15774 - Cycle 27 COS FUV Wavelength Scale Monitor

Cycle: 27, Proposal Category: CAL/COS

(Calibration)

(Availability Mode: RESTRICTED)

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) AV75	COS/FUV COS/NUV	3	12-Jul-2019 13:00:14.0	yes

3 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 at lifetime position 4 in Cycle 27, we continue the approach of Cycle 26 program 15536. This includes taking 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. 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; exposure times were left the same for Cycle 27. To maintain a regular interval of about 12 months between visits, the program will ideally be carried out in March 2020. The schedulability is set to 80% to fit all the observations in three orbits.

Visit

Proposal 15774, Visit 01 Fri Jul 12 17:00:15 GMT 2019

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-MAR-2020:00:00:00 AND 01-APR-2020:00:00:00

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 March 2020 is preferred to maintain a pattern of about 12 months between visits. The schedulability is set to 80% to fit all the observations in one orbit.

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		V=12.79	Reference Frame: ICRS

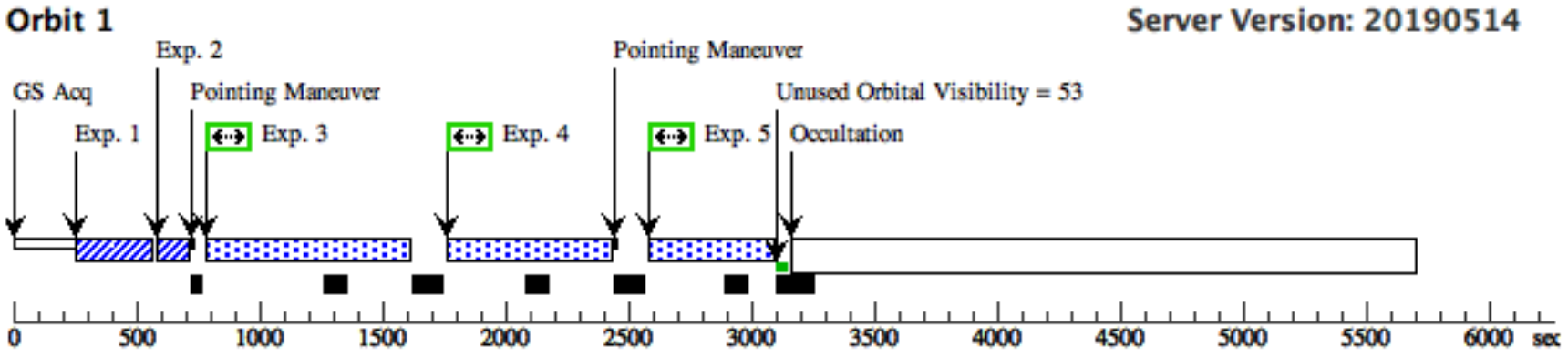
Comments: This object was generated by the target selector and retrieved from the SIMBAD database.
Category=ISM
Description=[ABSORPTION LINE SYSTEM - EXTRAGALACTIC]
Extended=NO

