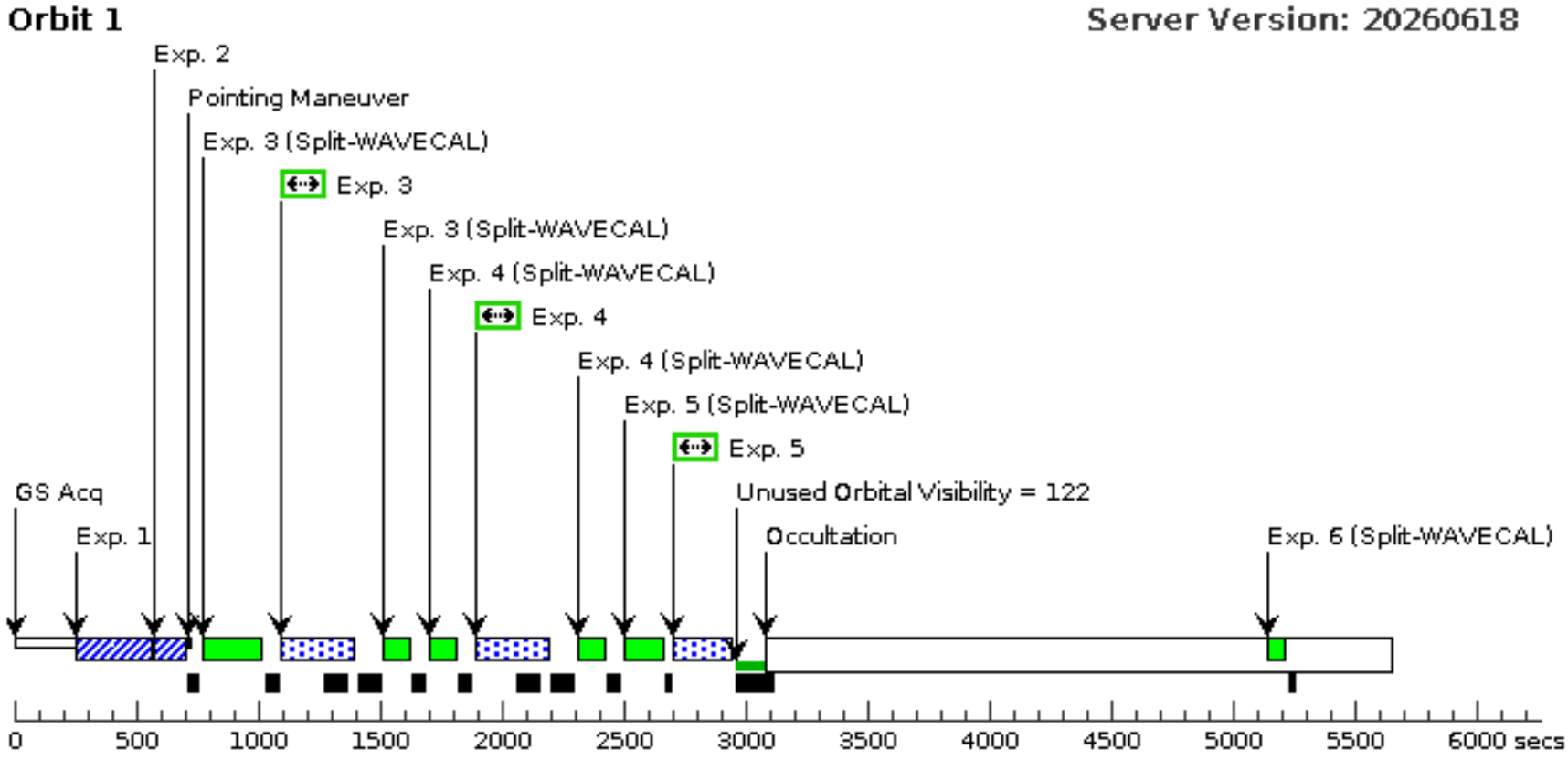
Comments: This object was generated by the target selector and retrieved from the SIMBAD database.
Category=STAR
Description=[SUPERGIANT O]
Extended=NO

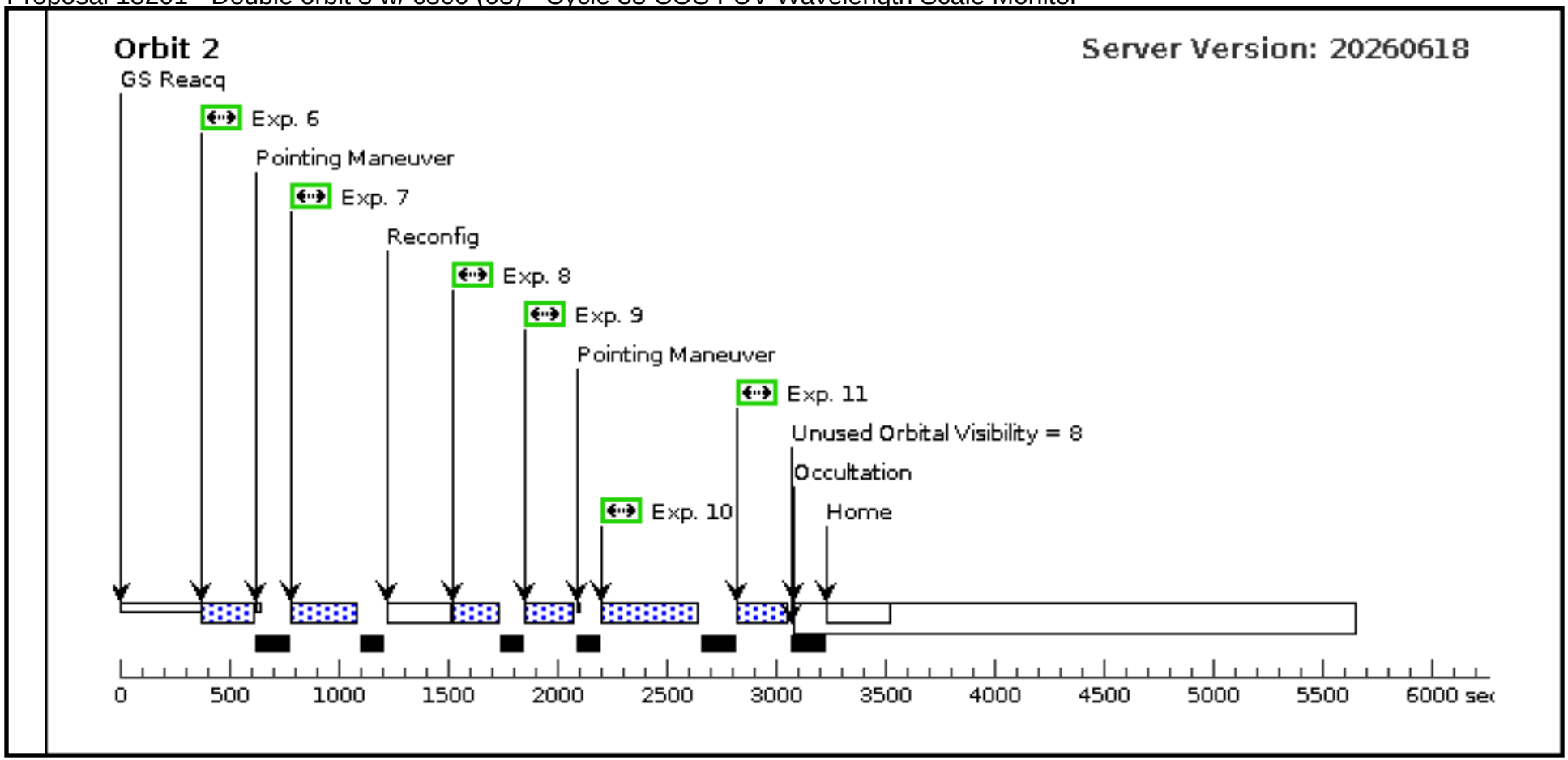
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/SEARCH (COS.ta.1925963)	(1) AV75	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	STEP-SIZE=1.767; SCAN-SIZE=2; CENTER=FLUX-WT			8.3 Secs (8.3 Secs) *[==>]*	*[1]*
	Comments: Increased exposure time by 1s based on updated ETC: COS.ta.1823225 Pre-RGM ETC: COS.ta.1025824								
2	ACQ/IMAGE (COS.ta.1925965)	(1) AV75	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				13.0 Secs (13 Secs) *[==>]*	*[1]*
	Comments: Pre-RGM ETC: COS.ta.1025825								
3	G130M/1222/FP1 (COS.sp.1925970)	(1) AV75	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=136; FP-POS=1; LIFETIME-POS=LP7			246 Secs (246 Secs) *[==>]*	*[1]*
	Comments: Buffer-time has been updated based new ETC run: COS.sp.1925970. New time is calculated via (EXP - 110)/N to minimize overheads. Exposure time remains unchanged from Cycle 29. Pre-RGM ETC: COS.sp.1025734								
4	G130M/1222/FP3 (COS.sp.1925970)	(1) AV75	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=136; FP-POS=3; LIFETIME-POS=LP7			246 Secs (246 Secs) *[==>]*	*[1]*
	Comments: Buffer-time has been updated based new ETC run: COS.sp.1925970. New time is calculated via (EXP - 110)/N to minimize overheads. Exposure time remains unchanged from Cycle 29. Pre-RGM ETC: COS.sp.1025734								
5	G130M/1291/FP3 (COS.sp.1925971)	(1) AV75	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=120; FP-POS=3; LIFETIME-POS=LP7			186 Secs (186 Secs) *[==>]*	*[1]*
	Comments: Pre-RGM ETC: COS.sp.1025735								
6	G130M/1291/FP4 (COS.sp.1925971)	(1) AV75	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=120; FP-POS=4; LIFETIME-POS=LP7			186 Secs (186 Secs) *[==>]*	*[2]*
	Comments: Pre-RGM ETC: COS.sp.1025735								
7	G140L/1280/FP3 (COS.sp.1925972)	(1) AV75	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=80; FP-POS=3; LIFETIME-POS=LP3			80 Secs (80 Secs) *[==>]*	*[2]*
	Comments: Pre-RGM ETC: COS.sp.1025740								
8	G140L/1105/FP3 (COS.sp.1925973)	(1) AV75	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=80; FP-POS=3; LIFETIME-POS=LP3			80 Secs (80 Secs) *[==>]*	*[2]*
	Comments: Pre-RGM ETC: COS.sp.1025741								

	9	G140L/800/ FP3 (COS.sp.2202701)	(1) AV757	COS/FUV, TIME-TAG, PSA	G140L 800 A	BUFFER-TIME=80; FP-POS=3; LIFETIME-POS=LP3	74 Secs (74 Secs) *[==>]*	***[2]***
	10	G130M/1327/FP1 (COS.sp.1925961)	(1) AV757	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=124; FP-POS=1; SEGMENT=A; LIFETIME-POS=LP5	180 Secs (180 Secs) *[==>]*	***[2]***
	Comments: Exposure time adjusted down slightly to fill orbit (Cycle 32). *Pre-RGM ETC: COS.sp.1025736*							
	11	G130M/1327/FP3 (COS.sp.1925961)	(1) AV757	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=124; FP-POS=3; SEGMENT=A; LIFETIME-POS=LP5	180 Secs (180 Secs) *[==>]*	***[2]***
	Comments: Exposure time adjusted down slightly to fill orbit (Cycle 32, 33). *Pre-RGM ETC: COS.sp.1025736*							

Orbit Structure




Orbit 2
Server Version: 20260618
GS Reacq
Exp. 6
Pointing Maneuver
Exp. 7
Reconfig
Exp. 8
Exp. 9
Pointing Maneuver
Exp. 11
Unused Orbital Visibility = 8
Occultation
Exp. 10
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec