



## 12096 - COS FUV Detector Lifetime Adjustment and Sensitivity Test

Cycle: 17, Proposal Category: CAL/COS

(Availability Mode: RESTRICTED)

### INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
<b>Dr. David J. Sahnou (PI)</b>	<b>The Johns Hopkins University</b>	<b>sahnou@pha.jhu.edu</b>
Dr. Charles D. Keyes (CoI)	Space Telescope Science Institute	keyes@stsci.edu
Dr. Steven V. Penton (CoI)	University of Colorado at Boulder	Steven.Penton@colorado.edu
Dr. Steven Osterman (CoI)	University of Colorado at Boulder	Steven.Osterman@colorado.edu

### 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	(1) WD0947+857 NONE WAVE	COS COS/FUV COS/NUV	2	05-Mar-2010 21:02:49.0	yes
02	(2) WD1057+719 NONE	COS COS/FUV	1	05-Mar-2010 21:03:03.0	yes

3 Total Orbits Used

### ABSTRACT

This program will test the COS FUV Detector sensitivity at several 'lifetime adjustment' (cross-dispersion) positions. By collecting identical spectra at different positions on the detector, including some relatively pristine regions, it will be possible to determine if the time dependent-sensitivity changes seen since SM4 are due to illumination, and thus limited to the areas that have collected the most counts.

In addition, the gain and flat field properties of the detector at the additional lifetime positions will be measured, so that if a permanent lifetime adjustment is found to be necessary, the best location can be identified.

### **OBSERVING DESCRIPTION**

Spectra will be taken at five detector 'lifetime adjustment' (cross-dispersion) positions at a single central wavelength for each FUV grating by using POSTARGs and aperture motions. The targets and acquisition strategies are identical to those used in program 11897 (COS FUV Spectroscopic Sensitivity Monitoring), so comparison with data from that program should be straightforward.

For G140L, a spectrum will also be collected at a sixth position, corresponding to the location of a spectrum taken as part of program 11491 (COS FUV External Flat Fields).

Proposal 12096 - Visit 01 - COS FUV Detector Lifetime Adjustment and Sensitivity Test

Sat Mar 06 02:03:08 GMT 2010

<b>Visit</b>	<b>Proposal 12096, Visit 01, implementation</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: COS, COS/NUV, COS/FUV Special Requirements: SCHED 100% Comments: G140L/1230 G130M/1309																
	(Visit 01) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (Visit 01) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (Visit 01) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (Visit 01) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (Visit 01) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (Visit 01) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (Visit 01) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (Visit 01) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE																
<b>Diagnosics</b>																	
<b>Fixed Targets</b>	<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>(1)</td> <td>WD0947+857</td> <td>RA: 09 57 54.4230 (149.4767625d) Dec: +85 29 40.91 (85.49470d) Equinox: J2000</td> <td>Proper Motion RA: -0.01747s/yr Proper Motion Dec: -0.0253"/yr Epoch of Position: 1997.19</td> <td>V=15.9</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table>	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	WD0947+857	RA: 09 57 54.4230 (149.4767625d) Dec: +85 29 40.91 (85.49470d) Equinox: J2000	Proper Motion RA: -0.01747s/yr Proper Motion Dec: -0.0253"/yr Epoch of Position: 1997.19	V=15.9	Reference Frame: ICRS				
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous											
(1)	WD0947+857	RA: 09 57 54.4230 (149.4767625d) Dec: +85 29 40.91 (85.49470d) Equinox: J2000	Proper Motion RA: -0.01747s/yr Proper Motion Dec: -0.0253"/yr Epoch of Position: 1997.19	V=15.9	Reference Frame: ICRS												
Comments: HST FASTEX standard PM, coords from GSC2																	

Proposal 12096 - Visit 01 - COS FUV Detector Lifetime Adjustment and Sensitivity Test

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit	
Exposures	1	MIRRORA - BOA ACQ /SEARCH	(1) WD0947+857	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	STEP-SIZE=1.767; SCAN-SIZE=2		85 Secs [==>]	[1]	
	<i>Comments: ACQ identical to program 11897</i>									
	<i>SN=60 in 85 seconds, brightest pixel=5.9 cts/s (COS.A217972)</i>									
	2	MIRRORA - BOA ACQ /IMAGE	(1) WD0947+857	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				85 Secs [==>]	[1]
	<i>Comments: ACQ identical to program 11897</i>									
	<i>SN=60 in 85 seconds, 43 counts in region, brightest pixel=5.9 cts/s (COS.A217972)</i>									
	3	Aperture Lif etime Positi on 1	NONE	COS, ALIGN/APER		XAPER=0; YAPER=0			0.0 Secs [==>]	[1]
	<i>Comments: Move to aperture location for Lifetime Position 1 (centered)</i>									
4	G140L/1230 , LT=1	(1) WD0947+857	COS/FUV, TIME-TAG, PSA	G140L 1230 A	BUFFER-TIME=90; POS TARG 0.0,0.0 FP-POS=3; FLASH=S0075D00 7			90 Secs [==>81.0 Secs ]	[1]	
<i>Comments: Lifetime Position 1: 0.0 arcsec</i>										
5	Aperture Po sition used i n 11491	NONE	COS, ALIGN/APER		XAPER=-25; YAPER=0			0.0 Secs [==>]	[1]	
<i>Comments: Move to aperture location used during 11491/flat field: corresponds to displacement across dispersion of: +1.2 arcsec (2.5x0.476)</i>										
<i>This aperture move is to an offset aperture position prior to obtaining an exposure at the cross dispersion position used in program 11491.</i>										
6	G140L/1230 A, 11491 Po sition	(1) WD0947+857	COS/FUV, TIME-TAG, PSA	G140L 1230 A	BUFFER-TIME=90; POS TARG 0.0,1.2; FP-POS=3; FLASH=S0075D00 7	SPEC COM INSTR ELNOAPMAIN		90 Secs [==>87.0 Secs ]	[1]	
<i>Comments: Position used in 11491: +1.2 arcsec</i>										
7	Aperture Lif etime Positi on 2	NONE	COS, ALIGN/APER		XAPER=-63; YAPER=0			0.0 Secs [==>]	[1]	
<i>Comments: Move to aperture location for Lifetime Position 2. This corresponds to displacement across dispersion of: +3.0 arcsec (6.3x0.476)</i>										
<i>This aperture move is to an offset aperture position prior to obtaining an exposure at one of the four alternate lifetime adjustment locations.</i>										
8	G140L/1230 A, LT=2	(1) WD0947+857	COS/FUV, TIME-TAG, PSA	G140L 1230 A	BUFFER-TIME=90; POS TARG 0.0,+3.0 FP-POS=3; FLASH=S0075D00 7	SPEC COM INSTR ELNOAPMAIN		90 Secs [==>81.0 Secs ]	[1]	
<i>Comments: Lifetime Position 2: +3.0 arcsec</i>										

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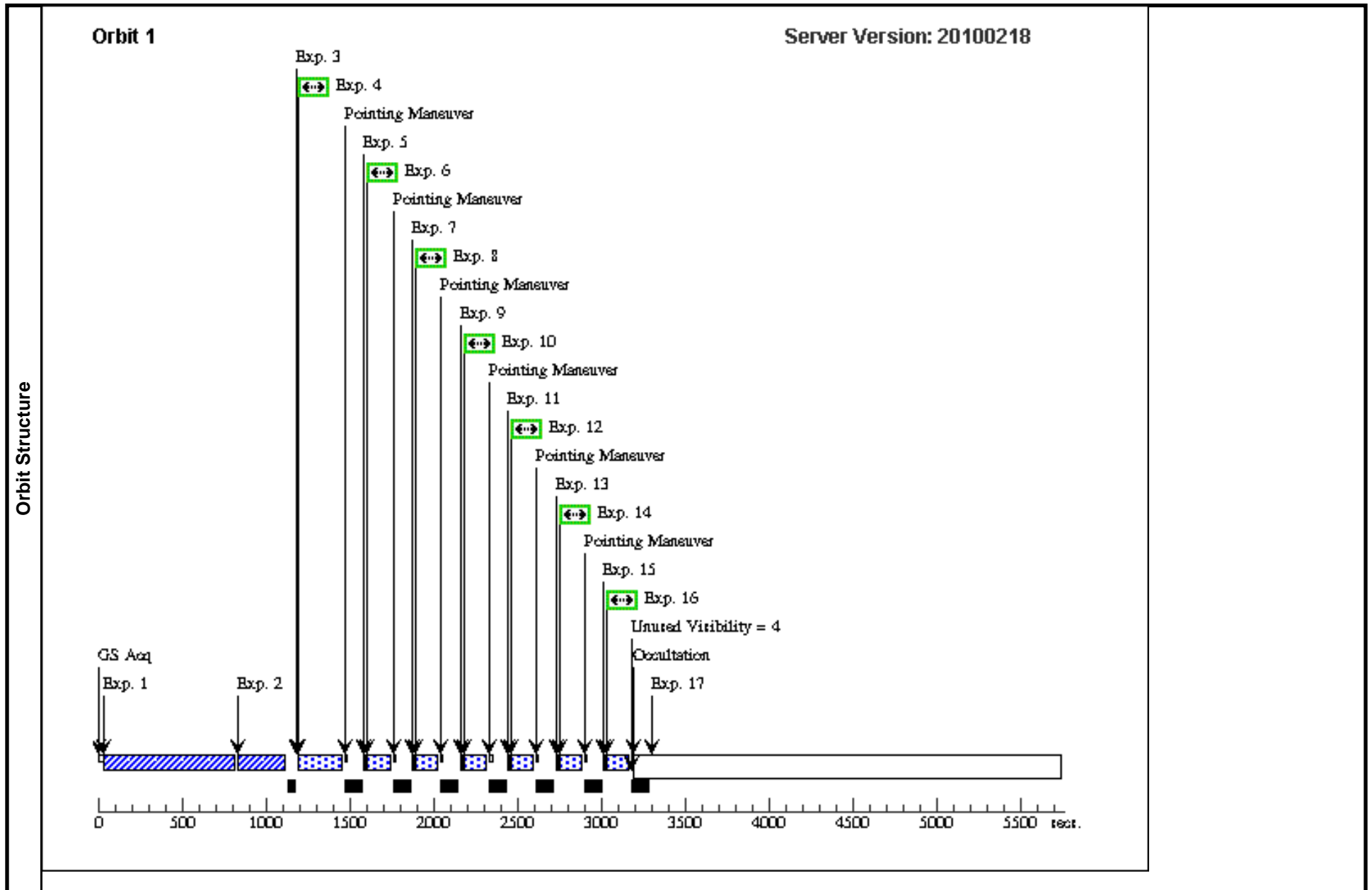
9	Aperture Lifetime Position 3	NONE	COS, ALIGN/APER		XAPER=-126; YAPER=0		0.0 Secs [==>]	[1]
<p><i>Comments: Move to aperture location for Lifetime Position 3. This corresponds to displacement across dispersion of: +6.0 arcsec (12.6x0.476)</i></p> <p><i>This aperture move is to an offset aperture position prior to obtaining an exposure at one of the four alternate lifetime adjustment locations.</i></p>								
10	G140L/1230 A, LT=3	(1) WD0947+857	COS/FUV, TIME-TAG, PSA	G140L 1230 A	BUFFER-TIME=90; FP-POS=3; FLASH=S0075D00 7	POS TARG 0.0,+6.0 ; SPEC COM INSTR ELNOAPMAIN	90 Secs [==>81.0 Secs ]	[1]
<p><i>Comments: Lifetime Position 3: +6.0 arcsec</i></p>								
11	Aperture Lifetime Position 5	NONE	COS, ALIGN/APER		XAPER=126; YAPER=0		0.0 Secs [==>]	[1]
<p><i>Comments: Move to aperture location for Lifetime Position 5. This corresponds to displacement across dispersion of: -6.0 arcsec (-12.6x0.476)</i></p> <p><i>This aperture move is to an offset aperture position prior to obtaining an exposure at one of the four alternate lifetime adjustment locations.</i></p>								
12	G140L/1230 A, LT=5	(1) WD0947+857	COS/FUV, TIME-TAG, PSA	G140L 1230 A	BUFFER-TIME=90; FP-POS=3; FLASH=S0075D00 7	POS TARG 0.0,-6.0; SPEC COM INSTR ELNOAPMAIN	90 Secs [==>81.0 Secs ]	[1]
<p><i>Comments: Lifetime Position 5: -6.0 arcsec</i></p>								
13	Aperture Lifetime Position 4	NONE	COS, ALIGN/APER		XAPER=63; YAPER=0		0.0 Secs [==>]	[1]
<p><i>Comments: Move to aperture location for Lifetime Position 4. This corresponds to displacement across dispersion of: -3.0 arcsec (-6.3x0.476)</i></p> <p><i>This aperture move is to an offset aperture position prior to obtaining an exposure at one of the four alternate lifetime adjustment locations.</i></p>								
14	G140L/1230 A, LT=4	(1) WD0947+857	COS/FUV, TIME-TAG, PSA	G140L 1230 A	BUFFER-TIME=90; FP-POS=3; FLASH=S0075D00 7	POS TARG 0.0,-3.0; SPEC COM INSTR ELNOAPMAIN	90 Secs [==>81.0 Secs ]	[1]
<p><i>Comments: Lifetime Position 4: -3.0 arcsec</i></p>								
15	Aperture Lifetime Position 1	NONE	COS, ALIGN/APER		XAPER=0; YAPER=0		0.0 Secs [==>]	[1]
<p><i>Comments: Move to aperture location 1 (centered)</i></p>								
16	G140L/1230 , LT=1	(1) WD0947+857	COS/FUV, TIME-TAG, PSA	G140L 1230 A	BUFFER-TIME=90; FP-POS=3; FLASH=S0075D00 7	POS TARG 0.0,0.0	90 Secs [==>81.0 Secs ]	[1]
<p><i>Comments: Repeat Lifetime Position 1: 0.0 arcsec</i></p>								

# Proposal 12096 - Visit 01 - COS FUV Detector Lifetime Adjustment and Sensitivity Test

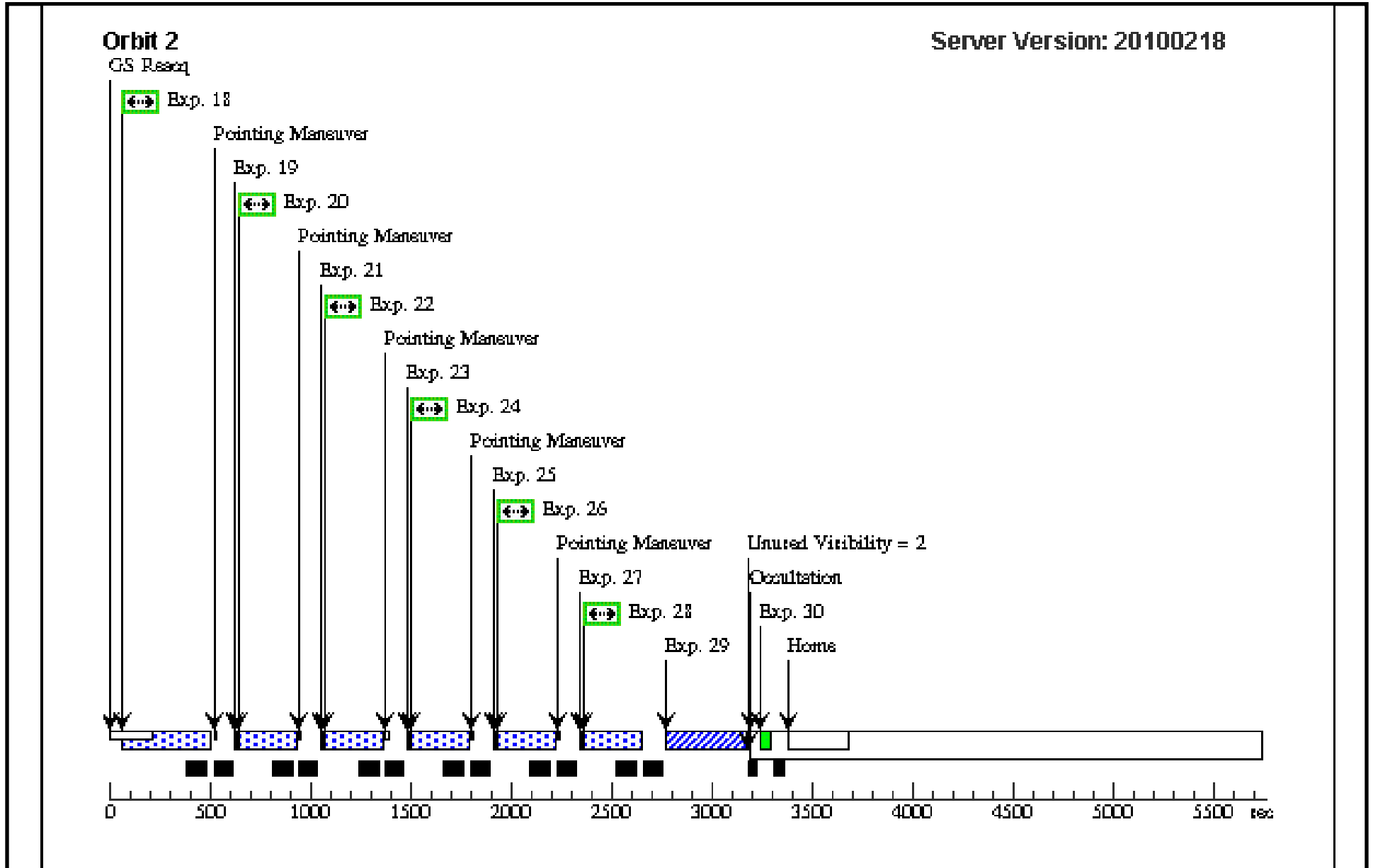
17	Aperture Lifetime Position 1	NONE	COS, ALIGN/APER		XAPER=0; YAPER=0	0.0 Secs [==>]	[1]
<i>Comments: Move to aperture location for Lifetime Position 1 (centered)</i>							
18	G130M/1291 A, LT=1	(1) WD0947+857	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=130; FP-POS=3; FLASH=S0210D012	POS TARG 0.0,0.0 230 Secs [==>234.0 Secs]	[2]
<i>Comments: Lifetime Position 1 (centered)</i>							
19	Aperture Lifetime Position 2	NONE	COS, ALIGN/APER		XAPER=-63; YAPER=0	0.0 Secs [==>]	[2]
<i>Comments: Move to aperture location for Lifetime Position 2. This corresponds to displacement across dispersion of: +3.0 arcsec (6.3x0.476)</i>							
<i>This aperture move is to an offset aperture position prior to obtaining an exposure at one of the four alternate lifetime adjustment locations.</i>							
20	G130M/1291 A, LT=2	(1) WD0947+857	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=130; FP-POS=3; FLASH=S0210D012	POS TARG 0.0,+3.0 ; SPEC COM INSTR ELNOAPMAIN 230 Secs [==>234.0 Secs]	[2]
<i>Comments: Lifetime Position 2: +3.0 arcsec</i>							
21	Aperture Lifetime Position 3	NONE	COS, ALIGN/APER		XAPER=-126; YAPER=0	0.0 Secs [==>]	[2]
<i>Comments: Move to aperture location for Lifetime Position 3. This corresponds to displacement across dispersion of: +6.0 arcsec (12.6x0.476)</i>							
<i>This aperture move is to an offset aperture position prior to obtaining an exposure at one of the four alternate lifetime adjustment locations.</i>							
22	G130M/1291 A, LT=3	(1) WD0947+857	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=130; FP-POS=3; FLASH=S0210D012	POS TARG 0.0,+6.0 ; SPEC COM INSTR ELNOAPMAIN 230 Secs [==>234.0 Secs]	[2]
<i>Comments: Lifetime Position 3: +6.0 arcsec</i>							
23	Aperture Lifetime Position 5	NONE	COS, ALIGN/APER		XAPER=126; YAPER=0	0.0 Secs [==>]	[2]
<i>Comments: Move to aperture location for Lifetime Position 5. This corresponds to displacement across dispersion of: -6.0 arcsec (-12.6x0.476)</i>							
<i>This aperture move is to an offset aperture position prior to obtaining an exposure at one of the four alternate lifetime adjustment locations.</i>							
24	G130M/1291 A, LT=5	(1) WD0947+857	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=130; FP-POS=3; FLASH=S0210D012	POS TARG 0.0,-6.0 ; SPEC COM INSTR ELNOAPMAIN 230 Secs [==>234.0 Secs]	[2]
<i>Comments: Lifetime Position 5: -6.0 arcsec</i>							

# Proposal 12096 - Visit 01 - COS FUV Detector Lifetime Adjustment and Sensitivity Test

25	Aperture Lifetime Position 4	NONE	COS, ALIGN/APER		XAPER=63; YAPER=0		0.0 Secs [==>]	[2]
<p><i>Comments: Move to aperture location for Lifetime Position 4. This corresponds to displacement across dispersion of: -3.0 arcsec (-6.3x0.476)</i></p> <p><i>This aperture move is to an offset aperture position prior to obtaining an exposure at one of the four alternate lifetime adjustment locations.</i></p>								
26	G130M/129 1 A, LT=4	(1) WD0947+857	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=13 0; FP-POS=3; FLASH=S0210D01 2	POS TARG 0.0,-3.0; SPEC COM INSTR ELNOAPMAIN	230 Secs [==>234.0 Secs ]	[2]
<p><i>Comments: Lifetime Position 4: -3.0 arcsec</i></p>								
27	Aperture Lifetime Position 1	NONE	COS, ALIGN/APER		XAPER=0; YAPER=0		0.0 Secs [==>]	[2]
<p><i>Comments: Move to back aperture location 1 (centered)</i></p>								
28	G130M/129 1, LT=1	(1) WD0947+857	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=13 0; FP-POS=3; FLASH=S0210D01 2	POS TARG 0.0,0.0	230 Secs [==>234.0 Secs ]	[2]
<p><i>Comments: Repeat Lifetime Position 1: 0.0 arcsec</i></p>								
29	MIRRORA - BOA ACQ /IMAGE	(1) WD0947+857	COS/NUV, ACQ/IMAGE, BOA	MIRRORA			85 Secs [==>]	[2]
<p><i>Comments: SN=90 in 85 seconds, brightest pixel=5.9 cts/s (COS.A217972)</i></p>								
30	MIRRORA - WAVECAL	WAVE	COS/NUV, TIME-TAG, WCA	MIRRORA			30 Secs [==>]	[2]







Proposal 12096 - Visit 01 - COS FUV Detector Lifetime Adjustment and Sensitivity Test

<b>Visit</b>	<b>Proposal 12096, Visit 02, implementation</b> <span style="float: right;">Sat Mar 06 02:03:11 GMT 2010</span>																	
	<b>Diagnostic Status: Warning</b> Scientific Instruments: COS, COS/FUV Special Requirements: SCHED 100% <i>Comments: G160M/1600</i>																	
<b>Diagnostics</b>	(Visit 02) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE																	
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	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous												
(2)	WD1057+719	RA: 11 00 34.2200 (165.1425833d) Dec: +71 38 2.99 (71.63416d) Equinox: J2000	Proper Motion RA: -0.00973s/yr Proper Motion Dec: -0.02"/yr Epoch of Position: 2000	V=14.68	Reference Frame: ICRS													

Proposal 12096 - Visit 02 - COS FUV Detector Lifetime Adjustment and Sensitivity Test

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	G160M - A CQ/SEARC H	(2) WD1057+719	COS/FUV, ACQ/SEARCH, PSA	G160M 1600 A	SCAN-SIZE=3			1 Secs [==>]	[1]
<i>Comments: Spectroscopic acquisition for G160M - step 1 Target Acq is identical to program 11897</i>									
2	G160M - A CQ/PEAKX D	(2) WD1057+719	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A				1 Secs [==>]	[1]
<i>Comments: Spectroscopic acquisition for G160M - step 2 Target Acq is identical to program 11897</i>									
3	G160M - A CQ/PEAKD	(2) WD1057+719	COS/FUV, ACQ/PEAKD, PSA	G160M 1600 A	STEP-SIZE=0.6; NUM-POS=9			1 Secs [==>]	[1]
<i>Comments: Spectroscopic acquisition for G160M - step 3 Target Acq is identical to program 11897</i>									
4	Aperture Lif etime Positi on 1	NONE	COS, ALIGN/APER		XAPER=0; YAPER=0			0.0 Secs [==>]	[1]
<i>Comments: Move to aperture location for Lifetime Position 1 (centered)</i>									
5	G160M/157 7, LT=1	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=15 0; FP-POS=3; FLASH=S0130D01 2	POS TARG 0.0,0.0		150 Secs [==>143.0 Secs ]	[1]
<i>Comments: Lifetime Position 1: 0.0 arcsec</i>									
6	Aperture Lif etime Positi on 2	NONE	COS, ALIGN/APER		XAPER=-63; YAPER=0			0.0 Secs [==>]	[1]
<i>Comments: Move to aperture location for Lifetime Position 2. This corresponds to displacement across dispersion of: +3.0 arcsec (6.3x0.476) This aperture move is to an offset aperture position prior to obtaining an exposure at one of the four alternate lifetime adjustment locations.</i>									
7	G160M/157 7 A, LT=2	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=15 0; FP-POS=3; FLASH=S0130D01 2	POS TARG 0.0,+3.0 ; SPEC COM INSTR ELNOAPMAIN		150 Secs [==>143.0 Secs ]	[1]
<i>Comments: Lifetime Position 2: +3.0 arcsec</i>									
8	Aperture Lif etime Positi on 3	NONE	COS, ALIGN/APER		XAPER=-126; YAPER=0			0.0 Secs [==>]	[1]
<i>Comments: Move to aperture location for Lifetime Position 3. This corresponds to displacement across dispersion of: +6.0 arcsec (12.6x0.476) This aperture move is to an offset aperture position prior to obtaining an exposure at one of the four alternate lifetime adjustment locations.</i>									

Proposal 12096 - Visit 02 - COS FUV Detector Lifetime Adjustment and Sensitivity Test

9	G160M/157 7 A, LT=3	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=15 0; FP-POS=3; FLASH=S0130D01 2	POS TARG 0.0,+6.0 ; SPEC COM INSTR ELNOAPMAIN	150 Secs [==>143.0 Secs ]	[1]
<i>Comments: Lifetime Position 3: +6.0 arcsec</i>								
10	Aperture Lif etime Positi on 5	NONE	COS, ALIGN/APER		XAPER=126; YAPER=0		0.0 Secs [==>]	[1]
<i>Comments: Move to aperture location for Lifetime Position 5. This corresponds to displacement across dispersion of: -6.0 arcsec (-12.6x0.476)</i>								
<i>This aperture move is to an offset aperture position prior to obtaining an exposure at one of the four alternate lifetime adjustment locations.</i>								
11	G160M/157 7 A, LT=5	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=15 0; FP-POS=3; FLASH=S0130D01 2	POS TARG 0.0,-6.0; SPEC COM INSTR ELNOAPMAIN	150 Secs [==>143.0 Secs ]	[1]
<i>Comments: Lifetime Position 5: -6.0 arcsec</i>								
12	Aperture Lif etime Positi on 4	NONE	COS, ALIGN/APER		XAPER=63; YAPER=0		0.0 Secs [==>]	[1]
<i>Comments: Move to aperture location for Lifetime Position 4. This corresponds to displacement across dispersion of: -3.0 arcsec (-6.3x0.476)</i>								
<i>This aperture move is to an offset aperture position prior to obtaining an exposure at one of the four alternate lifetime adjustment locations.</i>								
13	G160M/157 7 A, LT=4	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=15 0; FP-POS=3; FLASH=S0130D01 2	POS TARG 0.0,-3.0; SPEC COM INSTR ELNOAPMAIN	150 Secs [==>143.0 Secs ]	[1]
<i>Comments: Lifetime Position 4: -3.0 arcsec</i>								
14	Aperture Lif etime Positi on 1	NONE	COS, ALIGN/APER		XAPER=0; YAPER=0		0.0 Secs [==>]	[1]
<i>Comments: Move back to aperture location 1 (centered)</i>								
15	G160M/157 7, LT=1	(2) WD1057+719	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=15 0; FP-POS=3; FLASH=S0130D01 2	POS TARG 0.0,0.0	150 Secs [==>143.0 Secs ]	[1]
<i>Comments: Repeat Lifetime Position 1: 0.0 arcsec</i>								

