



17851 - Cycle 32 COS FUV Detector Gain Maps

Cycle: 32, 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>
2A	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	10-Feb-2025 08:00:26.0	yes
2C	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	10-Feb-2025 08:00:27.0	yes
3A	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	10-Feb-2025 08:00:28.0	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>
3C	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	10-Feb-2025 08:00:29.0	yes
4A	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	10-Feb-2025 08:00:30.0	yes
4C	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	10-Feb-2025 08:00:31.0	yes
5A	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	10-Feb-2025 08:00:32.0	yes
5C	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	10-Feb-2025 08:00:34.0	yes
6A	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	10-Feb-2025 08:00:35.0	yes
6C	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	10-Feb-2025 08:00:36.0	yes

10 Total Orbits Used

ABSTRACT

This program uses the deuterium lamp to illuminate the regions of the detector being used to collect spectra during Cycle 32. The data obtained will be used to create gain maps of the detector. Because of the strongly varying intensity of the lamp as a function of wavelength, G130M/1309 data will be obtained for Segment A, and G160M/1600 will be used for Segment B.

Gain map data will be obtained at ~6 month intervals for modes where the voltage is unchanged. Obtaining a gain map at these times will help to

improve the modeling of the modal gain as a function of time and extracted charge, since it will provide data that cover the full time span of each high voltage at each LP. Improving these models will allow better predictions of the future lifetime 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 where the spectra fall. In order to 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.

Gain maps should be taken at ~6 month and ~1 year intervals when the default HV does not change. They should be obtained at the appropriate HV levels and detector Lifetime Positions.

The plan for this cycle includes 10 one-orbit visits:

*Visits 2A and 2C will be taken at LP2 after about 6 months and 1 year from the gain map taken at this position near the end of the previous cycle at the nominal LP2 HV values (currently 178/175).

*Visits 3A and 3C will be taken at LP3 after about 6 months and 1 year from the gain map taken at this position near the end of the previous cycle at the nominal LP3 HV values (178/175).

*Visits 4A and 4C will be taken at LP4 after about 6 months and 1 year from the gain map taken at this position near the end of the previous cycle at the nominal LP4 HV values (173/175).

*Visits 5A and 5C will be taken at LP5 after about 6 months and 1 year from the gain map taken at this position near the end of the previous cycle at the nominal LP5 HV values (178/175).

*Visits 6A and 6C will be taken at LP6 after about 6 months and 1 year from the gain map taken at this position near the end of the previous cycle at the nominal LP6 HV values (178/175).

Note that if the HV changes during the current cycle, the values specified in this proposal will have to be adjusted.

The procedure for collecting this data in each visit is given below.

- * Take an exposure at LP1 to set up the aperture position and HV. This can also be used to measure the gain at LP1. These exposures will use G130M/1309 for visits 2A, 2C, 3A, and 3C; and G160M/1600 for visits 4A, 4C, 5A, 5C, 6A, and 6C.
- * Adjust the HV values
- * Adjust the aperture in the cross dispersion direction so that the deuterium lamp will illuminate the appropriate region on Segment A when using G130M/1309.
- * Take a 440 second deuterium lamp exposure using both detector segments.
- * Adjust the aperture to a second cross-dispersion location to obtain additional coverage on Segment A and take another 440 second deuterium lamp exposure.
- * Adjust the aperture in the cross dispersion direction so that the deuterium lamp will illuminate the appropriate region on Segment B when using G160M/1600.
- * Take a 440 second deuterium lamp exposure using both detector segments.
- * Adjust the aperture to a second cross-dispersion location to obtain additional coverage on Segment B and take another 440 second deuterium lamp exposure.
- * Return the aperture to the HOME position

All G130M/1309 exposures use FP-POS=1, and all G160M/1600 exposures use FP-POS=4. These choices give slightly more counts than other FP-

Proposal 17851 (STScI Edit Number: 1, Created: Monday, February 10, 2025, 8:00:36AM Eastern Standard Time) - Overview
POS values.

Note that because TRANS resets its aperture zero point when FCA exposures are taken, the aperture is explicitly moved using "QESIPARM XSTEPS", as was done in Program 13970, 14439, 14519, 14941, 15534, 15772, etc.

For reference, the soft and hard stops for the apertures are listed below. All aperture moves are within these ranges.

MEB1:

SOFT STOPS = -275 to 275

HARD STOPS = -282 to 285

MEB2:

SOFT STOPS = -275 to 275

HARD STOPS = -284 to 283

The initial exposure of each visit uses the FCA_LP1 aperture position, LAPXSTP = -153. Thus all XAPER values are relative to that position.

Summary table:

Visit	LP	Grating/Segment	Y Position	LAPXSTP	XAPER	HV
2A/2C	2	G130M/A	1	-213	-60	178/175
2A/2C	2	G130M/A	2	-267*	-114	178/175
2A/2C	2	G160M/B	1	-215	-62	178/175
2A/2C	2	G160M/B	2	-267*	-114	178/175
3A/3C	3	G130M/A	1	-72	+81	178/175
3A/3C	3	G130M/A	2	-128	+25	178/175

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3A/3C	3	G160M/B	1	-84	+69	178/175
3A/3C	3	G160M/B	2	-140	+13	178/175
4A/4C	4	G130M/A	1	-32	+121	173/175
4A/4C	4	G130M/A	2	-86	+67	173/175
4A/4C	4	G160M/B	1	-41	+112	173/175
4A/4C	4	G160M/B	2	-95	+58	173/175
5A/5C	5	G130M/A	1	-213	-60	178/175
5A/5C	5	G130M/A	2	-267*	-114	178/175
5A/5C	5	G160M/B	1	-215	-62	178/175
5A/5C	5	G160M/B	2	-267*	-114	178/175
6A/6C	5	G130M/A	1	-213	-60	178/175
6A/6C	5	G130M/A	2	-267*	-114	178/175
6A/6C	5	G160M/B	1	-215	-62	178/175
6A/6C	5	G160M/B	2	-267*	-114	178/175

* Limited to be within the soft stops

The LP2, LP5 and LP6 aperture positions are identical, but the Y extent of the spectra on the detector is large enough to cover the detector region used for these LPs.

Proposal 17851 - ~6 months after last Cycle 31 LP2 gain map (2A) - Cycle 32 COS FUV Detector Gain Maps

Visit	<p>Proposal 17851, ~6 months after last Cycle 31 LP2 gain map (2A), scheduling Mon Feb 10 13:00:36 GMT 2025</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: S/C, COS, COS/FUV</p> <p>Special Requirements: BETWEEN 01-APR-2025:00:00:00 AND 01-MAY-2025:00:00:00; PARALLEL</p> <p><i>Comments: This visit collects data at LP2. It uses the HV values appropriate for LP2 (178/175).</i></p>
Diagnostics	<p>(~6 months after last Cycle 31 LP2 gain map (2A)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB VISIT</p>

Proposal 17851 - ~6 months after last Cycle 31 LP2 gain map (2A) - Cycle 32 COS FUV Detector Gain Maps

