



14525 - Characterization of COS/FUV detector modal gain at Lifetime Position 4

Cycle: 23, 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>
13	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	29-Jul-2016 13:44:18.0	yes
16	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	29-Jul-2016 13:44:20.0	yes
23	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	29-Jul-2016 13:44:21.0	yes
26	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	29-Jul-2016 13:44:22.0	yes
33	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	29-Jul-2016 13:44:23.0	yes

<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>
36	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	29-Jul-2016 13:44:24.0	yes

6 Total Orbits Used

ABSTRACT

This program will characterize the COS/FUV modal gain at the detector locations over a range of possible initial HV settings for LP4 operations. The deuterium lamp will be used to illuminate the detector region covering possible LP4 positions (between LP3 and the bottom of the detector), along with the LP2 position (where the LP4 wavecal spectrum will fall). The data obtained will be used to create gain maps of the detector.

OBSERVING DESCRIPTION

This program will obtain spectra from the deuterium lamp with enough counts to permit the construction of a gain map covering the region from LP3 down to the bottom of the detector. It will also make similar exposures covering the LP2 location, where the LP4 wavecal spectra will fall.

This will be done at three high voltage settings in order to bracket the likely initial LP4 HV values (163, 167, and 171 for FUV A; 159, 163, and 167 for FUV B). In order to most efficiently illuminate the two segments, the G130M/1309 setting will be used for Segment A, and G160M/1600 will be used for Segment B. Both segments can safely remain on with either setting.

The program consists of six visits, with each collecting data at all three aperture positions for a single cenwave and set of HVs. The procedure for collecting this data is:

- * Set HV levels on both segments
- * Adjust the aperture in the cross dispersion direction so that the deuterium lamp will illuminate the LP2 region (on Segment A if using G130M/1309, or Segment B if using G160M/1600).
- * Take a 400 second deuterium lamp exposure using both detector segments.
- * Adjust the aperture in the cross dispersion direction so that the deuterium lamp will illuminate the LP3 region.
- * Take a 400 second deuterium lamp exposure using both detector segments.
- * Adjust the aperture in the cross dispersion direction so that the deuterium lamp will illuminate the LP4 region.
- * Take a 400 second deuterium lamp exposure using both detector segments.

* Return the HV to its nominal values.

Repeat for each cenwave and HV setting.

The first character of the visit number is 1, 2, or 3, for depending on the HV values: 1 for HVA/B = 163/159, 2 for 167/163, and 3 for 171/167.

The second character of the visit number is 3 for G130M/1309, or 6 for G160M/1600.

No up-to-date gainmaps exist (showing current usage) for the region below LP3 at the specified high-voltage levels. It is important to know the current gain situation over this detector region in order to optimize the placement of LP4. These maps will allow the spectra to be placed as close as possible to LP3, thus preserving resolution and extending operational lifetime, while retaining data quality.

Proposal 14525 - G130M/1309 for HV 163/159 (13) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

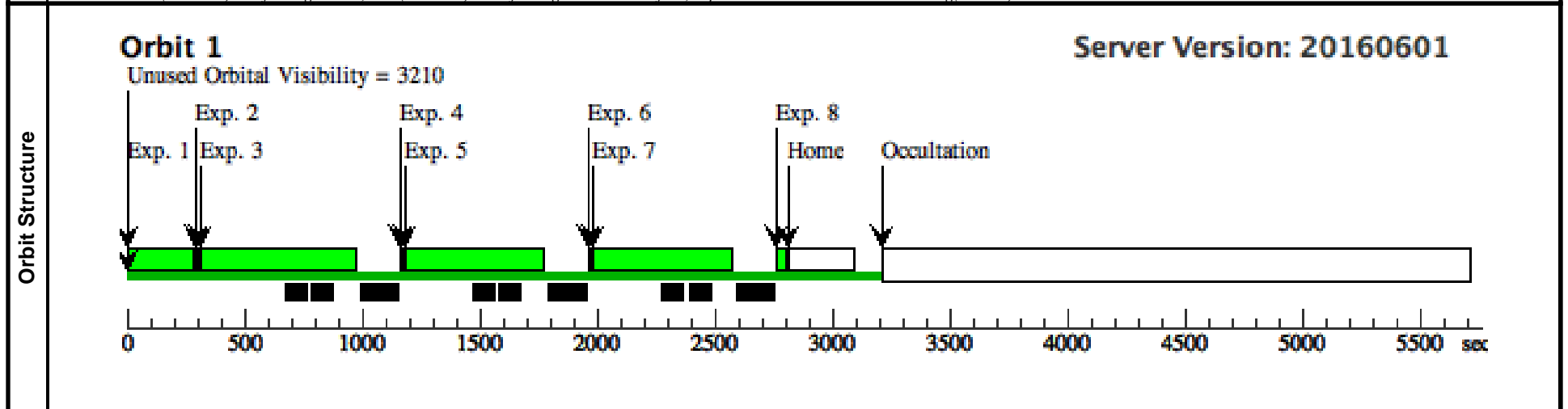
Visit	<p style="text-align: right;">Fri Jul 29 17:44:25 GMT 2016</p> <p>Proposal 14525, G130M/1309 for HV 163/159 (13), implementation Diagnostic Status: Warning Scientific Instruments: S/C, COS, COS/FUV Special Requirements: BEFORE 17-JUL-2016:00:00:00; PARALLEL <i>Comments: This visit collects deuterium lamp data using G130M/1309 at 3 aperture positions using HV values of 163/159.</i></p>
Diagnostics	<p>(G130M/1309 for HV 163/159 (13)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU (Move aperture to LP2 location for Segment A (13.002)) Warning (Form): This ALIGN/APER exposure should be preceded by a science exposure to define the starting position for the scan.</p>

Proposal 14525 - G130M/1309 for HV 163/159 (13) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	Adjust HV to 163/159	DARK	S/C, DATA, NONE		SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF; QASISTATES COS FUV HVLOW HVN OM; QESIPARM ENDC TSA 163; QESIPARM ENDC TSB 159; QESIPARM SEGM ENT AB		295 Secs (295 Secs) [==>]	[1]	
	<i>Comments: Adjust the HV to 163/159</i>									
	2	Move aperture to LP2 location for Segment A	NONE	COS, ALIGN/APER		XAPER=-413			0.0 Secs (0 Secs) [==>]	[1]
	<i>Comments: Put the aperture in the appropriate position to illuminate the LP2 region of the detector when illuminating Segment A with G130M/1309.</i>									
	<i>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at LP2 Position is -231 Therefore, XAPER is set to -231 - 182.1 = -413</i>									
3	G130M/1309 Deuterium Exposure at LP2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1			400 Secs (400 Secs) [==>]	[1]	
<i>Comments: Deuterium exposure optimized for Segment A. FP-POS=1 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G130M/1309.</i>										
4	Move aperture to LP3 location for Segment A	NONE	COS, ALIGN/APER		XAPER=-260	QESIPARM XSTEP S 153		0.0 Secs (0 Secs) [==>]	[1]	
<i>Comments: Put the aperture in the appropriate position to illuminate the LP3 region of the detector when illuminating Segment A with G130M/1309.</i>										
<i>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at LP3 Position is -78 Therefore, XAPER is set to -78 - 182.1 = -260. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 153" [(-260 - -413) = 153] Special Requirement is necessary to move the aperture to the correct location.</i>										
5	G130M/1309 Deuterium Exposure at LP3	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1			400 Secs (400 Secs) [==>]	[1]	
<i>Comments: Deuterium exposure optimized for Segment A. FP-POS=1 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G130M/1309.</i>										

Proposal 14525 - G130M/1309 for HV 163/159 (13) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

6	Move aperture to LP4 location for Segment A	NONE	COS, ALIGN/APER	XAPER=-206	QESIPARM XSTEP S 54	0.0 Secs (0 Secs)	[==>]	[1]
<p>Comments: Put the aperture in the appropriate position to illuminate the LP4 region of the detector when illuminating Segment A with G130M/1309.</p> <p>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at LP4 Position is -24 Therefore, XAPER is set to $-24 - 182.1 = -206$. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 54" $[(-206 - -260) = 54]$ Special Requirement is necessary to move the aperture to the correct location.</p>								
7	G130M/1309 Deuterium Exposure at LP3	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1	400 Secs (400 Secs)	[==>]	[1]
<p>Comments: Deuterium exposure optimized for Segment A. FP-POS=1 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G130M/1309.</p>								
8	Return to nominal HV for standard modes	DARK	S/C, DATA, NONE	SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 167; QESIPARM ENDC TSB 169	50 Secs (50 Secs)	[==>]	[1]	
<p>Comments: Set HV to nominal values used for the standard modes (167/169). HV increase is $(167-163) = 4$ for Segment A, and $(169-159) = 10$ for Segment B. Therefore, exposure time is 39 seconds + $\text{ceiling}(10*1.1) = 50$ seconds</p>								



Proposal 14525 - G160M/1600 for HV 163/159 (16) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

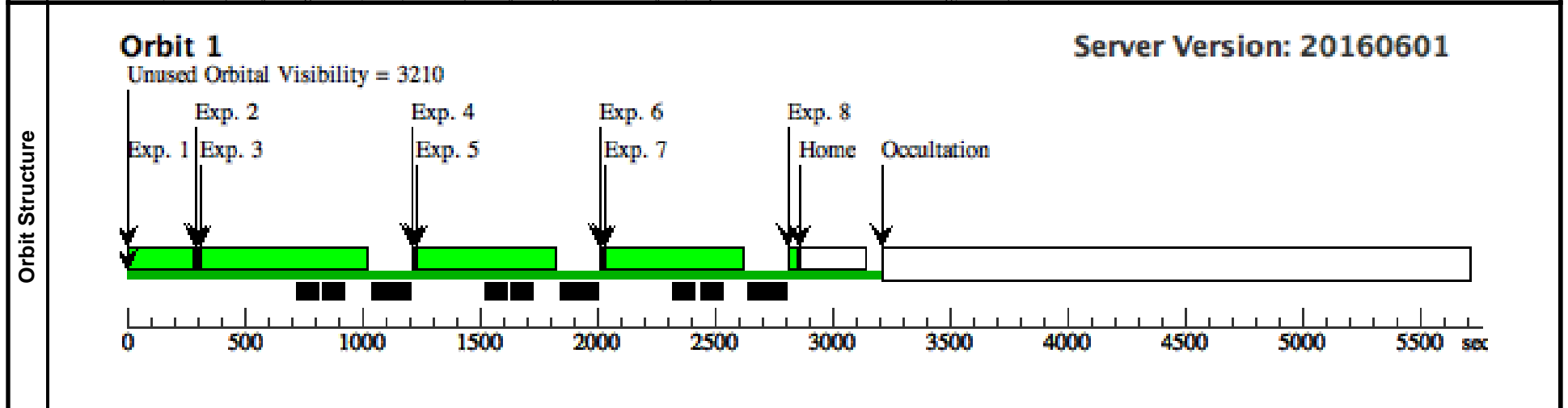
Visit	<p style="text-align: right;">Fri Jul 29 17:44:25 GMT 2016</p> <p>Proposal 14525, G160M/1600 for HV 163/159 (16), implementation Diagnostic Status: Warning Scientific Instruments: S/C, COS, COS/FUV Special Requirements: BEFORE 17-JUL-2016:00:00:00; PARALLEL <i>Comments: This visit collects deuterium lamp data using G160M/1600 at 3 aperture positions using HV values of 163/159.</i></p>
Diagnostics	<p>(G160M/1600 for HV 163/159 (16)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU (Move aperture to LP2 location for Segment B (16.002)) Warning (Form): This ALIGN/APER exposure should be preceded by a science exposure to define the starting position for the scan.</p>

Proposal 14525 - G160M/1600 for HV 163/159 (16) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	Adjust HV to 163/159	DARK	S/C, DATA, NONE		SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF; QASISTATES COS FUV HVLOW HVN OM; QESIPARM ENDC TSA 163; QESIPARM ENDC TSB 159; QESIPARM SEGM ENT AB		295 Secs (295 Secs) [==>]	[1]	
	<i>Comments: Adjust the HV to 163/159</i>									
	2	Move aperture to LP2 location for Segment B	NONE	COS, ALIGN/APER		XAPER=-425			0.0 Secs (0 Secs) [==>]	[1]
	<i>Comments: Put the aperture in the appropriate position to illuminate the LP2 region of the detector when illuminating Segment b with G160M/1600.</i>									
	<i>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at LP2 Position is -243 Therefore, XAPER is set to -243 - 182.1 = -425</i>									
3	G160M/1600 Deuterium Exposure at LP2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4			400 Secs (400 Secs) [==>]	[1]	
<i>Comments: Deuterium exposure optimized for Segment B. FP-POS=4 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G160M/1600.</i>										
4	Move aperture to LP3 location for Segment B	NONE	COS, ALIGN/APER		XAPER=-267	QESIPARM XSTEP S 158		0.0 Secs (0 Secs) [==>]	[1]	
<i>Comments: Put the aperture in the appropriate position to illuminate the LP3 region of the detector when illuminating Segment B with G160M/1600.</i>										
<i>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at LP3 Position is -85 Therefore, XAPER is set to -85 - 182.1 = -267. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 158" [(-267 - -425) = 158] Special Requirement is necessary to move the aperture to the correct location.</i>										
5	G160M/1600 Deuterium Exposure at LP3	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4			400 Secs (400 Secs) [==>]	[1]	
<i>Comments: Deuterium exposure optimized for Segment B. FP-POS=4 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G160M/1600.</i>										

Proposal 14525 - G160M/1600 for HV 163/159 (16) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

6	Move aperture to LP4 location for Segment B	NONE	COS, ALIGN/APER	XAPER=-215	QESIPARM XSTEP S 52	0.0 Secs (0 Secs)	[==>]	[1]
<p>Comments: Put the aperture in the appropriate position to illuminate the LP4 region of the detector when illuminating Segment A with G130M/1309.</p> <p>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at LP4 Position is -33 Therefore, XAPER is set to $-33 - 182.1 = -215$. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 52" $[(-215 - -267) = 52]$ Special Requirement is necessary to move the aperture to the correct location.</p>								
7	G160M/1600 Deuterium Exposure at LP3	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4	400 Secs (400 Secs)	[==>]	[1]
<p>Comments: Deuterium exposure optimized for Segment B. FP-POS=1 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G160M/1600.</p>								
8	Return to nominal HV for standard modes	DARK	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 167; QESIPARM ENDC TSB 169	50 Secs (50 Secs)	[==>]	[1]
<p>Comments: Set HV to nominal values used for the standard modes (167/169). HV increase is $(167-163) = 4$ for Segment A, and $(169-159) = 10$ for Segment B. Therefore, exposure time is 39 seconds + $\text{ceiling}(10*1.1) = 50$ seconds</p>								



Proposal 14525 - G130M/1309 for HV 167/163 (23) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

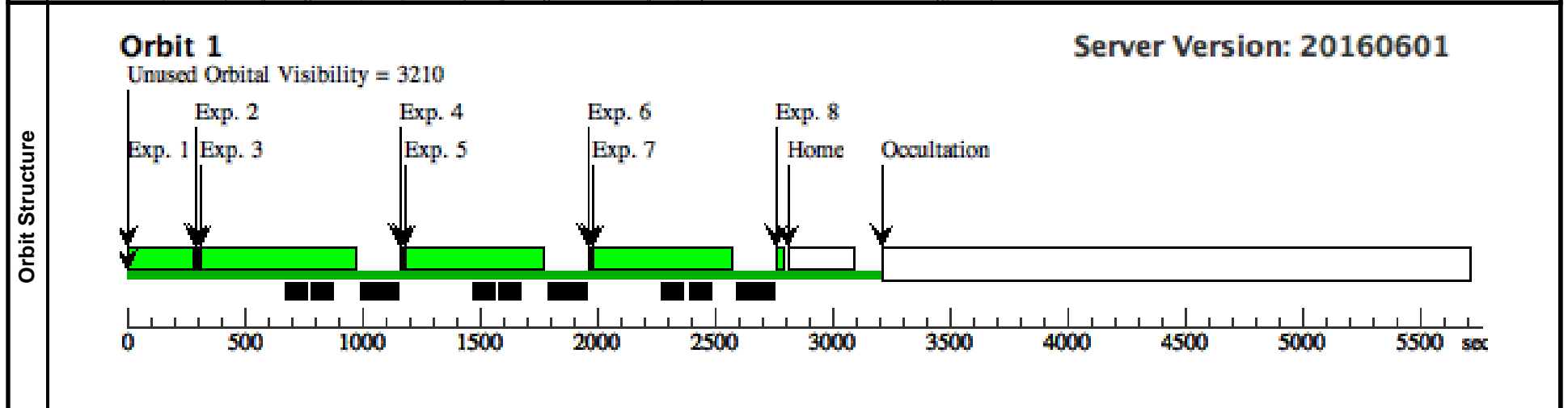
Visit	<p style="text-align: right;">Fri Jul 29 17:44:25 GMT 2016</p> <p>Proposal 14525, G130M/1309 for HV 167/163 (23), implementation Diagnostic Status: Warning Scientific Instruments: S/C, COS, COS/FUV Special Requirements: BEFORE 17-JUL-2016:00:00:00; PARALLEL <i>Comments: This visit collects deuterium lamp data using G130M/1309 at 3 aperture positions using HV values of 167/163.</i></p>
Diagnostics	<p>(G130M/1309 for HV 167/163 (23)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU (Move aperture to LP2 location for Segment A (23.002)) Warning (Form): This ALIGN/APER exposure should be preceded by a science exposure to define the starting position for the scan.</p>

Proposal 14525 - G130M/1309 for HV 167/163 (23) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	Adjust HV to 167/163	DARK	S/C, DATA, NONE		SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF; QASISTATES COS FUV HVLOW HVN OM; QESIPARM ENDC TSA 167; QESIPARM ENDC TSB 163; QESIPARM SEGM ENT AB		295 Secs (295 Secs) [==>]	[1]	
	<i>Comments: Adjust the HV to 167/163</i>									
	2	Move aperture to LP2 location for Segment A	NONE	COS, ALIGN/APER		XAPER=-413			0.0 Secs (0 Secs) [==>]	[1]
	<i>Comments: Put the aperture in the appropriate position to illuminate the LP2 region of the detector when illuminating Segment A with G130M/1309.</i>									
	<i>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at LP2 Position is -231 Therefore, XAPER is set to -231 - 182.1 = -413</i>									
3	G130M/1309 Deuterium Exposure at LP2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1			400 Secs (400 Secs) [==>]	[1]	
<i>Comments: Deuterium exposure optimized for Segment A. FP-POS=1 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G130M/1309.</i>										
4	Move aperture to LP3 location for Segment A	NONE	COS, ALIGN/APER		XAPER=-260	QESIPARM XSTEP S 153		0.0 Secs (0 Secs) [==>]	[1]	
<i>Comments: Put the aperture in the appropriate position to illuminate the LP3 region of the detector when illuminating Segment A with G130M/1309.</i>										
<i>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at LP3 Position is -78 Therefore, XAPER is set to -78 - 182.1 = -260. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 153" [(-260 - -413) = 153] Special Requirement is necessary to move the aperture to the correct location.</i>										
5	G130M/1309 Deuterium Exposure at LP3	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1			400 Secs (400 Secs) [==>]	[1]	
<i>Comments: Deuterium exposure optimized for Segment A. FP-POS=1 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G130M/1309.</i>										

Proposal 14525 - G130M/1309 for HV 167/163 (23) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

6	Move aperture to LP4 location for Segment A	NONE	COS, ALIGN/APER	XAPER=-206	QESIPARM XSTEP S 54	0.0 Secs (0 Secs)	[==>]	[1]
<p>Comments: Put the aperture in the appropriate position to illuminate the LP4 region of the detector when illuminating Segment A with G130M/1309.</p> <p>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at LP4 Position is -24 Therefore, XAPER is set to $-24 - 182.1 = -206$. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 54" $[(-206 - -260) = 54]$ Special Requirement is necessary to move the aperture to the correct location.</p>								
7	G130M/1309 Deuterium Exposure at LP3	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1	400 Secs (400 Secs)	[==>]	[1]
<p>Comments: Deuterium exposure optimized for Segment A. FP-POS=1 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G130M/1309.</p>								
8	Return to nominal HV for standard modes	DARK	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 167; QESIPARM ENDC TSB 169	46 Secs (46 Secs)	[==>]	[1]
<p>Comments: Set HV to nominal values used for the standard modes (167/169). HV increase is $(167-167) = 0$ for Segment A, and $(169-163) = 6$ for Segment B. Therefore, exposure time is 39 seconds + ceiling($6*1.1$) = 46 seconds</p>								



Proposal 14525 - G160M/1600 for HV 167/163 (26) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

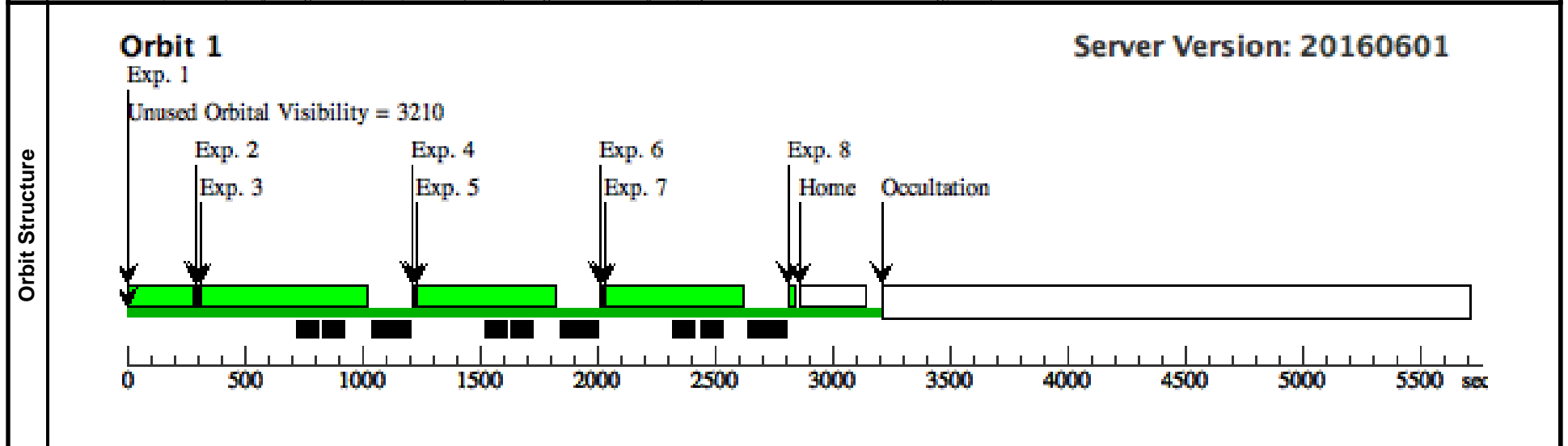
Visit	<p>Proposal 14525, G160M/1600 for HV 167/163 (26), implementation Fri Jul 29 17:44:26 GMT 2016</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: S/C, COS, COS/FUV</p> <p>Special Requirements: BEFORE 17-JUL-2016:00:00:00; PARALLEL</p> <p><i>Comments: This visit collects deuterium lamp data using G160M/1600 at 3 aperture positions using HV values of 167/163.</i></p>
Diagnostics	<p>(G160M/1600 for HV 167/163 (26)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU</p> <p>(Move aperture to LP2 location for Segment B (26.002)) Warning (Form): This ALIGN/APER exposure should be preceded by a science exposure to define the starting position for the scan.</p>

Proposal 14525 - G160M/1600 for HV 167/163 (26) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	Adjust HV to 167/163	DARK	S/C, DATA, NONE		SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF; QASISTATES COS FUV HVLOW HVN OM; QESIPARM ENDC TSA 167; QESIPARM ENDC TSB 163; QESIPARM SEGM ENT AB		295 Secs (295 Secs) [==>]	[1]	
	<i>Comments: Adjust the HV to 167/163</i>									
	2	Move aperture to LP2 location for Segment B	NONE	COS, ALIGN/APER		XAPER=-425			0.0 Secs (0 Secs) [==>]	[1]
	<i>Comments: Put the aperture in the appropriate position to illuminate the LP2 region of the detector when illuminating Segment b with G160M/1600.</i>									
	<i>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at LP2 Position is -243 Therefore, XAPER is set to $-243 - 182.1 = -425$</i>									
3	G160M/1600 Deuterium Exposure at LP2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4			400 Secs (400 Secs) [==>]	[1]	
<i>Comments: Deuterium exposure optimized for Segment B. FP-POS=4 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G160M/1600.</i>										
4	Move aperture to LP3 location for Segment B	NONE	COS, ALIGN/APER		XAPER=-267	QESIPARM XSTEP S 158		0.0 Secs (0 Secs) [==>]	[1]	
<i>Comments: Put the aperture in the appropriate position to illuminate the LP3 region of the detector when illuminating Segment B with G160M/1600.</i>										
<i>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at LP3 Position is -85 Therefore, XAPER is set to $-85 - 182.1 = -267$. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 158" $[(-267 - -425) = 158]$ Special Requirement is necessary to move the aperture to the correct location.</i>										
5	G160M/1600 Deuterium Exposure at LP3	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4			400 Secs (400 Secs) [==>]	[1]	
<i>Comments: Deuterium exposure optimized for Segment B. FP-POS=4 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G160M/1600.</i>										

Proposal 14525 - G160M/1600 for HV 167/163 (26) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

6	Move aperture to LP4 location for Segment B	NONE	COS, ALIGN/APER	XAPER=-215	QESIPARM XSTEP S 52	0.0 Secs (0 Secs)	[==>]	[1]
<p>Comments: Put the aperture in the appropriate position to illuminate the LP4 region of the detector when illuminating Segment A with G130M/1309.</p> <p>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at LP4 Position is -33 Therefore, XAPER is set to $-33 - 182.1 = -215$. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 52" $(-215 - -267) = 52$ Special Requirement is necessary to move the aperture to the correct location.</p>								
7	G160M/1600 Deuterium Exposure at LP3	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4	400 Secs (400 Secs)	[==>]	[1]
<p>Comments: Deuterium exposure optimized for Segment B. FP-POS=1 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G160M/1600.</p>								
8	Return to nominal HV for standard modes	DARK	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 167; QESIPARM ENDC TSB 169	46 Secs (46 Secs)	[==>]	[1]
<p>Comments: Set HV to nominal values used for the standard modes (167/169). HV increase is $(167-167) = 0$ for Segment A, and $(169-163) = 6$ for Segment B. Therefore, exposure time is 39 seconds + ceiling(6*1.1) = 46 seconds</p>								



Proposal 14525 - G130M/1309 for HV 171/167 (33) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

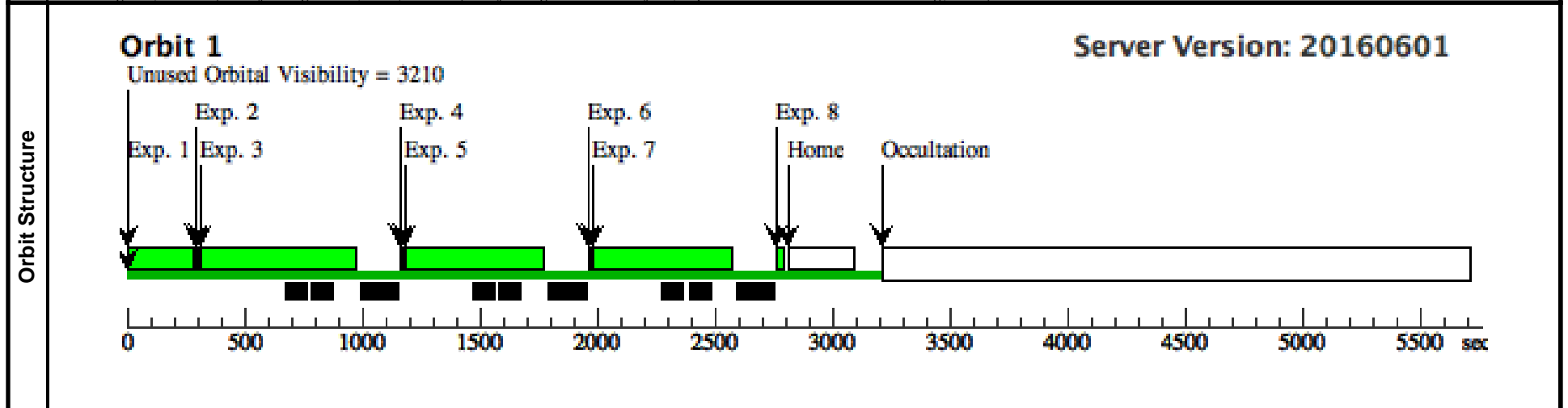
Visit	<p>Proposal 14525, G130M/1309 for HV 171/167 (33), implementation Fri Jul 29 17:44:26 GMT 2016</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: S/C, COS, COS/FUV</p> <p>Special Requirements: BEFORE 17-JUL-2016:00:00:00; PARALLEL</p> <p><i>Comments: This visit collects deuterium lamp data using G130M/1309 at 3 aperture positions using HV values of 171/167.</i></p>
Diagnostics	<p>(G130M/1309 for HV 171/167 (33)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU</p> <p>(Move aperture to LP2 location for Segment A (33.002)) Warning (Form): This ALIGN/APER exposure should be preceded by a science exposure to define the starting position for the scan.</p>

Proposal 14525 - G130M/1309 for HV 171/167 (33) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	Adjust HV to 171/167	DARK	S/C, DATA, NONE		SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF; QASISTATES COS FUV HVLOW HVN OM; QESIPARM ENDC TSA 171; QESIPARM ENDC TSB 167; QESIPARM SEGM ENT AB		295 Secs (295 Secs) [==>]	[1]	
	<i>Comments: Adjust the HV to 171/167</i>									
	2	Move aperture to LP2 location for Segment A	NONE	COS, ALIGN/APER		XAPER=-413			0.0 Secs (0 Secs) [==>]	[1]
	<i>Comments: Put the aperture in the appropriate position to illuminate the LP2 region of the detector when illuminating Segment A with G130M/1309.</i>									
	<i>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at LP2 Position is -231 Therefore, XAPER is set to -231 - 182.1 = -413</i>									
3	G130M/1309 Deuterium Exposure at LP2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1			400 Secs (400 Secs) [==>]	[1]	
<i>Comments: Deuterium exposure optimized for Segment A. FP-POS=1 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G130M/1309.</i>										
4	Move aperture to LP3 location for Segment A	NONE	COS, ALIGN/APER		XAPER=-260	QESIPARM XSTEP S 153		0.0 Secs (0 Secs) [==>]	[1]	
<i>Comments: Put the aperture in the appropriate position to illuminate the LP3 region of the detector when illuminating Segment A with G130M/1309.</i>										
<i>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at LP3 Position is -78 Therefore, XAPER is set to -78 - 182.1 = -260. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 153" [(-260 - -413) = 153] Special Requirement is necessary to move the aperture to the correct location.</i>										
5	G130M/1309 Deuterium Exposure at LP3	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1			400 Secs (400 Secs) [==>]	[1]	
<i>Comments: Deuterium exposure optimized for Segment A. FP-POS=1 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G130M/1309.</i>										

Proposal 14525 - G130M/1309 for HV 171/167 (33) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

6	Move aperture to LP4 location for Segment A	NONE	COS, ALIGN/APER	XAPER=-206	QESIPARM XSTEP 54	0.0 Secs (0 Secs) [==>]	[1]
<p>Comments: Put the aperture in the appropriate position to illuminate the LP4 region of the detector when illuminating Segment A with G130M/1309.</p> <p>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at LP4 Position is -24 Therefore, XAPER is set to $-24 - 182.1 = -206$. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 54" $[(-206 - -260) = 54]$ Special Requirement is necessary to move the aperture to the correct location.</p>							
7	G130M/1309 Deuterium Exposure at LP3	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1	400 Secs (400 Secs) [==>]	[1]
<p>Comments: Deuterium exposure optimized for Segment A. FP-POS=1 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G130M/1309.</p>							
8	Return to nominal HV for standard modes	DARK	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 167; QESIPARM ENDC TSB 169	42 Secs (42 Secs) [==>]	[1]
<p>Comments: Set HV to nominal values used for the standard modes (167/169). HV change is $(167-171) = -4$ for Segment A, and $(169-167) = 2$ for Segment B. Therefore, exposure time is 39 seconds + $\text{ceiling}(2*1.1) = 42$ seconds</p>							



Proposal 14525 - G160M/1600 for HV 171/167 (36) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

Visit	<p style="text-align: right;">Fri Jul 29 17:44:26 GMT 2016</p> <p>Proposal 14525, G160M/1600 for HV 171/167 (36), implementation Diagnostic Status: Warning Scientific Instruments: S/C, COS, COS/FUV Special Requirements: BEFORE 17-JUL-2016:00:00:00; PARALLEL <i>Comments: This visit collects deuterium lamp data using G160M/1600 at 3 aperture positions using HV values of 171/167.</i></p>
Diagnostics	<p>(G160M/1600 for HV 171/167 (36)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU (Move aperture to LP2 location for Segment B (36.002)) Warning (Form): This ALIGN/APER exposure should be preceded by a science exposure to define the starting position for the scan.</p>

Proposal 14525 - G160M/1600 for HV 171/167 (36) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit	
Exposures	1	Adjust HV to 171/167	DARK	S/C, DATA, NONE		SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF; QASISTATES COS FUV HVLOW HVN OM; QESIPARM ENDC TSA 171; QESIPARM ENDC TSB 167; QESIPARM SEGM ENT AB		295 Secs (295 Secs) [==>]	[1]	
	<i>Comments: Adjust the HV to 171/167</i>									
	2	Move aperture to LP2 location for Segment B	NONE	COS, ALIGN/APER		XAPER=-425			0.0 Secs (0 Secs) [==>]	[1]
	<i>Comments: Put the aperture in the appropriate position to illuminate the LP2 region of the detector when illuminating Segment b with G160M/1600.</i>									
	<i>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at LP2 Position is -243 Therefore, XAPER is set to -243 - 182.1 = -425</i>									
3	G160M/1600 Deuterium Exposure at LP2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4			400 Secs (400 Secs) [==>]	[1]	
<i>Comments: Deuterium exposure optimized for Segment B. FP-POS=4 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G160M/1600.</i>										
4	Move aperture to LP3 location for Segment B	NONE	COS, ALIGN/APER		XAPER=-267	QESIPARM XSTEP S 158		0.0 Secs (0 Secs) [==>]	[1]	
<i>Comments: Put the aperture in the appropriate position to illuminate the LP3 region of the detector when illuminating Segment B with G160M/1600.</i>										
<i>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at LP3 Position is -85 Therefore, XAPER is set to -85 - 182.1 = -267. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 158" [(-267 - -425) = 158] Special Requirement is necessary to move the aperture to the correct location.</i>										
5	G160M/1600 Deuterium Exposure at LP3	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4			400 Secs (400 Secs) [==>]	[1]	
<i>Comments: Deuterium exposure optimized for Segment B. FP-POS=4 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G160M/1600.</i>										

Proposal 14525 - G160M/1600 for HV 171/167 (36) - Characterization of COS/FUV detector modal gain at Lifetime Position 4

6	Move aperture to LP4 location for Segment B	NONE	COS, ALIGN/APER		XAPER=-215	QESIPARM XSTEP 52	0.0 Secs (0 Secs)	[1]
<p>Comments: Put the aperture in the appropriate position to illuminate the LP4 region of the detector when illuminating Segment A with G130M/1309.</p> <p>PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at LP4 Position is -33 Therefore, XAPER is set to $-33 - 182.1 = -215$. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 52" $[(-215 - -267) = 52]$ Special Requirement is necessary to move the aperture to the correct location.</p>								
7	G160M/1600 Deuterium Exposure at LP3	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM;	BUFFER-TIME=111;	400 Secs (400 Secs)	[1]
<p>Comments: Deuterium exposure optimized for Segment B. FP-POS=1 was chosen because previous observations show that it has slightly more counts than the other FP-POS values for G160M/1600.</p>								
8	Return to nominal HV for standard modes	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 167; QESIPARM ENDC TSB 169	42 Secs (42 Secs)	[1]
<p>Comments: Set HV to nominal values used for the standard modes (167/169). HV change is $(167-171) = -4$ for Segment A, and $(169-167) = 2$ for Segment B. Therefore, exposure time is 39 seconds + $\text{ceiling}(2*1.1) = 42$ seconds</p>								

