

17325 - Cycle 31 COS FUV Detector Gain Maps

Cycle: 31, Proposal Category: CAL/COS (Availability Mode: RESTRICTED)

INVESTIGATORS

Name	Institution
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Dr. Kate Rowlands (CoI) (ESA Member) (Contact)	Space Telescope Science Institute - ESA - JWST

VISITS

Visit	Targets used in Visit	Configurations used in Visit	Orbits Used	Last Orbit Planner Run	OP Current with Visit?
2A	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	16-Nov-2023 08:00:17.0	yes
2C	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	16-Nov-2023 08:00:18.0	yes
3A	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	16-Nov-2023 08:00:20.0	yes
3C	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	16-Nov-2023 08:00:21.0	yes

Proposal 17325 (STScI Edit Number: 0, Created: Thursday, November 16, 2023 at 8:00:27 AM Eastern Standard Time) - Overview

	Targets used in Visit	Configurations used in Visit	Orbits Used	Last Orbit Planner Run	OP Current with Visit?
4A	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	16-Nov-2023 08:00:22.0	yes
4C	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	16-Nov-2023 08:00:23.0	yes
5A	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	16-Nov-2023 08:00:24.0	yes
5C	DARK DEUTERIUM NONE	COS COS/FUV S/C	1	16-Nov-2023 08:00:25.0	yes

⁸ Total Orbits Used

ABSTRACT

This program uses the deuterium lamp to illuminate the regions of the detector being used to collect spectra during Cycle 31. The data obtained will be used to create gain maps of the detector. Because of the strongly varying intensity of the lamp as a function of wavelength, G130M/1309 data will be obtained for Segment A, and G160M/1600 will be used for Segment B.

Gain map data will be obtained at ~6 month intervals for modes where the voltage is unchanged. Obtaining a gain map at these times will help to improve the modeling of the modal gain as a function of time and extracted charge, since it will provide data that cover the full time span of each high voltage at each LP. Improving these models will allow better predictions of the future lifetime of the detector.

OBSERVING DESCRIPTION

This program will obtain spectra from the deuterium lamp with enough counts to permit the construction of a gain map covering the region where the spectra fall. In order to efficiently illuminate the two segments, the G130M/1309 setting will be used for Segment A, and G160M/1600 will be used for Segment B. Both segments can safely remain on with either setting.

Proposal 17325 (STScI Edit Number: 0, Created: Thursday, November 16, 2023 at 8:00:27 AM Eastern Standard Time) - Overview Gain maps should be taken at ~6 month and ~1 year intervals when the default HV does not change. They should be obtained at the appropriate HV levels and detector Lifetime Positions.

The plan for Cycle 31 includes 8 one-orbit visits:

*Visits 2A and 2C will be taken at LP2 after about 6 months and 1 year from the gain map taken at this position near the end of Cycle 30 at the nominal LP2 HV values (currently 173/175).

*Visits 3A and 3C will be taken at LP3 after about 6 months and 1 year from the gain map taken at this position near the end of Cycle 30 at the nominal LP3 HV values (currently 173/175).

*Visits 4A and 4C will be taken at LP4 after about 6 months and 1 year from the gain map taken at this position near the end of Cycle 30 at the nominal LP4 HV values (173/175).

*Visits 5A and 5C will be taken at LP5 after about 6 months and 1 year from the gain map taken at this position near the end of Cycle 30 at the nominal LP5 HV values (173/175).

Note that if the HV changes during Cycle 31, the values specified in this proposal will have to be adjusted.

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

- * Take an exposure at LP1 to set up the aperture position and HV. This can also be used to measure the gain at LP1. These exposures will use G130M/1309 for visits 2A, 2C, 3A, and 3C; and G160M/1600 for visits 4A, 4C, 5A, and 5C.
- * Adjust the HV values
- * Adjust the aperture in the cross dispersion direction so that the deuterium lamp will illuminate the appropriate region on Segment A when using

Proposal 17325 (STScI Edit Number: 0, Created: Thursday, November 16, 2023 at 8:00:27 AM Eastern Standard Time) - Overview

G130M/1309.

* Take a 440 second deuterium lamp exposure using both detector segments.

* Adjust the aperture to a second cross-dispersion location to obtain additional coverage on Segment A and take another 440 second deuterium lamp

exposure.

* Adjust the aperture in the cross dispersion direction so that the deuterium lamp will illuminate the appropriate region on Segment B when using

G160M/1600.

* Take a 440 second deuterium lamp exposure using both detector segments.

* Adjust the aperture to a second cross-dispersion location to obtain additional coverage on Segment B and take another 440 second deuterium lamp

exposure.

* Return the aperture to the HOME position

Note that because TRANS resets its aperture zero point when FCA exposures are taken, the aperture is explicitly moved using "QESIPARM

XSTEPS", as was done in Program 13970, 14439, 14519, 14941, 15534, 15772, etc.

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

MEB1:

SOFT STOPS = -275 to 275

HARD STOPS = -282 to 285

MEB2:

SOFT STOPS = -275 to 275

4

Proposal 17325 (STScI Edit Number: 0, Created: Thursday, November 16, 2023 at 8:00:27 AM Eastern Standard Time) - Overview HARD STOPS = -284 to 283

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

Summary table:

Visit	LP C	Grating/Segment	Y Position	LAPXSTP	XAPER	HV
2A/2C	2	G130M/A	1	-213	-60	173/175
2A/2C	2	G130M/A	2	-267*	-114	173/175
2A/2C	2	G160M/B	1	-215	-62	173/175
2A/2C	2	G160M/B	2	-267*	-114	173/175
3A/3C	3	G130M/A	1	-72	+81	173/175
3A/3C	3	G130M/A	2	-128	+25	173/175
3A/3C	3	G160M/B	1	-84	+69	173/175
3A/3C	3	G160M/B	2	-140	+13	173/175
4A/4C	4	G130M/A	1	-32	+121	173/175
4A/4C	4	G130M/A	2	-86	+67	173/175
4A/4C	4	G160M/B	1	-41	+112	173/175
4A/4C	4	G160M/B	2	-95	+58	173/175
5A/5C	5	G130M/A	1	-213	-60	173/175
5A/5C	5	G130M/A	2	-267*	-114	173/175

Proposal 17325 (STScI Edit Number: 0, Created: Thursday, November 16, 2023 at 8:00:27 AM Eastern Standard Time) - Overview

5A/5C	5	G160M/B	1	-215	-62	173/175
5A/5C	5	G160M/B	2	-267*	-114	173/175

The LP2 and LP5 aperture positions are identical, but the Y extent of the spectra on the detector is large enough to cover the detector region used for both LPs. The LP6 positions are also the same, and since the LP5 and LP6 HV values are identical, no separate LP6 visits have been created.

^{*} Limited to be within the soft stops

<u>P</u>	ro	posal 17325 - ~6 months after last Cycle 30 LP2 gain map (2A) - Cycle 31 COS FUV Detector Gain Maps	
		Proposal 17325, ~6 months after last Cycle 30 LP2 gain map (2A), implementation	Thu Nov 16 13:00:27 GMT 2023
	ַ ו	Diagnostic Status: Warning	
:	<u>s</u>	Scientific Instruments: S/C, COS, COS/FUV	
'	1	Special Requirements: BETWEEN 01-APR-2024:00:00:00 AND 01-MAY-2024:00:00:00; PARALLEL	
L	_	Comments: This visit collects data at LP2. It uses the HV values appropriate for LP2 (173/175).	
;	agnostics	(~6 months after last Cycle 30 LP2 gain map (2A)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU	
Ι.	<u>.</u>		

Proposal 17325 - ~6 months after last Cycle 30 LP2 gain map (2A) - Cycle 31 COS FUV Detector Gain Maps

1	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
		DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU			125 Secs (125 Secs)	
	9 Deuterium Exposure - S			1309 A	M;			[==>]	
	et up at LP1				BUFFER-TIME=19 6;				
					FP-POS=1;				[11
					SEGMENT=BOTH;				[1]
					LIFETIME-POS=L				
					P1				
Com	ments: Short e	exposure to set apert	ture to LP1, which is near the center o	f the aperture range	used in this program. It a	ilso sets the HV to the	LP1 values.		
	Adjust HV t	DARK	S/C, DATA, NONE			SAA CONTOUR 3	1;	39 Secs (39 Secs)	
	o LP2 value s					SPEC COM INSTR ELHVADJPROP;		[==>]	
						QASISTATES COS	S		
						FUV HVNOM HV OM;	N		
						QESIPARM ENDO			[1]
						QESIPARM ENDO			
						QESIPARM SEGMENT AB	I		
Com	ments: Adiust	the HV to the LP2 v	values.						
	J								
	Aperture Ad	V- 1	re time = 39 seconds COS, ALIGN/APER		XAPER=-60			0.05 (0.5)	
3									
		HOLL	COB, TEIGIVIII EK		AAI EK=-00			0.0 Secs (0 Secs)	
	justment 1 f or Segment	NONE	COS, ALIGIVA EK		AAI ER00			I = > I	[1]
	justment 1 f or Segment A		,	on of the LP2 region		minatina Sagmant A	with G130M/1300		[1]
Comi	justment 1 f or Segment A ments: Put the	aperture in the app	propriate position to illuminate a porti	on of the LP2 region		minating Segment A v	with G130M/1309.		[1]
Comi FCA	justment 1 f or Segment A ments: Put the LAPXSTP val	e aperture in the app	propriate position to illuminate a porti	v	of the detector when illu	minating Segment A v	with G130M/1309.		[1]
Comi FCA Desir	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP	e aperture in the app lue at LP1 is -153 value for FCA to ill	propriate position to illuminate a porti duminate Segment A with G130M/1309	v	of the detector when illu	minating Segment A v	with G130M/1309.		[1]
Comi FCA Desir There	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP efore, XAPER	e aperture in the app lue at LP1 is -153 value for FCA to ill is set to -213153	propriate position to illuminate a porti luminate Segment A with $G130M/1309$ t=-60	at Position 1 for LP	of the detector when illun 2 is -213	minating Segment A v	with G130M/1309.	[==>]	[1]
Comr FCA Desir There	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP efore, XAPER G130M/130	e aperture in the app lue at LP1 is -153 value for FCA to ill	propriate position to illuminate a porti duminate Segment A with G130M/1309	O at Position 1 for LP	of the detector when illum 2 is -213 CURRENT=MEDIU	minating Segment A v	with G130M/1309.	[==>] 440 Secs (440 Secs)	[1]
Comi FCA Desir There	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP efore, XAPER	e aperture in the app lue at LP1 is -153 value for FCA to ill is set to -213153	propriate position to illuminate a porti luminate Segment A with $G130M/1309$ t=-60	at Position 1 for LP	of the detector when illus 2 is -213 CURRENT=MEDIU M;	minating Segment A v	with G130M/1309.	[==>]	[1]
Comi FCA Desir There	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP efore, XAPER G130M/130 9 Deuterium	e aperture in the app lue at LP1 is -153 value for FCA to ill is set to -213153	propriate position to illuminate a porti luminate Segment A with $G130M/1309$ t=-60	O at Position 1 for LP	of the detector when illum 2 is -213 CURRENT=MEDIU	minating Segment A v	with G130M/1309.	[==>] 440 Secs (440 Secs)	[1]
Comi FCA Desir There	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP efore, XAPER G130M/130 9 Deuterium	e aperture in the app lue at LP1 is -153 value for FCA to ill is set to -213153	propriate position to illuminate a porti luminate Segment A with $G130M/1309$ t=-60	O at Position 1 for LP	of the detector when illust 2 is -213 CURRENT=MEDIU M; BUFFER-TIME=16	minating Segment A v	with G130M/1309.	[==>] 440 Secs (440 Secs)	
Comi FCA Desir There	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP efore, XAPER G130M/130 9 Deuterium	e aperture in the app lue at LP1 is -153 value for FCA to ill is set to -213153	propriate position to illuminate a porti luminate Segment A with $G130M/1309$ t=-60	O at Position 1 for LP	of the detector when illum 2 is -213 CURRENT=MEDIU M; BUFFER-TIME=16 5;		with G130M/1309.	[==>] 440 Secs (440 Secs)	[1]
Comi FCA Desir There	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP efore, XAPER G130M/130 9 Deuterium	e aperture in the app lue at LP1 is -153 value for FCA to ill is set to -213153	propriate position to illuminate a porti luminate Segment A with $G130M/1309$ t=-60	O at Position 1 for LP	of the detector when illustrated is -213 CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=1;		with G130M/1309.	[==>] 440 Secs (440 Secs)	
Comi FCA Desir There	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP efore, XAPER G130M/130 9 Deuterium	e aperture in the app lue at LP1 is -153 value for FCA to ill is set to -213153	propriate position to illuminate a porti luminate Segment A with $G130M/1309$ t=-60	O at Position 1 for LP	of the detector when illum 2 is -213 CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH;		with G130M/1309.	[==>] 440 Secs (440 Secs)	
Comr FCA Desir <u>There</u> 4	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP efore, XAPER G130M/130 9 Deuterium Exposure 1	e aperture in the app lue at LP1 is -153 value for FCA to ill is set to -213153 DEUTERIUM	propriate position to illuminate a porti luminate Segment A with $G130M/1309$ t=-60	G130M 1309 A	of the detector when illusticated by the detector when illusticated by the second of the s			[==>] 440 Secs (440 Secs) [==>]	
Comm FCA Desir There 4	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP efore, XAPER G130M/130 9 Deuterium Exposure 1	e aperture in the app lue at LP1 is -153 value for FCA to ill is set to -213153 DEUTERIUM	oropriate position to illuminate a porti luminate Segment A with G130M/1309 2 = -60 COS/FUV, TIME-TAG, FCA	G130M 1309 A	of the detector when illusticated by the detector when illusticated by the second of the s	at it has slightly more	e counts than the oth	[==>] 440 Secs (440 Secs) [==>]	
Comu FCA Desir There 4	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP efore, XAPER G130M/130 9 Deuterium Exposure 1	e aperture in the app lue at LP1 is -153 value for FCA to ill is set to -213153 DEUTERIUM	propriate position to illuminate a porticuminate Segment A with G130M/1309 2 = -60 COS/FUV, TIME-TAG, FCA	G130M 1309 A	of the detector when illusticated by the detector when illusticated by the second of the s	at it has slightly mor	e counts than the oth	[==>] 440 Secs (440 Secs) [==>] er FP-POS values.	
Comu FCA Desir There 4	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP efore, XAPER G130M/130 9 Deuterium Exposure 1 ments: Deuter Aperture Ad justment 2 f or Segment A	e aperture in the app lue at LP1 is -153 value for FCA to ill is set to -213153 DEUTERIUM	oropriate position to illuminate a porticuminate Segment A with G130M/1309 E = -60 COS/FUV, TIME-TAG, FCA ized for Segment A. FP-POS=1 was a COS, ALIGN/APER	G130M 1309 A 1309 A	of the detector when illusticated by the detector when illusticated by the second of the detector when illusticated by the second of the second of the detector when illusticated by the second of the	at it has slightly mor. QESIPARM XSTE S -54	<i>e counts than the oth</i> P	==>	[1]
Comu Comu Comu Comu	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP efore, XAPER G130M/130 9 Deuterium Exposure 1 Exposure 1 Aperture Ad justment 2 f or Segment A ments: Put the	e aperture in the applue at LP1 is -153 value for FCA to ill is set to -213153 DEUTERIUM THE TOTAL TO THE PROPERTY OF TH	propriate position to illuminate a porticuminate Segment A with G130M/1309 2 = -60 COS/FUV, TIME-TAG, FCA	G130M 1309 A 1309 A	of the detector when illusticated by the detector when illusticated by the second of the detector when illusticated by the second of the second of the detector when illusticated by the second of the	at it has slightly mor. QESIPARM XSTE S -54	<i>e counts than the oth</i> P	==>	[1]
Comu Comu Comu Comu Comu	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP efore, XAPER G130M/130 9 Deuterium Exposure 1 ments: Deuter Aperture Ad justment 2 f or Segment A ments: Put the LAPXSTP val	e aperture in the applue at LP1 is -153 value for FCA to ill is set to -213153 DEUTERIUM THE TOTAL TO THE APPLICATION ONE THE PROPERTY OF THE APPLICATION OF T	oropriate position to illuminate a porticuminate Segment A with G130M/1309 2 = -60 COS/FUV, TIME-TAG, FCA ized for Segment A. FP-POS=1 was a COS, ALIGN/APER	G130M 1309 A Schosen because previ	of the detector when illusticated as 2 is -213 CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1 ous observations show the XAPER=-114 of the detector when illusticated as 2 is 2.11	at it has slightly mor. QESIPARM XSTE S -54	<i>e counts than the oth</i> P	==>	[1]
Comu There 4 Comu 5 Comu FCA Desir	justment 1 f or Segment A ments: Put the LAPXSTP val red LAPXSTP efore, XAPER G130M/130 9 Deuterium Exposure 1 Exposure 1 Aperture Ad justment 2 f or Segment A ments: Put the LAPXSTP val red LAPXSTP val	e aperture in the applue at LP1 is -153 value for FCA to ill is set to -213153 DEUTERIUM TONE To aperture in the applue at LP1 is -153 value for FCA to ill	coropriate position to illuminate a porticuminate Segment A with G130M/1309 E = -60 COS/FUV, TIME-TAG, FCA ized for Segment A. FP-POS=1 was a COS, ALIGN/APER coropriate position to illuminate a porticuminate Segment A with G130M/1309	G130M 1309 A 1309 on of the LP2 region Output Description 2 for LP	of the detector when illum 2 is -213 CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1 ous observations show th XAPER=-114 of the detector when illum 2 is -267	at it has slightly more QESIPARM XSTE S -54 minating Segment A v	e counts than the oth P vith G130M/1309.	==>	(1)

	ns after last Cycle 30 LF		<u> </u>	COS FOV Detector C		
6 G130M/130 DEUTERIUM 9 Deuterium	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU M;		440 Secs (440 Secs)	
Exposure 2		1309 A	BUFFER-TIME=16 5;		[==>]	
			FP-POS=1;			[1]
			SEGMENT=BOTH;			[1]
			LIFETIME-POS=L			
Comments: Douterium expessure entire	nized for Segment A. FP-POS=1 was c	ahasan baagusa nn	P1	at it has slightly more counts than t	the other ED DOS values	
7 Aperture Ad NONE	COS, ALIGN/APER	nosen because pro	XAPER=-62	QESIPARM XSTEP	0.0 Secs (0 Secs)	
justment 1 f or Segment B	000,1220.0122		D	\$ 52	[==>]	[1]
_	propriate position to illuminate a porti	ion of the LP2 regi	ion of the detector when illu	minating Segment B with G160M/10	600.	
·	Illuminate Segment B with $G160M/1600$ 3 = -62. *HOWEVER*, because of the			(-62114) = +52] Special Requir	rement is necessary to move the aperture	to the correct local
8 G160M/160 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU		440 Secs (440 Secs)	
0 Deuterium	.,	1600 A	M;		[==>]	
Exposure 1			BUFFER-TIME=16 5;			
			FP-POS=4;			<i>[11]</i>
			SEGMENT=BOTH;			[1]
			LIFETIME-POS=L			
			P1			
	nmized for Segment B. FP-POS=4 was	chosen because p				
9 Aperture Ad NONE justment 2 f	COS, ALIGN/APER		XAPER=-114	QESIPARM XSTEP S -52	$0.0 \operatorname{Secs} (0 \operatorname{Secs})$ $I = > I$	
or Segment B					[==>]	[1]
Comments: Put the aperture in the ap	propriate position to illuminate a porti	ion of the LP2 regi	ion of the detector when illu	minating Segment B with G160M/10	600.	
FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to it ot. To leave some pad, I will set it to n	lluminate Segment B with G160M/1600 natch the G130M exposure (-267).	at Position 2 for	LP2 is -280, but the apertur	e soft stop is at -275 and we don't w	vant to exceed that value when including	the 5 step oversho
ation.				" [(-11462) = -52] Special Requ	irement is necessary to move the aperture	e to the correct loc
10 G160M/160 DEUTERIUM 0 Deuterium	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU M;		440 Secs (440 Secs)	
Exposure 2		1600 A	BUFFER-TIME=16		[==>]	
			5;			
			FP-POS=4;			[1]
			SEGMENT=BOTH;			
			LIFETIME-POS=L P1			
Commants: Dautarium avnosura ontin	nmized for Segment B. FP-POS=4 was	chosen hecause n		hat it has slightly more counts than	the other FP POS values	
Comments. Deutertum exposure optin	imized for Segment B. 11-1 OS-4 was	chosen because p	revious observations snow i	nai ii nas siigniiy more counis inan	the other 11-1 OS values.	

Proposal 17325 - ~6 months after last Cycle 30 LP2 gain map (2A) - Cycle 31 COS FUV Detector Gain Maps QESIPARM XSTEP Return Aper NONE COS, ALIGN/APER XAPER=0 0 Secs (0 Secs) ture to Nomi nal Position S 114 [==>] [1] Comments: Return aperture to nominal position by setting XAPER=0 *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS +114" [(0 - -114) = +114] Special Requirement is necessary to move the aperture to its correct location. Orbit 1 Server Version: 20230626 Unused Orbital Visibility = 3136 Exp. 2 Exp. 9 Ехр. 3 Exp. 10 Orbit Structure Exp. 7 Exp. 11 Exp. 5 Exp. 4 Exp. 6 Exp. 8 Occultation Home Exp. 1 500 5500 0 1000 1500 2000 2500 3000 3500 4000 4500 5000 6000 sec

<u>P</u>	<u> Proposal 17325 - ~12 months after last Cycle 30 LP2 gain map (2C) - Cycle 31 COS FUV Detector Gain N</u>	/laps
	Proposal 17325, ~12 months after last Cycle 30 LP2 gain map (2C), implementation	Thu Nov 16 13:00:27 GMT 2023
۱,	Diagnostic Status: Warning	
٤	Scientific Instruments: S/C, COS, COS/FUV	
1	Special Requirements: BETWEEN 01-OCT-2024:00:00:00 AND 01-NOV-2024:00:00:00; PARALLEL	
L	Comments: This visit collects data at LP2. It uses the HV values appropriate for LP2 (173/175).	
13	(~12 months after last Cycle 30 LP2 gain map (2C)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU	
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	On a	
Ë	<u>ā</u>	

Proposal 17325 - ~12 months after last Cycle 30 LP2 gain map (2C) - Cycle 31 COS FUV Detector Gain Maps

# Label Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1 G130M/130 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU			125 Secs (125 Secs)	
9 Deuterium Exposure - S		1309 A	M;			[==>]	
et up at LP1			BUFFER-TIME=19 6;				
			FP-POS=1;				
			SEGMENT=BOTH;				[1]
			LIFETIME-POS=L				
			P1				
Comments: Short exposure to set ape	rture to LP1, which is near the center o	of the aperture range	used in this program. It a	lso sets the HV to the	LP1 values.		
2 Adjust HV t DARK	S/C, DATA, NONE			SAA CONTOUR 3	1;	39 Secs (39 Secs)	
o LP2 value s				SPEC COM INSTR ELHVADJPROP;	t.	[==>]	
				QASISTATES COS FUV HVNOM HV			
				OM; QESIPARM ENDO TSA 173;			[1]
				QESIPARM ENDO			
				QESIPARM SEGMENT AB	I		
Comments: Adjust the HV to the LP2	values.			ELVI IIE			
Since the HV is not increasing, expos	ure time = 39 seconds						
3 Aperture Ad NONE	COS, ALIGN/APER		XAPER=-60			0.0 Secs (0 Secs)	
justment 1 f or Segment A						[==>]	[1]
Comments: Put the aperture in the ap	ppropriate position to illuminate a porti	ion of the LP2 region	of the detector when illur	ninating Segment A	with G130M/1309.		•
FCA LAPXSTP value at LP1 is -153	illuminate Segment A with G130M/1309	at Position 1 for LP	22 in 212				
·		9 ui 1 osiiion 1 joi L 1	2 13 -213				
Therefore, XAPER is set to -21315 4 G130M/130 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU			440 Secs (440 Secs)	
9 Deuterium	COS/1 C V, THVIL-TAG, TCA	1309 A	M;			[==>1	
Exposure 1		1309 A	BUFFER-TIME=16			[>]	
			5;				
			FP-POS=1;				[1]
			SEGMENT=BOTH;				
			LIFETIME-POS=L P1				
Commente: Deuterium exposure enti-	nized for Segment A. FP-POS=1 was o	ahasan baaaysa nnayi		at it has slightly man	a counts than the ot	nor ED DOS values	
	, <u>, , , , , , , , , , , , , , , , , , </u>	cnosen because previ					
5 Aperture Ad NONE justment 2 f	COS, ALIGN/APER		XAPER=-114	QESIPARM XSTE S -54	Г	0.0 Secs (0 Secs)	
or Segment A						[==>]	[1]
Comments: Put the aperture in the ag	ppropriate position to illuminate a porti	ion of the LP2 region	of the detector when illur	ninating Segment A	with G130M/1309.		
FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to t	illuminate Segment A with G130M/1309	9 at Position 2 for LP	22 is -267				
Desired LAPXSTP value for FCA to a	Ŭ	v		" [(-11460) = -54]	Special Requireme	nt is necessary to move the aperture to the	correct

6 G130M/130 DEUTERIUM	oths after last Cycle 30 L COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU	COOT OV Detector	440 Secs (440 Secs)	
9 Deuterium	COS/FUV, HIME-TAG, FCA	1309 A	M;		[==>]	
Exposure 2		1309 A	BUFFER-TIME=16 5;		[==>]	
			FP-POS=1;			[1]
			SEGMENT=BOTH;			[1]
			LIFETIME-POS=L			
Comments: Deuterium exposure optiv	mized for Segment A. FP-POS=1 was c	chosen hecause pro	P1 evious observations show that	it has slightly more counts than i	the other FP-POS values	
7 Aperture Ad NONE	COS, ALIGN/APER	mosen occurse pro		DESIPARM XSTEP	0.0 Secs (0 Secs)	
justment 1 f or Segment B			S	\$ 52	[==>]	[1]
Comments: Put the aperture in the ap	ppropriate position to illuminate a porti	on of the LP2 regi	ion of the detector when illumi	nating Segment B with G160M/1	600.	
FCA LAPXSTP value at LP1 is -153	illuminate Segment B with G160M/1600	at Position 1 for	I D2 ic 215			
·		v		62114) = +52] Special Requir	rement is necessary to move the aperture	to the correct locat
ion. 8 G160M/160 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU		440 Secs (440 Secs)	
0 Deuterium Exposure 1		1600 A	M;		[==>]	
Exposure 1			BUFFER-TIME=16 5;			
			FP-POS=4;			[1]
			SEGMENT=BOTH;			[1]
			LIFETIME-POS=L			
Comments: Deuterium exposure optir	mmized for Segment B. FP-POS=4 was	chosen because p	P1 revious observations show tha	t it has slightly more counts than	the other FP-POS values.	
9 Aperture Ad NONE	COS, ALIGN/APER	•	XAPER=-114 (QESIPARM XSTEP	0.0 Secs (0 Secs)	
justment 2 f or Segment B			S	S -52	[==>]	[1]
Comments: Put the aperture in the ap	ppropriate position to illuminate a porti	on of the LP2 regi	ion of the detector when illumi	nating Segment B with G160M/1	600.	
FCA LAPXSTP value at LP1 is -153	illumin ata Saamant Punish C160M/1600	at Position 2 for	ID2 in 200 hout the amountains	and atom is at 275 and the doubt.	want to account that wall could are in all disco	4h a 5 atau awanah a
ot. To leave some pad, I will set it to t	natch the G130M exposure (-267).	ai Position 2 jor	LF2 is -200, but the aperture s	soji siop is ai -273 ana we aon i v	want to exceed that value when including	ine 5 siep oversno
Therefore, XAPER is set to -26715 ation.	3 = -114. *HOWEVER*, because of th	e TRANS rules, the	e "QESIPARM XSTEPS -52" [(-11462) = -52] Special Requ	irement is necessary to move the aperture	to the correct loc
10 G160M/160 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU		440 Secs (440 Secs)	
0 Deuterium Exposure 2		1600 A	M;		[==>]	
			BUFFER-TIME=16 5;			
			FP-POS=4;			[1]
			SEGMENT=BOTH;			[1]
			LIFETIME-POS=L P1			
Comments: Deuterium exposure optir	mmized for Segment B. FP-POS=4 was	chosen because p	revious observations show tha	at it has slightly more counts than	the other FP-POS values.	
		<i>I</i>				

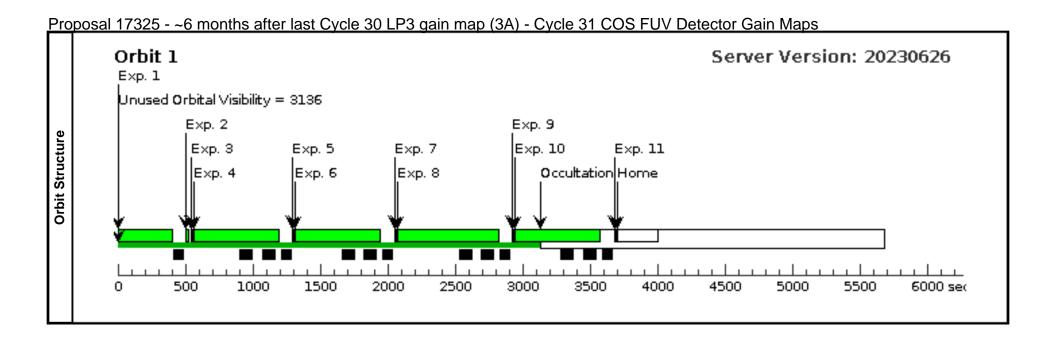
Proposal 17325 - ~12 months after last Cycle 30 LP2 gain map (2C) - Cycle 31 COS FUV Detector Gain Maps COS, ALIGN/APER Return Aper NONE XAPER=0 QESIPARM XSTEP 0 Secs (0 Secs) ture to Nomi nal Position S 114 [==>] [1] Comments: Return aperture to nominal position by setting XAPER=0 *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS +114" [(0 - -114) = +114] Special Requirement is necessary to move the aperture to its correct location. Orbit 1 Server Version: 20230626 Unused Orbital Visibility = 3136 Exp. 2 Exp. 9 Ехр. 3 Exp. 10 Orbit Structure Exp. 7 Exp. 11 Exp. 5 Exp. 4 Exp. 6 Exp. 8 Occultation Home Exp. 1 500 5500 0 1000 1500 2000 2500 3000 3500 4000 4500 5000 6000 sec

<u>Pr</u>	oposal 17325 - ~6 months after last Cycle 30 LP3 gain map (3A) - Cycle 31 COS FUV Detector Gain Maps	
	Proposal 17325, ~6 months after last Cycle 30 LP3 gain map (3A), implementation	Thu Nov 16 13:00:27 GMT 2023
<u>.</u> ±	Diagnostic Status: Warning	
Į į	Scientific Instruments: S/C, COS, COS/FUV	
1	Special Requirements: BETWEEN 01-APR-2024:00:00:00 AND 01-MAY-2024:00:00:00; PARALLEL	
┖	Comments: This visit collects data at LP3. It uses the HV values appropriate for LP3 (173/175).	
, v	(~6 months after last Cycle 30 LP3 gain map (3A)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU	
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Proposal 17325 - ~6 months after last Cycle 30 LP3 gain map (3A) - Cycle 31 COS FUV Detector Gain Maps

# Label Ta	arget	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1 G130M/130 D	EUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU			125 Secs (125 Secs)	
9 Deuterium Exposure - S			1309 A	M;			I ==> J	
et up at LP1				BUFFER-TIME=19 6;				
				FP-POS=1;				[1]
				SEGMENT=BOTH;				[1]
				LIFETIME-POS=L				
				P1				
	•	e to LP1, which is near the center o	f the aperture range	used in this program. It a	lso sets the HV to the	LP1 values.		1
2 Adjust HV t D. o LP3 value	ARK	S/C, DATA, NONE			SAA CONTOUR 31	;	39 Secs (39 Secs)	
S S					SPEC COM INSTR ELHVADJPROP;		[==>]	
					QASISTATES COS FUV HVNOM HVN	ī		
					OM; QESIPARM ENDC			[1]
					TSA 173; QESIPARM ENDC			
					TSB 175; QESIPARM SEGM			
Comments: Adjust the	. UV to I D2 values				ENT AB			
Since the HV is not in							T	
3 Aperture Ad No justment 1 f	ONE	COS, ALIGN/APER		XAPER=81			0.0 Secs (0 Secs)	
or Segment A							[==>]	[1]
Comments: Put the ap	perture in the appro	priate position to illuminate a portio	on of the LP3 region	of the detector when illur	ninating Segment A w	ith G130M/1309.		
FCA LAPXSTP value Desired LAPXSTP va		ninate Segment A with G130M/1309	at Position 1 for LP	3 is -72				
Therefore, XAPER is:		-	ar rosmon r jor Er	5 is 72				
4 G130M/130 D	EUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU			440 Secs (440 Secs)	
9 Deuterium Exposure 1			1309 A	M;			[==>]	
Exposure 1				BUFFER-TIME=16 5;				
				FP-POS=1;				(11
				SEGMENT=BOTH;				[1]
				LIFETIME-POS=L				
				P1				
Comments: Deuteriun	n exposure optimize	ed for Segment A. FP-POS=1 was c	hosen because previ	ous observations show the	at it has slightly more	counts than the other	FP-POS values.	
5 Aperture Ad N	ONE	COS, ALIGN/APER		XAPER=25	QESIPARM XSTEP		0.0 Secs (0 Secs)	
justment 2 f or Segment					S -56		[==>]	[1]
A		nriata nasitian ta illuminata a narti	on of the LP3 region	of the detector when illur	ninating Segment A w	ith G130M/1309.		•
A	perture in the appro	priale position to tituminale a porti						
A Comments: Put the ap FCA LAPXSTP value	at LP1 is -153							
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP val	at LP1 is -153 lue for FCA to illun	ninate Segment A with G130M/1309	at Position 2 for LP	3 is -128	I[(+25 - +81) = -56]	Special Requirement	is necessary to move the aperture to the	correct

	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU	ſ	440 Secs (440 Secs)	
9 Deuterium Exposure 2	,	1309 A	M; BUFFER-TIME=16		[==>]	
			5;			
			FP-POS=1;			[1]
			SEGMENT=BOTH;	;		
			LIFETIME-POS=L P1			
Comments: Deuterium exposure optii	nized for Segment A. FP-POS=1 was a	chosen because pre	evious observations show th	nat it has slightly more counts than t	he other FP-POS values.	•
7 Aperture Ad NONE	COS, ALIGN/APER		XAPER=69	QESIPARM XSTEP	0.0 Secs (0 Secs)	
justment 1 f or Segment B				S 44	[==>]	[1]
Comments: Put the aperture in the ap	propriate position to illuminate a porti	on of the LP3 region	on of the detector when illu	minating Segment B with G160M/16	500.	
FCA LAPXSTP value at LP1 is -153	VI					
·	lluminate Segment B with G160M/1600	v				
Therefore, XAPER is set to -84153 ion.	T = +69. *HOWEVER*, because of the	TRANS rules, the '	'QESIPARM XSTEPS 44" [f(+69 - +25) = +44] Special Requir	ement is necessary to move the aperture to	o the correct locat
8 G160M/160 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU		440 Secs (440 Secs)	
0 Deuterium Exposure 1		1600 A	M;		[==>]	
2			BUFFER-TIME=16 5;			
			FP-POS=4;			[1]
			SEGMENT=BOTH;	;		[2]
			LIFETIME-POS=L			
	nmized for Segment B. FP-POS=4 was	chosen hecause n	P1	that it has slightly more counts than	the other FP-POS values	
	nmizea jor segmeni b. 14 -1 Os-4 was	chosen because pr				
	COS. ALIGN/APER		XAPER=13	OESIPARM XSTEP	10.0 Secs (U Secs)	
	COS, ALIGN/APER		XAPER=13	QESIPARM XSTEP S -56	0.0 Secs (0 Secs) [==>]	[1]
9 Aperture Ad NONE justment 2 f or Segment B	•	on of the LP3 regi		S -56	[==>]	[1]
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the ap	COS, ALIGN/APER opropriate position to illuminate a porti	on of the LP3 region		S -56	[==>]	[1]
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the ap FCA LAPXSTP value at LP1 is -153	•	,	on of the detector when illu	S -56	[==>]	[1]
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the ap FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to i Therefore, XAPER is set to -14015	propriate position to illuminate a porti lluminate Segment B with G160M/1600	at Position 2 for I	on of the detector when illu LP3 is -140.	$ ilde{S}$ -56 minating Segment B with G160M/10	[==>]	
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the ap FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to i Therefore, XAPER is set to -14015 ation. 10 G160M/160 DEUTERIUM	propriate position to illuminate a porti lluminate Segment B with G160M/1600	at Position 2 for I	on of the detector when illu LP3 is -140. "QESIPARM XSTEPS -56 CURRENT=MEDIU	\vec{S} -56 minating Segment B with G160M/10 " $[(+13 - +69) = -56]$ Special Requi	[==>] 600.	
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the ap FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to i Therefore, XAPER is set to -14015 ation. 10 G160M/160 DEUTERIUM 0 Deuterium	propriate position to illuminate a portilluminate Segment B with G160M/1600 $3 = +13$. *HOWEVER*, because of the	at Position 2 for I	on of the detector when illu LP3 is -140. "QESIPARM XSTEPS -56" CURRENT=MEDIU M;	\vec{S} -56 minating Segment B with G160M/10 " $[(+13 - +69) = -56]$ Special Requires	[==>] frement is necessary to move the aperture	
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in th	propriate position to illuminate a portilluminate Segment B with G160M/1600 $3 = +13$. *HOWEVER*, because of the	at Position 2 for 1 TRANS rules, the	on of the detector when illu LP3 is -140. "QESIPARM XSTEPS -56" CURRENT=MEDIU M; BUFFER-TIME=16	\vec{S} -56 minating Segment B with G160M/10 " $[(+13 - +69) = -56]$ Special Requires	[==>] frement is necessary to move the aperture 440 Secs (440 Secs)	
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the ap FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to i Therefore, XAPER is set to -14015 ation. 10 G160M/160 DEUTERIUM 0 Deuterium	propriate position to illuminate a portilluminate Segment B with G160M/1600 $3 = +13$. *HOWEVER*, because of the	at Position 2 for 1 TRANS rules, the	on of the detector when illu LP3 is -140. "QESIPARM XSTEPS -56" CURRENT=MEDIU M;	\vec{S} -56 minating Segment B with G160M/10 " $[(+13 - +69) = -56]$ Special Requires	[==>] frement is necessary to move the aperture 440 Secs (440 Secs)	to the correct loc
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the ap FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to i Therefore, XAPER is set to -14015 ation. 10 G160M/160 DEUTERIUM 0 Deuterium	opropriate position to illuminate a porti lluminate Segment B with G160M/1600 3 = +13. *HOWEVER*, because of the	at Position 2 for 1 TRANS rules, the	on of the detector when illu LP3 is -140. "QESIPARM XSTEPS -56" CURRENT=MEDIU M; BUFFER-TIME=16 5;	\vec{S} -56 minating Segment B with G160M/10 " $[(+13 - +69) = -56]$ Special Requi	[==>] frement is necessary to move the aperture 440 Secs (440 Secs)	
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the ap FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to i Therefore, XAPER is set to -14015 ation. 10 G160M/160 DEUTERIUM 0 Deuterium	opropriate position to illuminate a porti lluminate Segment B with G160M/1600 3 = +13. *HOWEVER*, because of the	at Position 2 for 1 TRANS rules, the	on of the detector when illu LP3 is -140. "QESIPARM XSTEPS -56" CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=4;	\vec{S} -56 minating Segment B with G160M/10 " $[(+13 - +69) = -56]$ Special Requi	[==>] frement is necessary to move the aperture 440 Secs (440 Secs)	to the correct loc
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the ap FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to it Therefore, XAPER is set to -14015 ation. 10 G160M/160 DEUTERIUM 0 Deuterium Exposure 2	opropriate position to illuminate a porticlluminate Segment B with G160M/1600 at the G161 at the G162	at Position 2 for I TRANS rules, the G160M 1600 A	on of the detector when illu LP3 is -140. "QESIPARM XSTEPS -56 CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L P1	\vec{S} -56 minating Segment B with G160M/16 " $[(+13 - +69) = -56]$ Special Requi	[==>] [frement is necessary to move the aperture $\frac{440 \text{ Secs } (440 \text{ Secs})}{[==>]}$	to the correct loc
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the ap FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to it Therefore, XAPER is set to -14015 ation. 10 G160M/160 DEUTERIUM 0 Deuterium Exposure 2	ppropriate position to illuminate a porti lluminate Segment B with G160M/1600 3 = +13. *HOWEVER*, because of the COS/FUV, TIME-TAG, FCA	at Position 2 for I TRANS rules, the G160M 1600 A	on of the detector when illu LP3 is -140. "QESIPARM XSTEPS -56 CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L P1 revious observations show to	\vec{S} -56 minating Segment B with G160M/16 " $[(+13 - +69) = -56]$ Special Requi	[==>] [==>] [==>] [==>] 440 Secs (440 Secs) [==>] [==>] [==>]	to the correct loc
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the ap FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to it Therefore, XAPER is set to -14015 ation. 10 G160M/160 DEUTERIUM 0 Deuterium Exposure 2	opropriate position to illuminate a porticlluminate Segment B with G160M/1600 at the G161 at the G162	at Position 2 for I TRANS rules, the G160M 1600 A	on of the detector when illu LP3 is -140. "QESIPARM XSTEPS -56 CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L P1	\vec{S} -56 minating Segment B with G160M/16 " $[(+13 - +69) = -56]$ Special Requi	[==>] [frement is necessary to move the aperture $\frac{440 \text{ Secs } (440 \text{ Secs})}{[==>]}$	to the correct loc

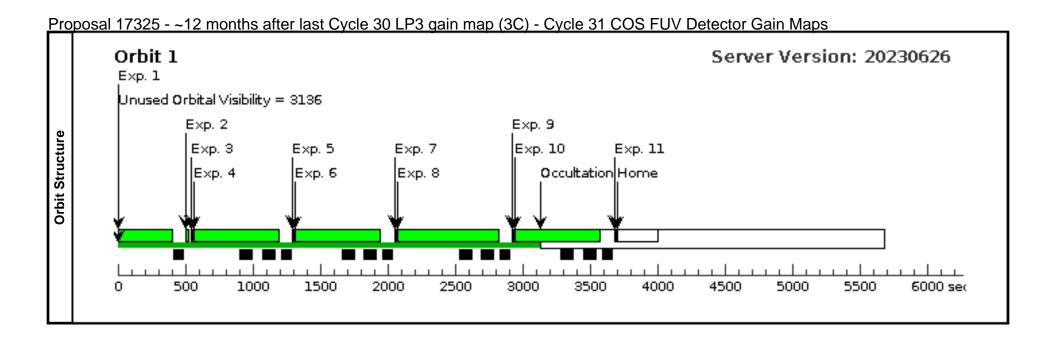


<u>P</u>	roposal 17325 - ~12 months after last Cycle 30 LP3 gain map (3C) - Cycle 31 COS FUV Detector Gain Maps	
	Proposal 17325, ~12 months after last Cycle 30 LP3 gain map (3C), implementation	Thu Nov 16 13:00:27 GMT 2023
<u>.</u> ±	Diagnostic Status: Warning	
į	Scientific Instruments: S/C, COS, COS/FUV	
[Special Requirements: BETWEEN 01-OCT-2024:00:00:00 AND 01-NOV-2024:00:00:00; PARALLEL	
L	Comments: This visit collects data at LP3. It uses the HV values appropriate for LP3 (173/175).	
٤	(~12 months after last Cycle 30 LP3 gain map (3C)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU	
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Proposal 17325 - ~12 months after last Cycle 30 LP3 gain map (3C) - Cycle 31 COS FUV Detector Gain Maps

1 G130M/120 D	arget	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	EUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU			125 Secs (125 Secs)	
9 Deuterium Exposure - S			1309 A	M;			[==>]	
et up at LP1				BUFFER-TIME=19 6;				
				FP-POS=1;				
				SEGMENT=BOTH;				[1]
				LIFETIME-POS=L				
				P1				
Comments: Short expe	osure to set apertu	ure to LP1, which is near the center o	f the aperture range	used in this program. It a	lso sets the HV to the	LP1 values.		
2 Adjust HV t D	ARK	S/C, DATA, NONE			SAA CONTOUR 31	1;	39 Secs (39 Secs)	
o LP3 value s					SPEC COM INSTR ELHVADJPROP;		[==>]	
					QASISTATES COS FUV HVNOM HVN			
					OM;			
					QESIPARM ENDC TSA 173;			[1]
					QESIPARM ENDC			
					TSB 175;			
					QESIPARM SEGM ENT AB			
Comments: Adjust the	HV to LP3 values	s.						
Since the HV is not inc	creasing, exposure	e time = 39 seconds						
3 Aperture Ad No		COS, ALIGN/APER		XAPER=81			0.0 Secs (0 Secs)	
justment 1 f							` ′	
~ ~							f==>1	
or Segment A							[==>]	[1]
A	perture in the appr	opriate position to illuminate a porti	on of the LP3 region	of the detector when illu	minating Segment A w	vith G130M/1309.	[==>]	[1]
A	**	opriate position to illuminate a porti	on of the LP3 region	of the detector when illur	minating Segment A w	vith G130M/1309.	[==>]	[1]
A Comments: Put the ap FCA LAPXSTP value	at LP1 is -153	opriate position to illuminate a portion opriate Segment A with G130M/1309	·	·	minating Segment A w	vith G130M/1309.	[==>]	[1]
A Comments: Put the ap FCA LAPXSTP value	at LP1 is -153 lue for FCA to illu	uminate Segment A with G130M/1309	·	·	minating Segment A w	vith G130M/1309.	[==>]	[1]
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP val	at LP1 is -153 lue for FCA to illu set to -72153 =	uminate Segment A with G130M/1309	·	·	minating Segment A w	vith G130M/1309.	[==>] 440 Secs (440 Secs)	[1]
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP val Therefore, XAPER is s 4 G130M/130 D1 9 Deuterium	at LP1 is -153 lue for FCA to illu set to -72153 =	uminate Segment A with G130M/1309 +81	O at Position 1 for LP	23 is -72	minating Segment A w	vith G130M/1309.	440 Secs (440 Secs)	[1]
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP val Therefore, XAPER is s 4 G130M/130 D1	at LP1 is -153 lue for FCA to illu set to -72153 =	uminate Segment A with G130M/1309 +81	at Position 1 for LF	CURRENT=MEDIU M; BUFFER-TIME=16	minating Segment A w	vith G130M/1309.		[1]
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP val Therefore, XAPER is s 4 G130M/130 D1 9 Deuterium	at LP1 is -153 lue for FCA to illu set to -72153 =	uminate Segment A with G130M/1309 +81	O at Position 1 for LP	CURRENT=MEDIU M; BUFFER-TIME=16 5;	minating Segment A w	vith G130M/1309.	440 Secs (440 Secs)	[1]
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP val Therefore, XAPER is s 4 G130M/130 D1 9 Deuterium	at LP1 is -153 lue for FCA to illu set to -72153 =	uminate Segment A with G130M/1309 +81	O at Position 1 for LP	CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=1;	minating Segment A w	vith G130M/1309.	440 Secs (440 Secs)	[1]
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP val Therefore, XAPER is s 4 G130M/130 D1 9 Deuterium	at LP1 is -153 lue for FCA to illu set to -72153 =	uminate Segment A with G130M/1309 +81	O at Position 1 for LP	CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH;	minating Segment A w	vith G130M/1309.	440 Secs (440 Secs)	
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP val Therefore, XAPER is s 4 G130M/130 D1 9 Deuterium	at LP1 is -153 lue for FCA to illu set to -72153 =	uminate Segment A with G130M/1309 +81	O at Position 1 for LP	CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L	minating Segment A w	vith G130M/1309.	440 Secs (440 Secs)	
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP val Therefore, XAPER is s 4 G130M/130 D1 9 Deuterium Exposure 1	at LP1 is -153 lue for FCA to illu set to -72153 = EUTERIUM	uminate Segment A with G130M/1309 +81 COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1			440 Secs (440 Secs) [==>]	
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP val Therefore, XAPER is s 4 G130M/130 D1 9 Deuterium Exposure 1 Comments: Deuterium	at LP1 is -153 lue for FCA to illu set to -72153 = EUTERIUM	uminate Segment A with G130M/1309 +81 COS/FUV, TIME-TAG, FCA zed for Segment A. FP-POS=1 was a	G130M 1309 A	CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1 Fous observations show the	at it has slightly more	e counts than the other	440 Secs (440 Secs) [==>] FP-POS values.	
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP val Therefore, XAPER is s 4 G130M/130 D1 9 Deuterium Exposure 1	at LP1 is -153 lue for FCA to illu set to -72153 = EUTERIUM	uminate Segment A with G130M/1309 +81 COS/FUV, TIME-TAG, FCA	G130M 1309 A	CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1		e counts than the other	440 Secs (440 Secs) [==>] FP-POS values. 0.0 Secs (0 Secs)	
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP val Therefore, XAPER is s G130M/130 Di 9 Deuterium Exposure 1 Comments: Deuterium 5 Aperture Ad justment 2 f or Segment	at LP1 is -153 lue for FCA to illu set to -72153 = EUTERIUM	uminate Segment A with G130M/1309 +81 COS/FUV, TIME-TAG, FCA zed for Segment A. FP-POS=1 was a	G130M 1309 A	CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1 Fous observations show the	at it has slightly more QESIPARM XSTEI	e counts than the other	440 Secs (440 Secs) [==>] FP-POS values.	
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP val Therefore, XAPER is s G130M/130 D1 9 Deuterium Exposure 1 Comments: Deuterium 5 Aperture Ad No justment 2 f or Segment A	at LP1 is -153 lue for FCA to illu set to -72153 = EUTERIUM n exposure optimiz	winate Segment A with G130M/1309 2 +81 COS/FUV, TIME-TAG, FCA Zed for Segment A. FP-POS=1 was a company of the company of t	G130M G1309 A 1309 A	CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1 ous observations show the	at it has slightly more QESIPARM XSTEI S -56	e counts than the other	440 Secs (440 Secs) [==>] FP-POS values. 0.0 Secs (0 Secs)	[1]
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP val Therefore, XAPER is s G130M/130 D1 9 Deuterium Exposure 1 Comments: Deuterium 5 Aperture Ad No justment 2 f or Segment A	at LP1 is -153 lue for FCA to illu set to -72153 = EUTERIUM n exposure optimiz	uminate Segment A with G130M/1309 +81 COS/FUV, TIME-TAG, FCA zed for Segment A. FP-POS=1 was a	G130M G1309 A 1309 A	CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1 ous observations show the	at it has slightly more QESIPARM XSTEI S -56	e counts than the other	440 Secs (440 Secs) [==>] FP-POS values. 0.0 Secs (0 Secs)	[1]
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP value Therefore, XAPER is s G130M/130 D1 9 Deuterium Exposure 1 Comments: Deuterium 5 Aperture Ad No justment 2 f or Segment A Comments: Put the ap FCA LAPXSTP value	at LP1 is -153 lue for FCA to illu set to -72153 = EUTERIUM n exposure optimiz ONE Derture in the appr at LP1 is -153	winate Segment A with G130M/1309 2 +81 COS/FUV, TIME-TAG, FCA Zed for Segment A. FP-POS=1 was a company of the company of t	G130M G1309 A	CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1 YAPER=25 of the detector when illumerates the second sec	at it has slightly more QESIPARM XSTEI S -56	e counts than the other	440 Secs (440 Secs) [==>] FP-POS values. 0.0 Secs (0 Secs)	[1]
A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP value Therefore, XAPER is s G130M/130 D1 9 Deuterium Exposure 1 Comments: Deuterium 5 Aperture Ad No justment 2 f or Segment A Comments: Put the ap FCA LAPXSTP value Desired LAPXSTP value	at LP1 is -153 lue for FCA to illu set to -72153 = EUTERIUM n exposure optimiz ONE oerture in the appr at LP1 is -153 lue for FCA to illu	aminate Segment A with G130M/1309 2. +81 COS/FUV, TIME-TAG, FCA 2. ced for Segment A. FP-POS=1 was of COS, ALIGN/APER 2. copriate position to illuminate a portional communicate Segment A with G130M/1309	G130M G1309 A 1309 A thosen because previous of the LP3 region at Position 2 for LP	CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1 ous observations show the XAPER=25 of the detector when illumed is 12 is -128	at it has slightly more QESIPARM XSTEI S -56 minating Segment A w	e counts than the other ovith G130M/1309.	440 Secs (440 Secs) [==>] FP-POS values. 0.0 Secs (0 Secs)	[1]

<u> pos</u>	<u>sai 17325 - ~12 monti</u>	<u>ns after last Cycle 30 L</u>	.P3 gain ma	<u> ap (3C) - Cycle 3</u>	T COS FUV Detecto	or Gain iviaps	
6	G130M/130 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU	J	440 Secs (440 Secs)	
	9 Deuterium Exposure 2		1309 A	M; BUFFER-TIME=16		[==>]	
				5;			
				FP-POS=1;			[1]
				SEGMENT=BOTH	;		
				LIFETIME-POS=L P1			
Com	ments: Deuterium exposure optimi	ized for Segment A. FP-POS=1 was c	chosen because pre		nat it has slightly more counts that	n the other FP-POS values.	
7	Aperture Ad NONE	COS, ALIGN/APER	,	XAPER=69	QESIPARM XSTEP	0.0 Secs (0 Secs)	
	justment 1 f or Segment B				S 44	[==>]	[1]
Com	ments: Put the aperture in the app	ropriate position to illuminate a porti	on of the LP3 region	on of the detector when illu	minating Segment B with G160M	/1600.	
	LAPXSTP value at LP1 is -153 red LAPXSTP value for FCA to illt	uminate Segment B with G160M/1600	at Position 1 for I	LP3 is -84			
Ther ion.	efore, XAPER is set to -84153 =	= +69. *HOWEVER*, because of the	TRANS rules, the '	'QESIPARM XSTEPS 44" [T(+69 - +25) = +44] Special Requ	uirement is necessary to move the aperture to	o the correct locat
8	G160M/160 DEUTERIUM 0 Deuterium	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU M;	Ţ	440 Secs (440 Secs)	
l	Exposure 1		1600 A	BUFFER-TIME=16		[==>]	
l				5;			
1				FP-POS=4;			[1]
				SEGMENT=BOTH	;		
				LIFETIME-POS=L P1			
Com	ments: Deuterium exposure optimn	mized for Segment B. FP-POS=4 was	chosen because pr	revious observations show i	that it has slightly more counts the	an the other FP-POS values.	
9	Aperture Ad NONE	COS, ALIGN/APER	-	XAPER=13	QESIPARM XSTEP	0.0 Secs (0 Secs)	
	justment 2 f or Segment B				S -56	[==>]	[1]
Com	ments: Put the aperture in the app	ropriate position to illuminate a porti	on of the LP3 region	on of the detector when illu	minating Segment B with G160M	/1600.	
FCA	LAPXSTP value at LP1 is -153						
		uminate Segment B with G160M/1600	at Position 2 for I	LP3 is -140.			
		= +13. *HOWEVER*, because of the	TRANS rules, the	"QESIPARM XSTEPS -56	" [(+13 - +69) = -56] Special Red	quirement is necessary to move the aperture	to the correct loc
atior 10	G160M/160 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU	Т	440 Saas (440 Saas)	
10	0 Deuterium	COS/FUV, TIME-TAG, FCA	1600 A	M;		440 Secs (440 Secs) $I = > I$	
	Exposure 2		1000 A	BUFFER-TIME=16		1>1	
				5;			
				FP-POS=4;			[1]
				SEGMENT=BOTH: LIFETIME-POS=L	,		
				P1			
Com	ments: Deuterium exposure optim	mized for Segment B. FP-POS=4 was	chosen because pr	revious observations show	that it has slightly more counts the	an the other FP-POS values.	
11	Return Aper NONE ture to Nomi	COS, ALIGN/APER		XAPER=0	QESIPARM XSTEP S -13	0 Secs (0 Secs)	
i.	nal Position				9-19	[==>]	[1]
Com	ments: Return aperture to nominal	l position by setting XAPER=0					
1		rules the "OFSIPARM XSTFPS -13" i					

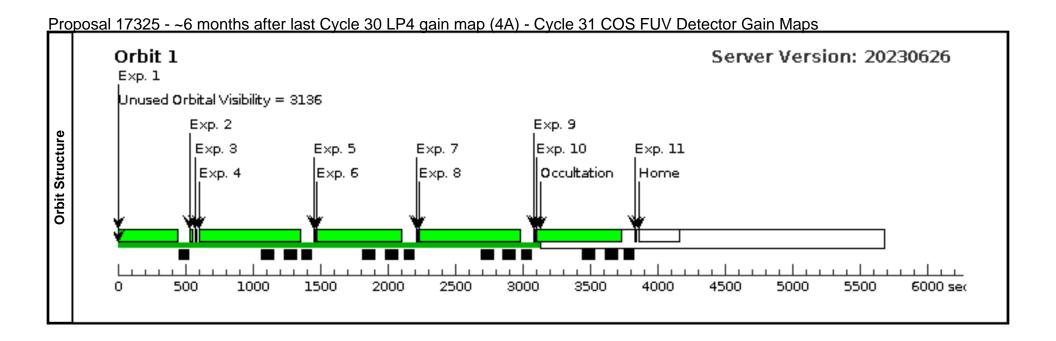


<u>Pr</u>	oposal 17325 - ~6 months after last Cycle 30 LP4 gain map (4A) - Cycle 31 COS FUV Detector Gain Maps	
	Proposal 17325, ~6 months after last Cycle 30 LP4 gain map (4A), implementation	Thu Nov 16 13:00:27 GMT 2023
.±	Diagnostic Status: Warning	
Į.	Scientific Instruments: S/C, COS, COS/FUV	
1	Special Requirements: BETWEEN 01-APR-2024:00:00:00 AND 01-MAY-2024:00:00:00; PARALLEL	
	Comments: This visit collects data at LP4. It uses the HV values appropriate for LP4 (173/175).	
S	(~6 months after last Cycle 30 LP4 gain map (4A)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU	
i.		
2		
g		
ق		

Proposal 17325 - ~6 months after last Cycle 30 LP4 gain map (4A) - Cycle 31 COS FUV Detector Gain Maps

	arget	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1 G160M/160 DE	EUTERIUM	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU			125 Secs (125 Secs)	
0 Deuterium Exposure - S			1600 A	M;			[==>]	
et up at LP1				BUFFER-TIME=19 6;				
				FP-POS=4;				[1]
				SEGMENT=BOTH;				[1]
				LIFETIME-POS=L				
				P1				
Comments: Short expo	sure to set apertur	re to LP1, which is near the center o	f the aperture range	used in this program. It a	lso sets the HV to the	LP1 values.		
2 Adjust HV t DA	ARK	S/C, DATA, NONE			SAA CONTOUR 3	1;	39 Secs (39 Secs)	
o LP4 value s					SPEC COM INSTR ELHVADJPROP;		[==>]	
					QASISTATES COS FUV HVNOM HVI			
					OM; QESIPARM ENDO TSA 173;			[1]
					QESIPARM ENDO			
					QESIPARM SEGM ENT AB			
Comments: Adjust the	HV to I DA values				ENI AD			
ď								
Since the HV is not inc								1
3 Aperture Ad NC justment 1 f	ONE	COS, ALIGN/APER		XAPER=121			0.0 Secs (0 Secs)	
Since the HV is not inc 3 Aperture Ad NC justment 1 f or Segment A							[==>]	[1]
	erture in the appro	opriate position to illuminate a porti	on of the LP3 region	of the detector when illu	ninating Segment A v	vith G130M/1309.		
FCA LAPXSTP value of Desired LAPXSTP value		ninate Segment A with G130M/1309	at Position 1 for LP	4 is -32				
2007000 2211 11011 7000	ne joi i cirio mini							
Therefore, XAPER is se	et to -32153 = -	+121						
4 G130M/130 DE		+121 COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU			440 Secs (440 Secs)	
4 G130M/130 DE 9 Deuterium				M;			440 Secs (440 Secs) [==>]	
4 G130M/130 DE			G130M	M; BUFFER-TIME=16				
4 G130M/130 DE 9 Deuterium			G130M	M; BUFFER-TIME=16 5;				[11]
4 G130M/130 DE 9 Deuterium			G130M	M; BUFFER-TIME=16 5; FP-POS=1;				[1]
4 G130M/130 DE 9 Deuterium			G130M	M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH;				[1]
4 G130M/130 DE 9 Deuterium			G130M	M; BUFFER-TIME=16 5; FP-POS=1;				[1]
4 G130M/130 DE 9 Deuterium Exposure 1	EUTERIUM		G130M 1309 A	M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1	at it has slightly more	e counts than the other	[==>]	[1]
4 G130M/130 DE 9 Deuterium Exposure 1 Comments: Deuterium 5 Aperture Ad NC	EUTERIUM a exposure optimize	COS/FUV, TIME-TAG, FCA	G130M 1309 A	M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1	QESIPARM XSTE		[==>]	[1]
4 G130M/130 DE 9 Deuterium Exposure 1 Comments: Deuterium	EUTERIUM a exposure optimize	COS/FUV, TIME-TAG, FCA ed for Segment A. FP-POS=1 was c	G130M 1309 A	M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1 ous observations show the			[==>] FP-POS values.	[1]
4 G130M/130 DE 9 Deuterium Exposure 1 Comments: Deuterium 5 Aperture Ad NO justment 2 f or Segment A	EUTERIUM n exposure optimize ONE	COS/FUV, TIME-TAG, FCA ed for Segment A. FP-POS=1 was c	G130M 1309 A hosen because previo	M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1 ous observations show the	QESIPARM XSTE S -54)	[==>] FP-POS values. 0.0 Secs (0 Secs)	
4 G130M/130 DE 9 Deuterium Exposure 1 Comments: Deuterium 5 Aperture Ad NC justment 2 f or Segment A Comments: Put the aper	exposure optimize ONE erture in the appro	COS/FUV, TIME-TAG, FCA ed for Segment A. FP-POS=1 was c COS, ALIGN/APER opriate position to illuminate a portion	G130M 1309 A hosen because previo	M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1 XAPER=67 of the detector when illustrates the second sec	QESIPARM XSTE S -54)	[==>] FP-POS values. 0.0 Secs (0 Secs)	
4 G130M/130 DE 9 Deuterium Exposure 1 Comments: Deuterium 5 Aperture Ad justment 2 f or Segment A Comments: Put the aperture A FCA LAPXSTP value of Desired LAPXSTP value of	euterium n exposure optimize ONE verture in the appro at LP1 is -153 lue for FCA to illun	COS/FUV, TIME-TAG, FCA ed for Segment A. FP-POS=1 was concentrate COS, ALIGN/APER opriate position to illuminate a portion of the concentrate Position to the concentrat	G130M 1309 A hosen because previous on of the LP3 region at Position 2 for LP4	M; BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1 Dus observations show the XAPER=67 of the detector when illum	QESIPARM XSTE S -54 ninating Segment A v	evith G130M/1309.	[==>] FP-POS values. 0.0 Secs (0 Secs)	[1]

6 G130M/130 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU	J	440 Secs (440 Secs)	
9 Deuterium Exposure 2		1309 A	M; BUFFER-TIME=16		[==>]	
			5;			
			FP-POS=1;			[1]
			SEGMENT=BOTH;	•		
			LIFETIME-POS=L P1			
Comments: Deuterium exposure opt	imized for Segment A. FP-POS=1 was c	chosen because pre	vious observations show th	nat it has slightly more counts than t	he other FP-POS values.	
7 Aperture Ad NONE	COS, ALIGN/APER		XAPER=112	QESIPARM XSTEP	0.0 Secs (0 Secs)	
justment 1 f or Segment B				S 45	[==>]	[1]
Comments: Put the aperture in the a	ppropriate position to illuminate a porti	on of the LP3 regi	on of the detector when illu	minating Segment B with G160M/1	600.	
·	illuminate Segment B with G160M/1600	•		[(+112 - +67) = +45] Special Req	uirement is necessary to move the apertur	e to the correct lo
8 G160M/160 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU	J	440 Secs (440 Secs)	
0 Deuterium Exposure 1		1600 A	M;		[==>]	
Exposure 1			BUFFER-TIME=16 5;			
			FP-POS=4;			[1]
			SEGMENT=BOTH;	•		[1]
			LIFETIME-POS=L			
	inneria de Carrant P. ED DOC. Anna	.1 1	P1	d i. 1 1i . 1. d	do adam ER ROS college	
Commenter Dantonium composition con	ımmızea tor seymeni b. FF-FOS=4 was	cnosen because pr	evious observations snow i	inai ii nas siigniiy more counis inan		
Comments: Deuterium exposure opt			YADER-58	OESIDARM YSTED	0.0 Secs. (0.Secs.)	
9 Aperture Ad NONE justment 2 f or Segment B	COS, ALIGN/APER		XAPER=58	QESIPARM XSTEP S -54	0.0 Secs (0 Secs) [==>]	[1]
9 Aperture Ad NONE justment 2 f or Segment B	COS, ALIGN/APER	on of the LP3 regi		S -54	[==>]	[1]
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the a	COS, ALIGN/APER	on of the LP3 regi		S -54	[==>]	[1]
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the a	COS, ALIGN/APER	,	on of the detector when illu	S -54	[==>]	[1]
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the a FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to Therefore, XAPER is set to -9515	COS, ALIGN/APER appropriate position to illuminate a porti illuminate Segment B with G160M/1600	at Position 2 for	on of the detector when illu LP3 is -95.	\widetilde{S} -54 minating Segment B with G160M/1.	[==>]	<u> </u>
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the a FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to Therefore, XAPER is set to -9515 ation. 10 G160M/160 DEUTERIUM	COS, ALIGN/APER appropriate position to illuminate a porti illuminate Segment B with G160M/1600	at Position 2 for	on of the detector when illu LP3 is -95. 'QESIPARM XSTEPS -54" CURRENT=MEDIU	\tilde{S} -54 minating Segment B with G160M/1 $[(+58 - +112) = -54]$ Special Requ	[==>]	<u> </u>
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the a FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to Therefore, XAPER is set to -9515 ation. 10 G160M/160 DEUTERIUM 0 Deuterium	COS, ALIGN/APER appropriate position to illuminate a portivation illuminate Segment B with G160M/1600 $3 = +58$. *HOWEVER*, because of the	at Position 2 for I	on of the detector when illu LP3 is -95. 'QESIPARM XSTEPS -54" CURRENT=MEDIU M;	\tilde{S} -54 minating Segment B with G160M/I $[(+58 - +112) = -54]$ Special Requ	[==>] foot. irement is necessary to move the aperture	<u> </u>
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the a FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to Therefore, XAPER is set to -9515 ation. 10 G160M/160 DEUTERIUM	COS, ALIGN/APER appropriate position to illuminate a portivation illuminate Segment B with G160M/1600 $3 = +58$. *HOWEVER*, because of the	at Position 2 for a TRANS rules, the G160M	on of the detector when illu LP3 is -95. 'QESIPARM XSTEPS -54" CURRENT=MEDIU M; BUFFER-TIME=16	\tilde{S} -54 minating Segment B with G160M/I $[(+58 - +112) = -54]$ Special Requ	[==>] foot. irement is necessary to move the aperture 440 Secs (440 Secs)	<u> </u>
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the a FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to Therefore, XAPER is set to -9515 ation. 10 G160M/160 DEUTERIUM 0 Deuterium	COS, ALIGN/APER appropriate position to illuminate a portivation illuminate Segment B with G160M/1600 $3 = +58$. *HOWEVER*, because of the	at Position 2 for a TRANS rules, the G160M	on of the detector when illu LP3 is -95. 'QESIPARM XSTEPS -54" CURRENT=MEDIU M;	\tilde{S} -54 minating Segment B with G160M/I $[(+58 - +112) = -54]$ Special Requ	[==>] foot. irement is necessary to move the aperture 440 Secs (440 Secs)	to the correct loc
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the a FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to Therefore, XAPER is set to -9515 ation. 10 G160M/160 DEUTERIUM 0 Deuterium	COS, ALIGN/APER appropriate position to illuminate a portivation illuminate Segment B with G160M/1600 $3 = +58$. *HOWEVER*, because of the	at Position 2 for a TRANS rules, the G160M	on of the detector when illu LP3 is -95. 'QESIPARM XSTEPS -54" CURRENT=MEDIU M; BUFFER-TIME=16 5;	\tilde{S} -54 minating Segment B with G160M/1 $[(+58 - +112) = -54]$ Special Requ	[==>] foot. irement is necessary to move the aperture 440 Secs (440 Secs)	<u> </u>
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the a FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to Therefore, XAPER is set to -9515 ation. 10 G160M/160 DEUTERIUM 0 Deuterium	COS, ALIGN/APER appropriate position to illuminate a portivation illuminate Segment B with G160M/1600 $3 = +58$. *HOWEVER*, because of the	at Position 2 for a TRANS rules, the G160M	CURRENT=MEDIUM; BUFFER-TIME=16 5; FP-POS=4; LIFETIME-POS=L	\tilde{S} -54 minating Segment B with G160M/1 $[(+58 - +112) = -54]$ Special Requ	[==>] foot. irement is necessary to move the aperture 440 Secs (440 Secs)	to the correct loc
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the a FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to Therefore, XAPER is set to -9515 ation. 10 G160M/160 DEUTERIUM 0 Deuterium Exposure 2	COS, ALIGN/APER appropriate position to illuminate a portivation illuminate Segment B with G160M/1600 3 = +58. *HOWEVER*, because of the COS/FUV, TIME-TAG, FCA	O at Position 2 for ATRANS rules, the GI60M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; LIFETIME-POS=LPI	\hat{S} -54 minating Segment B with G160M/I $[(+58 - +112) = -54]$ Special Requ	[==>] [==>] 600. 440 Secs (440 Secs) [==>]	to the correct loc
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the a FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to Therefore, XAPER is set to -9515 ation. 10 G160M/160 DEUTERIUM 0 Deuterium Exposure 2	COS, ALIGN/APER appropriate position to illuminate a porti illuminate Segment B with G160M/1600 3 = +58. *HOWEVER*, because of the COS/FUV, TIME-TAG, FCA	O at Position 2 for ATRANS rules, the GI60M 1600 A	on of the detector when illu LP3 is -95. QESIPARM XSTEPS -54" CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L P1	\hat{S} -54 minating Segment B with G160M/1- $[(+58 - +112) = -54]$ Special Requires that it has slightly more counts than	$[==>]$ 600. irement is necessary to move the aperture $\frac{440 \operatorname{Secs} (440 \operatorname{Secs})}{[==>]}$ the other FP-POS values.	to the correct loc
9 Aperture Ad NONE justment 2 f or Segment B Comments: Put the aperture in the a FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to Therefore, XAPER is set to -9515 ation. 10 G160M/160 DEUTERIUM 0 Deuterium Exposure 2	COS, ALIGN/APER appropriate position to illuminate a portivation illuminate Segment B with G160M/1600 3 = +58. *HOWEVER*, because of the COS/FUV, TIME-TAG, FCA	O at Position 2 for ATRANS rules, the GI60M 1600 A	CURRENT=MEDIUM; BUFFER-TIME=165; FP-POS=4; LIFETIME-POS=LPI	\hat{S} -54 minating Segment B with G160M/I $[(+58 - +112) = -54]$ Special Requ	[==>] [==>] 600. 440 Secs (440 Secs) [==>]	to the correct loc

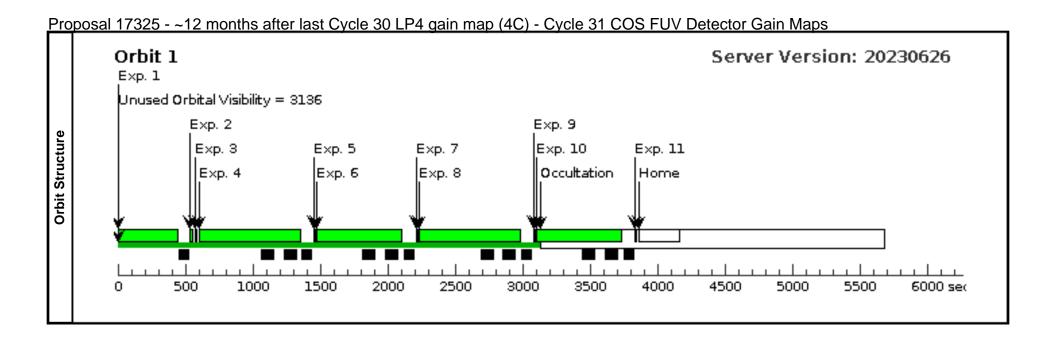


<u>Pr</u>	oposal 17325 - ~12 months after last Cycle 30 LP4 gain map (4C) - Cycle 31 COS FUV Detector Gain Maps	
	Proposal 17325, ~12 months after last Cycle 30 LP4 gain map (4C), implementation	Thu Nov 16 13:00:27 GMT 2023
.≝	Diagnostic Status: Warning	
/is	Scientific Instruments: S/C, COS, COS/FUV	
-	Special Requirements: BETWEEN 01-OCT-2024:00:00:00 AND 01-NOV-2024:00:00:00; PARALLEL	
<u> </u>	Comments: This visit collects data at LP4. It uses the HV values appropriate for LP4 (173/175).	
ပ္သ	(~12 months after last Cycle 30 LP4 gain map (4C)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU	
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Proposal 17325 - ~12 months after last Cycle 30 LP4 gain map (4C) - Cycle 31 COS FUV Detector Gain Maps

# Label Target	Config,Mode,Apertu		Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1 G160M/160 DEUTER	IUM COS/FUV, TIME-TA	G, FCA G160M	CURRENT=MEDIU			125 Secs (125 Secs)	
0 Deuterium Exposure - S		1600 A	M;			I ==> J	
et up at LP1			BUFFER-TIME=19 6;				
			FP-POS=4;				[1]
			SEGMENT=BOTH;				[[1]
			LIFETIME-POS=L				
			P1				
,	set aperture to LP1, which is near	the center of the aperture ran	ge used in this program. It a	lso sets the HV to the	e LP1 values.		
2 Adjust HV t DARK o LP4 value	S/C, DATA, NONE			SAA CONTOUR 3	*	39 Secs (39 Secs)	
S S				SPEC COM INSTR ELHVADJPROP;	{	[==>]	
				QASISTATES COS FUV HVNOM HV			
				OM; QESIPARM ENDO TSA 173;			[1]
				QESIPARM ENDO			
				QESIPARM SEGM	I		
Commenter Adiant the IIII to	(D.4			ENT AB			
Comments: Adjust the HV to							
,	g, exposure time = 39 seconds						1
3 Aperture Ad NONE	COS, ALIGN/APER		XAPER=121			0.0 Secs (0 Secs)	
justment 1 f or Segment A						[==>]	[1]
Since the HV is not increasing Aperture Ad NONE justment 1 f or Segment A Comments: Put the aperture of the since	n the appropriate position to illumi	nate a portion of the LP4 regi	ion of the detector when illur	ninating Segment A	with G130M/1309.		
FCA LAPXSTP value at LP1		7120M/1200 (P. W. 16	I.D.() 22				
Therefore, XAPER is set to -3	FCA to illuminate Segment A with G	1130M/1309 at Position 1 for	LP4 18 -32				
4 G130M/130 DEUTER		G, FCA G130M	CURRENT=MEDIU			440 Secs (440 Secs)	
9 Deuterium		1309 A	M;			[==>]	
Exposure 1			BUFFER-TIME=16				
			5;				
			FP-POS=1;				[1]
			SEGMENT=BOTH;				
			LIFETIME-POS=L P1				
Comments: Deuterium exposi	re optimized for Segment A. FP-Po	OS=1 was chosen because pr	evious observations show the	at it has slightly more	e counts than the other	FP-POS values.	
5 Aperture Ad NONE	COS, ALIGN/APER		XAPER=67	QESIPARM XSTE		0.0 Secs (0 Secs)	
justment 2 f				S -54		[==>]	[1]
or Segment					(1201//1200		
or Segment A	a the appropriate position to illumi	nate a portion of the IDA was	ion of the detector when illin	ninatina Saamant A .	N116 (+ 3(1)\/1 / 3(1)\)		
or Segment A	n the appropriate position to illumi	nate a portion of the LP4 regi	ion of the detector when illur	ninating Segment A v	with G130M/1309.		
or Segment A Comments: Put the aperture of FCA LAPXSTP value at LP1	** * *		V	ninating Segment A v	with G130M/1309.		
or Segment A Comments: Put the aperture of FCA LAPXSTP value at LP1 Desired LAPXSTP value for t	is -153 FCA to illuminate Segment A with G	G130M/1309 at Position 2 for	LP4 is -86	o o		s necessary to move the aperture to the	correct

6							
	G130M/130 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU		440 Secs (440 Secs)	
	9 Deuterium Exposure 2		1309 A	M;		[==>]	
	•			BUFFER-TIME=16 5;			
				FP-POS=1;			[1]
				SEGMENT=BOTH;			
				LIFETIME-POS=L			
Con	mants: Dautarium avnosura ontim	nized for Segment A. FP-POS=1 was c	hosen hecause pre	P1	at it has slightly more counts that	a the other FP_POS values	
7	Aperture Ad NONE	COS, ALIGN/APER	nosen because pre	XAPER=112	QESIPARM XSTEP	0.0 Secs (0 Secs)	
	justment 1 f or Segment B	223,2			S 45	[==>]	[1]
Com	ments: Put the aperture in the app	propriate position to illuminate a porti	on of the LP4 region	on of the detector when illu	ninating Segment B with G160M	71600.	<u>'</u>
	LAPXSTP value at LP1 is -153 red LAPXSTP value for FCA to ili	luminate Segment B with G160M/1600	at Position 1 for I	LP4 is -41			
Ther catio		= +112. *HOWEVER*, because of the	TRANS rules, the	"QESIPARM XSTEPS 45"	[(+112 - +67) = +45] Special Re	equirement is necessary to move the aperture	e to the correct lo
8	G160M/160 DEUTERIUM 0 Deuterium	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU M;		440 Secs (440 Secs)	
	Exposure 1		1600 A	BUFFER-TIME=16		[==>]	
				5;			
				FP-POS=4;			[1]
				SEGMENT=BOTH;			
				LIFETIME-POS=L P1			
i			chosen hecause n		hat it has slightly more counts the	un the other FP-POS values	l .
Com	ments: Deuterium exposure optim	mizea jor segment B. FP-POS=4 was	chosen because pr	CVIOUS ODSCIVEROUS SHOW I	iai ii rais siigriiiy more counis ira	in the other 11-1 OS vatues.	
Com	Aperture Ad NONE	COS, ALIGN/APER	chosen because pr	XAPER=58	QESIPARM XSTEP	0.0 Secs (0 Secs)	
Com 9			cnosen because pr				[1]
9	Aperture Ad NONE justment 2 f or Segment B			XAPER=58	QESIPARM XSTEP S -54	0.0 Secs (0 Secs) $I = -> I$	[1]
9 Com	Aperture Ad NONE justment 2 f or Segment B ments: Put the aperture in the app	COS, ALIGN/APER		XAPER=58	QESIPARM XSTEP S -54	0.0 Secs (0 Secs) $I = -> I$	[1]
9 Com FCA	Aperture Ad NONE justment 2 f or Segment B ments: Put the aperture in the app LAPXSTP value at LP1 is -153	COS, ALIGN/APER	on of the LP4 regio	XAPER=58 on of the detector when illu	QESIPARM XSTEP S -54	0.0 Secs (0 Secs) $I = -> I$	[1]
9 Com FCA Desi Ther	Aperture Ad NONE justment 2 f or Segment B ments: Put the aperture in the app LAPXSTP value at LP1 is -153 red LAPXSTP value for FCA to ill efore, XAPER is set to -95153	COS, ALIGN/APER oropriate position to illuminate a porti luminate Segment B with G160M/1600	on of the LP4 region	XAPER=58 on of the detector when illu. LP4 is -95.	QESIPARM XSTEP S -54 ninating Segment B with G160M/	0.0 Secs (0 Secs) $I = -> I$	
9 Com FCA Desi	Aperture Ad NONE justment 2 f or Segment B ments: Put the aperture in the app LAPXSTP value at LP1 is -153 red LAPXSTP value for FCA to ill efore, XAPER is set to -95153	COS, ALIGN/APER propriate position to illuminate a portion to illuminate a portion to the sum of the $a_{\rm c} = +58. * HOWEVER*, because of the$	on of the LP4 region of at Position 2 for I TRANS rules, the	XAPER=58 on of the detector when illu. LP4 is -95. 'QESIPARM XSTEPS -54"	QESIPARM XSTEP S -54 ninating Segment B with G160M/	0.0 Secs (0 Secs) [==>] [1600.] [160	
9 Com FCA Desi Ther ation	Aperture Ad NONE justment 2 f or Segment B ments: Put the aperture in the app LAPXSTP value at LP1 is -153 red LAPXSTP value for FCA to ill efore, XAPER is set to -95153 set. G160M/160 DEUTERIUM 0 Deuterium	COS, ALIGN/APER oropriate position to illuminate a porti luminate Segment B with G160M/1600	on of the LP4 region	XAPER=58 on of the detector when illu. LP4 is -95.	QESIPARM XSTEP S -54 ninating Segment B with G160M/	$ \frac{0.0 \text{ Secs } (0 \text{ Secs})}{I = = > J} $ (1600.	
9 Com FCA Desi Ther ation	Aperture Ad NONE justment 2 f or Segment B ments: Put the aperture in the app LAPXSTP value at LP1 is -153 red LAPXSTP value for FCA to ill efore, XAPER is set to -95153 is . G160M/160 DEUTERIUM	COS, ALIGN/APER propriate position to illuminate a portion to illuminate a portion to the sum of the $a_{\rm c} = +58. * HOWEVER*, because of the$	on of the LP4 region on at Position 2 for I TRANS rules, the ' G160M	XAPER=58 on of the detector when illustrated is -95. QESIPARM XSTEPS -54" CURRENT=MEDIU M; BUFFER-TIME=16	QESIPARM XSTEP S -54 ninating Segment B with G160M/	[l] 0.0 Secs (0 Secs) $[l] = > J$ $[l] 1600.$ $[l] 200 autrement is necessary to move the aperture$ $[l] 440 Secs (440 Secs)$	
9 Com FCA Desi Ther	Aperture Ad NONE justment 2 f or Segment B ments: Put the aperture in the app LAPXSTP value at LP1 is -153 red LAPXSTP value for FCA to ill efore, XAPER is set to -95153 set. G160M/160 DEUTERIUM 0 Deuterium	COS, ALIGN/APER propriate position to illuminate a portion to illuminate a portion to the sum of the $a_{\rm c} = +58. * HOWEVER*, because of the$	on of the LP4 region on at Position 2 for I TRANS rules, the ' G160M	XAPER=58 on of the detector when illustrated is -95. QESIPARM XSTEPS -54" CURRENT=MEDIU M; BUFFER-TIME=16 5;	QESIPARM XSTEP S -54 ninating Segment B with G160M/	[l] 0.0 Secs (0 Secs) $[l] = > J$ $[l] 1600.$ $[l] 200 autrement is necessary to move the aperture$ $[l] 440 Secs (440 Secs)$	to the correct loc
9 Com FCA Desi Ther	Aperture Ad NONE justment 2 f or Segment B ments: Put the aperture in the app LAPXSTP value at LP1 is -153 red LAPXSTP value for FCA to ill efore, XAPER is set to -95153 set. G160M/160 DEUTERIUM 0 Deuterium	COS, ALIGN/APER propriate position to illuminate a portion to illuminate a portion to the sum of the $a_{\rm c} = +58. * HOWEVER*, because of the$	on of the LP4 region on at Position 2 for I TRANS rules, the ' G160M	XAPER=58 on of the detector when illustrates -95. QESIPARM XSTEPS -54" CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=4;	QESIPARM XSTEP S -54 ninating Segment B with G160M/	[l] 0.0 Secs (0 Secs) $[l] = > J$ $[l] 1600.$ $[l] 200 autrement is necessary to move the aperture$ $[l] 440 Secs (440 Secs)$	
9 Com FCA Desi Ther	Aperture Ad NONE justment 2 f or Segment B ments: Put the aperture in the app LAPXSTP value at LP1 is -153 red LAPXSTP value for FCA to ill efore, XAPER is set to -95153 set. G160M/160 DEUTERIUM 0 Deuterium	COS, ALIGN/APER propriate position to illuminate a portion to illuminate a portion to the sum of the $a_{\rm c} = +58. * HOWEVER*, because of the$	on of the LP4 region on at Position 2 for I TRANS rules, the ' G160M	XAPER=58 on of the detector when illustrates -95. QESIPARM XSTEPS -54" CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=4; SEGMENT=BOTH;	QESIPARM XSTEP S -54 ninating Segment B with G160M/	[l] 0.0 Secs (0 Secs) $[l] = > J$ $[l] 1600.$ $[l] 200 autrement is necessary to move the aperture$ $[l] 440 Secs (440 Secs)$	to the correct loc
9 Com FCA Desi Ther	Aperture Ad NONE justment 2 f or Segment B ments: Put the aperture in the app LAPXSTP value at LP1 is -153 red LAPXSTP value for FCA to ill efore, XAPER is set to -95153 set. G160M/160 DEUTERIUM 0 Deuterium	COS, ALIGN/APER propriate position to illuminate a portion to illuminate a portion to the sum of the $a_{\rm c} = +58. * HOWEVER*, because of the$	on of the LP4 region on at Position 2 for I TRANS rules, the ' G160M	XAPER=58 on of the detector when illustrates -95. QESIPARM XSTEPS -54" CURRENT=MEDIU M; BUFFER-TIME=16 5; FP-POS=4;	QESIPARM XSTEP S -54 ninating Segment B with G160M/	[l] 0.0 Secs (0 Secs) $[l] = > J$ $[l] 1600.$ $[l] 200 autrement is necessary to move the aperture$ $[l] 440 Secs (440 Secs)$	to the correct loc
9 Com FCA Desi Ther ation 10	Aperture Ad NONE justment 2 f or Segment B ments: Put the aperture in the app. LAPXSTP value at LP1 is -153 red LAPXSTP value for FCA to ill efore, XAPER is set to -95153 i. G160M/160 DEUTERIUM 0 Deuterium Exposure 2	COS, ALIGN/APER propriate position to illuminate a porticuminate Segment B with G160M/1600 = +58. *HOWEVER*, because of the COS/FUV, TIME-TAG, FCA	on of the LP4 region of at Position 2 for I TRANS rules, the ' G160M 1600 A	XAPER=58 on of the detector when illustrates and the detector when illustrates are seen as a second of the detector when illustrates are seen as a second o	QESIPARM XSTEP $S-54$ minating Segment B with G160M, $S=54$ $S=54$ $S=54$ Special Requirement $S=54$ Special	[e] 0.0 Secs (0 Secs) $[e] = > J$ $[f] 1600.$ $[f] 240 Secs (440 Secs)$ $[f] = > J$ $[f] 250 and the other FP-POS values.$	to the correct loc
9 Com FCA Desi Ther ation 10	Aperture Ad NONE justment 2 f or Segment B ments: Put the aperture in the application and the segments: Put the aperture in the application and the segments and the segments are segments and the segments are segments. G160M/160 DEUTERIUM 0 Deuterium Exposure 2	COS, ALIGN/APER propriate position to illuminate a porticuluminate Segment B with G160M/1600 = +58. *HOWEVER*, because of the COS/FUV, TIME-TAG, FCA	on of the LP4 region of at Position 2 for I TRANS rules, the ' G160M 1600 A	XAPER=58 on of the detector when illustrates and the detector when illustrates are seen as a second of the detector when illustrates are second of the dete	QESIPARM XSTEP S -54 minating Segment B with G160M, $I(+58 - +112) = -54$] Special Req.	[l] 0.0 Secs (0 Secs) $[l] [l] [l] [l] [l] [l] [l] [l] [l] [l]$	to the correct loc



<u>Pr</u>	oposal 17325 - ~6 months after last Cycle 30 LP5 gain map (5A) - Cycle 31 COS FUV Detector Gain Maps	
	Proposal 17325, ~6 months after last Cycle 30 LP5 gain map (5A), implementation	Thu Nov 16 13:00:27 GMT 2023
	Diagnostic Status: Warning	
Sit	Scientific Instruments: S/C, COS, COS/FUV	
5	Special Requirements: BETWEEN 01-APR-2024:00:00:00 AND 01-MAY-2024:00:00:00; ON HOLD; PARALLEL	
	Comments: This visit collects data at LP5. It uses the HV values appropriate for LP5 (173/175).	
	On Hold Comments: On hold because the LP2 and LP5 HV values are the same, so both are not needed	
<u>S</u>	(~6 months after last Cycle 30 LP5 gain map (5A)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU	
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Proposal 17325 - ~6 months after last Cycle 30 LP5 gain map (5A) - Cycle 31 COS FUV Detector Gain Maps

Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the LP1 value. Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the LP1 value.	O Deuterium Exposure - S et up at LP1 Exposure - S Exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the left of the aperture range used in this program. It also sets the HV to the of LP5 value Exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the of LP5 value is a specific commission of the LP5 value of SPU HIVNOH HVN OM; Exposure to SPI V HIVNOH HVN OM; Exposure the HV to LP5 values. Exposure the HV is not increasing, exposure time = 39 seconds Exposure the HV is not increasing, exposure time = 39 seconds Exposure the HV is not increasing, exposure time = 39 seconds Exposure the Aviant and LP1 is -153 Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 1 for LP5 is -213 Exposure 1 Exposure 1 Exposure 1 Exposure 1 Exposure 1 Exposure 2 Exposure 2 Exposure 2 Exposure 2 Exposure 5 Exposure 5 Exposure 6 Exposure 7 Exposure 1 Exposure 6 Exposure 6 Exposure 6 Exposure 6 Exposure 7 Exposure 7 Exposure 7 Exposure 1 Exposure 7 Exposure 1 Exposure 7 Exposure 1 Exposure 6 Exposure 6 Exposure 7 Exposure 7 Exposure 1 Exposure 7 Exposure 7 Exposure 6 Exposure 7 Exposure 7 Exposure 8 Exposure 1 Exposure 9 Exposure 1 Expos	1_		Target		Config,Mode,Aperture		Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposure - S et up at LP1 BUFFER-TIME=19 6 FP-POS-4; SUGMENT-BOTH: LIFETIME-POS-L	Exposure - S et up at LP1 Exposure - S et up at LP1 BUFFER-TIME=19 6,6 6,7 FP-OS=4; SEGMENT-BOTH; LIFETIMF-POS=1. P1 Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the 1P1 value Adjust th V t DARK of LP5 value Adjust the V t DARK of LP5 value SAA CONTOUR 31 SPEC COM INSTRE SPEC COM INSTRE SPEC COM INSTRE PUV HYNOM HYN OM: OM: OESIPARM ENDC TSA 173; OESIPARM ENDC TSA 173; OESIPARM ENDC TSA 173; OESIPARM SEGM ENT AB Comments: Adjust the HV to LP5 values. Since the HV is not increasing, exposure time = 39 seconds 3 Aperture Ad NONE justment 1 f or Segment Comments: Put the aperture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment A with G130M/1309 at Position 1 for LP5 is -213 Therefore, XAPER is set to -213 - 153 = -60 4 G130M13D DEUTERIUM COS/FUV, TIME-TAG, FCA G130M CURRENT=MEDIU SEXPOSURE 1 EXPOSURE 1 EXPOSURE 1 SEGMENT=BOTH; LIFETIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME=10 SEGMENT=BOTH; LIFETIME			DEUTERI	IUM	COS/FUV, TIME-TAG, F	FCA	G160M				125 Secs (125 Secs)	
et up at LPI FP-POS-4; SEGMENT-BOTH: I IFFTIME-POS-1. PFI PIT IMP-POS-4. SEGMENT-BOTH: I IFFTIME-POS-1. PFI PIT IMP-POS-1. PFI	et up at LP1 FP-POS=4; SEGMENT-BOTH; LIFETIME-POS=L P1 Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the IIV to the SAA CONTOUR 31 Aperture Ad NONE Since the HV is not increasing, exposure time = 39 seconds Aperture Ad NONE Since the HV is not increasing, exposure time = 39 seconds Aperture Ad NONE Since the HV is not increasing, exposure time = 39 seconds Aperture Ad NONE Since the HV is not increasing exposure time = 39 seconds Aperture Ad NONE Since the HV is not increasing exposure time = 39 seconds Aperture Ad NONE Since the HV is not increasing exposure time = 39 seconds Aperture Ad NONE Since the HV is not increasing exposure time = 39 seconds Aperture Ad NONE Since the HV is not increasing exposure time = 39 seconds Aperture Ad NONE Since the HV is not increasing exposure time = 39 seconds Aperture Ad NONE Since the HV is not increasing exposure time = 39 seconds Aperture Ad NONE Since the HV is not increasing exposure time = 39 seconds Aperture Ad NONE Since the HV is not increasing exposure time = 39 seconds Aperture Ad NONE Since the HV is not increasing exposure time = 39 seconds Aperture Ad NONE Since the HV is not increasing exposure time = 39 seconds A second time time aperture time the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment A with GI30M/I309 at Position 2 for LP5 is -213 Comments: Deuterium exposure optimized for Segment A. FP-POS=1 was chosen because previous observations show that it has stilghtly more A Aperture Ad NONE Since III III is 153 Aperture Ad NONE Since III II is 153 Aperture Ad NONE Since II III is 153 Aperture Ad NONE Sin							1600 A	,			[==>]	
FFP-POS-4; SEGMENT-BOTH: LIFETIME-POS-1 P1 Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the LP1 values. 2 Adjust HV 1 DARK SC, DATA, NONE 3 FSPC COM INSTR ELHWADIPROP: QASISTATES COS, FLV HINVOM HVN OM: ORSIPARM FINDC TOM INSTR ELHWADIPROP: QASISTATES COS, FLV HINVOM HVN OM: ORSIPARM FINDC TOM INSTR ENT AB Since the HV is not increasing, exposure time = 39 seconds 3 Aperture Ad NONE justment I for the perture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment A with G130M/1309. FCA LAPXET value at LP1 is -153 Desired LAPXET value at LP1 is -154 Desired LAPXET value at LP1 is -155 D	FP-POS=4; SEGMENT=BOTH; LIFETIME-POS=L PI Comments: Short exposure to set aperture to LP1, which is near the center of the aperture range used in this program. It also sets the HV to the Adjust HV t DARK S.C, DATA, NONE SAA CONTOUR 31 SPEC COM INSTR SPEC CO	at	t LP1										
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BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1 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. 5 Aperture Ad NONE COS, ALIGN/APER XAPER=-114 QESIPARM XSTEP giustment 2 f or Segment A S -54 Comments: Put the aperture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment A with G130M/1309. FCA LAPXSTP value at LP1 is -153	BUFFER-TIME=16 5; FP-POS=1; SEGMENT=BOTH; LIFETIME-POS=L P1 Comments: Deuterium exposure optimized for Segment A. FP-POS=1 was chosen because previous observations show that it has slightly more 5 Aperture Ad NONE COS, ALIGN/APER XAPER=-114 QESIPARM XSTEP justment 2 f or Segment A Comments: Put the aperture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment A w. FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP5 is -267	ıte	erium	DEUTEKI	IUM	COS/FUV, HME-TAG, F	CA					· · · · · · · · · · · · · · · · · · ·	
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SEGMENT=BOTH; LIFETIME-POS=L P1 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. 5 Aperture Ad NONE COS, ALIGN/APER XAPER=-114 QESIPARM XSTEP giustment 2 f or Segment A correction of the detector when illuminating Segment A with G130M/1309. Comments: Put the aperture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment A with G130M/1309. FCA LAPXSTP value at LP1 is -153	SEGMENT=BOTH; LIFETIME-POS=L P1 Comments: Deuterium exposure optimized for Segment A. FP-POS=1 was chosen because previous observations show that it has slightly more 5 Aperture Ad NONE COS, ALIGN/APER XAPER=-114 QESIPARM XSTEP justment 2 f or Segment A Comments: Put the aperture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment A w. FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP5 is -267						5;						
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or Segment A Comments: Put the aperture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment A with G130M/1309. FCA LAPXSTP value at LP1 is -153	or Segment A Comments: Put the aperture in the appropriate position to illuminate a portion of the LP5 region of the detector when illuminating Segment A w. FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP5 is -267			NONE		COS, ALIGN/APER			XAPER=-114		EΡ	·	
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FCA LAPXSTP value at LP1 is -153	Desired LAPXSTP value for FCA to illuminate Segment A with G130M/1309 at Position 2 for LP5 is -267			•	**	r			-,				
1Destred LAPXNTP value for ECA to illuminate Negment A with G130M/1309 at Position 2 for LP5 is -267		S'. P	TP val PXSTP	ue at LP1 i value for F	s -153 CA to illur	ninate Segment A with G130	0M/1309 as	t Position 2 for I P	5 is -267				
	Therefore, XAPER is set to $-267153 = -114$. *HOWEVER*, because of the TRANS rules, the "OESIPARM XSTEPS -54 " [(-11460) = -54]:					-							
Therefore, XAPER is set to -267153 = -114. *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS -54" [(-11460) = -54] Special Requirement is necessary to move the aperture to the corration.		X.	APER	is set to -20	67153 =	-114. *HOWEVER*, becau	ise of the T	TRANS rules, the "9	QESIPARM XSTEPS -54	" [(-11460) = -54] Special Requiren	nent is necessary to move the aperture to the	e correct i

	ns after last Cycle 30 LF		<u> </u>	COS FOV Detector C	•	
6 G130M/130 DEUTERIUM 9 Deuterium	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU M;		440 Secs (440 Secs)	
Exposure 2		1309 A	BUFFER-TIME=16 5;		[==>]	
			FP-POS=1;			[1]
			SEGMENT=BOTH;			[1]
			LIFETIME-POS=L			
	· 1.C. C A. ED DOC 1	, ,	P1	ent total and a	d En Dog 1	
Comments: Deuterium exposure optin 7 Aperture Ad NONE	mized for Segment A. FP-POS=1 was a COS, ALIGN/APER	cnosen because pro		t it has slightly more counts than t QESIPARM XSTEP	0.0 Secs (0 Secs)	
justment 1 f or Segment B	COS, ALIGIVAI EK			S 52	[==>]	[1]
_	ppropriate position to illuminate a porti	ion of the LP5 regi	ion of the detector when illum	inating Segment B with G160M/1	600.	
v	Illuminate Segment B with $G160M/1600$ G3 = -62. *HOWEVER*, because of the			-62114) = +52] Special Requir	rement is necessary to move the aperture	to the correct locar
8 G160M/160 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU		440 Secs (440 Secs)	
0 Deuterium Exposure 1	,	1600 A	M;		[==>]	
Exposure 1			BUFFER-TIME=16 5;			
			FP-POS=4;			[1]
			SEGMENT=BOTH;			[1]
			LIFETIME-POS=L			
			P1			
	mmized for Segment B. FP-POS=4 was	chosen because p				
9 Aperture Ad NONE justment 2 f or Segment	COS, ALIGN/APER		XAPER=-114	QESIPARM XSTEP S -52	$0.0 \operatorname{Secs} (0 \operatorname{Secs})$ $[==>]$	F17
B						[1]
Comments: Put the aperture in the ap	ppropriate position to illuminate a porti	ion of the LP5 regi	ion of the detector when illum	ninating Segment B with G160M/1	600.	
FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to i ot. To leave some pad, I will set it to r	lluminate Segment B with G160M/1600 natch the G130M exposure (-267).	at Position 2 for	LP5 is -280, but the aperture	soft stop is at -275 and we don't v	want to exceed that value when including	the 5 step oversho
ation.	•			[(-11462) = -52] Special Requ	irement is necessary to move the aperture	e to the correct loc
10 G160M/160 DEUTERIUM 0 Deuterium	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU M;		440 Secs (440 Secs)	
Exposure 2		1600 A	BUFFER-TIME=16		[==>]	
			5;			
			FP-POS=4;			[1]
			SEGMENT=BOTH;			
			LIFETIME-POS=L P1			
Comments: Deuterium exposure optiv	nmized for Segment B. FP-POS=4 was	chosen hecause n		at it has slightly more counts than	the other FP-POS values	
Comments. Dettertum exposure optin	mmzeu for Segment B. 11-1 OS-4 was	chosen because p	revious observations show in	ai ii nas siigniiy more counis inan	the other 11-1 OS values.	

Proposal 17325 - ~6 months after last Cycle 30 LP5 gain map (5A) - Cycle 31 COS FUV Detector Gain Maps QESIPARM XSTEP COS, ALIGN/APER Return Aper NONE XAPER=0 0 Secs (0 Secs) ture to Nomi nal Position S 114 [==>] [1] Comments: Return aperture to nominal position by setting XAPER=0 *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS +114" [(0 - -114) = +114] Special Requirement is necessary to move the aperture to its correct location. Orbit 1 Server Version: 20230626 Exp. 1 Unused Orbital Visibility = 3136 Exp. 2 Exp. 9 **Orbit Structure** Exp. 10 Ехр. 3 Exp. 7 Exp. 11 Exp. 5 Exp. 4 Exp. 6 Exp. 8 Occultation Home 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec 0

<u>Pr</u>	oposal 17325 - ~12 months after last Cycle 30 LP5 gain map (5C) - Cycle 31 COS FUV Detector Gain Maps	
	Proposal 17325, ~12 months after last Cycle 30 LP5 gain map (5C), implementation	Thu Nov 16 13:00:27 GMT 2023
	Diagnostic Status: Warning	
Sit	Scientific Instruments: S/C, COS, COS/FUV	
	Special Requirements: BETWEEN 01-OCT-2024:00:00:00 AND 01-NOV-2024:00:00:00; ON HOLD; PARALLEL	
	Comments: This visit collects data at LP5. It uses the HV values appropriate for LP5 (173/175).	
	On Hold Comments: On hold because the LP2 and LP5 HV values are the same, so both are not needed	
SS	(~12 months after last Cycle 30 LP5 gain map (5C)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU	
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ad		
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Proposal 17325 - ~12 months after last Cycle 30 LP5 gain map (5C) - Cycle 31 COS FUV Detector Gain Maps

# Label Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit				
1 G160M/160 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU			125 Secs (125 Secs)					
0 Deuterium Exposure - S		1600 A	M;			[==>]					
et up at LP1			BUFFER-TIME=19 6;								
			FP-POS=4;				[11				
			SEGMENT=BOTH;				[1]				
			LIFETIME-POS=L								
			P1								
Comments: Short exposure to set of	aperture to LP1, which is near the center o	of the aperture range	used in this program. It a	lso sets the HV to the	2 LP1 values.						
2 Adjust HV t DARK	S/C, DATA, NONE			SAA CONTOUR 3	1;	39 Secs (39 Secs)					
o LP5 value s				SPEC COM INSTR ELHVADJPROP;	ł.	[==>]					
				QASISTATES COS FUV HVNOM HVI							
				OM; QESIPARM ENDO TSA 173;	2		[1]				
				QESIPARM ENDO							
				QESIPARM SEGMENT AB	I						
Comments: Adjust the HV to LP5	values.										
Since the HV is not increasing, exp	posure time = 39 seconds										
3 Aperture Ad NONE	COS, ALIGN/APER		XAPER=-60			0.0 Secs (0 Secs)					
Since the HV is not increasing, exp 3 Aperture Ad NONE justment 1 f or Segment A						[==>]	[1]				
	e appropriate position to illuminate a porti	ion of the LP5 region	of the detector when illur	minating Segment A v	with G130M/1309.						
FCA LAPXSTP value at LP1 is -1.	53 to illuminate Segment A with G130M/1309	at Position 1 for LE	05 in 212								
Therefore, XAPER is set to -213 -		o ai i osiiion i jor Li	J 13 -215								
4 G130M/130 DEUTERIUM		G130M	CURRENT=MEDIU			440 Secs (440 Secs)					
9 Deuterium	,	1309 A	M;			f==>1					
Exposure 1			BUFFER-TIME=16								
			5;								
			FP-POS=1;				[1]				
			SEGMENT=BOTH;								
			LIFETIME-POS=L P1								
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.											
5 Aperture Ad NONE	COS, ALIGN/APER	, , , , , , , , , , , , , , , , , , ,	XAPER=-114	QESIPARM XSTEP		0.0 Secs (0 Secs)					
justment 2 f				S -54		[==>]					
or Segment A							[1]				
	e appropriate position to illuminate a porti	ion of the LP5 region	of the detector when illu	minating Segment A v	with G130M/1309.						
•			.,								
FCA LAPXSTP value at LP1 is -1. Desired LAPXSTP value for FCA	53 to illuminate Segment A with G130M/1309	at Position 2 for LP	25 is -267								
Therefore, XAPER is set to -267 - ation.	-153 = -114. *HOWEVER*, because of th	e TRANS rules, the "	QESIPARM XSTEPS -54'	" [(-11460) = -54]	Special Requiremen	nt is necessary to move the aperture to the	correct la				
<u> </u>			36								

	oths after last Cycle 30 L			COSTOV Detector		
6 G130M/130 DEUTERIUM 9 Deuterium	COS/FUV, TIME-TAG, FCA	G130M	CURRENT=MEDIU M;		440 Secs (440 Secs)	
Exposure 2		1309 A	BUFFER-TIME=16 5;		[==>]	
			FP-POS=1;			[1]
			SEGMENT=BOTH;			[1]
			LIFETIME-POS=L			
Comments: Deuterium exposure opti	mized for Segment A. FP-POS=1 was c	chosen hecause pro	P1 evious observations show tha	t it has slightly more counts than i	the other FP-POS values	
7 Aperture Ad NONE	COS, ALIGN/APER	mosen because pre		QESIPARM XSTEP	0.0 Secs (0 Secs)	
justment 1 f or Segment B	,			S 52	[==>]	[1]
_	ppropriate position to illuminate a porti	on of the LP5 regi	ion of the detector when illum	inating Segment B with G160M/1	600.	
v	illuminate Segment B with G160M/1600	v		-62114) = +521 Special Requir	rement is necessary to move the aperture	to the correct local
ion. 8 G160M/160 DEUTERIUM	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU		440 Secs (440 Secs)	
0 Deuterium	COS/1 C V, TIME-TAG, TCA	1600 A	M;		[==>]	
Exposure 1		100011	BUFFER-TIME=16			
			5; ED DOS-4:			
			FP-POS=4;			[1]
			SEGMENT=BOTH; LIFETIME-POS=L			
			P1			
Comments: Deuterium exposure optic	mmized for Segment B. FP-POS=4 was	chosen because p	revious observations show th	at it has slightly more counts than	the other FP-POS values.	
9 Aperture Ad NONE	COS, ALIGN/APER		XAPER=-114	QESIPARM XSTEP	0.0 Secs (0 Secs)	
justment 2 f or Segment B				S -52	[==>]	[1]
Comments: Put the aperture in the ap	ppropriate position to illuminate a porti	on of the LP5 regi	ion of the detector when illum	inating Segment B with G160M/1	600.	
FCA LAPXSTP value at LP1 is -153 Desired LAPXSTP value for FCA to ot. To leave some pad, I will set it to	illuminate Segment B with G160M/1600 match the G130M exposure (-267).	at Position 2 for	LP5 is -280, but the aperture	soft stop is at -275 and we don't v	want to exceed that value when including	the 5 step oversho
ation.				[(-11462) = -52] Special Requ	irement is necessary to move the aperture	to the correct loc
10 G160M/160 DEUTERIUM 0 Deuterium	COS/FUV, TIME-TAG, FCA	G160M	CURRENT=MEDIU M;		440 Secs (440 Secs)	
Exposure 2		1600 A	BUFFER-TIME=16		I==>J	
			5;			
			FP-POS=4;			[1]
			SEGMENT=BOTH;			
			LIFETIME-POS=L P1			
Comments: Deuterium exposure onti	mmized for Segment B. FP-POS=4 was	chosen hecause n		at it has slightly more counts than	the other FP-POS values	
Comments. Demertum exposure opti-	mmzeu jor Segment B. 11 -1 OS-4 was	chosen because p	revious observations snow in	ui ii nus siigniiy more counis inun	i me omei 11-1 OS vaiues.	

Proposal 17325 - ~12 months after last Cycle 30 LP5 gain map (5C) - Cycle 31 COS FUV Detector Gain Maps QESIPARM XSTEP COS, ALIGN/APER Return Aper NONE XAPER=0 0 Secs (0 Secs) ture to Nomi nal Position S 114 [==>] [1] Comments: Return aperture to nominal position by setting XAPER=0 *HOWEVER*, because of the TRANS rules, the "QESIPARM XSTEPS +114" [(0 - -114) = +114] Special Requirement is necessary to move the aperture to its correct location. Orbit 1 Server Version: 20230626 Exp. 1 Unused Orbital Visibility = 3136 Exp. 2 Exp. 9 **Orbit Structure** Exp. 10 Ехр. 3 Exp. 11 Exp. 5 Exp. 7 Exp. 4 Exp. 6 Exp. 8 Occultation Home 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec 0