

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

Proposal 14519 (STScI Edit Number: 4, Created: Wednesday, January 11, 2017 9:05:17 PM EST) - Overview

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

Proposal 14519 (STScI Edit Number: 4, Created: Wednesday, January 11, 2017 9:05:17 PM EST) - Overview 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

Proposal 14519 (STScI Edit Number: 4, Created: Wednesday, January 11, 2017 9:05:17 PM EST) - Overview exposure.

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

^{*}Return the HV values to the nominal values for the standard modes, if necessary.

Proposal 14519 (STScI Edit Number: 4, Created: Wednesday, January 11, 2017 9:05:17 PM EST) - Overview

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

<u>Pı</u>	oposal 14519 - Before HV change using HV for standard modes (B1) - COS FUV Detector Gain Maps	
	Proposal 14519, Before HV change using HV for standard modes (B1), completed	Thu Jan 12 02:05:17 GMT 2017
١.	Diagnostic Status: Warning	
<u></u>	Scientific Instruments: COS, COS/FUV	
>	Special Requirements: BETWEEN 16-OCT-2016:00:00:00 AND 17-OCT-2016:00:00:00; PARALLEL	
L	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.	
ű	(Before HV change using HV for standard modes (B1)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU	
: <u>+</u>	(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	
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Proposal 14519 - Before HV change using HV for standard modes (B1) - COS FUV Detector Gain Maps

#	Label	Target	V change using HV for a Config, Mode, Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	Aperture Ad	I NONE	COS, ALIGN/APER		XAPER=-254			0.0 Secs (0 Secs)	
	justment 1 f or Segment A							[==>]	[1]
(Comments: Put th	e aperture in the app	propriate position to illuminate a porti	on of the LP3 region	of the detector when illi	uminating Segment A	with G130M/1309.		1
1	PSA LAPXSTP va	lue at LP3 is 182.1							
1	Desired LAPXSTF	P value for FCA to il	lluminate Segment A with G130M/1309	at Position 1 for LP	23 is -72				
7	Therefore, XAPEI	R is set to -72 - 182.1	1 = -254						
2		DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU	J		400 Secs (400 Secs)	
	9 Deuterium Exposure 1	1		1309 A	M;			[==>]	
	•				BUFFER-TIME=11 1;	L			[1]
					FP-POS=1				
(Comments: Deute	rium exposure optin	nized for Segment A. FP-POS=1 was c	hosen because previ	ous observations show to	hat it has slightly mo	re counts than the othe	er FP-POS values.	
3	Aperture Ad justment 2 f		COS, ALIGN/APER		XAPER=-310	QESIPARM XSTI S -56	EΡ	0.0 Secs (0 Secs)	
	or Segment A					3-30		[==>]	[1]
		e aperture in the ap	propriate position to illuminate a porti	on of the LP3 region	of the detector when illi	uminating Segment A	with G130M/1309.		
١,	DCA IADVSTD va	lue at LP3 is 182.1		,	·				
			lluminate Segment A with G130M/1309	at Position 2 for LP	² 3 is -128				
ရှု ြ		R is set to -128 - 182	3.1 = -310. *HOWEVER*, because of the	e TRANS rules, the	"QESIPARM XSTEPS -5	56" [(-310254) = -	56] Special Requireme	ent is necessary to move the aperture to th	he correct l
3 -	cation.	DEUTERIUM	COS/ELIV TIME TAC ECA	C120M	CUDDENT-MEDII	Т		400 Sags (400 Sags)	
	9 Deuterium		COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIU M;	J		I = > I	
<u> </u>	Exposure 2			1309 A	BUFFER-TIME=11	l		[/]	(1)
-					1;				[1]
			.:	1 1	FP-POS=1	l : (l l l l		ED DOSl	
-	Aperture Ad		nized for Segment A. FP-POS=1 was c COS, ALIGN/APER	nosen because previ	XAPER=-266	QESIPARM XSTI		0.0 Secs (0 Secs)	1
ľ	justment 1 f		COS, ALIGIVAFER		AAFEK=-200	S 44	2F	$\int_{-\infty}^{\infty} f(x) ^{2} dx$	
	or Segment B							1>1	[1]
	_	e aperture in the ap	propriate position to illuminate a porti	on of the LP3 region	of the detector when illi	uminating Segment B	with G160M/1600.		
		lue at LP3 is 182.1			· ,				
			lluminate Segment B with G160M/1600	at Position 1 for LP	23 is -84				
	Therefore, XAPEF cation.	R is set to -84 - 182.1	l = -266. *HOWEVER*, because of the	TRANS rules, the "	QESIPARM XSTEPS 44	" [(-266310) = +4	4] Special Requiremen	nt is necessary to move the aperture to the	e correct lo
ě		DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU			400 Secs (400 Secs)	
	0 Deuterium Exposure 1	ı		1600 A	M;			[==>]	
	Exposure 1				BUFFER-TIME=11 1;				[1]
					FP-POS=4				
1	Comments: Deute	rium exposure optin	nmized for Segment B. FP-POS=4 was	chosen because prev		that it has slightly m	ore counts than the oth	ner FP-POS values.	
	Johannenis. Deine	rum exposure opin	unizer for segment 2.11 1 05=7 was	enosen occuuse pres	rious observations show	mai ii mas siigmiy ma	ore counts man me on	ici II I ob varaes.	

Proposal 14519 - Before HV change using HV for standard modes (B1) - COS FUV Detector Gain Maps COS, ALIGN/APER XAPER=-322 QESIPARM XSTEP 0.0 Secs (0 Secs) Aperture Ad NONE justment 2 f S -56 [==>] or Segment [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 1 G160M/160 DEUTERIUM COS/FUV, TIME-TAG, FCA G160M CURRENT=MEDIU 400 Secs (400 Secs) 0 Deuterium 1600 A *[==>1* Exposure 2 BUFFER-TIME=11 [1] 1; FP-POS=4 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 1 Server Version: 20160601 Exp. 1 Unused Orbital Visibility = 3210 Exp. 5 Occultation Exp. 3 Exp. 7 **Orbit Structure** Exp. 8 Home Exp. 2 Exp. 6 Exp. 4 2000 2500 3500 500 1000 1500 3000 4000 4500 5000 5500 sec

<u>Pr</u>	oposal 14519 - After HV change using HV for standard modes (B2) - COS FUV Detector Gain Maps	
	Proposal 14519, After HV change using HV for standard modes (B2), completed	Thu Jan 12 02:05:18 GMT 2017
١	Diagnostic Status: Warning	
<u></u>	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.	
S	(After HV change using HV for standard modes (B2)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU	
Sti	(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.	
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Proposal 14519 - After HV change using HV for standard modes (B2) - COS FUV Detector Gain Maps

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Aperture Ad	NONE	COS, ALIGN/APER		XAPER=-254			0.0 Secs (0 Secs)	
	justment 1 f or Segment A							[==>]	[1]
C	omments: Put the	e aperture in the app	propriate position to illuminate a porti	on of the LP3 region	of the detector when illu	ıminating Segment A	with G130M/1309.		•
		lue at LP3 is 182.1	Luning Comment Amid C120M/1200) or Desiries I for LD	22:- 72				
			luminate Segment A with G130M/1309	at Position 1 for LP	3 IS -/2				
T	*	? is set to -72 - 182.1							1
2	G130M/130 9 Deuterium	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU M;	J		400 Secs (400 Secs)	
	Exposure 1			1309 A	BUFFER-TIME=11			[==>]	
	•				1;				[1]
					FP-POS=1				
c	omments: Deute	rium exposure optim	nized for Segment A. FP-POS=1 was a	hosen because previ	ous observations show th	hat it has slightly mo	re counts than the oth	ner FP-POS values.	I
3	Aperture Ad		COS, ALIGN/APER	•	XAPER=-310	QESIPARM XSTI		0.0 Secs (0 Secs)	
	justment 2 f					S -56		[==>]	
	or Segment A							, ,	[1]
c	Comments: Put the	e aperture in the api	propriate position to illuminate a porti	on of the LP3 region	of the detector when illu	ıminating Segment A	with G130M/1309.		
					· ,	8 - 8			
		lue at LP3 is 182.1 Pyalue for FCA to il	luminate Segment A with G130M/1309	at Position 2 for LP	3 is -128				
		v		•					
		? is set to -128 - 182.	A = -310. *HOWEVER*, because of the	he TRANS rules, the	"QESIPARM XSTEPS -5	<i>[6" [(-310254) = -</i>	56] Special Requiren	nent is necessary to move the aperture to t	he correct
4	C120M/120	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU	т		400 Secs (400 Secs)	
4	9 Deuterium		COS/FUV, TIME-TAG, FCA		M;)		· · · · · · · · · · · · · · · · · · ·	
	Exposure 2			1309 A	BUFFER-TIME=11			[==>]	
					1;				[1]
					FP-POS=1				
C	omments: Deute	rium exposure optim	nized for Segment A. FP-POS=1 was a	hosen because previ	ous observations show th	hat it has slightly mo	re counts than the oth	ner FP-POS values.	
5	Aperture Ad	NONE	COS, ALIGN/APER		XAPER=-266	QESIPARM XSTI	EP	0.0 Secs (0 Secs)	
	justment 1 f					S 44		<i>[==>1</i>	
	or Segment B								[1]
c	omments: Put the	e aperture in the api	propriate position to illuminate a porti	on of the LP3 region	of the detector when illu	ıminating Segment B	with G160M/1600.		
					· ,	8 - 8			
		lue at LP3 is 182.1 Pvalue for FCA to il	luminate Segment B with G160M/1600	at Position 1 for LP	23 is -84				
		v	· ·	•					
	herefore, XAPER ation.	? is set to -84 - 182.1	t = -266. *HOWEVER*, because of the	e TRANS rules, the "9	QESIPARM XSTEPS 44'	'[(-266310) = +4	4] Special Requireme	ent is necessary to move the aperture to th	e correct l
6		DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU	T		400 Secs (400 Secs)	
ľ	0 Deuterium			1600 A	M;	,		[==>]	
	Exposure 1			1000 A	BUFFER-TIME=11			[>]	
					1;				[1]
					FP-POS=4				
C	omments: Deute	rium exposure optim	nmized for Segment B. FP-POS=4 was	chosen because prev	vious observations show	that it has slightly m	ore counts than the o	ther FP-POS values.	
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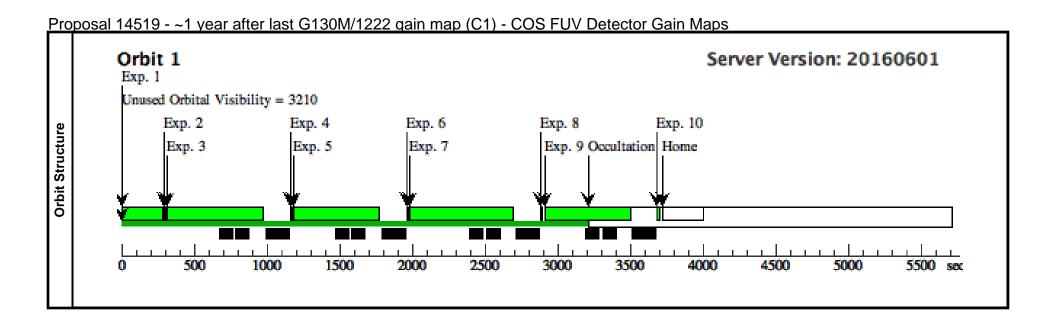
Proposal 14519 - After HV change using HV for standard modes (B2) - COS FUV Detector Gain Maps COS, ALIGN/APER XAPER=-322 **QESIPARM XSTEP** 0.0 Secs (0 Secs) Aperture Ad NONE justment 2 f S -56 [==>] or Segment [1] Comments: Put the aperture in the appropriate position to illuminate a portion of the 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 1 G160M/160 DEUTERIUM COS/FUV, TIME-TAG, FCA G160M CURRENT=MEDIU 400 Secs (400 Secs) 0 Deuterium 1600 A *[==>1* Exposure 2 BUFFER-TIME=11 [1] 1; FP-POS=4 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 1 Server Version: 20160601 Exp. 1 Unused Orbital Visibility = 3210 Exp. 3 Exp. 5 Occultation Exp. 7 **Orbit Structure** Exp. 8 Home Exp. 2 Exp. 6 Exp. 4 1500 2000 2500 3500 500 1000 3000 4000 4500 5000 5500 sec

<u>Pro</u>	pposal 14519 - ~1 year after last G130M/1222 gain map (C1) - COS FUV Detector Gain Maps	
	Proposal 14519, ~1 year after last G130M/1222 gain map (C1), implementation	Thu Jan 12 02:05:18 GMT 2017
±	Diagnostic Status: Warning	
/is	Scientific Instruments: S/C, COS, COS/FUV	
1	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.	
ပ္သ	(~1 year after last G130M/1222 gain map (C1)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU	
Sţ.	(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.	
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Proposal 14519 - ~1 year after last G130M/1222 gain map (C1) - COS FUV Detector Gain Maps

	# Label	Target	TEF IAST G13UIVI/1222 Q Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1 Adjust HV t	DARK	S/C, DATA, NONE	•	•	SAA CONTOUR 31;	•	295 Secs (295 Secs)	
	o G130M/12 22 values					SPEC COM INSTR ELHLTHVF;		[==>]	
						QASISTATES COS FUV HVLOW HVN OM;			
						QESIPARM ENDC TSA 171;			[1]
						QESIPARM ENDC TSB 175;			
						QESIPARM SEGM ENT AB			
	Comments: Adjust	the HV to the approp	oriate G130M/1222 values.						
	2 Aperture Ad	NONE	COS, ALIGN/APER		XAPER=-254			0.0 Secs (0 Secs)	
	justment 1 f or Segment A							[==>]	[1]
	Comments: Put the	e aperture in the appi	ropriate position to illuminate a portio	on of the LP3 region	of the detector when illu	minating Segment A wi	th G130M/1309.		•
		lue at LP3 is 182.1 V value for FCA to illi	uminate Segment A with G130M/1309	at Position 1 for LP	3 is -72				
	Therefore, XAPER	? is set to -72 - 182.1	= -254						
		DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU			400 Secs (400 Secs)	
es	9 Deuterium Exposure 1			1309 A	M;			[==>]	
ü	Exposure 1				BUFFER-TIME=11				[1]
SO					1; FP-POS=1				[[1]
Exposures	C		- Africa Comment A FR DOC Assessed	1 1				ED DOCl	
ш			zed for Segment A. FP-POS=1 was ca	nosen because previ			counts than the other		
	4 Aperture Ad justment 2 f	NONE	COS, ALIGN/APER		XAPER=-310	QESIPARM XSTEP S -56		0.0 Secs (0 Secs)	
	or Segment A							[==>]	[1]
	Comments: Put the	e aperture in the appr	ropriate position to illuminate a portio	on of the LP3 region	of the detector when illu	minating Segment A wi	th G130M/1309.		
	PSA LAPXSTP val		uminate Segment A with G130M/1309	at Position 2 for LP	3 is -128				
	Desired LAPXSTP	value for FCA to titl	U						
	Therefore, XAPER ocation.	? is set to -128 - 182.1	= -310. *HOWEVER*, because of th] Special Requiremen	t is necessary to move the aperture to th	he correct l
	Therefore, XAPER ocation. 5 G130M/130	R is set to -128 - 182.1 DEUTERIUM	· ·	G130M	CURRENT=MEDIU] Special Requiremen	t is necessary to move the aperture to the 400 Secs (400 Secs)	he correct l
	Therefore, XAPER ocation.	R is set to -128 - 182.1 DEUTERIUM	= -310. *HOWEVER*, because of th		CURRENT=MEDIU M;] Special Requiremen		he correct l
	Therefore, XAPER ocation. 5 G130M/130 9 Deuterium	R is set to -128 - 182.1 DEUTERIUM	= -310. *HOWEVER*, because of th	G130M	CURRENT=MEDIU] Special Requiremen	400 Secs (400 Secs)	he correct l
	Therefore, XAPER ocation. 5 G130M/130 9 Deuterium	R is set to -128 - 182.1 DEUTERIUM	= -310. *HOWEVER*, because of th	G130M	CURRENT=MEDIU M; BUFFER-TIME=11 1;] Special Requiremen	400 Secs (400 Secs)	
	Therefore, XAPER ocation. 5 G130M/130 9 Deuterium Exposure 2	e is set to -128 - 182.1 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIU M; BUFFER-TIME=11 1; FP-POS=1			400 Secs (400 Secs) [==>]	
	Therefore, XAPER ocation. 5 G130M/130 9 Deuterium Exposure 2	e is set to -128 - 182.1 DEUTERIUM	= -310. *HOWEVER*, because of th	G130M 1309 A	CURRENT=MEDIU M; BUFFER-TIME=11 1; FP-POS=1			400 Secs (400 Secs) [==>]	
	Therefore, XAPER ocation. 5 G130M/130 9 Deuterium Exposure 2	e is set to -128 - 182.1 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIU M; BUFFER-TIME=11 1; FP-POS=1			400 Secs (400 Secs) [==>]	
	Therefore, XAPER ocation. 5 G130M/130 9 Deuterium Exposure 2	e is set to -128 - 182.1 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIU M; BUFFER-TIME=11 1; FP-POS=1			400 Secs (400 Secs) [==>]	
	Therefore, XAPER ocation. 5 G130M/130 9 Deuterium Exposure 2	e is set to -128 - 182.1 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIU M; BUFFER-TIME=11 1; FP-POS=1			400 Secs (400 Secs) [==>]	
	Therefore, XAPER ocation. 5 G130M/130 9 Deuterium Exposure 2	e is set to -128 - 182.1 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIU M; BUFFER-TIME=11 1; FP-POS=1			400 Secs (400 Secs) [==>]	
	Therefore, XAPER ocation. 5 G130M/130 9 Deuterium Exposure 2	e is set to -128 - 182.1 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIU M; BUFFER-TIME=11 1; FP-POS=1			400 Secs (400 Secs) [==>]	

6 Amountaino Ad MONE				Detector Gain Maps		
Aperture Ad NONE justment 1 f	COS, ALIGN/APER		XAPER=-266	QESIPARM XSTEP S 44	0.0 Secs (0 Secs)	
or Segment B				5 11	[==>]	[1]
Comments: Put the aperture in the appro	opriate position to illuminate a portio	on of the LP3 regio	on of the detector when it	lluminating Segment B with G160M/	71600.	
PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illur	minate Segment B with G160M/1600	at Position 1 for I	LP3 is -84			
Therefore, XAPER is set to -84 - 182.1 = ation.	266. *HOWEVER*, because of the	TRANS rules, the	"QESIPARM XSTEPS 4	4" [(-266310) = +44] Special Red	quirement is necessary to move the apertur	re to the correct lo
G160M/160 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MED	IU	400 Secs (400 Secs)	
0 Deuterium Exposure 1		1600 A	M;		[==>]	
r			BUFFER-TIME=1;	11		[1]
			FP-POS=4			
Comments: Deuterium exposure optimmi	ized for Segment B. FP-POS=4 was	chosen because pr	evious observations show	w that it has slightly more counts tha	n the other FP-POS values.	•
Aperture Ad NONE	COS, ALIGN/APER		XAPER=-322	QESIPARM XSTEP	0.0 Secs (0 Secs)	
justment 2 f or Segment B				S -56	[==>]	[1]
PSA LAPXSTP value at LP3 is 182.1	opriate position to illuminate a portio		·	lluminating Segment B with G160M/	71600.	-
PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illur	minate Segment B with G160M/1600	at Position 2 for I	LP3 is -140		1600. equirement is necessary to move the apertu	ure to the correct i
PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illur Therefore, XAPER is set to -140 - 182.1 ocation.	minate Segment B with G160M/1600 = -322. *HOWEVER*, because of th	at Position 2 for I	LP3 is -140 e "QESIPARM XSTEPS	-56" [(-322266) = -56] Special R	equirement is necessary to move the aperti	ure to the correct l
PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illur Cherefore, XAPER is set to -140 - 182.1	minate Segment B with G160M/1600	at Position 2 for 1 e TRANS rules, th G160M	LP3 is -140	-56" [(-322266) = -56] Special R	equirement is necessary to move the apertu 400 Secs (400 Secs)	ure to the correct l
PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illur Therefore, XAPER is set to -140 - 182.1 Decation. G160M/160 DEUTERIUM	minate Segment B with G160M/1600 = -322. *HOWEVER*, because of th	at Position 2 for I	LP3 is -140 e "QESIPARM XSTEPS CURRENT=MED	-56" [(-322266) = -56] Special R	equirement is necessary to move the aperti	
PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illur Therefore, XAPER is set to -140 - 182.1 Decation. G160M/160 DEUTERIUM 0 Deuterium	minate Segment B with G160M/1600 = -322. *HOWEVER*, because of th	at Position 2 for 1 e TRANS rules, th G160M	CP3 is -140 e "QESIPARM XSTEPS CURRENT=MED M; BUFFER-TIME= 1;	-56" [(-322266) = -56] Special R	equirement is necessary to move the apertu 400 Secs (400 Secs)	ure to the correct l
PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illustration. Therefore, XAPER is set to -140 - 182.1 in incation. O G160M/160 DEUTERIUM O Deuterium Exposure 2	minate Segment B with G160M/1600 = -322. *HOWEVER*, because of th COS/FUV, TIME-TAG, FCA	at Position 2 for I e TRANS rules, th G160M 1600 A	CP3 is -140 e "QESIPARM XSTEPS CURRENT=MED M; BUFFER-TIME= 1; FP-POS=4	56" [(-322266) = -56] Special R IU	equirement is necessary to move the apertude $400 \text{ Secs } (400 \text{ Secs})$ $I = => J$	
PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illur Therefore, XAPER is set to -140 - 182.1 Desired LAPXSTP value for FCA to illur Therefore, XAPER is set to -140 - 182.1 Decation. Decetorion Office Deuterium Exposure 2 Comments: Deuterium exposure optimm	minate Segment B with G160M/1600 = -322. *HOWEVER*, because of th COS/FUV, TIME-TAG, FCA	at Position 2 for I e TRANS rules, th G160M 1600 A	CP3 is -140 e "QESIPARM XSTEPS CURRENT=MED M; BUFFER-TIME= 1; FP-POS=4	-56" [(-322266) = -56] Special R IU 11 w that it has slightly more counts tha	equirement is necessary to move the apertu- $ 400 \text{ Secs } (400 \text{ Secs}) $ $ [==>] $ In the other FP-POS values.	
PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illur Therefore, XAPER is set to -140 - 182.1 Desired LAPXSTP value for FCA to illur Therefore, XAPER is set to -140 - 182.1 Desired Color of the	minate Segment B with G160M/1600 = -322. *HOWEVER*, because of th COS/FUV, TIME-TAG, FCA	at Position 2 for I e TRANS rules, th G160M 1600 A	CP3 is -140 e "QESIPARM XSTEPS CURRENT=MED M; BUFFER-TIME= 1; FP-POS=4	-56" [(-322266) = -56] Special R IU I1 w that it has slightly more counts that SPEC COM INSTR	equirement is necessary to move the apertu-	
PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illur Therefore, XAPER is set to -140 - 182.1 ocation. G160M/160 DEUTERIUM 0 Deuterium Exposure 2 Comments: Deuterium exposure optimmi 10 Return to no DARK	minate Segment B with G160M/1600 = -322. *HOWEVER*, because of th COS/FUV, TIME-TAG, FCA	at Position 2 for I e TRANS rules, th G160M 1600 A	CP3 is -140 e "QESIPARM XSTEPS CURRENT=MED M; BUFFER-TIME= 1; FP-POS=4	-56" [(-322266) = -56] Special R IU 11 w that it has slightly more counts tha	equirement is necessary to move the apertu- $ 400 \text{ Secs } (400 \text{ Secs}) $ $ [==>] $ In the other FP-POS values.	[1]
PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illur Therefore, XAPER is set to -140 - 182.1 socation. 9 G160M/160 DEUTERIUM 0 Deuterium Exposure 2 Comments: Deuterium exposure optimm. 10 Return to no DARK minal HV fo r most mode	minate Segment B with G160M/1600 = -322. *HOWEVER*, because of th COS/FUV, TIME-TAG, FCA	at Position 2 for I e TRANS rules, th G160M 1600 A	CP3 is -140 e "QESIPARM XSTEPS CURRENT=MED M; BUFFER-TIME= 1; FP-POS=4	56" [(-322266) = -56] Special R. IU II w that it has slightly more counts that SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC	equirement is necessary to move the apertu-	
PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to illur Therefore, XAPER is set to -140 - 182.1 socation. 9 G160M/160 DEUTERIUM 0 Deuterium Exposure 2 Comments: Deuterium exposure optimm. 10 Return to no DARK minal HV fo r most mode	minate Segment B with G160M/1600 = -322. *HOWEVER*, because of th COS/FUV, TIME-TAG, FCA ized for Segment B. FP-POS=4 was a S/C, DATA, NONE	at Position 2 for I e TRANS rules, th G160M 1600 A	CP3 is -140 e "QESIPARM XSTEPS CURRENT=MED M; BUFFER-TIME= 1; FP-POS=4	56" [(-322266) = -56] Special R IU II w that it has slightly more counts that SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 167; QESIPARM ENDC	equirement is necessary to move the apertu-	[1]

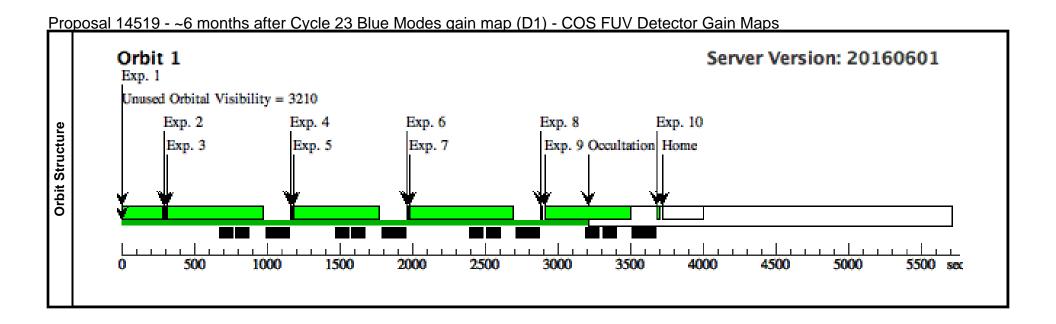


<u>Pr</u>	oposal 14519 - ~6 months after Cycle 23 Blue Modes gain map (D1) - COS FUV Detector Gain Maps	
	Proposal 14519, ~6 months after Cycle 23 Blue Modes gain map (D1), completed	Thu Jan 12 02:05:18 GMT 2017
l.±	Diagnostic Status: Warning	
į	Scientific Instruments: S/C, COS, COS/FUV	
1	Special Requirements: 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).	
S.	(~6 months after Cycle 23 Blue Modes gain map (D1)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU	
Z.	(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	

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

#	Label	Target	Config, Mode, Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Adjust HV t	DARK	S/C, DATA, NONE			SAA CONTOUR 31:	;	295 Secs (295 Secs)	
	o Blue Mod e values					SPEC COM INSTR ELHLTHVF;		[==>]	
						QASISTATES COS			
						FUV HVLOW HVN OM;			
						QESIPARM ENDC			[1]
						TSA 173; QESIPARM ENDC			
						TSB 175;			
						QESIPARM SEGM ENT AB			
Со	mments: Adjust	the HV to the Blue I	Mode values.						1
2	Aperture Ad	NONE	COS, ALIGN/APER		XAPER=-395			0.0 Secs (0 Secs)	
	justment 1 f or Segment							[==>]	[1]
Co	A	anorture in the ann	propriate position to illuminate a porti	on of the LD2/Plue N	Ander region of the date	aton when illuminating S	Sagment A with C120	M/1200	
			порнале розлион 10 илитилие а рони	on of the LF 2/Blue N	todes region of the detec	nor when illuminating s	segmeni A wun G1301	W/1309.	
PS. De	A LAPXSTP vali sired LAPXSTP	ue at LP3 is 182.1 value for FCA to ill	luminate Segment A with G130M/1309	at Position 1 for LF	P2 is -213				
Th	erefore. XAPER	is set to -213 - 182.	1 = -395						
3	G130M/130	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU	J		400 Secs (400 Secs)	
3	9 Deuterium Exposure 1			1309 A	M;			[==>]	
					BUFFER-TIME=11 1;				[1]
}					FP-POS=1				
Co			ized for Segment A. FP-POS=1 was c	hosen because previ			counts than the other		1
4	Aperture Ad justment 2 f	NONE	COS, ALIGN/APER		XAPER=-449	QESIPARM XSTEP S -54		0.0 Secs (0 Secs)	
	or Segment A							[==>]	[1]
Co		aperture in the app	propriate position to illuminate a porti	on of the LP2/Blue N	Modes region of the detec	ctor when illuminating S	Segment A with G1301	M/1309.	
		ue at LP3 is 182.1		·					
			luminate Segment A with G130M/1309	at Position 2 for LF	P2 is -267				
	erefore, XAPER ation.	is set to -267 - 182.	1 = -449. *HOWEVER*, because of the	ne TRANS rules, the	"QESIPARM XSTEPS -5	54" [(-449395) = -54] Special Requiremen	t is necessary to move the aperture to th	he correct l
5	G130M/130	DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU	J		400 Secs (400 Secs)	
	9 Deuterium Exposure 2			1309 A	M;			[==>]	
					BUFFER-TIME=11 1;				[1]
					FP-POS=1				
Co	mments: Deuter	ium exposure optim	ized for Segment A. FP-POS=1 was a	hosen because previ	ious observations show t	hat it has slightly more	counts than the other	FP-POS values.	

Aperture Ad NONE	COS, ALIGN/APER		XAPER=-407	QESIPARM XSTEP	0.0 Secs (0 Secs)	
justment 1 f or Segment B				S 42	[==>]	[1]
Comments: Put the aperture in the ap	ppropriate position to illuminate a porti	on of the LP2/Blue	Modes region of the detec	ctor when illuminating Segment B v	with G160M/1600.	
PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to i	illuminate Segment B with G160M/1600	at Position 1 for I	LP2 is -225			
Therefore, XAPER is set to -225 - 182 ocation.	2.1 = -407. *HOWEVER*, because of the	ne TRANS rules, th	ne "QESIPARM XSTEPS 48	8" [(-407449) = +42] Special R	equirement is necessary to move the aperti	ure to the correct l
G160M/160 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU	J	400 Secs (400 Secs)	
0 Deuterium Exposure 1	1600 A	M;		[==>J		
•			BUFFER-TIME=11 1;	L		[1]
			FP-POS=4			
Comments: Deuterium exposure optis	mmized for Segment B. FP-POS=4 was	chosen because p	revious observations show	that it has slightly more counts tha	n the other FP-POS values.	<u>, </u>
Aperture Ad NONE	COS, ALIGN/APER		XAPER=-449	QESIPARM XSTEP	0.0 Secs (0 Secs)	
justment 2 f or Segment				S -42	[==>]	[1]
В		on of the LD2/Dless	. Madas nasion of the dates	otomoulous illuminatina Commant D.	:	1-3
B Comments: Put the aperture in the ap PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to i	opropriate position to illuminate a portion	v			with G160M/1600. want to exceed that value when including	
B Comments: Put the aperture in the aperture PSA LAPXSTP value at LP3 is 182.1 Desired LAPXSTP value for FCA to it. To leave some pad, I will set it to	illuminate Segment B with G160M/1600 match the G130M exposure (-267).	at Position 2 for I	LP2 is -280, but the apertu	re soft stop is at -275 and we don't		the 5 step oversho
B Comments: Put the aperture in the aperture delivers in the aperture in the a	illuminate Segment B with G160M/1600 match the G130M exposure (-267).	at Position 2 for I	LP2 is -280, but the apertu ne "QESIPARM XSTEPS -4 CURRENT=MEDIU	re soft stop is at -275 and we don't 12" [(-449407) = -42] Special R	want to exceed that value when including	the 5 step oversho
B Comments: Put the aperture in the aperture distribution of the aperture in the aperture is 182.1 and 182.1 a	illuminate Segment B with G160M/1600 match the G130M exposure (-267). 2.1 = -449. *HOWEVER*, because of th	at Position 2 for a	LP2 is -280, but the apertu ne "QESIPARM XSTEPS -4 CURRENT=MEDIU M;	re soft stop is at -275 and we don't 12" [(-449407) = -42] Special R	want to exceed that value when including equirement is necessary to move the aperti	the 5 step oversho
B Comments: Put the aperture in the aperture delivers in the aperture in the a	illuminate Segment B with G160M/1600 match the G130M exposure (-267). 2.1 = -449. *HOWEVER*, because of th	at Position 2 for the TRANS rules, the G160M	LP2 is -280, but the apertule "QESIPARM XSTEPS -4 CURRENT=MEDIUM; BUFFER-TIME=11	re soft stop is at -275 and we don't 12" [(-449407) = -42] Special R	want to exceed that value when including equirement is necessary to move the apertu 400 Secs (400 Secs)	the 5 step oversho
B Comments: Put the aperture in the aperture distribution of the aperture in the aperture is 182.1 and 182.1 a	illuminate Segment B with G160M/1600 match the G130M exposure (-267). 2.1 = -449. *HOWEVER*, because of th	at Position 2 for the TRANS rules, the G160M	LP2 is -280, but the apertu ne "QESIPARM XSTEPS -4 CURRENT=MEDIU M;	re soft stop is at -275 and we don't 12" [(-449407) = -42] Special R	want to exceed that value when including equirement is necessary to move the apertu 400 Secs (400 Secs)	the 5 step oversho
B Comments: Put the aperture in the aperture i	illuminate Segment B with G160M/1600 match the G130M exposure (-267). 2.1 = -449. *HOWEVER*, because of the COS/FUV, TIME-TAG, FCA	of at Position 2 for American TRANS rules, the G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4	re soft stop is at -275 and we don't 12" [(-449407) = -42] Special R	want to exceed that value when including equirement is necessary to move the apertu- $\frac{400 \text{ Secs } (400 \text{ Secs})}{[==>]}$	the 5 step oversho
B Comments: Put the aperture in the aperture i	illuminate Segment B with G160M/1600 match the G130M exposure (-267). 2.1 = -449. *HOWEVER*, because of th	of at Position 2 for American TRANS rules, the G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4	re soft stop is at -275 and we don't 12" [(-449407) = -42] Special R J that it has slightly more counts that SPEC COM INSTR	want to exceed that value when including equirement is necessary to move the apertu- $\frac{400 \text{ Secs } (400 \text{ Secs})}{[==>]}$	the 5 step oversho
B Comments: Put the aperture in the aperture i	illuminate Segment B with G160M/1600 match the G130M exposure (-267). 2.1 = -449. *HOWEVER*, because of the COS/FUV, TIME-TAG, FCA	of at Position 2 for American TRANS rules, the G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4	re soft stop is at -275 and we don't 12" [(-449407) = -42] Special R J that it has slightly more counts that SPEC COM INSTR ELHVADJPROP;	want to exceed that value when including equirement is necessary to move the apertu $\frac{400 \text{ Secs } (400 \text{ Secs})}{[==>]}$ in the other FP-POS values.	the 5 step oversho
B Comments: Put the aperture in the aperture i	illuminate Segment B with G160M/1600 match the G130M exposure (-267). 2.1 = -449. *HOWEVER*, because of the COS/FUV, TIME-TAG, FCA	of at Position 2 for American TRANS rules, the G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4	re soft stop is at -275 and we don't 12" [(-449407) = -42] Special R that it has slightly more counts that SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC	want to exceed that value when including equirement is necessary to move the apertu $\frac{400 \text{ Secs } (400 \text{ Secs})}{[==>]}$ in the other FP-POS values. $39 \text{ Secs } (39 \text{ Secs})$	the 5 step oversho
B Comments: Put the aperture in the aperture i	illuminate Segment B with G160M/1600 match the G130M exposure (-267). 2.1 = -449. *HOWEVER*, because of the COS/FUV, TIME-TAG, FCA	of at Position 2 for American TRANS rules, the G160M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=111; FP-POS=4	re soft stop is at -275 and we don't 12" [(-449407) = -42] Special R J that it has slightly more counts that SPEC COM INSTR ELHVADJPROP;	want to exceed that value when including equirement is necessary to move the apertu $\frac{400 \text{ Secs } (400 \text{ Secs})}{[==>]}$ in the other FP-POS values. $39 \text{ Secs } (39 \text{ Secs})$	the 5 step oversho



<u>Pro</u>	oposal 14519 - ~1 year after Cycle 23 Blue Modes gain map (D2) - COS FUV Detector Gain Maps	
	Proposal 14519, ~1 year after Cycle 23 Blue Modes gain map (D2), scheduling	Thu Jan 12 02:05:18 GMT 2017
.=	Diagnostic Status: Warning	
/is	Scientific Instruments: S/C, COS, COS/FUV	
1	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).	
SS	(~1 year after Cycle 23 Blue Modes gain map (D2)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU	
Sti	(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.	
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Proposal 14519 - ~1 year after Cycle 23 Blue Modes gain map (D2) - COS FUV Detector Gain Maps

1 Adjust	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	HV t DARK	S/C, DATA, NONE			SAA CONTOUR 31;		295 Secs (295 Secs)	
o Blue e value					SPEC COM INSTR ELHLTHVF;		[==>]	
					QASISTATES COS FUV HVLOW HVN OM;			
					QESIPARM ENDC TSA 173;			[1]
					QESIPARM ENDC TSB 175;			
					QESIPARM SEGM ENT AB			
Comments: A	Adjust the HV to the Blu	e Mode values.						
	ire Ad NONE	COS, ALIGN/APER		XAPER=-395			0.0 Secs (0 Secs)	
justmer or Segr A	nt 1 i ment						[==>]	[1]
Comments: 1	Put the aperture in the a	appropriate position to illuminate a porti	on of the LP2/Blue M	lodes region of the detec	tor when illuminating S	egment A with G130	M/1309.	•
	TP value at LP3 is 182.1 PXSTP value for FCA to	1 illuminate Segment A with G130M/1309	e) at Position 1 for LP	2 is -213				
	XAPER is set to -213 - 18							1
	M/130 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU M;	ſ		400 Secs (400 Secs)	
Expost	9 Deuterium Exposure 1		1309 A	BUFFER-TIME=11			[==>]	
			1;				[1]	
9 Deute Exposu				FP-POS=1				
Comments: 1	Deuterium exposure opt	timized for Segment A. FP-POS=1 was c	chosen because previo	ous observations show th	at it has slightly more o	counts than the other	FP-POS values.	
	ire Ad NONE	COS, ALIGN/APER		XAPER=-449	QESIPARM XSTEP		0.0 Secs (0 Secs)	
justmei					S -54		[==>]	[1]
or Segr A								
A	Put the aperture in the a	appropriate position to illuminate a porti	on of the LP2/Blue M	odes region of the detec	tor when illuminating S	egment A with G130	M/1309.	
A Comments: I PSA LAPXST	TP value at LP3 is 182.1		v	Ų Į	tor when illuminating S	egment A with G130	M/1309.	
A Comments: H PSA LAPXST Desired LAP	TP value at LP3 is 182.1 PXSTP value for FCA to	1	9 at Position 2 for LP.	2 is -267	Ü			he correc
A Comments: H PSA LAPXSI Desired LAP Therefore, X. ocation. 5 G130M	TP value at LP3 is 182.i PXSTP value for FCA to CAPER is set to -267 - 18	1 illuminate Segment A with G130M/1309	9 at Position 2 for LP.	2 is -267 "QESIPARM XSTEPS -5 CURRENT=MEDIU	4" [(-449395) = -54]			he correc
A Comments: H PSA LAPXST Desired LAP Therefore, X ocation. 5 G130M 9 Deute	TP value at LP3 is 182.1 PXSTP value for FCA to APER is set to -267 - 18 M/130 DEUTERIUM erium	I illuminate Segment A with G130M/1309 82.1 = -449. *HOWEVER*, because of th	9 at Position 2 for LP. the TRANS rules, the '	2 is -267 "QESIPARM XSTEPS -5 CURRENT=MEDIU M;	4" [(-449395) = -54		nt is necessary to move the aperture to the	he correc
A Comments: H PSA LAPXSI Desired LAP Therefore, X. ocation. 5 G130M	TP value at LP3 is 182.1 PXSTP value for FCA to APER is set to -267 - 18 M/130 DEUTERIUM erium	I illuminate Segment A with G130M/1309 82.1 = -449. *HOWEVER*, because of th	9 at Position 2 for LP. the TRANS rules, the 'G130M	2 is -267 "QESIPARM XSTEPS -5 CURRENT=MEDIU M; BUFFER-TIME=11	4" [(-449395) = -54		at is necessary to move the aperture to the 400 Secs (400 Secs)	he correc
A Comments: H PSA LAPXST Desired LAP Therefore, X. ocation. 5 G130M 9 Deute	TP value at LP3 is 182.1 PXSTP value for FCA to APER is set to -267 - 18 M/130 DEUTERIUM erium	I illuminate Segment A with G130M/1309 82.1 = -449. *HOWEVER*, because of th	9 at Position 2 for LP. the TRANS rules, the 'G130M	2 is -267 "QESIPARM XSTEPS -5 CURRENT=MEDIU M;	4" [(-449395) = -54		at is necessary to move the aperture to the 400 Secs (400 Secs)	
A Comments: H PSA LAPXST Desired LAP Therefore, X ocation. 5 G130M 9 Deute Exposu	TP value at LP3 is 182.1 PXSTP value for FCA to CAPER is set to -267 - 18 M/130 DEUTERIUM erium ure 2	I illuminate Segment A with G130M/1309 82.1 = -449. *HOWEVER*, because of th	9 at Position 2 for LP. he TRANS rules, the ' G130M 1309 A	2 is -267 "QESIPARM XSTEPS -5 CURRENT=MEDIU M; BUFFER-TIME=11 1; FP-POS=1	4" [(-449395) = -54 _.] Special Requiremen	at is necessary to move the aperture to the $\frac{400 \text{ Secs }}{[==>]}$	
A Comments: H PSA LAPXST Desired LAP Therefore, X. ocation. 5 G130M 9 Deute Exposu	TP value at LP3 is 182.1 PXSTP value for FCA to CAPER is set to -267 - 18 M/130 DEUTERIUM erium ure 2	1 1 2 3 3 4 3 5 6 6 7 7 8 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	9 at Position 2 for LP. he TRANS rules, the ' G130M 1309 A	2 is -267 "QESIPARM XSTEPS -5 CURRENT=MEDIU M; BUFFER-TIME=11 1; FP-POS=1	4" [(-449395) = -54 _.] Special Requiremen	at is necessary to move the aperture to the $\frac{400 \text{ Secs }}{[==>]}$	
A Comments: H PSA LAPXST Desired LAP Therefore, X. ocation. 5 G130M 9 Deute Exposu	TP value at LP3 is 182.1 PXSTP value for FCA to CAPER is set to -267 - 18 M/130 DEUTERIUM erium ure 2	1 1 2 3 3 4 3 5 6 6 7 7 8 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	9 at Position 2 for LP. he TRANS rules, the ' G130M 1309 A	2 is -267 "QESIPARM XSTEPS -5 CURRENT=MEDIU M; BUFFER-TIME=11 1; FP-POS=1	4" [(-449395) = -54 _.] Special Requiremen	at is necessary to move the aperture to the $\frac{400 \text{ Secs }}{[==>]}$	
A Comments: H PSA LAPXST Desired LAP Therefore, X. ocation. 5 G130M 9 Deute Exposu	TP value at LP3 is 182.1 PXSTP value for FCA to CAPER is set to -267 - 18 M/130 DEUTERIUM erium ure 2	1 1 2 3 3 4 3 5 6 6 7 7 8 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	9 at Position 2 for LP. he TRANS rules, the ' G130M 1309 A	2 is -267 "QESIPARM XSTEPS -5 CURRENT=MEDIU M; BUFFER-TIME=11 1; FP-POS=1	4" [(-449395) = -54 _.] Special Requiremen	at is necessary to move the aperture to the $\frac{400 \text{ Secs }}{[==>]}$	
A Comments: H PSA LAPXST Desired LAP Therefore, X. ocation. 5 G130M 9 Deute Exposu	TP value at LP3 is 182.1 PXSTP value for FCA to CAPER is set to -267 - 18 M/130 DEUTERIUM erium ure 2	1 1 2 3 3 4 3 5 6 6 7 7 8 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	9 at Position 2 for LP. he TRANS rules, the ' G130M 1309 A	2 is -267 "QESIPARM XSTEPS -5 CURRENT=MEDIU M; BUFFER-TIME=11 1; FP-POS=1	4" [(-449395) = -54 _.] Special Requiremen	at is necessary to move the aperture to the $\frac{400 \text{ Secs }}{[==>]}$	
A Comments: H PSA LAPXST Desired LAP Therefore, X ocation. 5 G130M 9 Deute Exposu	TP value at LP3 is 182.1 PXSTP value for FCA to CAPER is set to -267 - 18 M/130 DEUTERIUM erium ure 2	1 1 2 3 3 4 3 5 6 6 7 7 8 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	9 at Position 2 for LP. he TRANS rules, the ' G130M 1309 A	2 is -267 "QESIPARM XSTEPS -5 CURRENT=MEDIU M; BUFFER-TIME=11 1; FP-POS=1	4" [(-449395) = -54 _.] Special Requiremen	at is necessary to move the aperture to the $\frac{400 \text{ Secs }}{[==>]}$	

ent tt the aperture in the appropriate position to illuminate a portion of the LP2/Blue Modes region of the P value at LP3 is 182.1 STP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP2 is -225 PER is set to -225 - 182.1 = -407. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTE" 160 DEUTERIUM COS/FUV, TIME-TAG, FCA G160M CURRENT=MI			[1]
P value at LP3 is 182.1 STP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP2 is -225 PER is set to -225 - 182.1 = -407. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTE" 160 DEUTERIUM COS/FUV, TIME-TAG, FCA G160M CURRENT=MI			
STP value for FCA to illuminate Segment B with G160M/1600 at Position 1 for LP2 is -225 PER is set to -225 - 182.1 = -407. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTE" 160 DEUTERIUM COS/FUV, TIME-TAG, FCA G160M CURRENT=M.	PS 48" [(-407449) = +42] Special Red	quirement is necessary to maye the anertu	
PER is set to -225 - 182.1 = -407. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTE" 160 DEUTERIUM COS/FUV, TIME-TAG, FCA G160M CURRENT=M:	PS 48" [(-407449) = +42] Special Red	auirement is necessary to move the apertu	
160 DEUTERIUM COS/FUV, TIME-TAG, FCA G160M CURRENT=M			ira to the correct
		quirement is necessary to move the apertu-	Te to the correct
	EDIU	400 Secs (400 Secs)	
ium 1600 A M; e 1 PAUSSER TIM		[==>]	
BUFFER-TIM 1:	E=11		[1]
FP-POS=4			
euterium exposure optimmized for Segment B. FP-POS=4 was chosen because previous observations s	show that it has slightly more counts than	the other FP-POS values.	!
ANONE COS, ALIGN/APER XAPER=-449	QESIPARM XSTEP	0.0 Secs (0 Secs)	
2 f ent	S -42	[==>]	[1]
t the aperture in the appropriate position to illuminate a portion of the LP2/Blue Modes region of the	detector when illuminating Segment B w	ith G160M/1600.	
P value at LP3 is 182.1 ISTP value for FCA to illuminate Segment B with G160M/1600 at Position 2 for LP2 is -280, but the apome pad, I will set it to match the G130M exposure (-267). PER is set to -267 - 182.1 = -449. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTE" 160 DEUTERIUM COS/FUV, TIME-TAG, FCA G160M CURRENT=M.	SPS -42" [(-449407) = -42] Special Rec	· ·	•
diam.	EDIU	· · · · · · · · · · · · · · · · · · ·	
e 2 1600 A BUFFER-TIM	E=11	[==>]	
1;			[1]
FP-POS=4			
euterium exposure optimmized for Segment B. FP-POS=4 was chosen because previous observations s			
	SPEC COM INSTR	39 Secs (39 Secs)	
o no DARK S/C, DATA, NONE	EI HAADIDDOD:	r . 1	
o no DARK S/C, DATA, NONE V fo rd m	ELHVADJPROP;	I==>J	
V fo	ELHVADJPROP; QESIPARM ENDC TSA 167;	<i>[==>J</i>	/11
V fo	QESIPARM ENDC	[==>]	[1]