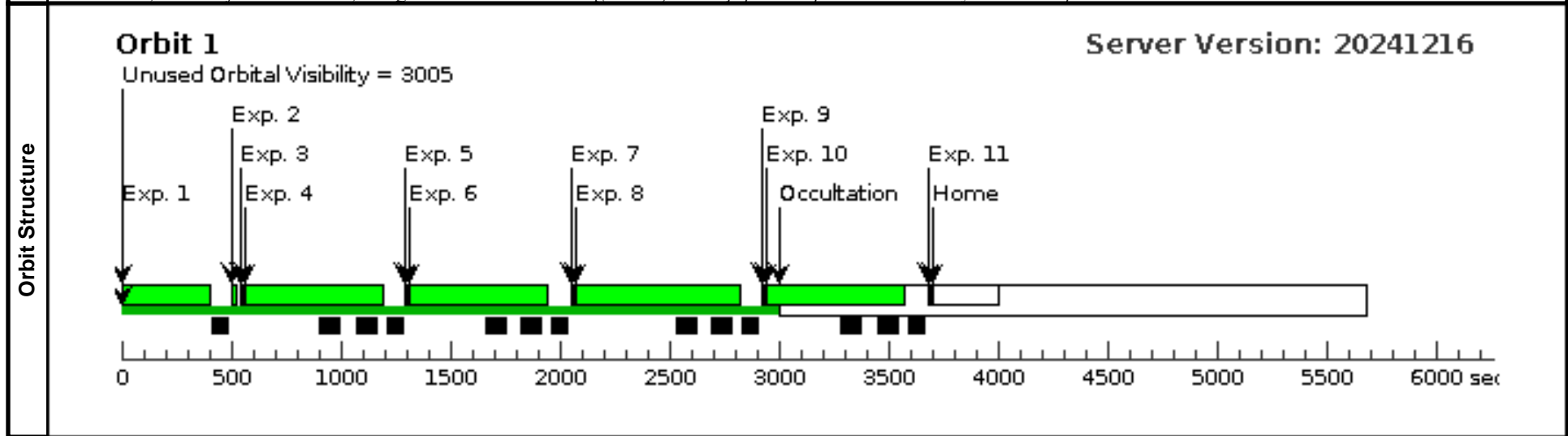
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	G130M/130 9 Deuterium Exposure - Set up at LP1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=196; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=LPI			125 Secs (125 Secs) [==>]	[1]
<p><i>Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the LP1 values.</i></p>									
2	Adjust HV to LP2 values	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHVADJPROP; QASISTATES COS FUV HVNOM HVNOM; QESIPARM ENDC TSA 178; QESIPARM ENDC TSB 175; QESIPARM SEGMENT AB		39 Secs (39 Secs) [==>]	[1]
<p><i>Comments: Adjust the HV to the LP2 values.</i></p> <p><i>Since the HV is not increasing, exposure time = 39 seconds</i></p>									
3	Aperture Adjustment 1 for Segment A	NONE	COS, ALIGN/APERTURE		XAPER=-60			0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP2 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 1 for LP2 is -213</i> <i>Therefore, XAPER is set to -213 - -153 = -60</i></p>									
4	G130M/130 9 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=LPI			440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>									
5	Aperture Adjustment 2 for Segment A	NONE	COS, ALIGN/APERTURE		XAPER=-114	QESIPARM XSTEP S-54		0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP2 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP2 is -267</i> <i>Therefore, XAPER is set to -267 - -153 = -114. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -54" [(-114 - -60) = -54] Special Requirement is necessary to move the aperture to the correct location.</i></p>									

Proposal 17851 - ~6 months after last Cycle 31 LP2 gain map (2A) - Cycle 32 COS FUV Detector Gain Maps

6	G130M/130 9 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
7	Aperture Adjustment 1 for Segment B	NONE	COS, ALIGN/APER		XAPER=-62 QESIPARM XSTEP S 52	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP2 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP2 is -215</i> <i>Therefore, XAPER is set to -215 - -153 = -62. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 52" [(-62 - -114) = +52] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
8	G160M/160 0 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
9	Aperture Adjustment 2 for Segment B	NONE	COS, ALIGN/APER		XAPER=-114 QESIPARM XSTEP S -52	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP2 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP2 is -280, but the aperture soft stop is at -275 and we don't want to exceed that value when including the 5 step overshoot. To leave some pad, I will set it to match the G130M exposure (-267).</i> <i>Therefore, XAPER is set to -267 - -153 = -114. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -52" [(-114 - -62) = -52] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
10	G160M/160 0 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							

Proposal 17851 - ~6 months after last Cycle 31 LP2 gain map (2A) - Cycle 32 COS FUV Detector Gain Maps

11	Return Aperture to Nominal Position	NONE	COS, ALIGN/APER	XAPER=0	QESIPARM XSTEP S 114	0 Secs (0 Secs)	
						[==>]	[!]
<p>Comments: Return aperture to nominal position by setting XAPER=0</p> <p><i>*HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS +114" [(0 - -114) = +114] Special Requirement is necessary to move the aperture to its correct location.</i></p>							



Proposal 17851 - ~12 months after last Cycle 31 LP2 gain map (2C) - Cycle 32 COS FUV Detector Gain Maps

Visit	<p>Proposal 17851, ~12 months after last Cycle 31 LP2 gain map (2C), implementation Mon Feb 10 13:00:36 GMT 2025</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: S/C, COS, COS/FUV</p> <p>Special Requirements: BETWEEN 01-OCT-2025:00:00:00 AND 01-NOV-2025:00:00:00; PARALLEL</p> <p><i>Comments: This visit collects data at LP2. It uses the HV values appropriate for LP2 (178/175).</i></p>
Diagnostics	<p>(~12 months after last Cycle 31 LP2 gain map (2C)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB VISIT</p>

Proposal 17851 - ~12 months after last Cycle 31 LP2 gain map (2C) - Cycle 32 COS FUV Detector Gain Maps

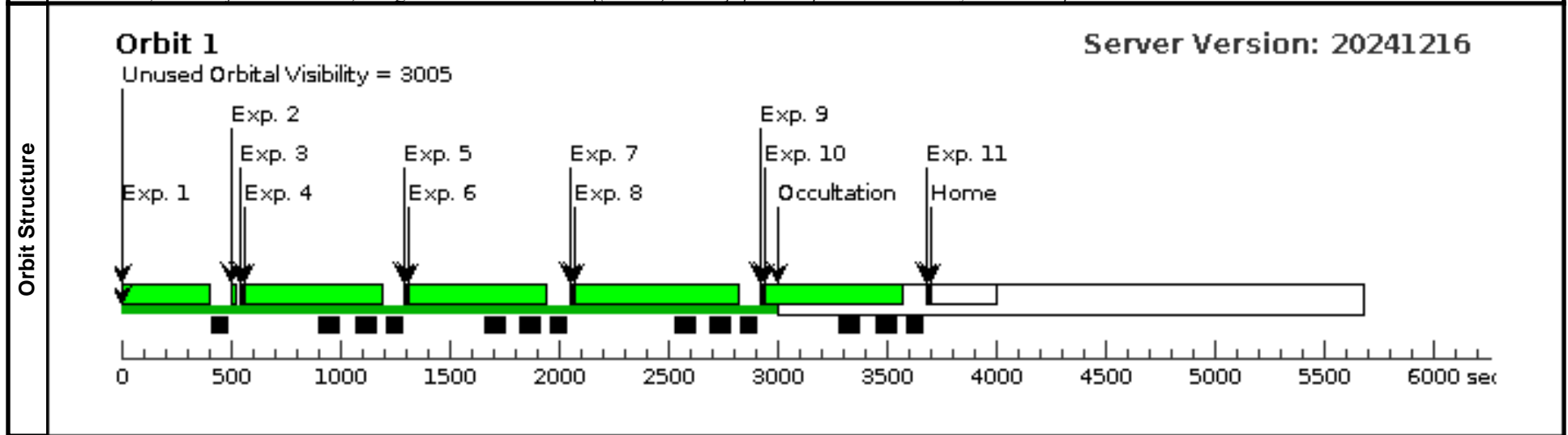
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	G130M/1309 Deuterium Exposure - Set up at LP1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=196; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=LPI			125 Secs (125 Secs) [==>]	[1]
<p><i>Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the LP1 values.</i></p>									
2	Adjust HV to LP2 values	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHVADJPROP; QASISTATES COS FUV HVNOM HVNOM; QESIPARM ENDC TSA 178; QESIPARM ENDC TSB 175; QESIPARM SEGMENT AB		39 Secs (39 Secs) [==>]	[1]
<p><i>Comments: Adjust the HV to the LP2 values.</i></p> <p><i>Since the HV is not increasing, exposure time = 39 seconds</i></p>									
3	Aperture Adjustment 1 for Segment A	NONE	COS, ALIGN/APER		XAPER=-60			0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP2 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i></p> <p><i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 1 for LP2 is -213</i></p> <p><i>Therefore, XAPER is set to -213 - -153 = -60</i></p>									
4	G130M/1309 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=LPI			440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>									
5	Aperture Adjustment 2 for Segment A	NONE	COS, ALIGN/APER		XAPER=-114	QESIPARM XSTEP S -54		0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP2 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i></p> <p><i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP2 is -267</i></p> <p><i>Therefore, XAPER is set to -267 - -153 = -114. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -54" [(-114 - -60) = -54] Special Requirement is necessary to move the aperture to the correct location.</i></p>									

Proposal 17851 - ~12 months after last Cycle 31 LP2 gain map (2C) - Cycle 32 COS FUV Detector Gain Maps

6	G130M/130 9 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
7	Aperture Adjustment 1 for Segment B	NONE	COS, ALIGN/APER		XAPER=-62 QESIPARM XSTEP S 52	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP2 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP2 is -215</i> <i>Therefore, XAPER is set to -215 - -153 = -62. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 52" [(-62 - -114) = +52] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
8	G160M/160 0 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
9	Aperture Adjustment 2 for Segment B	NONE	COS, ALIGN/APER		XAPER=-114 QESIPARM XSTEP S -52	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP2 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP2 is -280, but the aperture soft stop is at -275 and we don't want to exceed that value when including the 5 step overshoot. To leave some pad, I will set it to match the G130M exposure (-267).</i> <i>Therefore, XAPER is set to -267 - -153 = -114. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -52" [(-114 - -62) = -52] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
10	G160M/160 0 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							

Proposal 17851 - ~12 months after last Cycle 31 LP2 gain map (2C) - Cycle 32 COS FUV Detector Gain Maps

11	Return Aperture to Nominal Position	NONE	COS, ALIGN/APER	XAPER=0	QESIPARM XSTEP S 114	0 Secs (0 Secs)	
						[==>]	[!]
<p>Comments: Return aperture to nominal position by setting XAPER=0</p> <p><i>*HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS +114" [(0 - -114) = +114] Special Requirement is necessary to move the aperture to its correct location.</i></p>							



Proposal 17851 - ~6 months after last Cycle 31 LP3 gain map (3A) - Cycle 32 COS FUV Detector Gain Maps

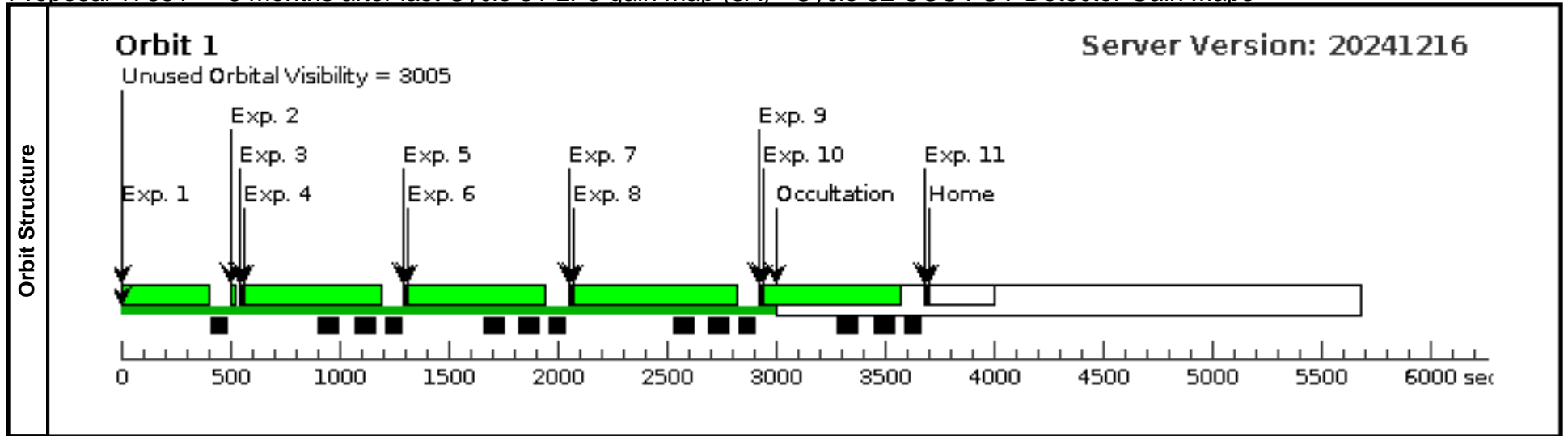
Visit	<p>Proposal 17851, ~6 months after last Cycle 31 LP3 gain map (3A), scheduling Mon Feb 10 13:00:36 GMT 2025</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: S/C, COS, COS/FUV</p> <p>Special Requirements: BETWEEN 01-APR-2025:00:00:00 AND 01-MAY-2025:00:00:00; PARALLEL</p> <p><i>Comments: This visit collects data at LP3. It uses the HV values appropriate for LP3 (178/175).</i></p>
Diagnostics	<p>(~6 months after last Cycle 31 LP3 gain map (3A)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB VISIT</p>

Proposal 17851 - ~6 months after last Cycle 31 LP3 gain map (3A) - Cycle 32 COS FUV Detector Gain Maps

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	G130M/1309 Deuterium Exposure - Set up at LP1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=196; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=LPI			125 Secs (125 Secs) [==>]	[1]
<p><i>Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the LP1 values.</i></p>									
2	Adjust HV to LP3 values	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHVADJPROP; QASISTATES COS FUV HVNOM HVNOM; QESIPARM ENDC TSA 178; QESIPARM ENDC TSB 175; QESIPARM SEGMENT AB		39 Secs (39 Secs) [==>]	[1]
<p><i>Comments: Adjust the HV to LP3 values.</i></p> <p><i>Since the HV is not increasing, exposure time = 39 seconds</i></p>									
3	Aperture Adjustment 1 for Segment A	NONE	COS, ALIGN/APER		XAPER=81			0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP3 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i></p> <p><i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 1 for LP3 is -72</i></p> <p><i>Therefore, XAPER is set to -72 - -153 = +81</i></p>									
4	G130M/1309 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=LPI			440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>									
5	Aperture Adjustment 2 for Segment A	NONE	COS, ALIGN/APER		XAPER=25	QESIPARM XSTEP S -56		0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP3 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i></p> <p><i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP3 is -128</i></p> <p><i>Therefore, XAPER is set to -128 - -153 = +25. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -56" [(+25 - +81) = -56] Special Requirement is necessary to move the aperture to the correct location.</i></p>									

Proposal 17851 - ~6 months after last Cycle 31 LP3 gain map (3A) - Cycle 32 COS FUV Detector Gain Maps

6	G130M/130 9 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
7	Aperture Adjustment 1 for Segment B	NONE	COS, ALIGN/APER		XAPER=69 QESIPARM XSTEP S 44	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP3 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP3 is -84</i></p> <p><i>Therefore, XAPER is set to -84 - -153 = +69. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 44" [(+69 - +25) = +44] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
8	G160M/160 0 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
9	Aperture Adjustment 2 for Segment B	NONE	COS, ALIGN/APER		XAPER=13 QESIPARM XSTEP S -56	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP3 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP3 is -140.</i></p> <p><i>Therefore, XAPER is set to -140 - -153 = +13. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -56" [(+13 - +69) = -56] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
10	G160M/160 0 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
11	Return Aperture to Nominal Position	NONE	COS, ALIGN/APER		XAPER=0 QESIPARM XSTEP S -13	0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Return aperture to nominal position by setting XAPER=0</i></p> <p><i>*HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -13" [(0 - 13) = -13] Special Requirement is necessary to move the aperture to its correct location.</i></p>							



Proposal 17851 - ~12 months after last Cycle 31 LP3 gain map (3C) - Cycle 32 COS FUV Detector Gain Maps

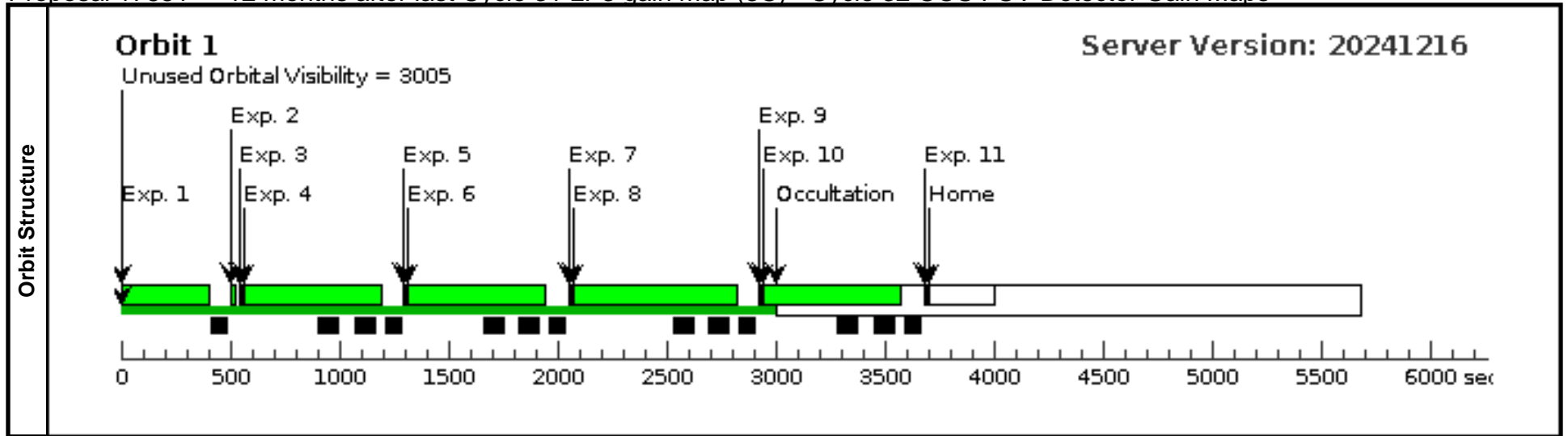
Visit	<p>Proposal 17851, ~12 months after last Cycle 31 LP3 gain map (3C), implementation Mon Feb 10 13:00:37 GMT 2025</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: S/C, COS, COS/FUV</p> <p>Special Requirements: BETWEEN 01-OCT-2025:00:00:00 AND 01-NOV-2025:00:00:00; PARALLEL</p> <p><i>Comments: This visit collects data at LP3. It uses the HV values appropriate for LP3 (178/175).</i></p>
Diagnostics	<p>(~12 months after last Cycle 31 LP3 gain map (3C)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB VISIT</p>

Proposal 17851 - ~12 months after last Cycle 31 LP3 gain map (3C) - Cycle 32 COS FUV Detector Gain Maps

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	G130M/1309 Deuterium Exposure - Set up at LP1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=196; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=LPI			125 Secs (125 Secs) [==>]	[1]
<p><i>Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the LP1 values.</i></p>									
2	Adjust HV to LP3 values	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHVADJPROP; QASISTATES COS FUV HVNOM HVNOM; QESIPARM ENDC TSA 178; QESIPARM ENDC TSB 175; QESIPARM SEGMENT AB		39 Secs (39 Secs) [==>]	[1]
<p><i>Comments: Adjust the HV to LP3 values.</i></p> <p><i>Since the HV is not increasing, exposure time = 39 seconds</i></p>									
3	Aperture Adjustment 1 for Segment A	NONE	COS, ALIGN/APER		XAPER=81			0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP3 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i></p> <p><i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 1 for LP3 is -72</i></p> <p><i>Therefore, XAPER is set to -72 - -153 = +81</i></p>									
4	G130M/1309 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=LPI			440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>									
5	Aperture Adjustment 2 for Segment A	NONE	COS, ALIGN/APER		XAPER=25	QESIPARM XSTEP S -56		0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP3 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i></p> <p><i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP3 is -128</i></p> <p><i>Therefore, XAPER is set to -128 - -153 = +25. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -56" [(+25 - +81) = -56] Special Requirement is necessary to move the aperture to the correct location.</i></p>									

Proposal 17851 - ~12 months after last Cycle 31 LP3 gain map (3C) - Cycle 32 COS FUV Detector Gain Maps

6	G130M/130 9 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
7	Aperture Adjustment 1 for Segment B	NONE	COS, ALIGN/APER		XAPER=69 QESIPARM XSTEP S 44	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP3 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP3 is -84</i></p> <p><i>Therefore, XAPER is set to -84 - -153 = +69. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 44" [(+69 - +25) = +44] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
8	G160M/160 0 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
9	Aperture Adjustment 2 for Segment B	NONE	COS, ALIGN/APER		XAPER=13 QESIPARM XSTEP S -56	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP3 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP3 is -140.</i></p> <p><i>Therefore, XAPER is set to -140 - -153 = +13. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -56" [(+13 - +69) = -56] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
10	G160M/160 0 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
11	Return Aperture to Nominal Position	NONE	COS, ALIGN/APER		XAPER=0 QESIPARM XSTEP S -13	0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Return aperture to nominal position by setting XAPER=0</i></p> <p><i>*HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -13" [(0 - 13) = -13] Special Requirement is necessary to move the aperture to its correct location.</i></p>							



Proposal 17851 - ~6 months after last Cycle 31 LP4 gain map (4A) - Cycle 32 COS FUV Detector Gain Maps

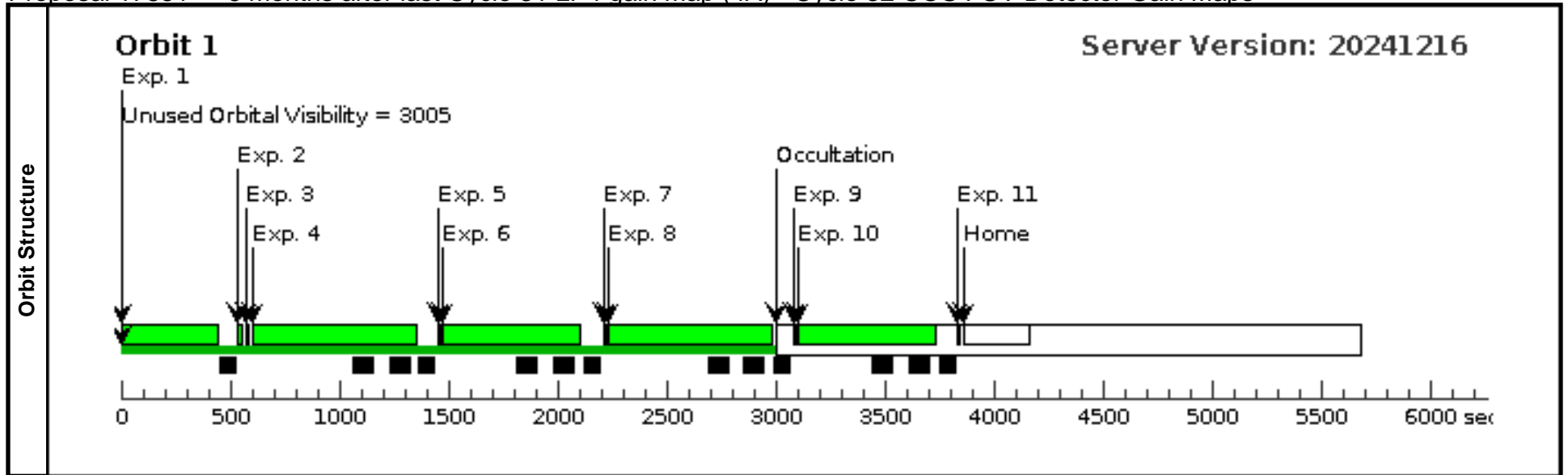
Visit	<p>Proposal 17851, ~6 months after last Cycle 31 LP4 gain map (4A), scheduling Mon Feb 10 13:00:37 GMT 2025</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: S/C, COS, COS/FUV</p> <p>Special Requirements: BETWEEN 01-APR-2025:00:00:00 AND 01-MAY-2025:00:00:00; PARALLEL</p> <p><i>Comments: This visit collects data at LP4. It uses the HV values appropriate for LP4 (173/175).</i></p>
Diagnostics	<p>(~6 months after last Cycle 31 LP4 gain map (4A)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB VISIT</p>

Proposal 17851 - ~6 months after last Cycle 31 LP4 gain map (4A) - Cycle 32 COS FUV Detector Gain Maps

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	G160M/1600 Deuterium Exposure - Set up at LP1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=196; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=LPI			125 Secs (125 Secs) [==>]	[1]
<p><i>Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the LP1 values.</i></p>									
2	Adjust HV to LP4 values	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHVADJPROP; QASISTATES COS FUV HVNOM HVNOM; QESIPARM ENDC TSA 173; QESIPARM ENDC TSB 175; QESIPARM SEGMENT AB		39 Secs (39 Secs) [==>]	[1]
<p><i>Comments: Adjust the HV to LP4 values.</i></p> <p><i>Since the HV is not increasing, exposure time = 39 seconds</i></p>									
3	Aperture Adjustment 1 for Segment A	NONE	COS, ALIGN/APER		XAPER=121			0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP3 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i></p> <p><i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 1 for LP4 is -32</i></p> <p><i>Therefore, XAPER is set to -32 - -153 = +121</i></p>									
4	G130M/1309 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=LPI			440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>									
5	Aperture Adjustment 2 for Segment A	NONE	COS, ALIGN/APER		XAPER=67	QESIPARM XSTEP S -54		0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP3 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i></p> <p><i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP4 is -86</i></p> <p><i>Therefore, XAPER is set to -86 - -153 = +67. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -54" [(+67 - +121) = -54] Special Requirement is necessary to move the aperture to the correct location.</i></p>									

Proposal 17851 - ~6 months after last Cycle 31 LP4 gain map (4A) - Cycle 32 COS FUV Detector Gain Maps

6	G130M/130 9 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
7	Aperture Adjustment 1 for Segment B	NONE	COS, ALIGN/APER		XAPER=112 QESIPARM XSTEP S 45	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP3 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP4 is -41</i></p> <p><i>Therefore, XAPER is set to -41 - -153 = +112. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 45" [(+112 - +67) = +45] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
8	G160M/160 0 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
9	Aperture Adjustment 2 for Segment B	NONE	COS, ALIGN/APER		XAPER=58 QESIPARM XSTEP S -54	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP3 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP3 is -95.</i></p> <p><i>Therefore, XAPER is set to -95 - -153 = +58. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -54" [(+58 - +112) = -54] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
10	G160M/160 0 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
11	Return Aperture to Nominal Position	NONE	COS, ALIGN/APER		XAPER=0 QESIPARM XSTEP S -58	0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Return aperture to nominal position by setting XAPER=0</i></p> <p><i>*HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -58" [(0 - 58) = -58] Special Requirement is necessary to move the aperture to its correct location.</i></p>							



Proposal 17851 - ~12 months after last Cycle 31 LP4 gain map (4C) - Cycle 32 COS FUV Detector Gain Maps

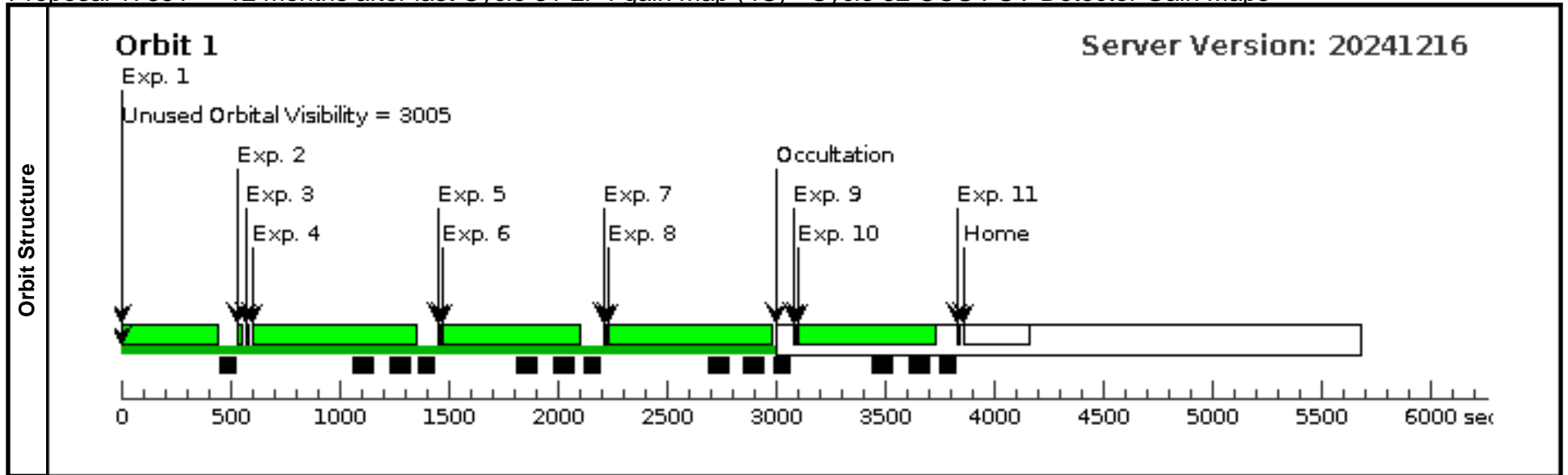
Visit	<p>Proposal 17851, ~12 months after last Cycle 31 LP4 gain map (4C), implementation Mon Feb 10 13:00:37 GMT 2025</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: S/C, COS, COS/FUV</p> <p>Special Requirements: BETWEEN 01-OCT-2025:00:00:00 AND 01-NOV-2025:00:00:00; PARALLEL</p> <p><i>Comments: This visit collects data at LP4. It uses the HV values appropriate for LP4 (173/175).</i></p>
Diagnostics	<p>(~12 months after last Cycle 31 LP4 gain map (4C)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB VISIT</p>

Proposal 17851 - ~12 months after last Cycle 31 LP4 gain map (4C) - Cycle 32 COS FUV Detector Gain Maps

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	G160M/1600 Deuterium Exposure - Set up at LP1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=196; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=LPI			125 Secs (125 Secs) [==>]	[1]
<p><i>Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the LP1 values.</i></p>									
2	Adjust HV to LP4 values	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHVADJPROP; QASISTATES COS FUV HVNOM HVNOM; QESIPARM ENDC TSA 173; QESIPARM ENDC TSB 175; QESIPARM SEGMENT AB		39 Secs (39 Secs) [==>]	[1]
<p><i>Comments: Adjust the HV to LP4 values.</i></p> <p><i>Since the HV is not increasing, exposure time = 39 seconds</i></p>									
3	Aperture Adjustment 1 for Segment A	NONE	COS, ALIGN/APER		XAPER=121			0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP4 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i></p> <p><i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 1 for LP4 is -32</i></p> <p><i>Therefore, XAPER is set to -32 - -153 = +121</i></p>									
4	G130M/1309 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=LPI			440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>									
5	Aperture Adjustment 2 for Segment A	NONE	COS, ALIGN/APER		XAPER=67	QESIPARM XSTEP S -54		0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP4 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i></p> <p><i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP4 is -86</i></p> <p><i>Therefore, XAPER is set to -86 - -153 = +67. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -54" [(+67 - +121) = -54] Special Requirement is necessary to move the aperture to the correct location.</i></p>									

Proposal 17851 - ~12 months after last Cycle 31 LP4 gain map (4C) - Cycle 32 COS FUV Detector Gain Maps

6	G130M/130 9 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
7	Aperture Adjustment 1 for Segment B	NONE	COS, ALIGN/APER		XAPER=112 QESIPARM XSTEP S 45	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP4 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP4 is -41</i></p> <p><i>Therefore, XAPER is set to -41 - -153 = +112. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 45" [(+112 - +67) = +45] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
8	G160M/160 0 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
9	Aperture Adjustment 2 for Segment B	NONE	COS, ALIGN/APER		XAPER=58 QESIPARM XSTEP S -54	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP4 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP4 is -95.</i></p> <p><i>Therefore, XAPER is set to -95 - -153 = +58. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -54" [(+58 - +112) = -54] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
10	G160M/160 0 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
11	Return Aperture to Nominal Position	NONE	COS, ALIGN/APER		XAPER=0 QESIPARM XSTEP S -58	0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Return aperture to nominal position by setting XAPER=0</i></p> <p><i>*HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -58" [(0 - 58) = -58] Special Requirement is necessary to move the aperture to its correct location.</i></p>							



Proposal 17851 - ~6 months after last Cycle 31 LP5 gain map (5A) - Cycle 32 COS FUV Detector Gain Maps

Visit	<p style="text-align: right;">Mon Feb 10 13:00:37 GMT 2025</p> <p>Proposal 17851, ~6 months after last Cycle 31 LP5 gain map (5A), implementation Diagnostic Status: Warning Scientific Instruments: S/C, COS, COS/FUV Special Requirements: BETWEEN 01-APR-2025:00:00:00 AND 01-MAY-2025:00:00:00; ON HOLD ; PARALLEL Comments: <i>This visit collects data at LP5. It uses the HV values appropriate for LP5 (178/175).</i> On Hold Comments: <i>On hold because the LP2, LP5 and LP6 HV values are the same, so all may not be needed</i></p>
Diagnostics	<p>(~6 months after last Cycle 31 LP5 gain map (5A)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB VISIT</p>

Proposal 17851 - ~6 months after last Cycle 31 LP5 gain map (5A) - Cycle 32 COS FUV Detector Gain Maps

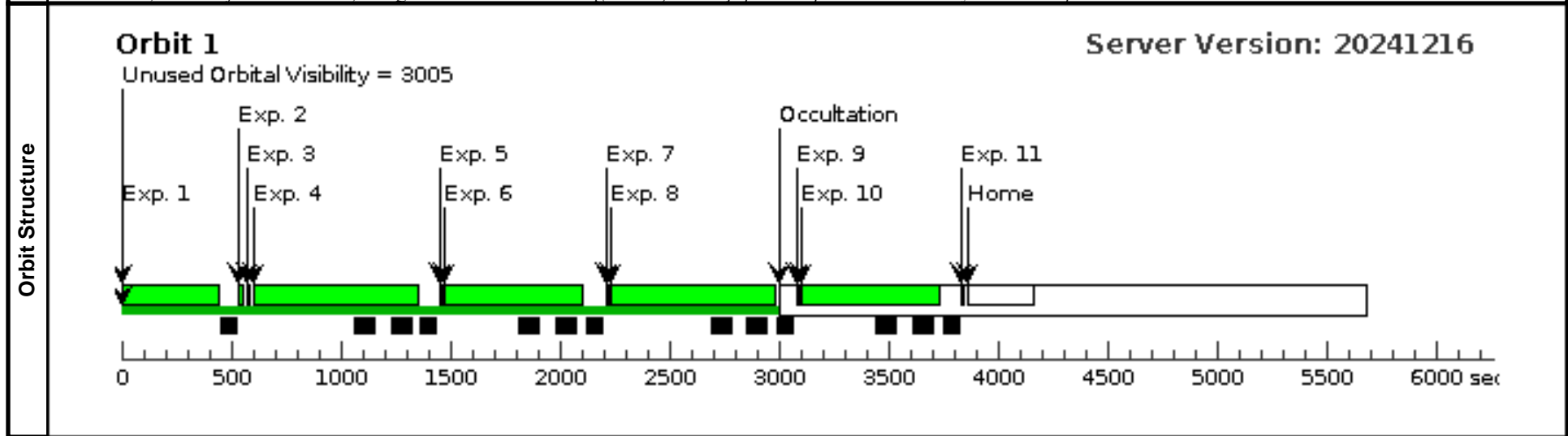
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	G160M/1600 Deuterium Exposure - Set up at LP1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=196; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=LPI			125 Secs (125 Secs) [==>]	[1]
<p><i>Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the LP1 values.</i></p>									
2	Adjust HV to LP5 values	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHVADJPROP; QASISTATES COS FUV HVNOM HVNOM; QESIPARM ENDC TSA 178; QESIPARM ENDC TSB 175; QESIPARM SEGMENT AB		39 Secs (39 Secs) [==>]	[1]
<p><i>Comments: Adjust the HV to LP5 values.</i></p> <p><i>Since the HV is not increasing, exposure time = 39 seconds</i></p>									
3	Aperture Adjustment 1 for Segment A	NONE	COS, ALIGN/APER		XAPER=-60			0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i></p> <p><i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 1 for LP5 is -213</i></p> <p><i>Therefore, XAPER is set to -213 - -153 = -60</i></p>									
4	G130M/1309 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=LPI			440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>									
5	Aperture Adjustment 2 for Segment A	NONE	COS, ALIGN/APER		XAPER=-114	QESIPARM XSTEP S -54		0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i></p> <p><i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP5 is -267</i></p> <p><i>Therefore, XAPER is set to -267 - -153 = -114. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -54" [(-114 - -60) = -54] Special Requirement is necessary to move the aperture to the correct location.</i></p>									

Proposal 17851 - ~6 months after last Cycle 31 LP5 gain map (5A) - Cycle 32 COS FUV Detector Gain Maps

6	G130M/130 9 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
7	Aperture Adjustment 1 for Segment B	NONE	COS, ALIGN/APER		XAPER=-62 QESIPARM XSTEP S 52	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP5 is -215</i> <i>Therefore, XAPER is set to -215 - -153 = -62. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 52" [(-62 - -114) = +52] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
8	G160M/160 0 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
9	Aperture Adjustment 2 for Segment B	NONE	COS, ALIGN/APER		XAPER=-114 QESIPARM XSTEP S -52	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP5 is -280, but the aperture soft stop is at -275 and we don't want to exceed that value when including the 5 step overshoot. To leave some pad, I will set it to match the G130M exposure (-267).</i> <i>Therefore, XAPER is set to -267 - -153 = -114. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -52" [(-114 - -62) = -52] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
10	G160M/160 0 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							

Proposal 17851 - ~6 months after last Cycle 31 LP5 gain map (5A) - Cycle 32 COS FUV Detector Gain Maps

11	Return Aperture to Nominal Position	NONE	COS, ALIGN/APER	XAPER=0	QESIPARM XSTEP S 114	0 Secs (0 Secs)	
						[==>]	[!]
<p>Comments: Return aperture to nominal position by setting XAPER=0</p> <p><i>*HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS +114" [(0 - -114) = +114] Special Requirement is necessary to move the aperture to its correct location.</i></p>							



Proposal 17851 - ~12 months after last Cycle 31 LP5 gain map (5C) - Cycle 32 COS FUV Detector Gain Maps

Visit	<p style="text-align: right;">Mon Feb 10 13:00:37 GMT 2025</p> <p>Proposal 17851, ~12 months after last Cycle 31 LP5 gain map (5C), implementation Diagnostic Status: Warning Scientific Instruments: S/C, COS, COS/FUV Special Requirements: BETWEEN 01-OCT-2025:00:00:00 AND 01-NOV-2025:00:00:00; ON HOLD ; PARALLEL Comments: <i>This visit collects data at LP5. It uses the HV values appropriate for LP5 (178/175).</i> On Hold Comments: <i>On hold because the LP2, LP5 and LP6 HV values are the same, so all may not be needed</i></p>
Diagnostics	<p>(~12 months after last Cycle 31 LP5 gain map (5C)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB VISIT</p>

Proposal 17851 - ~12 months after last Cycle 31 LP5 gain map (5C) - Cycle 32 COS FUV Detector Gain Maps

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	G160M/1600 Deuterium Exposure - Set up at LP1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=196; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=LPI			125 Secs (125 Secs) [==>]	[1]
<p><i>Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the LP1 values.</i></p>									
2	Adjust HV to LP5 values	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHVADJPROP; QASISTATES COS FUV HVNOM HVNOM; QESIPARM ENDC TSA 178; QESIPARM ENDC TSB 175; QESIPARM SEGMENT AB		39 Secs (39 Secs) [==>]	[1]
<p><i>Comments: Adjust the HV to LP5 values.</i></p> <p><i>Since the HV is not increasing, exposure time = 39 seconds</i></p>									
3	Aperture Adjustment 1 for Segment A	NONE	COS, ALIGN/APER		XAPER=-60			0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 1 for LP5 is -213</i> <i>Therefore, XAPER is set to -213 - -153 = -60</i></p>									
4	G130M/1309 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=LPI			440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>									
5	Aperture Adjustment 2 for Segment A	NONE	COS, ALIGN/APER		XAPER=-114	QESIPARM XSTEP S -54		0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP5 is -267</i> <i>Therefore, XAPER is set to -267 - -153 = -114. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -54" [(-114 - -60) = -54] Special Requirement is necessary to move the aperture to the correct location.</i></p>									

Proposal 17851 - ~12 months after last Cycle 31 LP5 gain map (5C) - Cycle 32 COS FUV Detector Gain Maps

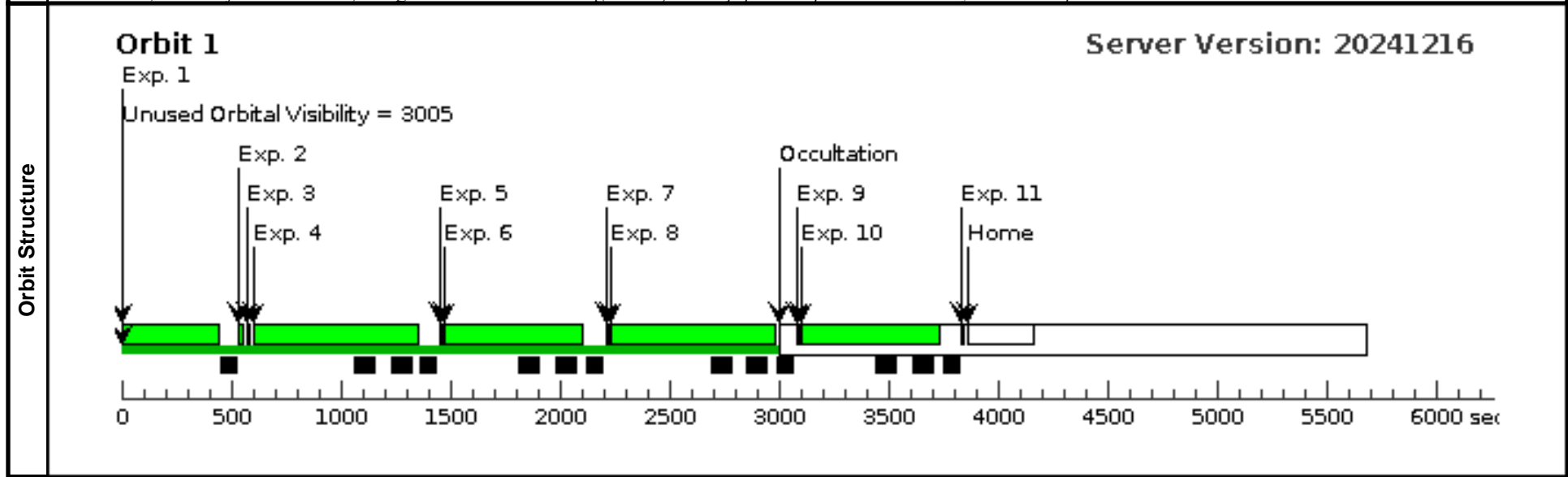
6	G130M/130 9 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><i>Comments: Deuterium exposure optimized for Segment A. FP-POS=1 was chosen because previous observations show that it has slightly more counts than the other FP-POS values.</i></p>							
7	Aperture Adjustment 1 for Segment B	NONE	COS, ALIGN/APER		XAPER=-62 QESIPARM XSTEP S 52	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP5 is -215</i> <i>Therefore, XAPER is set to -215 - -153 = -62. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 52" [(-62 - -114) = +52] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
8	G160M/160 0 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
9	Aperture Adjustment 2 for Segment B	NONE	COS, ALIGN/APER		XAPER=-114 QESIPARM XSTEP S -52	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP5 is -280, but the aperture soft stop is at -275 and we don't want to exceed that value when including the 5 step overshoot. To leave some pad, I will set it to match the G130M exposure (-267).</i> <i>Therefore, XAPER is set to -267 - -153 = -114. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -52" [(-114 - -62) = -52] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
10	G160M/160 0 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							

Proposal 17851 - ~12 months after last Cycle 31 LP5 gain map (5C) - Cycle 32 COS FUV Detector Gain Maps

11	Return Aperture to Nominal Position	NONE	COS, ALIGN/APER	XAPER=0	QESIPARM XSTEP S 114	0 Secs (0 Secs)	
						[==>]	[!]

Comments: Return aperture to nominal position by setting XAPER=0

HOWEVER, because of the TRANS rules, the "QESIPARM XSTEPS +114" [(0 - -114) = +114] Special Requirement is necessary to move the aperture to its correct location.



Proposal 17851 - ~6 months after last Cycle 31 LP6 gain map (6A) - Cycle 32 COS FUV Detector Gain Maps

Visit	<p style="text-align: right;">Mon Feb 10 13:00:37 GMT 2025</p> <p>Proposal 17851, ~6 months after last Cycle 31 LP6 gain map (6A), implementation Diagnostic Status: Warning Scientific Instruments: S/C, COS, COS/FUV Special Requirements: BETWEEN 01-APR-2025:00:00:00 AND 01-MAY-2025:00:00:00; ON HOLD ; PARALLEL Comments: <i>This visit collects data at LP6. It uses the HV values appropriate for LP6 (178/175).</i> On Hold Comments: <i>On hold because the LP2, LP5 and LP6 HV values are the same, so all may not be needed</i></p>
Diagnostics	<p>(~6 months after last Cycle 31 LP6 gain map (6A)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB VISIT</p>

Proposal 17851 - ~6 months after last Cycle 31 LP6 gain map (6A) - Cycle 32 COS FUV Detector Gain Maps

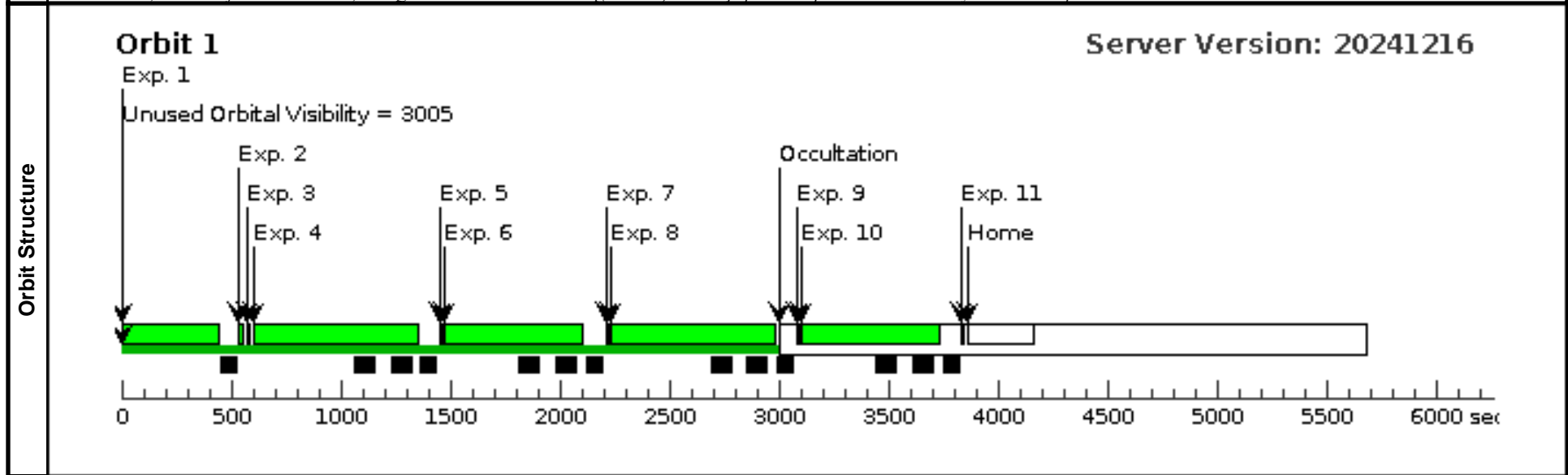
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	G160M/1600 Deuterium Exposure - Set up at LP1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=196; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=LPI			125 Secs (125 Secs) [==>]	[1]
<p><i>Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the LP1 values.</i></p>									
2	Adjust HV to LP6 values	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHVADJPROP; QASISTATES COS FUV HVNOM HVNOM; QESIPARM ENDC TSA 178; QESIPARM ENDC TSB 175; QESIPARM SEGMENT AB		39 Secs (39 Secs) [==>]	[1]
<p><i>Comments: Adjust the HV to LP6 values.</i></p> <p><i>Since the HV is not increasing, exposure time = 39 seconds</i></p>									
3	Aperture Adjustment 1 for Segment A	NONE	COS, ALIGN/APER		XAPER=-60			0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP6 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i></p> <p><i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 1 for LP6 is -213</i></p> <p><i>Therefore, XAPER is set to -213 - -153 = -60</i></p>									
4	G130M/1309 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=LPI			440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>									
5	Aperture Adjustment 2 for Segment A	NONE	COS, ALIGN/APER		XAPER=-114	QESIPARM XSTEP S -54		0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP6 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i></p> <p><i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP6 is -267</i></p> <p><i>Therefore, XAPER is set to -267 - -153 = -114. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -54" [(-114 - -60) = -54] Special Requirement is necessary to move the aperture to the correct location.</i></p>									

Proposal 17851 - ~6 months after last Cycle 31 LP6 gain map (6A) - Cycle 32 COS FUV Detector Gain Maps

6	G130M/130 9 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
7	Aperture Adjustment 1 for Segment B	NONE	COS, ALIGN/APER		XAPER=-62 QESIPARM XSTEP S 52	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP6 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP6 is -215</i> <i>Therefore, XAPER is set to -215 - -153 = -62. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 52" [(-62 - -114) = +52] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
8	G160M/160 0 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
9	Aperture Adjustment 2 for Segment B	NONE	COS, ALIGN/APER		XAPER=-114 QESIPARM XSTEP S -52	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP6 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP6 is -280, but the aperture soft stop is at -275 and we don't want to exceed that value when including the 5 step overshoot. To leave some pad, I will set it to match the G130M exposure (-267).</i> <i>Therefore, XAPER is set to -267 - -153 = -114. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -52" [(-114 - -62) = -52] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
10	G160M/160 0 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							

Proposal 17851 - ~6 months after last Cycle 31 LP6 gain map (6A) - Cycle 32 COS FUV Detector Gain Maps

11	Return Aperture to Nominal Position	NONE	COS, ALIGN/APER	XAPER=0	QESIPARM XSTEP S 114	0 Secs (0 Secs)	
						[==>]	[!]
<p>Comments: Return aperture to nominal position by setting XAPER=0</p> <p><i>*HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS +114" [(0 - -114) = +114] Special Requirement is necessary to move the aperture to its correct location.</i></p>							



Proposal 17851 - ~12 months after last Cycle 31 LP6 gain map (6C) - Cycle 32 COS FUV Detector Gain Maps

Visit	<p style="text-align: right;">Mon Feb 10 13:00:37 GMT 2025</p> <p>Proposal 17851, ~12 months after last Cycle 31 LP6 gain map (6C), implementation Diagnostic Status: Warning Scientific Instruments: S/C, COS, COS/FUV Special Requirements: BETWEEN 01-OCT-2025:00:00:00 AND 01-NOV-2025:00:00:00; ON HOLD ; PARALLEL Comments: <i>This visit collects data at LP6. It uses the HV values appropriate for LP6 (178/175).</i> On Hold Comments: <i>On hold because the LP2, LP5 and LP6 HV values are the same, so all may not be needed</i></p>
Diagnostics	<p>(~12 months after last Cycle 31 LP6 gain map (6C)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB VISIT</p>

Proposal 17851 - ~12 months after last Cycle 31 LP6 gain map (6C) - Cycle 32 COS FUV Detector Gain Maps

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	G160M/1600 Deuterium Exposure - Set up at LP1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=196; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=LPI			125 Secs (125 Secs) [==>]	[1]
<p><i>Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the LP1 values.</i></p>									
2	Adjust HV to LP6 values	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHVADJPROP; QASISTATES COS FUV HVNOM HVNOM; QESIPARM ENDC TSA 178; QESIPARM ENDC TSB 175; QESIPARM SEGMENT AB		39 Secs (39 Secs) [==>]	[1]
<p><i>Comments: Adjust the HV to LP6 values.</i></p> <p><i>Since the HV is not increasing, exposure time = 39 seconds</i></p>									
3	Aperture Adjustment 1 for Segment A	NONE	COS, ALIGN/APER		XAPER=-60			0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP6 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 1 for LP6 is -213</i> <i>Therefore, XAPER is set to -213 - -153 = -60</i></p>									
4	G130M/1309 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=LPI			440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>									
5	Aperture Adjustment 2 for Segment A	NONE	COS, ALIGN/APER		XAPER=-114	QESIPARM XSTEP S -54		0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP6 region of the detector when illuminating Segment A with G130M/1309.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP6 is -267</i> <i>Therefore, XAPER is set to -267 - -153 = -114. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -54" [(-114 - -60) = -54] Special Requirement is necessary to move the aperture to the correct location.</i></p>									

Proposal 17851 - ~12 months after last Cycle 31 LP6 gain map (6C) - Cycle 32 COS FUV Detector Gain Maps

6	G130M/130 9 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
7	Aperture Adjustment 1 for Segment B	NONE	COS, ALIGN/APER		XAPER=-62 QESIPARM XSTEP S 52	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP6 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP6 is -215</i> <i>Therefore, XAPER is set to -215 - -153 = -62. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 52" [(-62 - -114) = +52] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
8	G160M/160 0 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							
9	Aperture Adjustment 2 for Segment B	NONE	COS, ALIGN/APER		XAPER=-114 QESIPARM XSTEP S -52	0.0 Secs (0 Secs) [==>]	[1]
<p><i>Comments: Put the aperture in the appropriate position to illuminate a portion of the LP6 region of the detector when illuminating Segment B with G160M/1600.</i></p> <p><i>FCA LAPXSTP value at LP1 is -153</i> <i>Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP6 is -280, but the aperture soft stop is at -275 and we don't want to exceed that value when including the 5 step overshoot. To leave some pad, I will set it to match the G130M exposure (-267).</i> <i>Therefore, XAPER is set to -267 - -153 = -114. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -52" [(-114 - -62) = -52] Special Requirement is necessary to move the aperture to the correct location.</i></p>							
10	G160M/160 0 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI	440 Secs (440 Secs) [==>]	[1]
<p><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.</i></p>							

Proposal 17851 - ~12 months after last Cycle 31 LP6 gain map (6C) - Cycle 32 COS FUV Detector Gain Maps

11	Return Aperture to Nominal Position	NONE	COS, ALIGN/APER	XAPER=0	QESIPARM XSTEP S 114	0 Secs (0 Secs)	
						[==>]	[!]
<p>Comments: Return aperture to nominal position by setting XAPER=0</p> <p><i>*HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS +114" [(0 - -114) = +114] Special Requirement is necessary to move the aperture to its correct location.</i></p>							