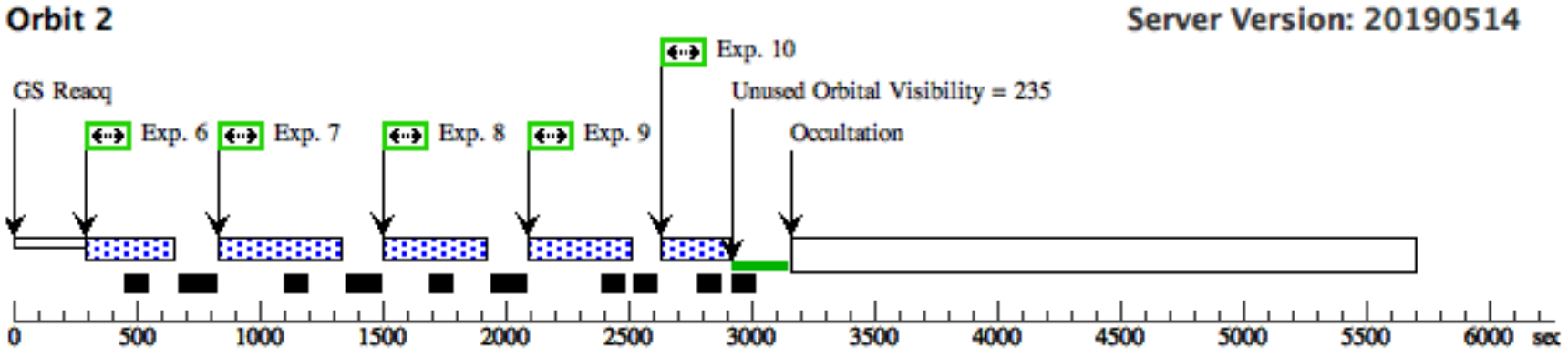
Exposures

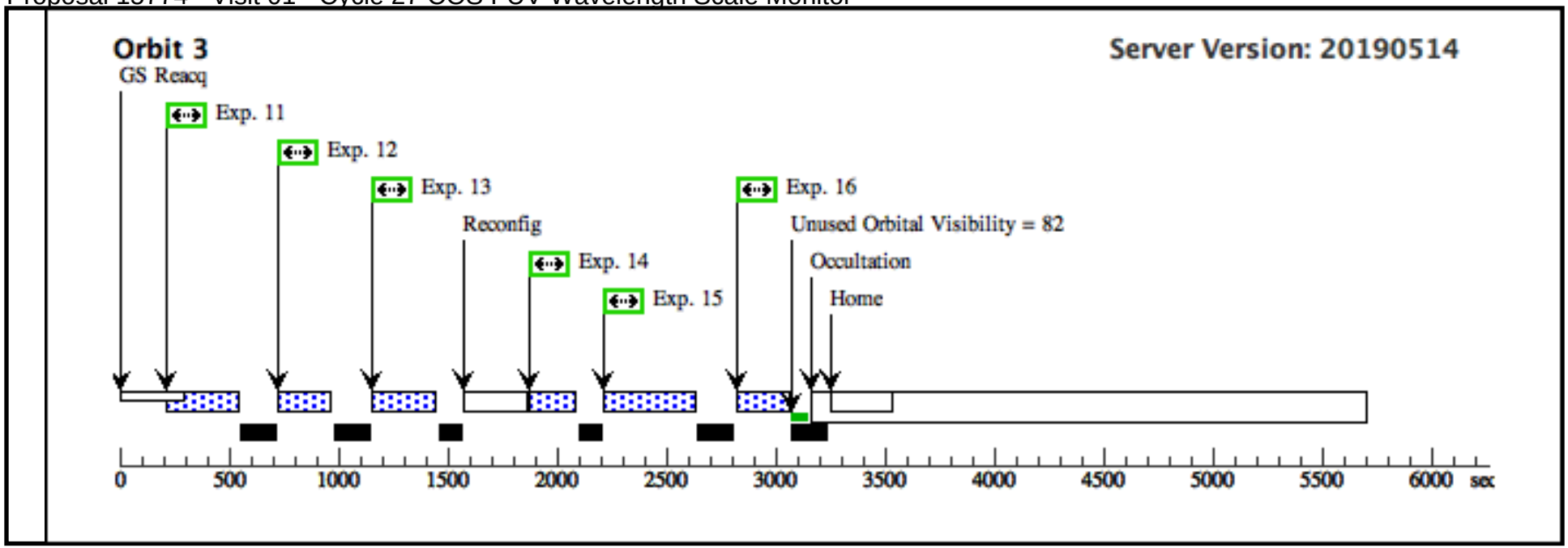
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	(COS.ta.1025824)	(1) AV75	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	STEP-SIZE=1.767; SCAN-SIZE=2; CENTER=FLUX-WT			7.3 Secs (7.3 Secs) *[==>]*	*[1]*
2	(COS.ta.1025825)	(1) AV75	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				13.0 Secs (13 Secs) *[==>]*	*[1]*
3	(COS.sp.1025732)	(1) AV75	COS/FUV, TIME-TAG, PSA	G130M 1096 A	BUFFER-TIME=2900; FP-POS=2; LIFETIME-POS=LP2			620 Secs (620 Secs) *[==>]*	*[1]*
4	(COS.sp.1025732)	(1) AV75	COS/FUV, TIME-TAG, PSA	G130M 1096 A	BUFFER-TIME=2900; FP-POS=4; LIFETIME-POS=LP2			620 Secs (620 Secs) *[==>]*	*[1]*
5	(COS.sp.1025737)	(1) AV75	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=124; FP-POS=2			305 Secs (305 Secs) *[==>]*	*[1]*
6	(COS.sp.1025737)	(1) AV75	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=124; FP-POS=4			305 Secs (305 Secs) *[==>]*	*[2]*
7	(COS.sp.1025738)	(1) AV75	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=154; FP-POS=1			369 Secs (369 Secs) *[==>]*	*[2]*
8	(COS.sp.1025738)	(1) AV75	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=154; FP-POS=3			369 Secs (369 Secs) *[==>]*	*[2]*
9	(COS.sp.1025734)	(1) AV75	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=120; FP-POS=1; LIFETIME-POS=LP4			226 Secs (226 Secs) *[==>]*	*[2]*
10	(COS.sp.1025734)	(1) AV75	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=120; FP-POS=3; LIFETIME-POS=LP4			226 Secs (226 Secs) *[==>]*	*[2]*
11	(COS.sp.1025735)	(1) AV75	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=120; FP-POS=3; LIFETIME-POS=LP4			191 Secs (191 Secs) *[==>]*	*[3]*
12	(COS.sp.1025735)	(1) AV75	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=120; FP-POS=4; LIFETIME-POS=LP4			191 Secs (191 Secs) *[==>]*	*[3]*

	13	(COS.sp.102 (1) AV75 5740)	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=80; FP-POS=3	80 Secs (80 Secs) *[==>]*	 ***[3]***
	14	(COS.sp.102 (1) AV75 5741)	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=80; FP-POS=3	80 Secs (80 Secs) *[==>]*	 ***[3]***
	15	(COS.sp.102 (1) AV75 5736)	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=120; FP-POS=1; LIFETIME-POS=LP4; SEGMENT=A	192 Secs (192 Secs) *[==>]*	 ***[3]***
	16	(COS.sp.102 (1) AV75 5736)	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=120; FP-POS=3; LIFETIME-POS=LP4; SEGMENT=A	192 Secs (192 Secs) *[==>]*	 ***[3]***

Orbit Structure






Orbit 3
Server Version: 20190514
GS Reacq
Exp. 11
Exp. 12
Exp. 13
Reconfig
Exp. 14
Exp. 15
Exp. 16
Unused Orbital Visibility = 82
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec