

16850 - FUV Focus Sweep for COS: LP6 Enabling

Cycle: 29, Proposal Category: CAL/COS (Availability Mode: RESTRICTED)

INVESTIGATORS

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VISITS

Visit	Targets used in Visit	Configurations used in Visit	Orbits Used		OP Current with Visit?
01	(3) LIN-156 NONE	COS COS/FUV	3	19-Oct-2021 07:00:21.0	yes
		COS/NUV			

Proposal 16850 (STScI Edit Number: 0, Created: Tuesday, October 19, 2021 at 6:00:44 AM Eastern Standard Time) - Overview

Visit	Targets used in Visit	Configurations used in Visit	Orbits Used	Last Orbit Planner Run	OP Current with Visit?
02	(3) LIN-156 NONE	COS COS/FUV COS/NUV	5	19-Oct-2021 07:00:26.0	yes
03	(4) FEIGE-48 NONE	COS COS/FUV COS/NUV	3	19-Oct-2021 07:00:36.0	yes
04	(4) FEIGE-48 NONE	COS COS/FUV COS/NUV	5	19-Oct-2021 07:00:43.0	yes

16 Total Orbits Used

ABSTRACT

This program is designed to search for the best focus for the G130M/1222 and G160M/1600 settings at Lifetime Position 6 (LP6) at +6.5" on the FUV detector. The focus sweeps are designed to determine the best focus position to within 100 steps, and will scan at 200 focus step increments from -1000 to +1000 relative to the predicted best focuses for the G130M/1222 and G160M/1600 settings which were determined by extrapolation from the adjacent exploratory sweep at +7". This strategy is based on several earlier programs (PIDs 13635, 14527, 15451, 16431, 16491), which all executed successfully. We will adjust the focus in steps of 200 as is typical for focus sweeps, with finer, 100 step increments between relative focus steps of [-200,+200]

The target for this program is AzV 75, as this star is visible with HST during the required operation window (Nov-Dec, 2021). This program also includes a backup target, Feige 48, with visits which would be observed in late Dec. 2021 - early Jan. 2022. The exposure times at each step are defined to provide spectra with $S/N \sim 30$ in the faintest portion of each spectrum.

OBSERVING DESCRIPTION

This program performs a focus sweep at LP6 with G130M/1222 (Visit 01) and G160M/1600 (Visit 02), with Visits 03 and 04 performing the same sweeps on a second star available at a later visit window should the observing window for Visits 01 and 02 have passed.

Sweep Visits 01 and 02 of AzV 75 are designed as follows:

Proposal 16850 (STScI Edit Number: 0, Created: Tuesday, October 19, 2021 at 6:00:44 AM Eastern Standard Time) - Overview

- 1. Perform ACQ/SEARCH (Due to past GS acquisition issues e.g., Visit 01 of Cycle 23 program 14437; see HOPR 83980)
- 2. Perform two ACQ/IMAGEs to acquire target AzV 75 and to counter potential gyro issues.
- 3. Initial exposure at relative focus offset set to 0, allowing for set up of the correct instrument mode for the focus sweep. Absolute focus value is set by FSW patch.
- 4. ALIGN/OSM exposure: Move the focus to -1000 steps from the preliminary absolute focus values f = -951, +78 for G130M/1222 (V01) and G160M/1600 (V02), respectively.
- 5. Take a spectrum with a minimum $S/N \sim 30$
- 6. Repeat steps 3 and 4, sweeping over focus values of -1000 to +1000, in increments of 200 steps with finer, 100 step increments between [-200,+200].
- 7. Re-set the absolute focus offset to 0

THE FOLLOWING VISITS ARE ON HOLD AND ONLY REQUIRED IF OBSERVING WINDOW FOR VISITS 1&2 HAVE PASSED

Sweep Visit 03 of Feige 48 is designed as follows:

- 1. Perform two ACQ/IMAGEs to acquire target Feige 48.
- 2. Initial exposure at relative focus offset set to 0, allowing for set up of the correct instrument mode for the focus sweep.
- 3. ALIGN/OSM exposure: Move the focus to -1000 steps from the preliminary G130M/1222 absolute focus value, f =-951.
- 4. Take a spectrum with a minimum S/N ~ 30 using FUVA only.

 NOTE: FUVA and FUVB exposures must be done consecutively (not simultaneously) for health and safety (bright object) reasons.
- 5. Repeat steps 3 and 4, sweeping over focus values of -1000 to +1000, in increments of 200 steps with finer, 100 step increments between [-200,+200].
- 6. Take a spectrum with a minimum $S/N \sim 30$ using FUVB only.
- 7. ALIGN/OSM exposure: Move the focus to +1000 steps from the preliminary G130M/1222 absolute focus value, f = -951.
- 8. Repeat steps 6 and 7, sweeping over focus values of +1000 to -1000, in increments of 200 steps with finer, 100 step increments between [-200,+200].
- 9. Re-set the relataive focus offset to 0

NOTE ON OBSERVATIONS USING INDIVIDUAL SEGMENTS: As visible in the ETC calculations for Feige 48 in Visit 03, the global count rate

Proposal 16850 (STScI Edit Number: 0, Created: Tuesday, October 19, 2021 at 6:00:44 AM Eastern Standard Time) - Overview exceeds the acceptable 30K counts/s value. Exceeding this value results in a loss of data. To counter this, we only use one segment at a time, such that global rates are below the 30K counts/s threshold.

Sweep Visit 04 of Feige 48 is designed as follows:

- 1. Perform two ACQ/IMAGEs to acquire target Feige 48.
- 2. Initial exposure at relative focus offset set to 0, allowing for set up of the correct instrument mode for the focus sweep.
- 3. ALIGN/OSM exposure: Move the focus to -1000 steps from the preliminary G160M/1600 absolute focus value f = +78
- 4. Take a spectrum with a minimum $S/N \sim 30$
- 5. Repeat steps 3 and 4, sweeping over focus values of -1000 to +1000, in increments of 200 steps with finer, 100 step increments between [-200,+200].
- 6. Re-set the relative focus offset to 0

The soft stops for the OSM focus mechanism are at -2900 and +2505 absolute focus steps. The absolute focus step ranges for the two grating setups employed in this program are [-1951,+49] and [-922,+1078] for G130M/1222 and G160M/1600, respectively, and do not risk running into the soft stops.

The SIAF to be used includes the following LP6 positions:

AP	V2	V3
LFBOA6	230.9137	-239.2749
LFPSA6	237.3192	-232.9188
LAPTFBOAF6	227.9450	-242.2930
LAPTFPSAF6	240.2879	-229.9007

The FSW patchable constant table pcmech_ApMXDispPosition should use the following LP6 positions:

Proposal 16850 (STScI Edit Number: 0, Created: Tuesday, October 19, 2021 at 6:00:44 AM Eastern Standard Time) - Overview

```
{-98, -153 }, /* BOA_LP6 */
{-98, -153 }, /* FCA_LP6 */
{ 22, 126 }, /* WCA LP6 */
```

The FSW patchabale constant table pcmech_OSMTbl should use the following focus positions for the G130M/1222 and G160M/1600 settings:

G160M/1600 : 78 G130M/1222 : -951

The HV values for all modes at LP6 should be:

FUVA: 167 FUVB: 169

Wavecals are turned off to mitigate light-leak issues above +5.5" (i.e. WAVECAL=NO, FLASH=NO

----SPECIAL REQUESTS:----

Please turn off calibration for the COS/FUV exposures. These data should not be used for scientific purposes due to non-finalized pointing and focus values.

Please disassociate all exposures. All data that is not calibrated must be disassociated to make it into the archive.

SQL is used to meet the above requests.

In case 1 qexposure.control_id is modified. In case 2 qeassociation records are deleted. Contact G. Chapman/M. Reinhart for further information about this process.

