14439 - COS FUV Detector Gain Maps

Cycle: 23, Proposal Category: CAL/COS

(Availability Mode: RESTRICTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
B1	DEUTERIUM NONE	COS COS/FUV	1	13-Apr-2016 21:11:03.0	yes
B2	DEUTERIUM NONE	COS COS/FUV	1	13-Apr-2016 21:11:05.0	yes
C1	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	13-Apr-2016 21:11:07.0	yes
D1	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	13-Apr-2016 21:11:09.0	yes

4 Total Orbits Used

ABSTRACT

This program uses the deuterium lamp to illuminate the regions of the detector being used to collect spectra. 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 both before and after any change is made to any nominal high voltage value on either segment, and before and after any lifetime move.

Obtaining a gain map at all HV transitions 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 timespan 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 at the current lifetime position. 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 before and after any high voltage change and before and after any change in Lifetime Position. At LP3, multiple nominal HV levels will be in use at the same time, and data should be taken at each of these voltages.

The initial plan includes 4 one orbit visits, and two one orbit contingency visits:

* Visits B1 and B2 data will be taken at LIFE_ADJ=3 before and after a change to the Segment B HV for the standard observing modes.

* Visit C1 data will be taken at LIFE_ADJ=3 before a change to the G130M/1222 Segment B HV, or after about a year from the move to LP3.

* Visit C2 is a contingency visit at LIFE_ADJ=3 which will only be needed if the G130M/1222 Segment B HV is changed to a value that does not match the standard modes.

*Visit D1 will be taken at LIFE_ADJ=2 before a change to the Blue Mode (G130M/1055 & 1096) Segment B HV, or after about a year from the move to LP3.

*Visit D2 is a contingency visit at LIFE_ADJ=2 which will only be needed if the Blue Mode HV is changed.

If the standard HV on Segment B changes more than once during Cycle 23, additional contingency orbits will be needed. Similarly, if Segment A is changed, contingency orbits will be required.

The procedure for collecting this data in each visit is:

* Adjust the HV values if necessary.

* 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 400 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 400 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 400 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 400 second deuterium lamp exposure.

*Return the HV values to the nominal values for the standard modes.

Note that beacuse 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.

For reference, the soft and hard stops for the apertures are listed below. All aperture moves should be kept 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

Proposal 14439 - Before HV change using HV for most modes (B1) - COS FUV Detector Gain Maps

Visit	**Proposal 14439, Before HV change using HV for most modes (B1), completed** Thu Apr 14 01:11:11 GMT 2016 **Diagnostic Status: Warning** Scientific Instruments: COS, COS/FUV Special Requirements: BETWEEN 11-JAN-2016:00:00:00 AND 18-JAN-2016:00:00:00; PARALLEL *Comments: This visit collects data at LP3. It uses the HV values appropriate for most modes at LP3 before the HV increase.* *It should be one of the last COS visits executed before the HV change.*
Diagnostics	(Before HV change using HV for most modes (B1)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU (Aperture Adjustment 1 for Segment A (B1.001)) Warning (Form): This ALIGN/APER exposure should be preceded by a science exposure to define the starting position for the scan.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Aperture Adjustment 1 for Segment A	NONE	COS, ALIGN/APER		XAPER=-254			0.0 Secs (0 Secs) *[==>]*	***[1]***

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.

PSA LAPXSTP value at LP3 is 182.1
Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 1 for LP3 is -72

Therefore, XAPER is set to -72 - 182.1 = -254

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
2	G130M/1309 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1			400 Secs (400 Secs) *[==>]*	***[1]***

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.

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
3	Aperture Adjustment 2 for Segment A	NONE	COS, ALIGN/APER		XAPER=-310	QESIPARM XSTEPS -56		0.0 Secs (0 Secs) *[==>]*	***[1]***

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.

PSA LAPXSTP value at LP3 is 182.1
Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP3 is -128

*Therefore, XAPER is set to -128 - 182.1 = -310. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -56" [(-310 - -254) = -56] Special Requirement is necessary to move the aperture to the correct location.*

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
4	G130M/1309 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1			400 Secs (400 Secs) *[==>]*	***[1]***

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.

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
5	Aperture Adjustment 1 for Segment B	NONE	COS, ALIGN/APER		XAPER=-266	QESIPARM XSTEPS 44		0.0 Secs (0 Secs) *[==>]*	***[1]***

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.

PSA LAPXSTP value at LP3 is 182.1
Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP3 is -84

*Therefore, XAPER is set to -84 - 182.1 = -266. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 44" [(-266 - -310) = +44] Special Requirement is necessary to move the aperture to the correct location.*

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
6	G160M/1600 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4			400 Secs (400 Secs) *[==>]*	***[1]***

Comments: Deuterium exposure optimmized for Segment B. FP-POS=4 was chosen because previous observations show that it has slightly more counts than the other FP-POS values.

7	Aperture Adjustment 2 for Segment B	NONE	COS, ALIGN/APER		XAPER=-322	QESIPARM XSTEPS -56	0.0 Secs (0 Secs) *[==>]*	***[1]***

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.

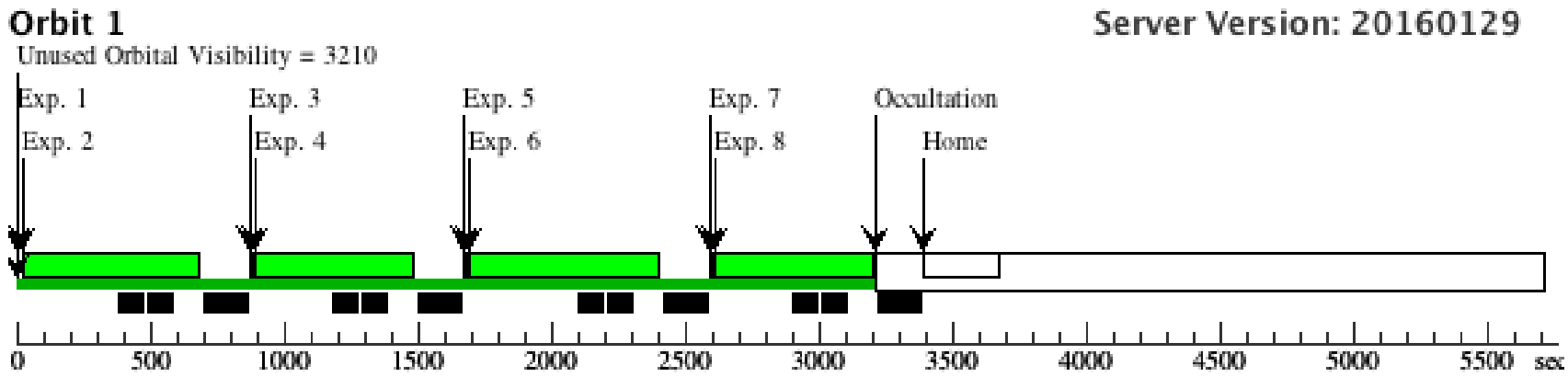
PSA LAPXSTP value at LP3 is 182.1
Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP3 is -140

*Therefore, XAPER is set to -140 - 182.1 = -322. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -56" [(-322 - -266) = -56] Special Requirement is necessary to move the aperture to the correct location.*

8	G160M/1600 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4		400 Secs (400 Secs) *[==>]*	***[1]***

Comments: Deuterium exposure optimmized for Segment B. FP-POS=4 was chosen because previous observations show that it has slightly more counts than the other FP-POS values.

Orbit Structure



Proposal 14439 - After HV change using HV for most modes (B2) - COS FUV Detector Gain Maps

Visit	**Proposal 14439, After HV change using HV for most modes (B2), completed** Thu Apr 14 01:11:11 GMT 2016 **Diagnostic Status: Warning** Scientific Instruments: COS, COS/FUV Special Requirements: BETWEEN 18-JAN-2016:00:00:00 AND 25-JAN-2016:00:00:00; PARALLEL *Comments: This visit collects data at LP3. It uses the HV values appropriate for most modes at LP3 after the HV increase.* *It should be one of the first COS visits executed before the HV change.*
Diagnostics	(After HV change using HV for most modes (B2)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU (Aperture Adjustment 1 for Segment A (B2.001)) Warning (Form): This ALIGN/APER exposure should be preceded by a science exposure to define the starting position for the scan.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Aperture Adjustment 1 for Segment A	NONE	COS, ALIGN/APER		XAPER=-254			0.0 Secs (0 Secs) *[==>]*	***[1]***

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.

PSA LAPXSTP value at LP3 is 182.1
Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 1 for LP3 is -72

Therefore, XAPER is set to -72 - 182.1 = -254

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
2	G130M/1309 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1			400 Secs (400 Secs) *[==>]*	***[1]***

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.

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
3	Aperture Adjustment 2 for Segment A	NONE	COS, ALIGN/APER		XAPER=-310	QESIPARM XSTEPS -56		0.0 Secs (0 Secs) *[==>]*	***[1]***

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.

PSA LAPXSTP value at LP3 is 182.1
Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP3 is -128

*Therefore, XAPER is set to -128 - 182.1 = -310. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -56" [(-310 - -254) = -56] Special Requirement is necessary to move the aperture to the correct location.*

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
4	G130M/1309 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1			400 Secs (400 Secs) *[==>]*	***[1]***

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.

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
5	Aperture Adjustment 1 for Segment B	NONE	COS, ALIGN/APER		XAPER=-266	QESIPARM XSTEPS 44		0.0 Secs (0 Secs) *[==>]*	***[1]***

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.

PSA LAPXSTP value at LP3 is 182.1
Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP3 is -84

*Therefore, XAPER is set to -84 - 182.1 = -266. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 44" [(-266 - -310) = +44] Special Requirement is necessary to move the aperture to the correct location.*

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
6	G160M/1600 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4			400 Secs (400 Secs) *[==>]*	***[1]***

Comments: Deuterium exposure optimmized for Segment B. FP-POS=4 was chosen because previous observations show that it has slightly more counts than the other FP-POS values.

	7	Aperture Adjustment 2 for Segment B	NONE	COS, ALIGN/APER	XAPER=-322	QESIPARM XSTEPS -56	0.0 Secs (0 Secs) *[==>]*	***[1]***

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.

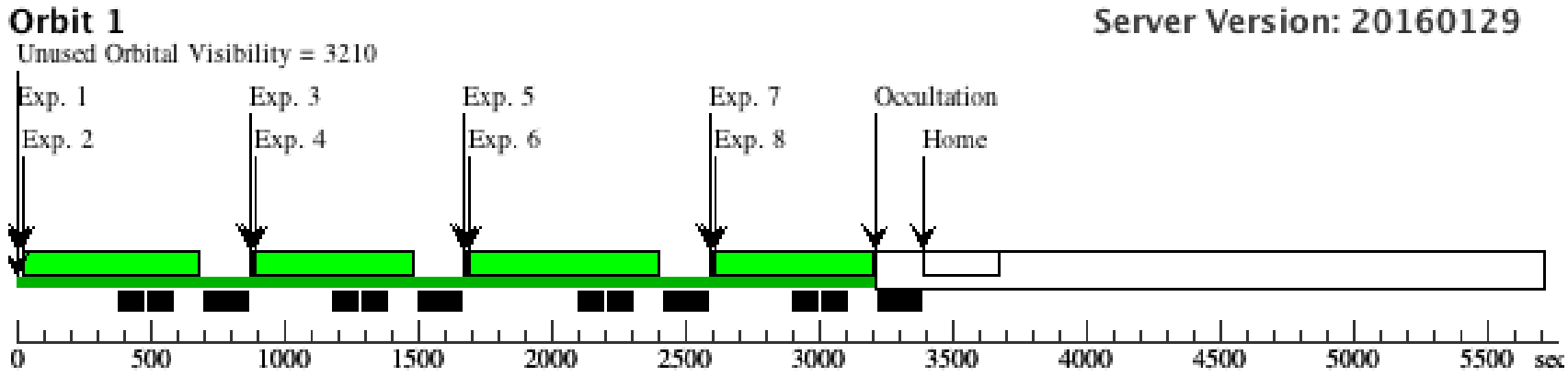
PSA LAPXSTP value at LP3 is 182.1
Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP3 is -140

*Therefore, XAPER is set to -140 - 182.1 = -322. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -56" [(-322 - -266) = -56] Special Requirement is necessary to move the aperture to the correct location.*

	8	G160M/1600 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4	400 Secs (400 Secs) *[==>]*	***[1]***

Comments: Deuterium exposure optimmized for Segment B. FP-POS=4 was chosen because previous observations show that it has slightly more counts than the other FP-POS values.

Orbit Structure



Proposal 14439 - Before HV change using HV for G130M/1222 (C1) - COS FUV Detector Gain Maps

Visit	**Proposal 14439, Before HV change using HV for G130M/1222 (C1), completed** Thu Apr 14 01:11:11 GMT 2016 **Diagnostic Status: Warning** Scientific Instruments: S/C, COS, COS/FUV Special Requirements: BETWEEN 11-JAN-2016:00:00:00 AND 18-JAN-2016:00:00:00; PARALLEL *Comments: This visit collects data at LP3. It uses the HV values appropriate for G130M/1222.* *It should be one of the last COS visits executed before the HV change.*
Diagnostics	(Before HV change using HV for G130M/1222 (C1)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU (Aperture Adjustment 1 for Segment A (C1.002)) Warning (Form): This ALIGN/APER exposure should be preceded by a science exposure to define the starting position for the scan.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Adjust HV to G130M/1222 values	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF; QASISTATES COS FUV HVLOW HVNOM; QESIPARM ENDCTSA 171; QESIPARM ENDCTSB 167; QESIPARM SEGMENT AB		295 Secs (295 Secs) *[==>]*	***[1]***
	Comments: Adjust the HV to the pre HV increase G130M/1222 values.								
2	Aperture Adjustment 1 for Segment A	NONE	COS, ALIGN/APER		XAPER=-254			0.0 Secs (0 Secs) *[==>]*	***[1]***
	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. *PSA LAPXSTP value at LP3 is 182.1* *Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 1 for LP3 is -72* *Therefore, XAPER is set to -72 - 182.1 = -254*								
3	G130M/1309 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1			400 Secs (400 Secs) *[==>]*	***[1]***
	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.								
4	Aperture Adjustment 2 for Segment A	NONE	COS, ALIGN/APER		XAPER=-310	QESIPARM XSTEPS -56		0.0 Secs (0 Secs) *[==>]*	***[1]***
	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. *PSA LAPXSTP value at LP3 is 182.1* *Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP3 is -128* *Therefore, XAPER is set to -128 - 182.1 = -310. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -56" [(-310 - -254) = -56] Special Requirement is necessary to move the aperture to the correct location.*								
5	G130M/1309 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1			400 Secs (400 Secs) *[==>]*	***[1]***
	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.								

6	Aperture Adjustment 1 for Segment B	NONE	COS, ALIGN/APER		XAPER=-266	QESIPARM XSTEPS 44	0.0 Secs (0 Secs) *[==>]*		

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.

PSA LAPXSTP value at LP3 is 182.1
Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP3 is -84

*Therefore, XAPER is set to -84 - 182.1 = -266. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 44" [(-266 - -310) = +44] Special Requirement is necessary to move the aperture to the correct location.*

7	G160M/1600 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4		400 Secs (400 Secs) *[==>]*		

Comments: Deuterium exposure optimmized for Segment B. FP-POS=4 was chosen because previous observations show that it has slightly more counts than the other FP-POS values.

8	Aperture Adjustment 2 for Segment B	NONE	COS, ALIGN/APER		XAPER=-322	QESIPARM XSTEPS -56	0.0 Secs (0 Secs) *[==>]*		

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.

PSA LAPXSTP value at LP3 is 182.1
Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP3 is -140

*Therefore, XAPER is set to -140 - 182.1 = -322. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -56" [(-322 - -266) = -56] Special Requirement is necessary to move the aperture to the correct location.*

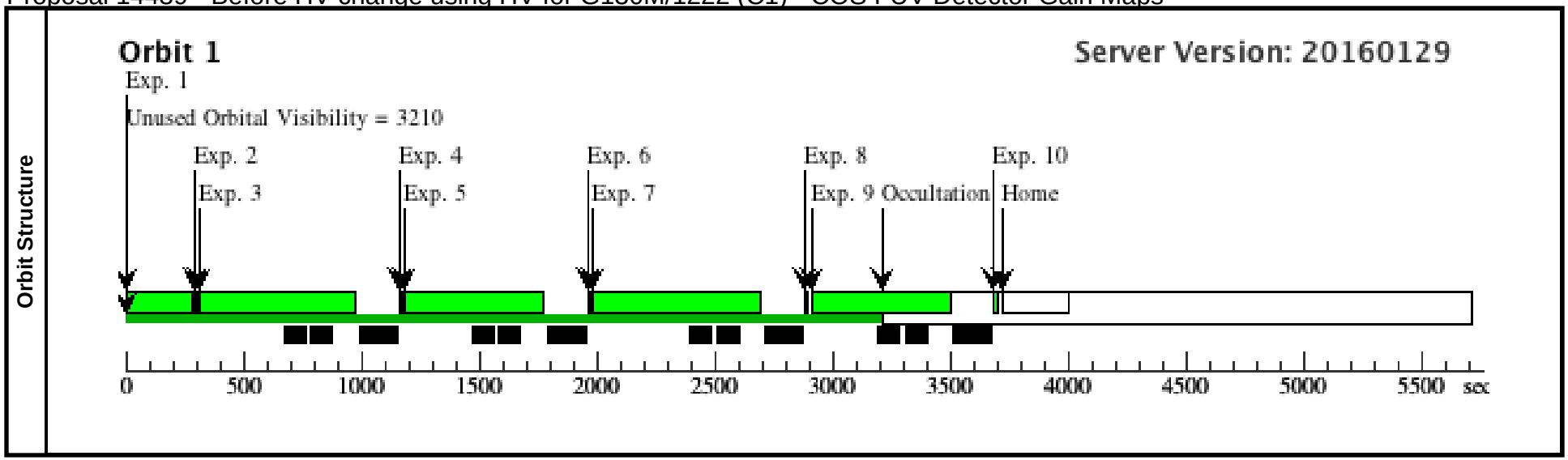
9	G160M/1600 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4		400 Secs (400 Secs) *[==>]*		

Comments: Deuterium exposure optimmized for Segment B. FP-POS=4 was chosen because previous observations show that it has slightly more counts than the other FP-POS values.

10	Return to nominal HV for most modes	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDCTSA 167; QESIPARM ENDCTSB 163	39 Secs (39 Secs) *[==>]*		

Comments: Set HV to nominal values used for most modes (167/163).

Exposure Time is 39 seconds since the HV is being decreased on both segments.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Orbit 1
Server Version: 20160129
Exp. 1
Unused Orbital Visibility = 3210
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Exp. 8
Exp. 9 Occultation
Exp. 10
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Proposal 14439 - ~1 year after move to LP3 using Blue Mode settings (D1) - COS FUV Detector Gain Maps

Visit	**Proposal 14439, ~1 year after move to LP3 using Blue Mode settings (D1), scheduling** Thu Apr 14 01:11:11 GMT 2016 **Diagnostic Status: Warning** Scientific Instruments: S/C, COS, COS/FUV Special Requirements: BEFORE 01-MAY-2016:00:00:00; PARALLEL *Comments: This visit collects data at LP2. It uses the HV values appropriate for the Blue Modes (173/175).*
Diagnostics	(~1 year after move to LP3 using Blue Mode settings (D1)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU (Aperture Adjustment 1 for Segment A (D1.002)) Warning (Form): This ALIGN/APER exposure should be preceded by a science exposure to define the starting position for the scan.

Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Adjust HV to Blue Mode values	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF; QASISTATES COS FUV HVLOW HVNOM; QESIPARM ENDCTSA 173; QESIPARM ENDCTSB 175; QESIPARM SEGMENT AB		295 Secs (295 Secs) *[==>]*	***[1]***
	Comments: Adjust the HV to the Blue Mode values.								
2	Aperture Adjustment 1 for Segment A	NONE	COS, ALIGN/APER		XAPER=-395			0.0 Secs (0 Secs) *[==>]*	***[1]***
	Comments: Put the aperture in the appropriate position to illuminate a portion of the LP2/Blue Modes region of the detector when illuminating Segment A with G130M/1309. *PSA LAPXSTP value at LP3 is 182.1* *Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 1 for LP2 is -213* *Therefore, XAPER is set to -213 - 182.1 = -395*								
3	G130M/1309 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1			400 Secs (400 Secs) *[==>]*	***[1]***
	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.								
4	Aperture Adjustment 2 for Segment A	NONE	COS, ALIGN/APER		XAPER=-449	QESIPARM XSTEPS -54		0.0 Secs (0 Secs) *[==>]*	***[1]***
	Comments: Put the aperture in the appropriate position to illuminate a portion of the LP2/Blue Modes region of the detector when illuminating Segment A with G130M/1309. *PSA LAPXSTP value at LP3 is 182.1* *Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP2 is -267* *Therefore, XAPER is set to -267 - 182.1 = -449. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -54" [(-449 - -395) = -54] Special Requirement is necessary to move the aperture to the correct location.*								
5	G130M/1309 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=1			400 Secs (400 Secs) *[==>]*	***[1]***
	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.								

6	Aperture Adjustment 1 for Segment B	NONE	COS, ALIGN/APER		XAPER=-407	QESIPARM XSTEP S 42	0.0 Secs (0 Secs) *[==>]*	***[1]***

Comments: Put the aperture in the appropriate position to illuminate a portion of the LP2/Blue Modes region of the detector when illuminating Segment B with G160M/1600.

PSA LAPXSTP value at LP3 is 182.1
Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP2 is -225

*Therefore, XAPER is set to -225 - 182.1 = -407. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS 48" [(-407 - -449) = +42] Special Requirement is necessary to move the aperture to the correct location.*

7	G160M/1600 Deuterium Exposure 1	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4		400 Secs (400 Secs) *[==>]*	***[1]***

Comments: Deuterium exposure optimmized for Segment B. FP-POS=4 was chosen because previous observations show that it has slightly more counts than the other FP-POS values.

8	Aperture Adjustment 2 for Segment B	NONE	COS, ALIGN/APER		XAPER=-449	QESIPARM XSTEP S -42	0.0 Secs (0 Secs) *[==>]*	***[1]***

Comments: Put the aperture in the appropriate position to illuminate a portion of the LP2/Blue Modes region of the detector when illuminating Segment B with G160M/1600.

PSA LAPXSTP value at LP3 is 182.1
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).

*Therefore, XAPER is set to -267 - 182.1 = -449. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -42" [(-449 - -407) = -42] Special Requirement is necessary to move the aperture to the correct location.*

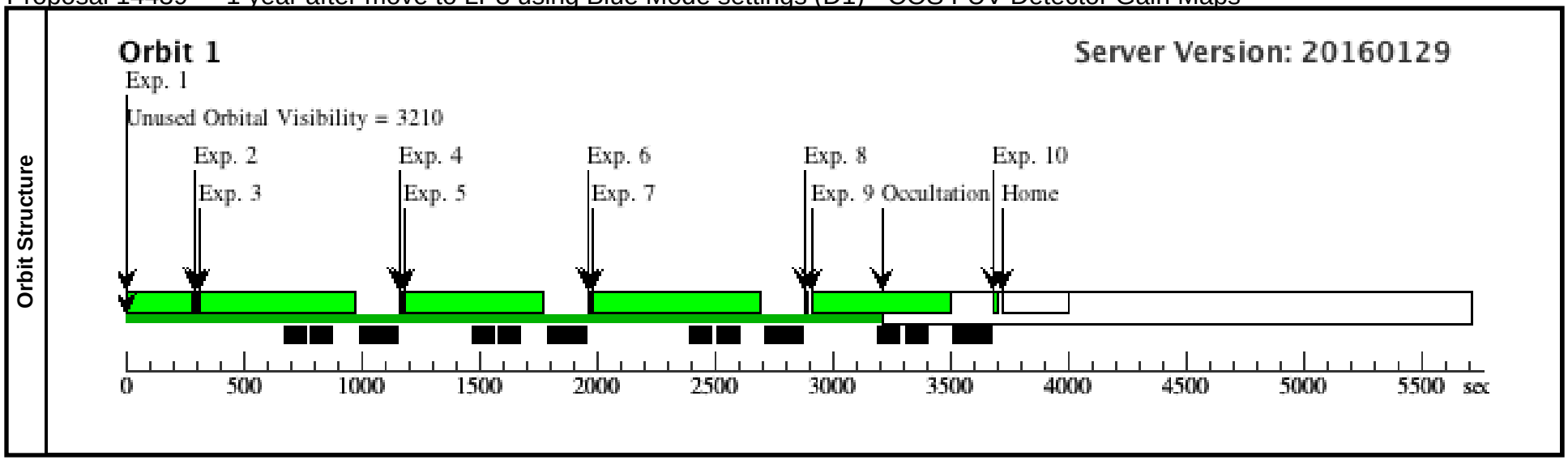
9	G160M/1600 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4		400 Secs (400 Secs) *[==>]*	***[1]***

Comments: Deuterium exposure optimmized for Segment B. FP-POS=4 was chosen because previous observations show that it has slightly more counts than the other FP-POS values.

10	Return to nominal HV for most modes	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 167; QESIPARM ENDC TSB 169	39 Secs (39 Secs) *[==>]*	***[1]***

Comments: Set HV to nominal values used for the standard modes (167/169).

Exposure Time is 39 seconds since the HV is being decreased on both segments.


Orbit Structure
Orbit 1
Server Version: 20160129
Exp. 1
Unused Orbital Visibility = 3210
Exp. 2
Exp. 3
Exp. 4
Exp. 5
Exp. 6
Exp. 7
Exp. 8
Exp. 9 Occultation
Exp. 10
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec