



13931 - Third COS FUV Lifetime Position: Wavelength and Resolution Calibration (LCAL2)

Cycle: 22, Proposal Category: CAL/COS

(Availability Mode: RESTRICTED)

INVESTIGATORS

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VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(3) AV75	COS/FUV COS/NUV	4	28-Mar-2015 21:03:01.0	yes
51	(3) AV75	COS/FUV COS/NUV	4	28-Mar-2015 21:03:09.0	yes

8 Total Orbits Used

ABSTRACT

Following its change of lifetime position, the core of the LSFs of the COS FUV detector are expected to change by up to 10% once combined with the LSFs of the OTA+MFWE combination. The knowledge of the COS LSFs is critical for users to evaluate the feasibility and S/N requirements of their observations. In addition, accurate COS LSFs are necessary to perform line profile fitting. Thus, it appears necessary to constrain the shape of the COS LSFs at the new lifetime position. To do so, we will acquire COS FUV G130M and G160M spectra of the SMC star AzV 75, at the two

Proposal 13931 (STScI Edit Number: 2, Created: Saturday, March 28, 2015 8:03:11 PM EST) - Overview

extreme CENWAVES of each grating, and using all FPPOS to optimize the S/N. Once all FPPOS settings combined, our observations will reach a S/N of 60/resel. We will test whether previous STIS E140M spectra of AzV 75 convolved with model COS LSFs at LP3 can reproduce on-orbit observed COS FUV spectra of the numerous ISM lines toward AzV 75 at LP3. While we will not be able to detect a 10% change in the core of the COS LSFs, we will rather be able to test the validity of the model LSFs at the new position. In addition, we will be able to detect a 15% uniform change across the LSFs, and unexpected larger variations in the COS LSFs larger than 15%.

OBSERVING DESCRIPTION

We will acquire COS G130M and G160M spectra of SMC star AzV 75 at the extreme CENWAVES of each grating (1222, 1291, 1327, 1577 and 1623) and using all FPPOS positions. The exposure times are calculated such that the combined FPPOS exposures give S/N = 60/resel. We will perform a NUV imaging target acquisition with the BOA.

The local count rate is slightly exceeded, but still well within the margins.

Proposal 13931 - Visit 01 - Third COS FUV Lifetime Position: Wavelength and Resolution Calibration (LCAL2)

Sun Mar 29 01:03:11 GMT 2015

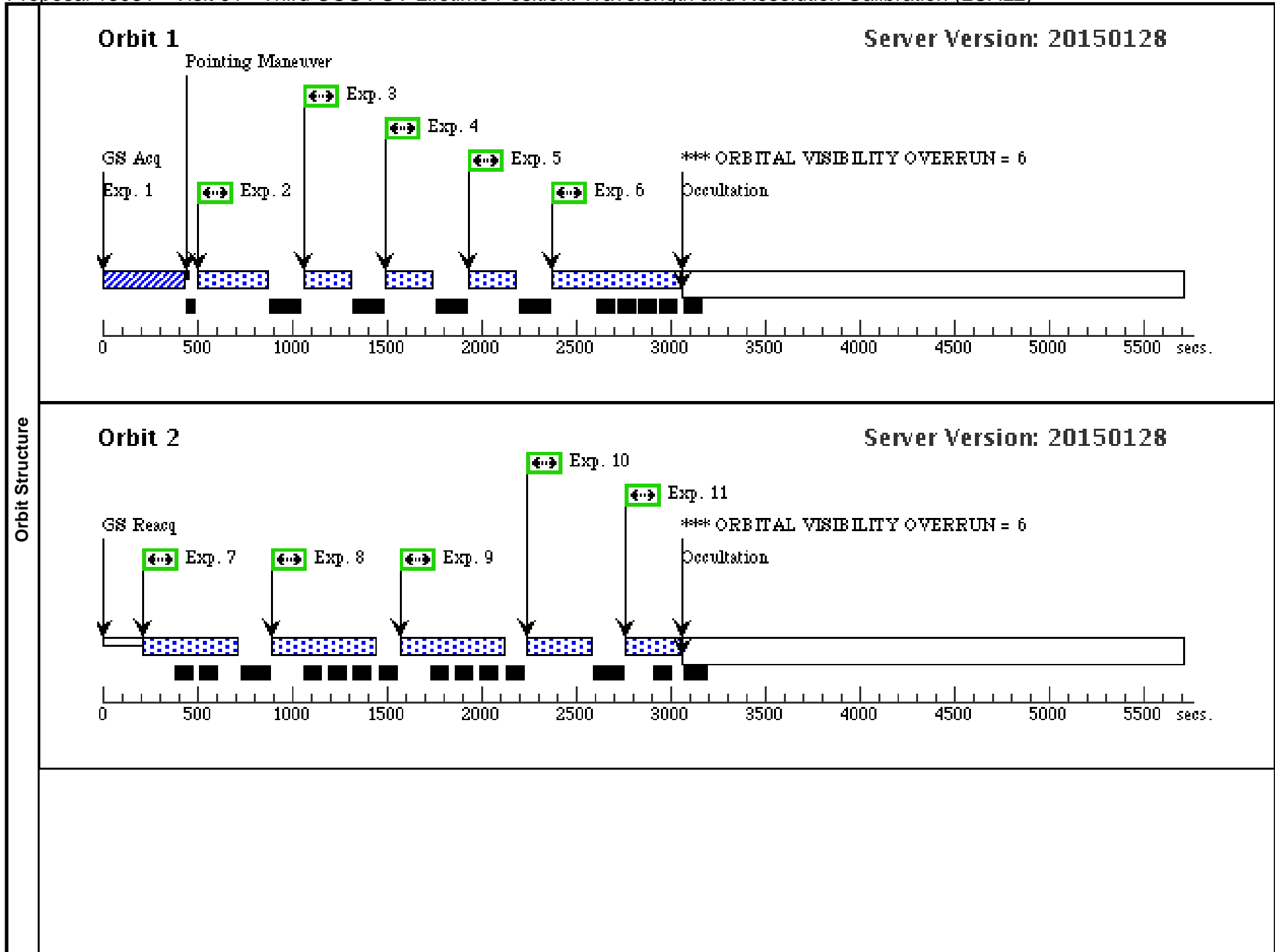
Visit	Proposal 13931, Visit 01, failed Diagnostic Status: Warning Scientific Instruments: COS/NUV, COS/FUV Special Requirements: SCHED 100%; ORIENT 280D TO 60 D; ORIENT 160D TO 165 D; BETWEEN 09-FEB-2015:00:00:00 AND 20-MAR-2015:00:00:00																
	(Visit 01) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN (Visit 01) Warning (Orbit Planner): ORBITAL VISIBILITY OVERRUN																
Diagnosics																	
Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(3)</td> <td>AV75</td> <td>RA: 00 50 32.3900 (12.6349583d) Dec: -72 52 36.48 (-72.87680d) Equinox: J2000</td> <td></td> <td>V=12.79</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(3)	AV75	RA: 00 50 32.3900 (12.6349583d) Dec: -72 52 36.48 (-72.87680d) Equinox: J2000		V=12.79	Reference Frame: ICRS				
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous											
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<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>																	

Proposal 13931 - Visit 01 - Third COS FUV Lifetime Position: Wavelength and Resolution Calibration (LCAL2)

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	image_acq_ boa (COS.ta.640 604)	(3) AV75	COS/NUV, ACQ/IMAGE, BOA	MIRRORA			15 Secs (15 Secs) [==>]	[1]	
	2	1291_1 (COS.sp.640 614)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=12 0; FP-POS=1		200 Secs (200 Secs) [==>]	[1]	
	3	1291_2 (COS.sp.640 614)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=12 0; FP-POS=2		200 Secs (200 Secs) [==>]	[1]	
	<i>Comments: This exposure exceeds local count rate limit, but it's OK for calibration purposes (COS.sp.640614)</i>									
	4	1291_3 (COS.sp.640 614)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=12 0; FP-POS=3; FLASH=S0055D03 0		200 Secs (200 Secs) [==>]	[1]	
	5	1291_4 (COS.sp.640 614)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=12 0; FP-POS=4		200 Secs (200 Secs) [==>]	[1]	
	6	1222_1 (626960)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=11 1; FP-POS=1		540 Secs (540 Secs) [==>]	[1]	
	7	1222_2 (626960)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=13 0; FP-POS=2		450 Secs (450 Secs) [==>]	[2]	
	8	1222_3 (626960)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=13 0; FP-POS=3; FLASH=S0224D05 2		500 Secs (500 Secs) [==>]	[2]	
	9	1222_4 (626960)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=13 0; FP-POS=4		500 Secs (500 Secs) [==>]	[2]	
	10	1327_1 (COS.sp.640 615)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=11 1; FP-POS=1		180 Secs (180 Secs) [==>]	[2]	
	11	1327_2 (COS.sp.640 615)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=11 1; FP-POS=2		240 Secs (240 Secs) [==>]	[2]	
	12	1327_3 (COS.sp.640 615)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=11 1; FP-POS=3; FLASH=S0055D03 0		200 Secs (200 Secs) [==>]	[3]	
13	1327_4 (COS.sp.640 615)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=11 1; FP-POS=4		200 Secs (200 Secs) [==>]	[3]		

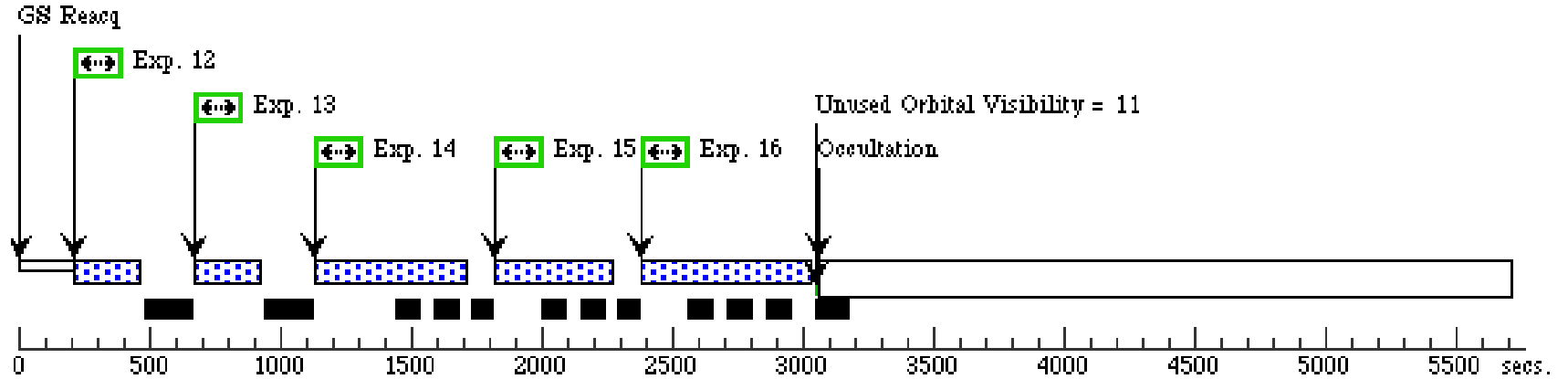
Proposal 13931 - Visit 01 - Third COS FUV Lifetime Position: Wavelength and Resolution Calibration (LCAL2)

14	1577_1 (COS.sp.640 618)	(3) AV75	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=14 5; FP-POS=1	400 Secs (400 Secs)	
						[==>]	[3]
15	1577_2 (COS.sp.640 618)	(3) AV75	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=14 5; FP-POS=2	400 Secs (400 Secs)	
						[==>]	[3]
16	1577_3 (COS.sp.640 618)	(3) AV75	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=14 5; FP-POS=3; FLASH=S0144D02 4	600 Secs (600 Secs)	
						[==>]	[3]
17	1577_4 (COS.sp.640 618)	(3) AV75	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=14 5; FP-POS=4	415 Secs (415 Secs)	
						[==>]	[4]
18	1623_1 (COS.sp.640 619)	(3) AV75	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=14 0; FP-POS=1	400 Secs (400 Secs)	
						[==>]	[4]
19	1623_2 (COS.sp.640 619)	(3) AV75	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=14 5; FP-POS=2	400 Secs (400 Secs)	
						[==>]	[4]
20	1623_3 (COS.sp.640 619)	(3) AV75	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=14 5; FP-POS=3; FLASH=S0094D02 4	400 Secs (400 Secs)	
						[==>]	[4]
21	1623_4 (COS.sp.640 619)	(3) AV75	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=14 0; FP-POS=4	400 Secs (400 Secs)	
						[==>]	[4]



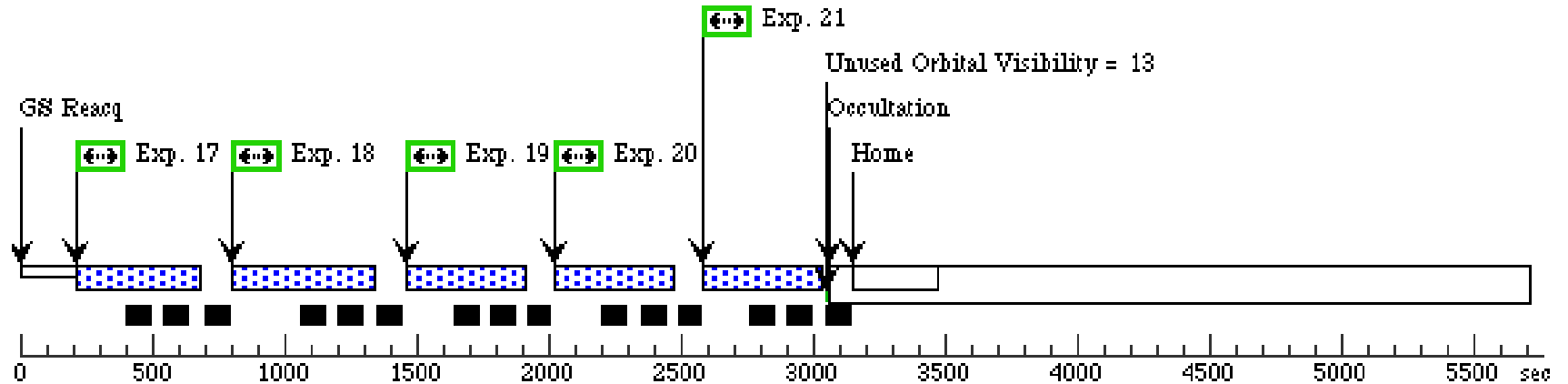
Orbit 3

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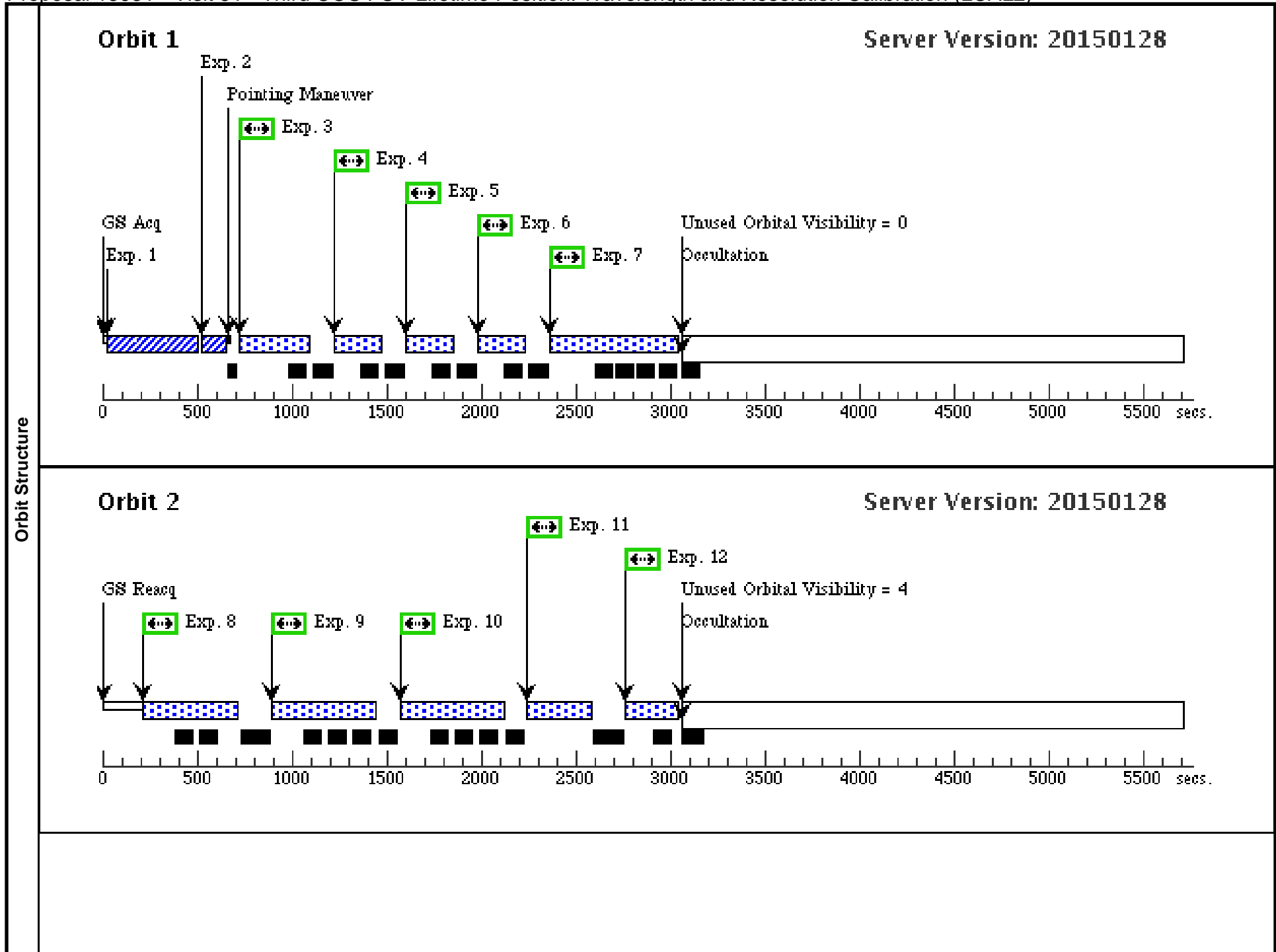
Visit	Proposal 13931, Visit 51, implementation Sun Mar 29 01:03:12 GMT 2015 Diagnostic Status: No Diagnostics Scientific Instruments: COS/NUV, COS/FUV Special Requirements: SCHED 100%; ORIENT 280D TO 60 D; ORIENT 160D TO 165 D; BETWEEN 01-JUL-2015:00:00:00 AND 15-JUL-2015:00:00:00					
	Fixed Targets	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes
(3)		AV75	RA: 00 50 32.3900 (12.6349583d) Dec: -72 52 36.48 (-72.87680d) Equinox: J2000		V=12.79	Reference Frame: ICRS
<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.</i>						

Proposal 13931 - Visit 51 - Third COS FUV Lifetime Position: Wavelength and Resolution Calibration (LCAL2)

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	nuv_boa_mira_acq_search (COS.ta.675262)	(3) AV75	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	STEP-SIZE=1.767; SCAN-SIZE=2; CENTER=FLUX-WT		7 Secs (7 Secs) [==>]	[1]	
	2	image_acq_boa (COS.ta.640604)	(3) AV75	COS/NUV, ACQ/IMAGE, BOA	MIRRORA			14 Secs (14 Secs) [==>]	[1]	
	3	1291_1 (COS.sp.640614)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=100; FP-POS=1		200 Secs (200 Secs) [==>]	[1]	
	4	1291_2 (COS.sp.640614)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=100; FP-POS=2		200 Secs (200 Secs) [==>]	[1]	
	<i>Comments: This exposure exceeds local count rate limit, but it's OK for calibration purposes (COS.sp.640614)</i>									
	5	1291_3 (COS.sp.640614)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=100; FP-POS=3; FLASH=S0055D030		200 Secs (200 Secs) [==>]	[1]	
	6	1291_4 (COS.sp.640614)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=100; FP-POS=4		200 Secs (200 Secs) [==>]	[1]	
	7	1222_1 (626960)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=111; FP-POS=1		540 Secs (540 Secs) [==>]	[1]	
	8	1222_2 (626960)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=130; FP-POS=2		450 Secs (450 Secs) [==>]	[2]	
	9	1222_3 (626960)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=130; FP-POS=3; FLASH=S0224D052		500 Secs (500 Secs) [==>]	[2]	
	10	1222_4 (626960)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=130; FP-POS=4		500 Secs (500 Secs) [==>]	[2]	
	11	1327_1 (COS.sp.640615)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=111; FP-POS=1		180 Secs (180 Secs) [==>]	[2]	
	12	1327_2 (COS.sp.640615)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=111; FP-POS=2		230 Secs (230 Secs) [==>]	[2]	
13	1327_3 (COS.sp.640615)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=111; FP-POS=3; FLASH=S0055D030		200 Secs (200 Secs) [==>]	[3]		

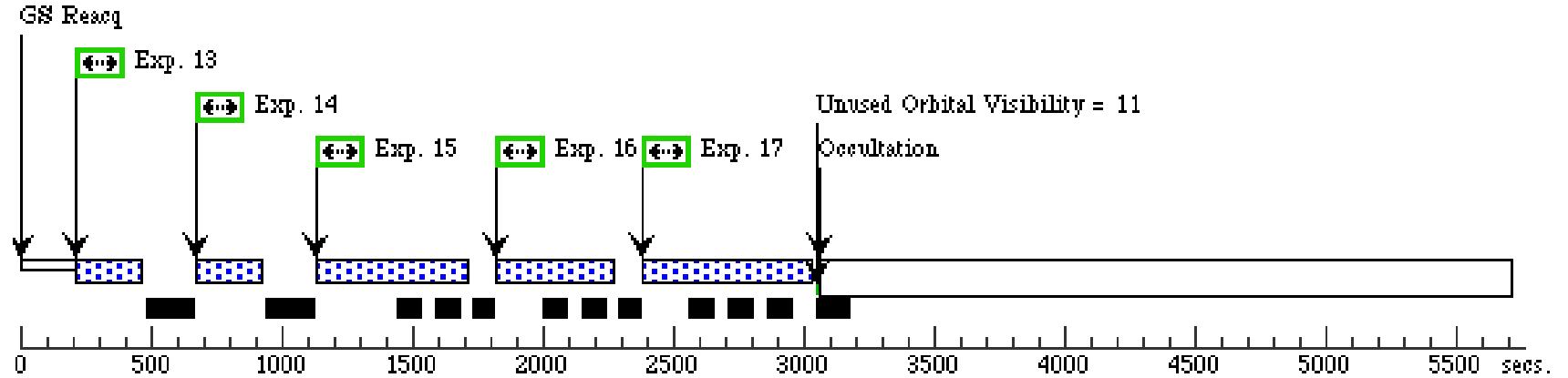
Proposal 13931 - Visit 51 - Third COS FUV Lifetime Position: Wavelength and Resolution Calibration (LCAL2)

14	1327_4 (COS.sp.640 615)	(3) AV75	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=11 1; FP-POS=4	200 Secs (200 Secs)	
						[==>]	[3]
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22	1623_4 (COS.sp.640 619)	(3) AV75	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=14 0; FP-POS=4	400 Secs (400 Secs)	
						[==>]	[4]



Orbit 3

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