14519 - COS FUV Detector Gain Maps

Cycle: 24, 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	11-Jan-2017 21:05:10.0	yes
B2	DEUTERIUM NONE	COS COS/FUV	1	11-Jan-2017 21:05:12.0	yes
C1	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	11-Jan-2017 21:05:14.0	yes
D1	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	11-Jan-2017 21:05:15.0	yes
D2	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	11-Jan-2017 21:05:16.0	yes

5 Total Orbits Used

ABSTRACT

This program uses the deuterium lamp to illuminate the regions of the detector being used to collect spectra during Cycle 24. 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, before and after any lifetime move, and at semi-regular intervals for modes which have remained at the same voltage for a long time.

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 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 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, before and after any change in Lifetime Position, and 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 locations.

The initial plan for Cycle 24 includes 5 one-orbit visits, and three one-orbit contingency visits:

* Visits A1 and A2 are contingency visits which will be taken at LIFE_ADJ=3 before and after a change to the Segment A HV for the standard observing modes or G130M/1222.

* 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 either before a change to the G130M/1222 Segment A HV, or after about a year from the Cycle 23

deuterium exposure taken with the 1222 HV values (14439 C1 on 1/17/16).

*Visits D1 and D2 will be taken at LIFE_ADJ=2 either before a change to the Blue Modes (G130M/1055 & 1096) Segment A HV, or after about 6 months and 1 year from the Cycle 23 gain map at this position (14439 D1 on 4/25/16)

*Visit D3 is a contingency visit at LIFE_ADJ=2 which will only be needed if the Blue Mode Segment A HV is changed and D1 and D2 have already been executed.

If the standard HV on Segment B changes more than once during Cycle 24, additional contingency orbits will be needed.

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, if necessary.

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, etc.

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

Summary table:

Visit	LP	Grating/Segment	Y Position	LAPXSTP	XAPER
D1,D2	2	G130M/A	1	-213	-395
D1,D2	2	G130M/A	2	-267*	-449
D1,D2	2	G160M/B	1	-225	-407
D1,D2	2	G160M/B	2	-267*	-449
B1,B2,C1	3	G130M/A	1	-72	-254

B1,B2,C1	3	G130M/A	2	-128	-310
B1,B2,C1	3	G160M/B	1	-84	-266
B1,B2,C1	3	B160M/B	2	-140	-322

* Limited to be within the soft stops

Proposal 14519 - Before HV change using HV for standard modes (B1) - COS FUV Detector Gain Maps

Visit	**Proposal 14519, Before HV change using HV for standard modes (B1), completed** Thu Jan 12 02:05:17 GMT 2017 **Diagnostic Status: Warning** Scientific Instruments: COS, COS/FUV Special Requirements: BETWEEN 16-OCT-2016:00:00:00 AND 17-OCT-2016:00:00:00; PARALLEL *Comments: This visit collects data at LP3. It uses the HV values appropriate for the standard 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 standard 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.

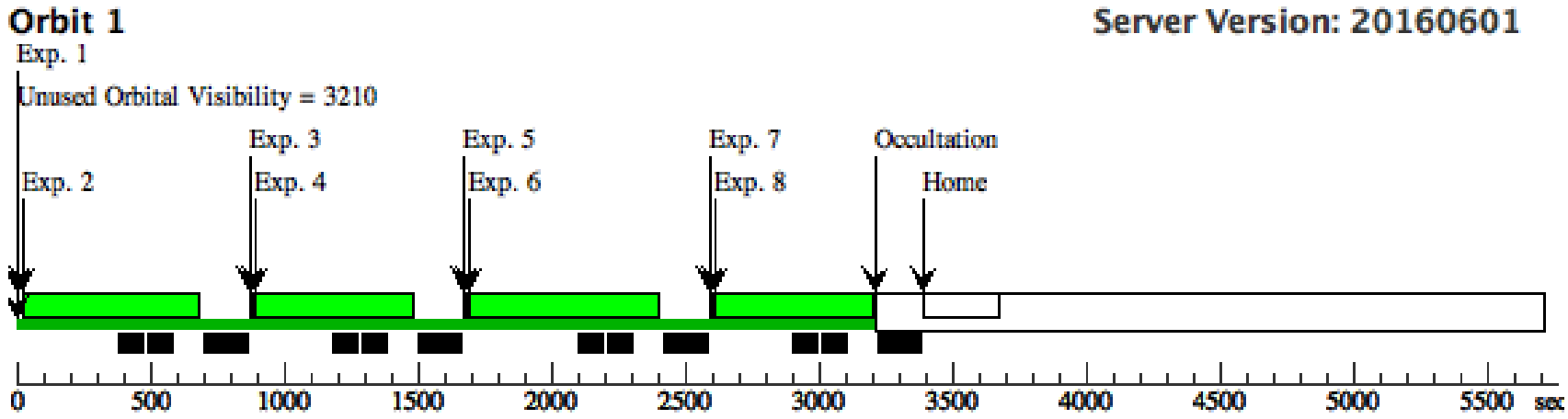
PSA LAPXSTP value at LP3 is 182.1
Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP3 is -140

*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 14519 - After HV change using HV for standard modes (B2) - COS FUV Detector Gain Maps

Visit	**Proposal 14519, After HV change using HV for standard modes (B2), completed** Thu Jan 12 02:05:18 GMT 2017 **Diagnostic Status: Warning** Scientific Instruments: COS, COS/FUV Special Requirements: AFTER B1; BETWEEN 17-OCT-2016:00:00:00 AND 18-OCT-2016:00:00:00; PARALLEL *Comments: This visit collects data at LP3. It uses the HV values appropriate for the standard modes at LP3 after the HV increase. It should be one of the first COS visits executed after the HV change.*
Diagnostics	(After HV change using HV for standard 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.

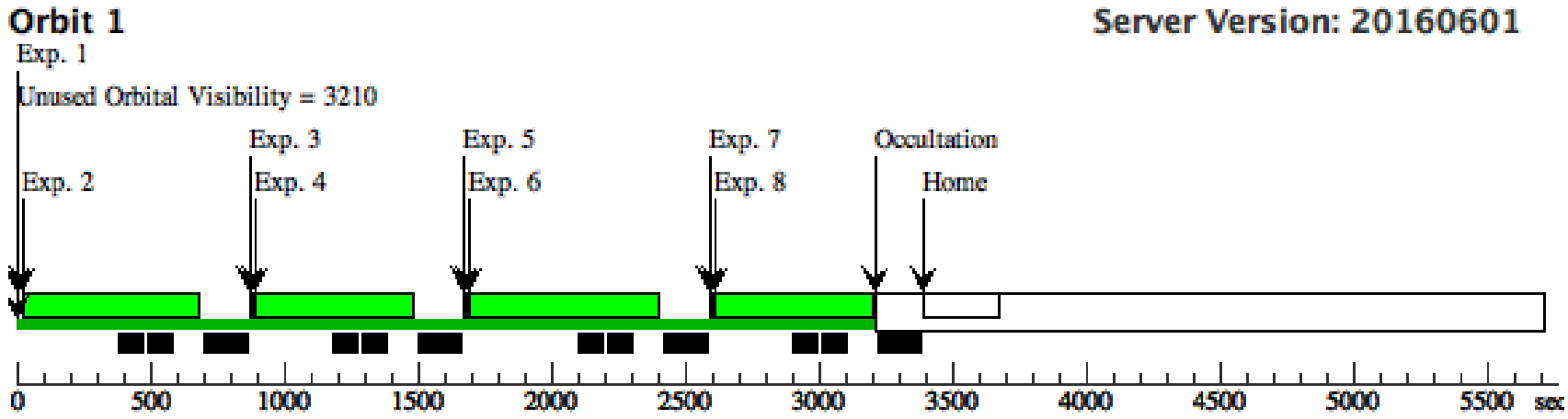
PSA LAPXSTP value at LP3 is 182.1
Desired LAPXSTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP3 is -140

*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 14519 - ~1 year after last G130M/1222 gain map (C1) - COS FUV Detector Gain Maps

Visit	**Proposal 14519, ~1 year after last G130M/1222 gain map (C1), implementation** Thu Jan 12 02:05:18 GMT 2017 **Diagnostic Status: Warning** Scientific Instruments: S/C, COS, COS/FUV Special Requirements: BETWEEN 17-JAN-2017:00:00:00 AND 17-FEB-2017:00:00:00; PARALLEL *Comments: This visit collects data at LP3. It uses the HV values appropriate for G130M/1222.*
Diagnostics	(~1 year after last G130M/1222 gain map (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 175; QESIPARM SEGMENT AB		295 Secs (295 Secs) *[==>]*	***[1]***
	Comments: Adjust the HV to the appropriate 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) *[==>]*	***[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.*

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=-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.*

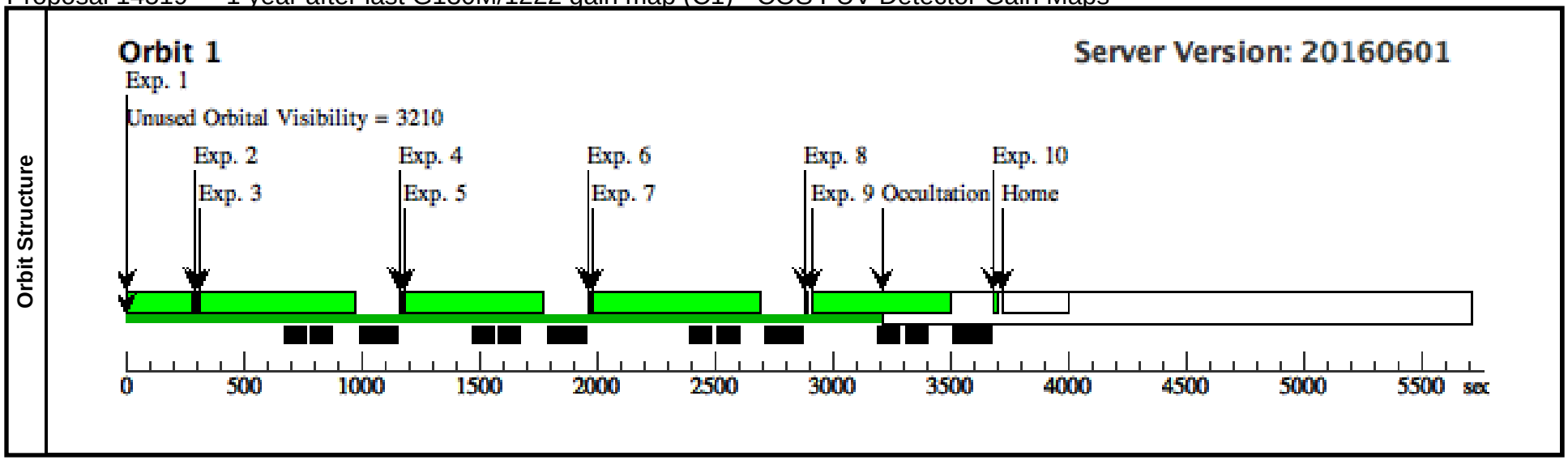
9	G160M/1600 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4		400 Secs (400 Secs) *[==>]*	***[1]***

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 175	39 Secs (39 Secs) *[==>]*	***[1]***

Comments: Set HV to nominal values used for the standard modes.

*HV increase is (167-171) = -4 for Segment A, and (175-175) = 0 for Segment B. Therefore, exposure time is 39 seconds + ceiling(0*1.1) = 39 seconds*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Exp. 4
Exp. 5
Exp. 6
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Exp. 8
Exp. 9 Occultation
Exp. 10
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Proposal 14519 - ~6 months after Cycle 23 Blue Modes gain map (D1) - COS FUV Detector Gain Maps

Visit	**Proposal 14519, ~6 months after Cycle 23 Blue Modes gain map (D1), completed** Thu Jan 12 02:05:18 GMT 2017 **Diagnostic Status: Warning** Scientific Instruments: S/C, COS, COS/FUV Special Requirements: BETWEEN 25-OCT-2016:00:00:00 AND 25-NOV-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	(~6 months after Cycle 23 Blue Modes gain map (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) *[==>]*		

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) *[==>]*		

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) *[==>]*		

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.*

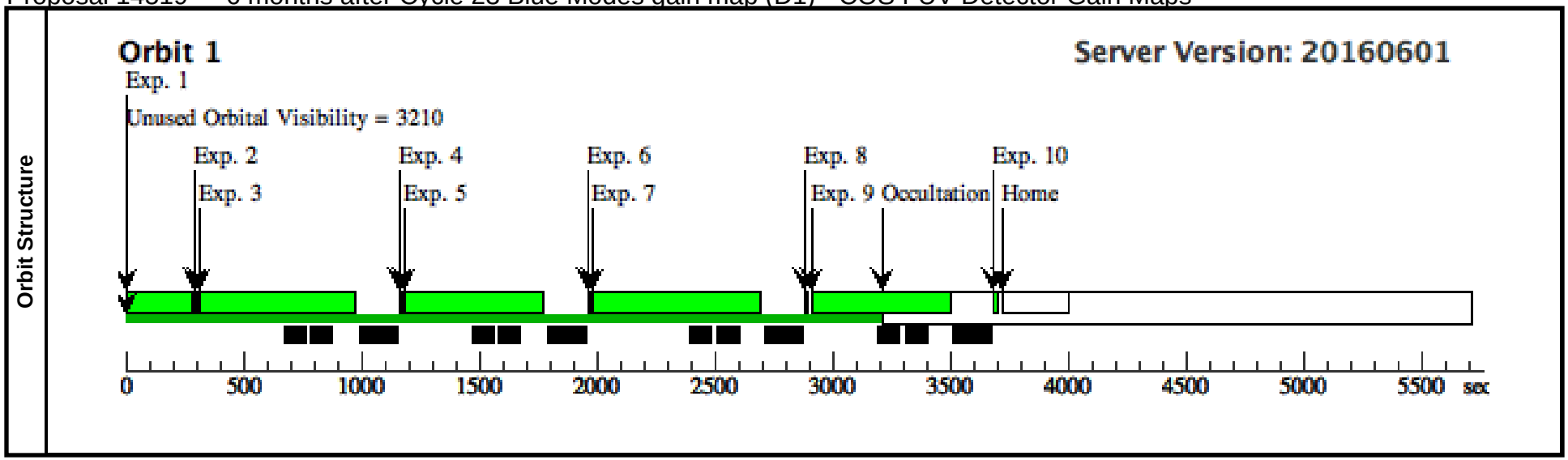
9	G160M/1600 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4		400 Secs (400 Secs) *[==>]*		

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 standard modes	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 167; QESIPARM ENDC TSB 175	39 Secs (39 Secs) *[==>]*		

Comments: Set HV to nominal values used for the standard modes.

Exposure Time is 39 seconds since the HV is not increasing on either segment.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Server Version: 20160601
Exp. 1
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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 14519 - ~1 year after Cycle 23 Blue Modes gain map (D2) - COS FUV Detector Gain Maps

Visit	**Proposal 14519, ~1 year after Cycle 23 Blue Modes gain map (D2), scheduling** Thu Jan 12 02:05:18 GMT 2017 **Diagnostic Status: Warning** Scientific Instruments: S/C, COS, COS/FUV Special Requirements: BETWEEN 25-APR-2017:00:00:00 AND 25-MAY-2017:00:00:00; PARALLEL *Comments: This visit collects data at LP2. It uses the HV values appropriate for the Blue Modes (173/175).*
Diagnostics	(~1 year after Cycle 23 Blue Modes gain map (D2)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU (Aperture Adjustment 1 for Segment A (D2.002)) 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.*

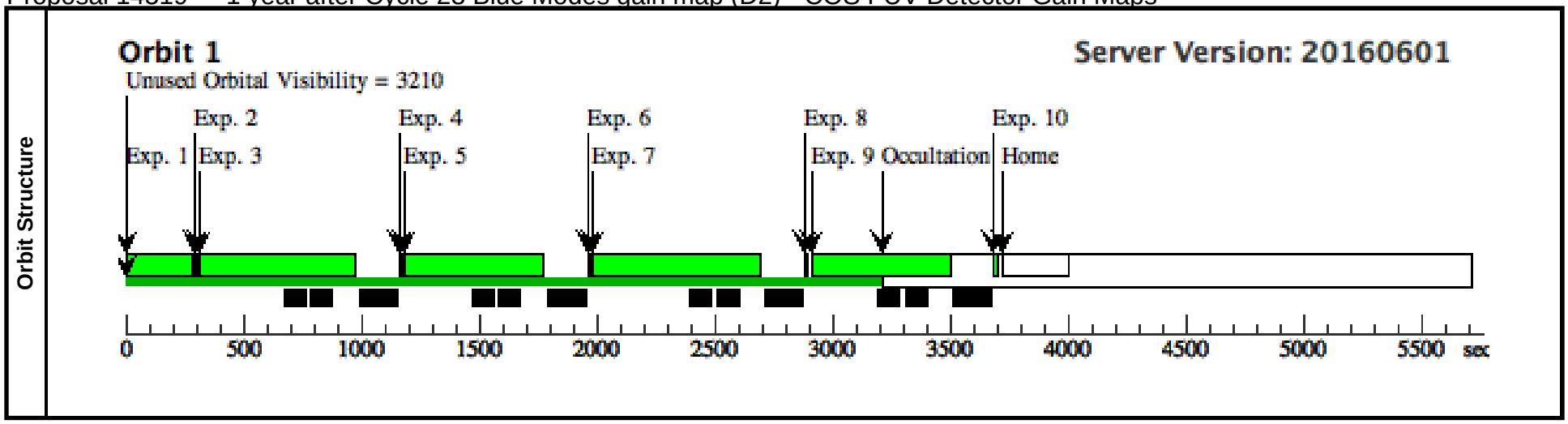
9	G160M/1600 Deuterium Exposure 2	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4		400 Secs (400 Secs) *[==>]*	***[1]***

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 standard modes	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 167; QESIPARM ENDC TSB 175	39 Secs (39 Secs) *[==>]*	***[1]***

Comments: Set HV to nominal values used for the standard modes.

Exposure Time is 39 seconds since the HV is not increasing on either segment.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Server Version: 20160601
Unused Orbital Visibility = 3210
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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