Proposal 16850 - G130M/1222 AzV 75 (01) - FUV Focus Sweep for COS: LP6 Enabling

ı		Proposal 16850, G130M/1222 AzV	75 (01), implementation			Tue Oct 19 11:00:44 GMT 2021		
1	SIT	Diagnostic Status: No Diagnostics						
ŀ		Scientific Instruments: COS, COS/FU						
L		Special Requirements: ORIENT 2751	D TO 60 D; ORIENT 160D TO 165 D					
ı	L	# Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous		
	ts	(3) LIN-156	RA: 00 50 32.4076 (12.6350317d)	Proper Motion RA: 1.428761918512278E-4	V=12.756	Reference Frame: ICRS		
	ge	Alt Name1: AZV75	Dec: -72 52 36.46 (-72.87679d)	sec of time/yr				
	lar		Equinox: J2000	Proper Motion Dec: - 0.0010469999779161299 arcsec/yr				
ŀ	ᅙ			Epoch of Position: 2015.5				
	×۱	Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.						
Įį		Category=STAR						
ı		Description=[MAIN SEQUENCE O] Extended=NO	1					

Proposal 16850 - G130M/1222 AzV 75 (01) - FUV Focus Sweep for COS: LP6 Enabling

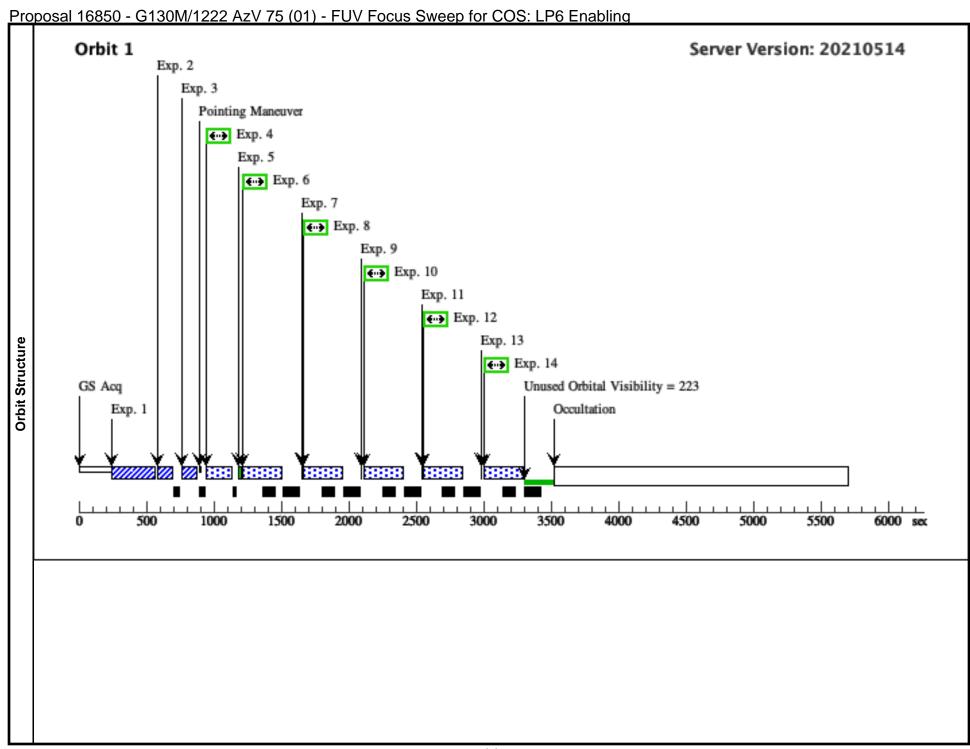
	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/SEAR CH (COS.ta.154 1166)	(3) LIN-156	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	SCAN-SIZE=2; STEP-SIZE=1.767; CENTER=FLUX-W	<i>I</i>		7.6 Secs (7.6 Secs) [==>]	[1]
	,				T				
Con		$\frac{\text{ne for S/N} = 40}{\text{(2) LPL 156}}$	COCATINI A COMPACE DO	MDDODA				2.5 (2.5)	
2	ACQ/IMAG E	(3) LIN-156	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				$3 \operatorname{Secs} (3 \operatorname{Secs})$ $I = > I$	
	(COS.ta.154 1167)							[==>]	[1]
Con	ıments: Exp tin	ne for $S/N = 30$							•
3		(3) LIN-156	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				3 Secs (3 Secs)	
	E (COS.ta.154 1167)							[==>]	[1]
Con	ıments: Exp tin	ne for S/N = 30							
4		(3) LIN-156	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3;			0.1 Secs (0.1 Secs)	
	30M/1222 at nominal ape rture and foc			1222 A	BUFFER-TIME=11 1;			[==>]	
	us position				WAVECAL=NO;				[1]
	(COS.sp.153 5470)				FLASH=NO;				[1]
					LIFETIME-POS=L P6				
Con	ıments: This ex	xposure sets the cor	rrect instrument configuration before the	aperture is moved.					•
l	liminary G1301	M/1222 absolute fo	acus value f = -951						
Prei			ens varue, j = 251						_
Prel 5	Move to -10		COS, ALIGN/OSM		FOCUS=-1000			0 Secs (0 Secs)	
	Move to -10 00	NONE	COS, ALIGN/OSM					[==>]	[1]
	Move to -10 00 1222_f-1000	NONE (3) LIN-156		G130M	FP-POS=3;			[==>] 240 Secs (240 Secs)	[1]
5	Move to -10 00	NONE (3) LIN-156	COS, ALIGN/OSM	G130M 1222 A	FP-POS=3; BUFFER-TIME=11			[==>]	[1]
5	Move to -10 00 1222_f-1000 (COS.sp.153	NONE (3) LIN-156	COS, ALIGN/OSM		FP-POS=3; BUFFER-TIME=11 1;			[==>] 240 Secs (240 Secs)	
5	Move to -10 00 1222_f-1000 (COS.sp.153	NONE (3) LIN-156	COS, ALIGN/OSM		FP-POS=3; BUFFER-TIME=11			[==>] 240 Secs (240 Secs)	
5	Move to -10 00 1222_f-1000 (COS.sp.153	NONE (3) LIN-156	COS, ALIGN/OSM		FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO;			[==>] 240 Secs (240 Secs)	
6	Move to -10 00 1222_f-1000 (COS.sp.153 5470)	NONE (3) LIN-156	COS, ALIGN/OSM	1222 A	FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L			[==>] 240 Secs (240 Secs)	
5 6	Move to -10 00 1222_f-1000 (COS.sp.153 5470)	NONE (3) LIN-156 exposure time gives seed off to mitigate light	COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1300A (wavelength of reddest ght-leak issues above +5.5"/(i.e. WAVEO	1222 A , faintest window).	FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6			[==>] 240 Secs (240 Secs) [==>]	
5 6	Move to -10 00 1222_f-1000 (COS.sp.153 5470) naments: This expecals are turned Move to -80	NONE (3) LIN-156 exposure time gives seed off to mitigate light	COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1300A (wavelength of reddest	1222 A , faintest window).	FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6			[==>] 240 Secs (240 Secs) [==>] 0 Secs (0 Secs)	[1]
5 6	Move to -10 00 1222_f-1000 (COS.sp.153 5470) nments: This expecals are turned Move to -80	NONE (3) LIN-156 Exposure time gives Sed off to mitigate light NONE	COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1300A (wavelength of reddest ght-leak issues above +5.5"/(i.e. WAVEC COS, ALIGN/OSM	1222 A , faintest window). EAL=NO, FLASH=	FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6			==> 240 Secs (240 Secs) ==> 0 Secs (0 Secs) ==>	[1]
5 6	Move to -10 00 1222_f-1000 (COS.sp.153 5470) nments: This expecals are turned Move to -80 0	NONE (3) LIN-156 Exposure time gives Seed off to mitigate light NONE (3) LIN-156	COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1300A (wavelength of reddest ght-leak issues above +5.5"/(i.e. WAVEO	1222 A , faintest window). CAL=NO, FLASH= G130M	FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6 NO) FOCUS=-800 FP-POS=3;			I ==> 240 Secs (240 Secs) I ==> 0 Secs (0 Secs) I ==> 240 Secs (240 Secs)	[1]
5 6	Move to -10 00 1222_f-1000 (COS.sp.153 5470) nments: This expecals are turned Move to -80	NONE (3) LIN-156 Exposure time gives Seed off to mitigate light NONE (3) LIN-156	COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1300A (wavelength of reddest ght-leak issues above +5.5"/(i.e. WAVEC COS, ALIGN/OSM	1222 A , faintest window). EAL=NO, FLASH=	FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6			==> 240 Secs (240 Secs) ==> 0 Secs (0 Secs) ==>	[1]
5 6	Move to -10 00 1222_f-1000 (COS.sp.153 5470) nments: This expectals are turned Move to -80 0 1222_f-800 (COS.sp.153	NONE (3) LIN-156 Exposure time gives Seed off to mitigate light NONE (3) LIN-156	COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1300A (wavelength of reddest ght-leak issues above +5.5"/(i.e. WAVEC COS, ALIGN/OSM	1222 A , faintest window). CAL=NO, FLASH= G130M	FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6 NO) FOCUS=-800 FP-POS=3; BUFFER-TIME=11			I ==> 240 Secs (240 Secs) I ==> 0 Secs (0 Secs) I ==> 240 Secs (240 Secs)	[1]
5 6	Move to -10 00 1222_f-1000 (COS.sp.153 5470) nments: This expectals are turned Move to -80 0 1222_f-800 (COS.sp.153	NONE (3) LIN-156 Exposure time gives Seed off to mitigate light NONE (3) LIN-156	COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1300A (wavelength of reddest ght-leak issues above +5.5"/(i.e. WAVEC COS, ALIGN/OSM	1222 A , faintest window). CAL=NO, FLASH= G130M	FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6 NO) FOCUS=-800 FP-POS=3; BUFFER-TIME=11 1;			I ==> 240 Secs (240 Secs) I ==> 0 Secs (0 Secs) I ==> 240 Secs (240 Secs)	[1]
5 6	Move to -10 00 1222_f-1000 (COS.sp.153 5470) nments: This expectals are turned Move to -80 0 1222_f-800 (COS.sp.153	NONE (3) LIN-156 Exposure time gives Seed off to mitigate light NONE (3) LIN-156	COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1300A (wavelength of reddest ght-leak issues above +5.5"/(i.e. WAVEC COS, ALIGN/OSM	1222 A , faintest window). CAL=NO, FLASH= G130M	FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6 NO) FOCUS=-800 FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L			I ==> 240 Secs (240 Secs) I ==> 0 Secs (0 Secs) I ==> 240 Secs (240 Secs)	[1]
5 Com Wav 7 8	Move to -10 00 1222_f-1000 (COS.sp.153 5470) mments: This expectals are turned Move to -80 0 1222_f-800 (COS.sp.153 5470)	NONE (3) LIN-156 exposure time gives seed off to mitigate lig NONE (3) LIN-156	COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1300A (wavelength of reddest ght-leak issues above +5.5"/(i.e. WAVEO COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA	1222 A faintest window). CAL=NO, FLASH= G130M 1222 A	FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6 NO) FOCUS=-800 FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO;			I ==> 240 Secs (240 Secs) I ==> 0 Secs (0 Secs) I ==> 240 Secs (240 Secs)	[1]
5 Com Wav 7 8	Move to -10 00 1222_f-1000 (COS.sp.153 5470) mments: This expecals are turned Move to -80 0 1222_f-800 (COS.sp.153 5470)	NONE (3) LIN-156 Exposure time gives Seed off to mitigate lig NONE (3) LIN-156	COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1300A (wavelength of reddest ght-leak issues above +5.5"/(i.e. WAVEC COS, ALIGN/OSM	1222 A f, faintest window). CAL=NO, FLASH= G130M 1222 A f, faintest window).	FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6 NO) FOCUS=-800 FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6			I ==> 240 Secs (240 Secs) I ==> 0 Secs (0 Secs) I ==> 240 Secs (240 Secs)	[1]

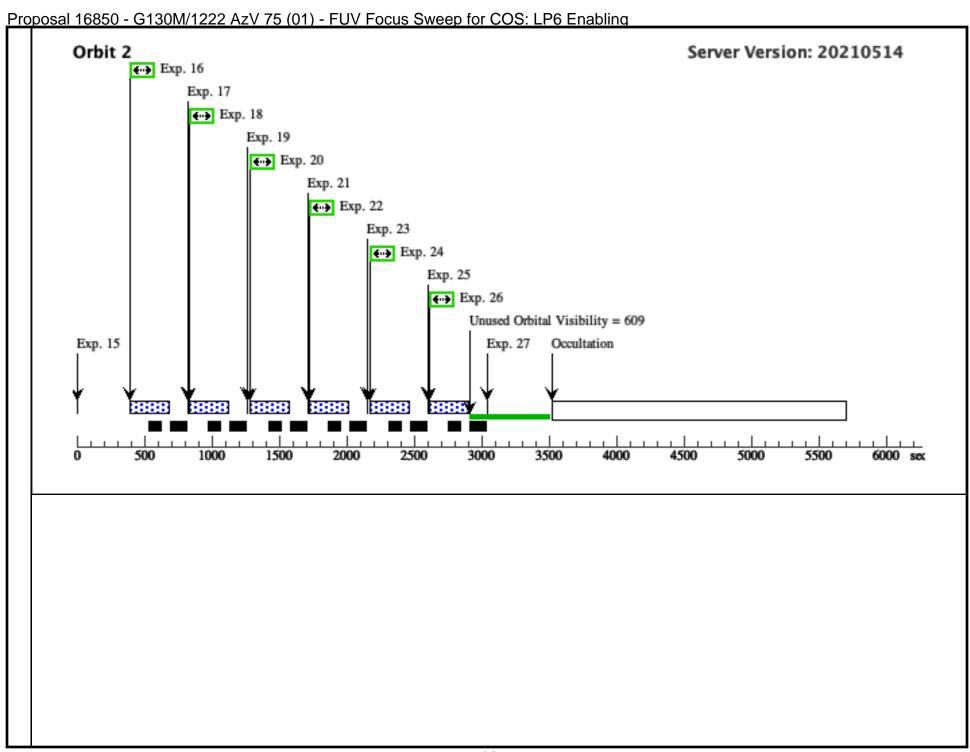
Proposal 16850 - G130M/1222 AzV 75 (01) - FUV Focus Sweep for COS: LP6 Enabling Move to -60 NONE COS, ALIGN/OSM FOCUS=-600 0 Secs (0 Secs) I = = > 1[1] 1222_f-600 (3) LIN-156 COS/FUV, TIME-TAG, PSA G130M FP-POS=3; 240 Secs (240 Secs) (COS.sp.153 1222 A *[==>1* BUFFER-TIME=11 5470) WAVECAL=NO; [1] FLASH=NO; LIFETIME-POS=L Comments: This exposure time gives S/N=30 at 1300A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) Move to -40 NONE COS. ALIGN/OSM FOCUS=-400 0 Secs (0 Secs) I = = > 1[1] 12 1222_f-400 (3) LIN-156 COS/FUV, TIME-TAG, PSA G130M FP-POS=3; 240 Secs (240 Secs) (COS.sp.153 1222 A BUFFER-TIME=11 f = = > 15470) 1; WAVECAL=NO; [1] FLASH=NO; LIFETIME-POS=L Comments: This exposure time gives S/N=30 at 1300A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 13 Move to -20 NONE COS, ALIGN/OSM FOCUS=-200 0 Secs (0 Secs) I = = > 1[1] 1222_f-200 (3) LIN-156 COS/FUV, TIME-TAG, PSA G130M FP-POS=3; 240 Secs (240 Secs) (COS.sp.153 1222 A BUFFER-TIME=11 [==>] 5470) WAVECAL=NO; [1] FLASH=NO; LIFETIME-POS=L Comments: This exposure time gives S/N=30 at 1300A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 15 Move to -10 NONE COS, ALIGN/OSM FOCUS=-100 0 Secs (0 Secs) I = > 1[2] 1222_f-100 (3) LIN-156 COS/FUV, TIME-TAG, PSA G130M FP-POS=3; 240 Secs (240 Secs) (COS.sp.153 BUFFER-TIME=11 1222 A *[==>1* 5470) WAVECAL=NO: [2] FLASH=NO; LIFETIME-POS=L P6 Comments: This exposure time gives S/N=30 at 1300A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 17 Move to 0 NONE COS. ALIGN/OSM FOCUS=0 0 Secs (0 Secs) I = = > 1[2]

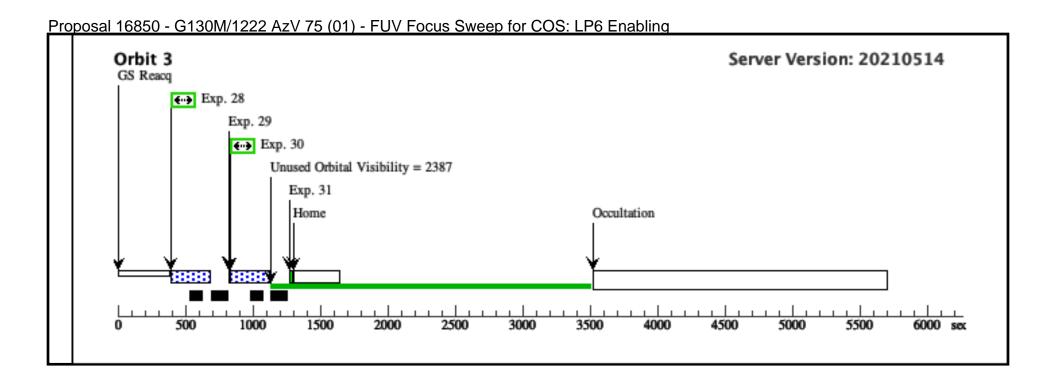
18	1222_f_0 (3) LIN-156	1222 AzV 75 (01) - FUV COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3;	240 Secs (240 Secs)	
	(COS.sp.153 5470)		1222 A	BUFFER-TIME=11	[==>1	
	5470)			1;	,	
				WAVECAL=NO;		[2]
				FLASH=NO;		[2]
				LIFETIME-POS=L P6		
Com	ments: This exposure time gives S	S/N=30 at 1300A (wavelength of redde.	st, faintest window			<u>l</u>
Wave	ecals are turned off to mitigate lig	ght-leak issues above +5.5"/(i.e. WAVE	CAL=NO, FLASH	T=NO)		
	Move to +10 NONE	COS, ALIGN/OSM		FOCUS=+100	0 Secs (0 Secs)	
	0				[==>]	[2
20	1222_f+100 (3) LIN-156	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3;	240 Secs (240 Secs)	
	(COS.sp.153 5470)		1222 A	BUFFER-TIME=11	[==>]	
				1; WAVECAL=NO;		
				FLASH=NO;		[2
				LIFETIME-POS=L		
				P6		
Comi	ments: This exposure time gives S	S/N=30 at 1300A (wavelength of redde.	st, faintest window).		
Wave	ecals are turned off to mitigate lig	ght-leak issues above +5.5"/(i.e. WAVE	ECAL=NO, FLASH	(=NO)		
	Move to +20 NONE	COS, ALIGN/OSM		FOCUS=+200	0 Secs (0 Secs)	
	0				[==>]	[2
22	1222_f+200 (3) LIN-156	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3;	240 Secs (240 Secs)	
	(COS.sp.153 5470)		1222 A	BUFFER-TIME=11	[==>]	
				1;		
				WAVECAL=NO;		[2
				FLASH=NO; LIFETIME-POS=L		
				P6		
Comr	ments: This exposure time gives S	S/N=30 at 1300A (wavelength of redde.	st, faintest window,).		
<i>Wave</i> 23	ecals are turned off to mitigate list Move to +40 NONE	S/N=30 at 1300A (wavelength of redde. ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM			0 Secs (0 Secs)	
<i>Wave</i> 23	ecals are turned off to mitigate lig	ght-leak issues above +5.5"/(i.e. WAVE		(=NO)	0 Secs (0 Secs) [==>]	[2]
<i>Wave</i> 23 24	Move to +40 NONE 0 1222 f+400 (3) LIN-156	ght-leak issues above +5.5"/(i.e. WAVE		(=NO)	` ′	[2
<i>Wave</i> 23 24	ecals are turned off to mitigate lig Move to +40 NONE 0	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	ECAL=NO, FLASH	<i>T=NO)</i> FOCUS=+400	[==>]	[2
<i>Wave</i> 23 24	Move to +40 NONE 0 1222 f+400 (3) LIN-156	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	G130M	FOCUS=+400 FP-POS=3; POS TARG 0.0,0.0 BUFFER-TIME=11	[==>] 240 Secs (240 Secs)	
<i>Wave</i> 23 24	Move to +40 NONE 0 1222 f+400 (3) LIN-156	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	G130M	FOCUS=+400 FP-POS=3; POS TARG 0.0,0.0 BUFFER-TIME=11 1;	[==>] 240 Secs (240 Secs)	
<i>Wave</i> 23 24	Move to +40 NONE 0 1222 f+400 (3) LIN-156	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	G130M	FOCUS=+400 FP-POS=3; POS TARG 0.0,0.0 BUFFER-TIME=11 1; WAVECAL=NO;	[==>] 240 Secs (240 Secs)	
<u>Wave</u> 23 24	Move to +40 NONE 1222_f+400 (3) LIN-156 (COS.sp.153 5470)	cos, align/osm cos/fuv, time-tag, psa	G130M 1222 A	FOCUS=+400 FP-POS=3; POS TARG 0.0,0.0 BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6	[==>] 240 Secs (240 Secs)	
<u>Wave</u> 23 24	Move to +40 NONE 1222_f+400 (3) LIN-156 (COS.sp.153 5470)	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	G130M 1222 A	FOCUS=+400 FP-POS=3; POS TARG 0.0,0.0 BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6	[==>] 240 Secs (240 Secs)	
Wave 223 224 Comm	Move to +40 NONE 1222_f+400 (3) LIN-156 (COS.sp.153 5470) ments: This exposure time gives Secals are turned off to mitigate light	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1300A (wavelength of redde.	G130M 1222 A	FOCUS=+400 FP-POS=3; POS TARG 0.0,0.0 BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6 J. JENO)	[==>] 240 Secs (240 Secs) [==>]	
Wave Comm Wave 225	Move to +40 NONE 1222_f+400 (3) LIN-156 (COS.sp.153 5470) ments: This exposure time gives Secals are turned off to mitigate light Move to +60 NONE	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1300A (wavelength of redde.	G130M 1222 A	FP-POS=3; POS TARG 0.0,0.0 BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6	[==>] 240 Secs (240 Secs) [==>] 0 Secs (0 Secs)	
Wave Comm Wave 225	Move to +40 NONE 1222_f+400 (3) LIN-156 (COS.sp.153 5470) ments: This exposure time gives Secals are turned off to mitigate light	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1300A (wavelength of redde.	G130M 1222 A	FOCUS=+400 FP-POS=3; POS TARG 0.0,0.0 BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6 J. JENO)	[==>] 240 Secs (240 Secs) [==>]	[2]

Proposal 16850 - G130M/1222 AzV 75 (01) - FUV Focus Sweep for COS: LP6 Enabling

26	1222_f+600 (3) LIN-156	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3;	POS TARG 0.0,0.0	240 Secs (240 Secs)	
	(COS.sp.153 5470)		1222 A	BUFFER-TIME=11 1;		[==>]	
				WAVECAL=NO;			[2]
				FLASH=NO;			[2]
				LIFETIME-POS=L P6			
	1 0	S/N=30 at 1300A (wavelength of redde					
	ecals are turned off to mitigate lig Move to +80 NONE	<pre>ght-leak issues above +5.5" (i.e. WAVE COS, ALIGN/OSM</pre>	ECAL=NO, FLASH	FOCUS=+800		0 Secs (0 Secs)	
21	0	COS, ALIGIVOSM		FOCUS=+000		[==>1	[2]
28	1222_f+800 (3) LIN-156	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3;	POS TARG 0.0,0.0	I = > I 240 Secs (240 Secs)	[2]
	(COS.sp.153 5470)		1222 A	BUFFER-TIME=11 1;	,	[==>]	
				WAVECAL=NO;			(2)
				FLASH=NO;			[3]
				FLASH=NO;			
				LIFETIME-POS=L P6			
	1	S/N=30 at 1300A (wavelength of redde		LIFETIME-POS=L P6			
Wave	ecals are turned off to mitigate lig	ght-leak issues above +5.5"/(i.e. WAVI		LIFETIME-POS=L P6		0 Secs (0 Secs)	
<i>Wave</i> 29	1	,		LIFETIME-POS=L P6). =NO)		0 Secs (0 Secs) f==>1	[3]
<i>Wave</i> 29	ecals are turned off to mitigate lig Move to +10 NONE	ght-leak issues above +5.5"/(i.e. WAVI		LIFETIME-POS=L P6). =NO)	POS TARG 0.0,0.0	` /	[3]
<i>Wave</i> 29	Move to +10 NONE 00 1222_f+100 (3) LIN-156 0 (COS.sp.153	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	ECAL=NO, FLASH	LIFETIME-POS=L P6). (=NO) FOCUS=+1000	POS TARG 0.0,0.0	[==>]	[3]
<i>Wave</i> 29	Move to +10 NONE 00 1222_f+100 (3) LIN-156	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	G130M	LIFETIME-POS=L P6). =NO) FOCUS=+1000 FP-POS=3; BUFFER-TIME=11	POS TARG 0.0,0.0	[==>] 240 Secs (240 Secs)	
<i>Wave</i> 29	Move to +10 NONE 00 1222_f+100 (3) LIN-156 0 (COS.sp.153	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	G130M	LIFETIME-POS=L P6 FOCUS=+1000 FP-POS=3; BUFFER-TIME=111;	POS TARG 0.0,0.0	[==>] 240 Secs (240 Secs)	
<i>Wave</i> 29	Move to +10 NONE 00 1222_f+100 (3) LIN-156 0 (COS.sp.153	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	G130M	LIFETIME-POS=L P6 DESCRIPTION FOCUS=+1000 FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO;	POS TARG 0.0,0.0	[==>] 240 Secs (240 Secs)	
<i>Wave</i> 29 30	Move to +10 NONE 00 1222_f+100 (3) LIN-156 0 (COS.sp.153 5470)	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	G130M 1222 A	LIFETIME-POS=L P6 i. =NO) FOCUS=+1000 FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6	POS TARG 0.0,0.0	[==>] 240 Secs (240 Secs)	[3]
Wave 29 30	Move to +10 NONE 1222_f+100 (3) LIN-156 (COS.sp.153 5470) ments: This exposure time gives S	cOS, ALIGN/OSM COS/FUV, TIME-TAG, PSA	G130M 1222 A	LIFETIME-POS=L P6 DESCRIPTION FOCUS=+1000 FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6 DESCRIPTION:	POS TARG 0.0,0.0	[==>] 240 Secs (240 Secs)	
Wave 29 30 Com	Move to +10 NONE 1222_f+100 (3) LIN-156 (COS.sp.153 5470) ments: This exposure time gives S	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1300A (wavelength of redde	G130M 1222 A	LIFETIME-POS=L P6 DESCRIPTION FOCUS=+1000 FP-POS=3; BUFFER-TIME=11 1; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6 DESCRIPTION:	POS TARG 0.0,0.0	[==>] 240 Secs (240 Secs)	







Proposal 16850 - G160M/1600 AZV 75 (02) - FUV Focus Sweep for COS: LP6 Enabling

1	Proposa	al 16850, G160M/1600 AZV	V 75 (02), implementation			Tue Oct 19 11:00:44 GMT 2021
Si	Diagnos	stic Status: No Diagnostics				
=	Scientifi	ic Instruments: COS, COS/F				
	Special l	Requirements: ORIENT 275	5D TO 60 D; ORIENT 160D TO 165 D			
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
က္က	(3)	LIN-156	RA: 00 50 32.4076 (12.6350317d)	Proper Motion RA: 1.428761918512278E-4	V=12.756	Reference Frame: ICRS
gets		Alt Name1: AZV75	Dec: -72 52 36.46 (-72.87679d)	sec of time/yr		
Tar.			Equinox: J2000	Proper Motion Dec: - 0.0010469999779161299 arcsec/yr		
ğ				Epoch of Position: 2015.5		
Fixe	Categor	y=STAR tion=[MAIN SEQUENCE O	ed by the targetselector and retrieved from the	SIMBAD database.		

Proposal 16850 - G160M/1600 AZV 75 (02) - FUV Focus Sweep for COS: LP6 Enabling

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		(3) LIN-156	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	SCAN-SIZE=2; STEP-SIZE=1.767; CENTER=FLUX-W T	7		7.6 Secs (7.6 Secs) [==>]	[1]
Con	ıments: Exposi	ire time for S/N = 4	40		1				_
2		(3) LIN-156	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				3 Secs (3 Secs)	
	E (COS.ta.154 1167)							[==>]	[1]
Con	ments: S/N=30	0							
3	ACQ/IMAG E	(3) LIN-156	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				3 Secs (3 Secs)	
	(COS.ta.154 1167)							[==>]	[1]
Con	ments: S/N=30	0							
4	Initialize G1 60M/1600 at	(3) LIN-156	COS/FUV, TIME-TAG, PSA	G160M	FP-POS=3;			0.1 Secs (0.1 Secs)	
	nominal aperture and focus position (COS.sp.153 5480)			1600 A	BUFFER-TIME=11 0; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6			[==>]	[1]
		M/1600 absolute foo	rect instrument configuration before the cus value f =+78 COS, ALIGN/OSM		FOCUS=-1000			0 Secs (0 Secs)	
_	1600 £ 1000	(3) LIN-156	COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=15			[==>] 900 Secs (900 Secs)	[1]
O	(COS.sp.153 5480)		COS/FOV, HIVIE-TAG, FSA	1600 A	0; FLASH=NO; LIFETIME-POS=L P6; WAVECAL=NO;			[==>]	[1]
	ecals are turne	ed off to mitigate lig	S/N=30 at 1700A (wavelength of reddest ght-leak issues above +5.5"/(i.e. WAVEC	,				0.5 (0.5)	
′	Move to -80	INUINE	COS, ALIGN/OSM		FOCUS=-800			$0 \operatorname{Secs} (0 \operatorname{Secs})$ $I = > I$	[1]
8	1600 f-800	(3) LIN-156	COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=15			900 Secs (900 Secs)	[1]
	(COS.sp.153 5480)	(0) 22 (100		1600 A	0; FLASH=NO; LIFETIME-POS=L P6; WAVECAL=NO;			[==>]	[1]
			S/N=30 at 1700A (wavelength of reddest ght-leak issues above +5.5" (i.e. WAVEC		FP-POS=3 NO)				

Proposal 16850 - G160M/1600 AZV 75 (02) - FUV Focus Sweep for COS: LP6 Enabling Move to -60 NONE COS, ALIGN/OSM FOCUS=-600 0 Secs (0 Secs) I = = > 1[2] 1600_f-600 (3) LIN-156 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=15 900 Secs (900 Secs) (COS.sp.153 1600 A *[==>1* 5480) FLASH=NO; LIFETIME-POS=L [2] WAVECAL=NO; FP-POS=3 Comments: This exposure time gives S/N=30 at 1700A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) Move to -40 NONE COS. ALIGN/OSM FOCUS=-400 0 Secs (0 Secs) I = = > 1[2] 12 1600_f-400 (3) LIN-156 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=15 900 Secs (900 Secs) (COS.sp.153 1600 A f = = > 15480) FLASH=NO; LIFETIME-POS=L [2] WAVECAL=NO; FP-POS=3 Comments: This exposure time gives S/N=30 at 1700A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 13 Move to -20 NONE COS, ALIGN/OSM FOCUS=-200 0 Secs (0 Secs) I = = > 1[2] 1600_f-200 (3) LIN-156 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=15 899 Secs (899 Secs) (COS.sp.153 1600 A [==>] 5480) FLASH=NO; LIFETIME-POS=L [2] P6: WAVECAL=NO; FP-POS=3 Comments: This exposure time gives S/N=30 at 1700A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 15 Move to -10 NONE COS, ALIGN/OSM FOCUS=-100 0 Secs (0 Secs) I = > 1[3] 1600_f-100 (3) LIN-156 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=15 900 Secs (900 Secs) (COS.sp.153 1600 A *[==>1* 5480) FLASH=NO; LIFETIME-POS=L [3] P6; WAVECAL=NO; FP-POS=3 Comments: This exposure time gives S/N=30 at 1700A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 17 Move to 0 NONE COS. ALIGN/OSM FOCUS=0 0 Secs (0 Secs) I = = > 1[3]

18	1600_f_0 (3) LIN-156	COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=15	900 Secs (900 Secs)	
	(COS.sp.153 5480)		1600 A	0;	f==>1	
	3480)			FLASH=NO;		
				LIFETIME-POS=L P6;		Į.
				WAVECAL=NO;		
				FP-POS=3		
Con	ments: This exposure time gives	S/N=30 at 1700A (wavelength of redde	st, faintest window).		
Wav	ecals are turned off to mitigate li	ght-leak issues above +5.5"/(i.e. WAVI	ECAL=NO, FLASH	I=NO)		
19	Move to +10 NONE	COS, ALIGN/OSM		FOCUS=+100	0 Secs (0 Secs)	
	0				[==>]	[3
20	1600_f+100 (3) LIN-156	COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=15	900 Secs (900 Secs)	
	(COS.sp.153 5480)		1600 A	0;	[==>]	
	3400)			FLASH=NO;		
				LIFETIME-POS=L P6;		[3
				WAVECAL=NO;		
				FP-POS=3		
Con	ments: This exposure time gives	S/N=30 at 1700A (wavelength of redde	st, faintest window).		
Wav	ecals are turned off to mitigate li	ght-leak issues above +5.5"/(i.e. WAVI	ECAL=NO, FLASH	I=NO)		
	Move to +20 NONE	COS, ALIGN/OSM		FOCUS=+200	0 Secs (0 Secs)	
	0				[==>]	[4
22	1600_f+200 (3) LIN-156	COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=15	900 Secs (900 Secs)	
	(COS.sp.153 5480)		1600 A	0;	[==>]	
	,			FLASH=NO;		
				LIFETIME-POS=L P6;		[4
				WAVECAL=NO;		
				FP-POS=3		
Con	ments: This exposure time gives	S/N=30 at 1700A (wavelength of redde	st, faintest window).		
Wav	ecals are turned off to mitigate li	ght-leak issues above +5.5"/(i.e. WAVI	ECAL=NO, FLASH	I=NO)		
23	Move to +40 NONE	COS, ALIGN/OSM		FOCUS=+400	0 Secs (0 Secs)	
	0				[==>]	[4
24	1600_f+400 (3) LIN-156	COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=15	900 Secs (900 Secs)	
	(COS.sp.153 5480)		1600 A	0;	[==>]	
	,			FLASH=NO; LIFETIME-POS=L		
				P6;		[4
				WAVECAL=NO;		
				FP-POS=3		
Con	ments: This exposure time gives	S/N=30 at 1700A (wavelength of redde	st, faintest window).		
	ecals are turned off to mitigate li	ght-leak issues above +5.5"/(i.e. WAVI	ECAL=NO, FLASH	I=NO)		
Wai	Move to +60 NONE	COS, ALIGN/OSM	,	FOCUS=+600	0 Secs (0 Secs)	
<i>Wa</i> 1 25	MOVE TO TOO INDINE					
	0				I = > I	1
					[==>]	[4

Proposal 16850 - G160M/1600 AZV 75 (02) - FUV Focus Sweep for COS: LP6 Enabling 1600_f+600 (3) LIN-156 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=15 899 Secs (899 Secs) (COS.sp.153 5480) 0: 1600 A *[==>1* FLASH=NO; LIFETIME-POS=L [4] P6; WAVECAL=NO; FP-POS=3 Comments: This exposure time gives S/N=30 at 1700A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 27 Move to +80 NONE COS, ALIGN/OSM FOCUS=+800 0 Secs (0 Secs) I = = > 1[4] 1600_f+800 (3) LIN-156 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=15 900 Secs (900 Secs) (COS.sp.153 1600 A I = = > 15480) FLASH=NO; LIFETIME-POS=L [5] WAVECAL=NO; FP-POS=3 Comments: This exposure time gives S/N=30 at 1700A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) Move to +10 NONE COS, ALIGN/OSM FOCUS=+1000 0 Secs (0 Secs) *[5]* I = = > 11600_f+100 (3) LIN-156 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=15 900 Secs (900 Secs) 1600 A [==>] (COS.sp.153 FLASH=NO; 5480) LIFETIME-POS=L [5] P6; WAVECAL=NO; FP-POS=3 Comments: This exposure time gives S/N=30 at 1700A (wavelength of reddest, faintest window).

FOCUS=0

0 Secs (0 Secs)

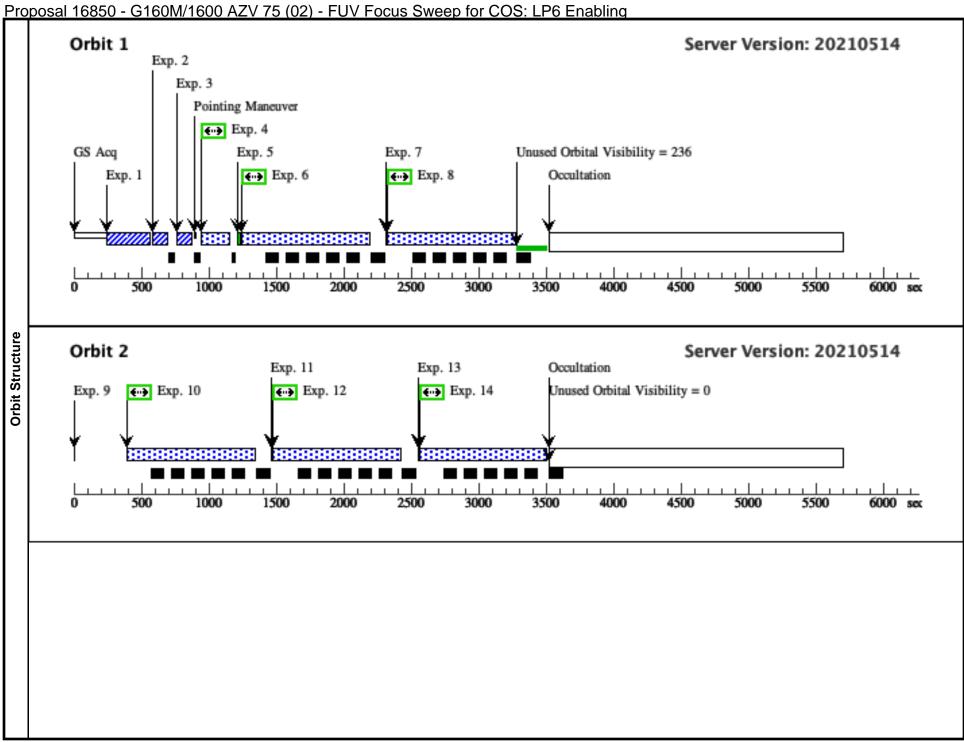
[5]

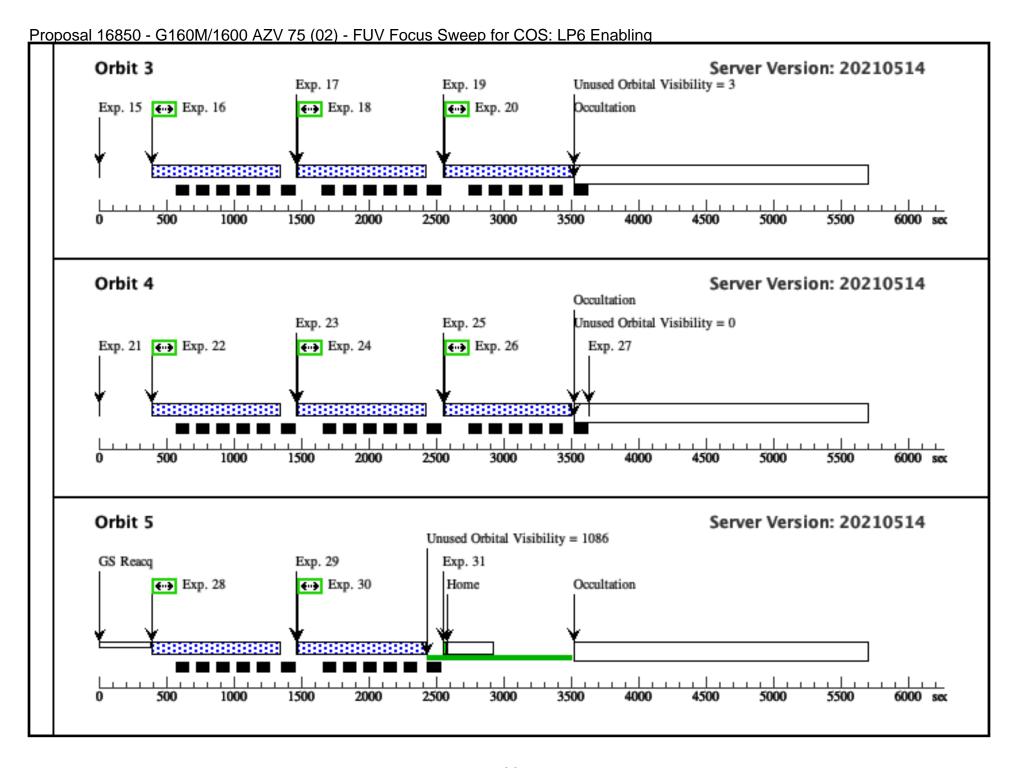
I==>1

Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO)

COS, ALIGN/OSM

31 Move to 0 NONE





Proposal 16850 - G130M/1222 Feige 48 (03) - FUV Focus Sweep for COS: LP6 Enabling

	posai	10000 C 1001VII/ 12	222 Feige 46 (03) - FOV FOCUS	owccp for OOO. Li o Litabil	ng	
	Proposal 1	16850, G130M/1222 Feige 4	8 (03), implementation			Tue Oct 19 11:00:45 GMT 2021
.±	Diagnostic	c Status: No Diagnostics				
/is	Scientific I	Instruments: COS, COS/FUV				
_	Special Re	equirements: ON HOLD				
	On Hold C	Comments: Feige 48 observat	tions are supplementary in case the observing wind	low for the initial visits to AzV 75 close.		
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
ets	(4)	FEIGE-48	RA: 11 47 14.4421 (176.8101754d)	Proper Motion RA: -0.0035937440813851103	V=13.28	Reference Frame: ICRS
ge			Dec: +61 15 31.68 (61.25880d)	sec of time/yr		
Tarç			Equinox: J2000	Proper Motion Dec: -0.007394999965981697 arcsec/yr		
g				Epoch of Position: 2015.5		
I .≝			by the targetselector and retrieved from the SIMBA	AD database.		
证		EXT-STAR				
	Description Extended=					

Proposal 16850 - G130M/1222 Feige 48 (03) - FUV Focus Sweep for COS: LP6 Enabling

	Label Target (ETC Run)	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	ACQ/IMAG (4) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				4 Secs (4 Secs)	
	E (COS.ta.153 7872)						[==>]	[1]
	ments: S/N = 30							
	ACQ/IMAG (4) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				4 Secs (4 Secs)	
	E (COS.ta.153 7872)						[==>]	[1]
	ments: S/N = 30							1
	Initialize G1 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3;			0.1 Secs (0.1 Secs)	
	30M/1222 at nominal ape		1222 A	BUFFER-TIME=88			[==>]	
	rture and foc us position			WAVECAL=NO;				
	(COS.sp.153			FLASH=NO;				[1]
	6398)			LIFETIME-POS=L P6;				
				SEGMENT=A				
Comi	ments: This exposure sets the c	orrect instrument configuration before the	e aperture is moved.					•
Preli	minary G130M/1222 absolute	f_{ocus} value $f = -951$						
	Move to -10 NONE	COS, ALIGN/OSM		FOCUS=-1000			0 Secs (0 Secs)	
	00	665, 11 <u>2</u> 161 (1651.1		10000 1000			[==>1	[1]
;	1222A_f-10 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3;			100 Secs (100 Secs)	1-1
	00 (COS.sp.153 6398)		1222 A	BUFFER-TIME=88			[==>]	
	0396)			WAVECAL=NO;				
				FLASH=NO;				[1]
				LIFETIME-POS=L P6;				
				SEGMENT=A				
Comi	ments: This exposure time give	s S/N=30 at 1300A (wavelength of reddes	t, faintest window).					
Wave	ecals are turned off to mitigate	light-leak issues above +5.5"/(i.e. WAVE	CAL=NO. FLASH=	NO)				
	Move to -80 NONE	COS, ALIGN/OSM	<u> </u>	FOCUS=-800			0 Secs (0 Secs)	
	0						[==>]	[1]
			G130M	FP-POS=3;			100 Secs (100 Secs)	
	1222A_f-80 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA						
7	0	COS/FUV, TIME-TAG, PSA	1222 A	BUFFER-TIME=88			[==>]	
7		COS/FUV, TIME-TAG, PSA	1222 A	;			[==>]	
7	0 (COS.sp.153	COS/FUV, TIME-TAG, PSA	1222 A	; WAVECAL=NO;			[==>]	
7	0 (COS.sp.153	COS/FUV, TIME-TAG, PSA	1222 A	; WAVECAL=NO; FLASH=NO;			[==>]	[1]
7	0 (COS.sp.153	COS/FUV, TIME-TAG, PSA	1222 A	; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L			[==>]	[1]
7	0 (COS.sp.153	COS/FUV, TIME-TAG, PSA	1222 A	; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6;			[==>]	[1]
7	0 (COS.sp.153 6398)			; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L			[==>]	[1]
7 Comr	0 (COS.sp.153 6398) ments: This exposure time give.	s S/N=30 at 1300A (wavelength of reddes	t, faintest window).	; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6; SEGMENT=A			[==>]	[1]
7 Comr Wave	0 (COS.sp.153 6398) ments: This exposure time give.		t, faintest window).	; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6; SEGMENT=A			0 Secs (0 Secs)	[1]

Proposal 16850 - G130M/1222 Feige 48 (03) - FUV Focus Sweep for COS: LP6 Enabling 1222A_f-60 (4) FEIGE-48 COS/FUV, TIME-TAG, PSA G130M FP-POS=3; 100 Secs (100 Secs) 1222 A **BUFFER-TIME=88** I = = > 1(COS.sp.153 6398) WAVECAL=NO: FLASH=NO; [1] LIFETIME-POS=L P6; SEGMENT=A Comments: This exposure time gives S/N=30 at 1300A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 10 Move to -40 NONE FOCUS=-400 0 Secs (0 Secs) COS. ALIGN/OSM I = = > 1[1] 11 1222A_f-40 (4) FEIGE-48 100 Secs (100 Secs) COS/FUV. TIME-TAG, PSA G130M FP-POS=3: 1222 A *[==>]* BUFFER-TIME=88 (COS.sp.153 6398) WAVECAL=NO; FLASH=NO; [1] LIFETIME-POS=L P6; SEGMENT=A Comments: This exposure time gives S/N=30 at 1300A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 12 Move to -20 NONE COS, ALIGN/OSM FOCUS=-200 0 Secs (0 Secs) I = = > 1[1] 13 1222A_f-20 (4) FEIGE-48 COS/FUV, TIME-TAG, PSA G130M FP-POS=3; 100 Secs (100 Secs) 1222 A BUFFER-TIME=88 [==>] (COS.sp.153 6398) WAVECAL=NO; FLASH=NO; [1] LIFETIME-POS=L P6: SEGMENT=A Comments: This exposure time gives S/N=30 at 1300A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 0 Secs (0 Secs) 14 Move to -10 NONE COS, ALIGN/OSM FOCUS=-100 I = = > 1[1] 100 Secs (100 Secs) 1222A_f-10 (4) FEIGE-48 COS/FUV, TIME-TAG, PSA G130M FP-POS=3; 1222 A **BUFFER-TIME=88** [==>] (COS.sp.153 6398) WAVECAL=NO; FLASH=NO; [1] LIFETIME-POS=L P6; SEGMENT=A Comments: This exposure time gives S/N=30 at 1300A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO)

Proposal 16850 - G130M/1222 Feige 48 (03) - FUV Focus Sweep for COS: LP6 Enabling 16 Move to 0 NONE FOCUS=0 COS, ALIGN/OSM 0 Secs (0 Secs) *I==>1* [1] 1222A_f_0 (4) FEIGE-48 COS/FUV, TIME-TAG, PSA G130M FP-POS=3; 100 Secs (100 Secs) (COS.sp.153 6398) *[==>1* 1222 A **BUFFER-TIME=88** WAVECAL=NO; FLASH=NO; [1] LIFETIME-POS=L P6; SEGMENT=A Comments: This exposure time gives S/N=30 at 1300A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 18 Move to +10 NONE COS. ALIGN/OSM FOCUS=+100 0 Secs (0 Secs) I = = > 1[1] 1222A_f+10 (4) FEIGE-48 FP-POS=3; 100 Secs (100 Secs) COS/FUV, TIME-TAG, PSA G130M 1222 A *[==>]* **BUFFER-TIME=88** (COS.sp.153 6398) WAVECAL=NO; FLASH=NO; [1] LIFETIME-POS=L P6; SEGMENT=A Comments: This exposure time gives S/N=30 at 1300A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 20 Move to +20 NONE FOCUS=+200 COS, ALIGN/OSM 0 Secs (0 Secs) *[==>1* [1] 21 1222A_f+20 (4) FEIGE-48 100 Secs (100 Secs) COS/FUV, TIME-TAG, PSA G130M FP-POS=3; 1222 A **BUFFER-TIME=88** [==>] (COS.sp.153 6398) WAVECAL=NO; FLASH=NO; [2] LIFETIME-POS=L P6; SEGMENT=A Comments: This exposure time gives S/N=30 at 1300A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 22 Move to +40 NONE COS, ALIGN/OSM FOCUS=+400 0 Secs (0 Secs) [==>] [2]

23	1222A_f+40 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3; POS TARG 0.0,0.0	100 Secs (100 Secs)	
	0 (COS.sp.153		1222 A	BUFFER-TIME=88	[==>]	
	6398)			;		
				WAVECAL=NO;		
				FLASH=NO;		[2
				LIFETIME-POS=L		
				P6; SEGMENT=A		
C		EAL 20 of 12004 ((
	•	S/N=30 at 1300A (wavelength of redde	v			
		ght-leak issues above +5.5"/(i.e. WAVI	ECAL=NO, FLASH			
	Move to +60 NONE 0	COS, ALIGN/OSM		FOCUS=+600	0 Secs (0 Secs)	
					[==>]	[.
25	1222A_f+60 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3; POS TARG 0.0,0.0	100 Secs (100 Secs)	
	(COS.sp.153		1222 A	BUFFER-TIME=88	[==>]	
	6398)			, WAVECAL=NO;		
				FLASH=NO;		Į.
				LIFETIME-POS=L		'-
				P6;		
				SEGMENT=A		
Com	ments: This exposure time gives S	S/N=42 at 1150A (wavelength of blues	t window).			
Wave	ecals are turned off to mitigate lig	ght-leak issues above +5.5"/(i.e. WAVI	ECAL=NO. FLASH	I=NO)		
	Move to +80 NONE	COS, ALIGN/OSM	ĺ	FOCUS=+800	0 Secs (0 Secs)	
	0				[==>]	[2
27	1222A_f+80 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3; POS TARG 0.0,0.0	100 Secs (100 Secs)	
	0 (COS.sp.153		1222 A	BUFFER-TIME=88	[==>]	
	6398)			;		
				WAVECAL=NO;		
				FLASH=NO;		I.
				LIFETIME-POS=L		
				P6; SEGMENT=A		
Com	mente. This expenses time aims (S/N=30 at 1300A (wavelength of redde	est faintast window			
	•		•			
		ght-leak issues above +5.5"/(i.e. WAVI	ECAL=NO, FLASH		0 Sags (0 Sags)	
28	Move to +10 NONE 00	COS, ALIGN/OSM		FOCUS=+1000	$0 \operatorname{Secs} (0 \operatorname{Secs})$ $I = > I$	<u> </u>
		COS/EIN/ TIME TAC DOA	G120M	ED DOC_2: DOC TABC 0.0.0	<u> </u>	[.
20	1222A_f+10 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3; POS TARG 0.0,0.0	100 Secs (100 Secs)	
	00		1222 A	BUFFER-TIME=88 ;	[==>]	
	(COS.sp.153					
	(COS.sp.153 6398)			WAVECAL=NO;		
	(COS.sp.153			WAVECAL=NO; FLASH=NO;		
	(COS.sp.153					[.
	(COS.sp.153			FLASH=NO;		I.
	(COS.sp.153			FLASH=NO; LIFETIME-POS=L		[.

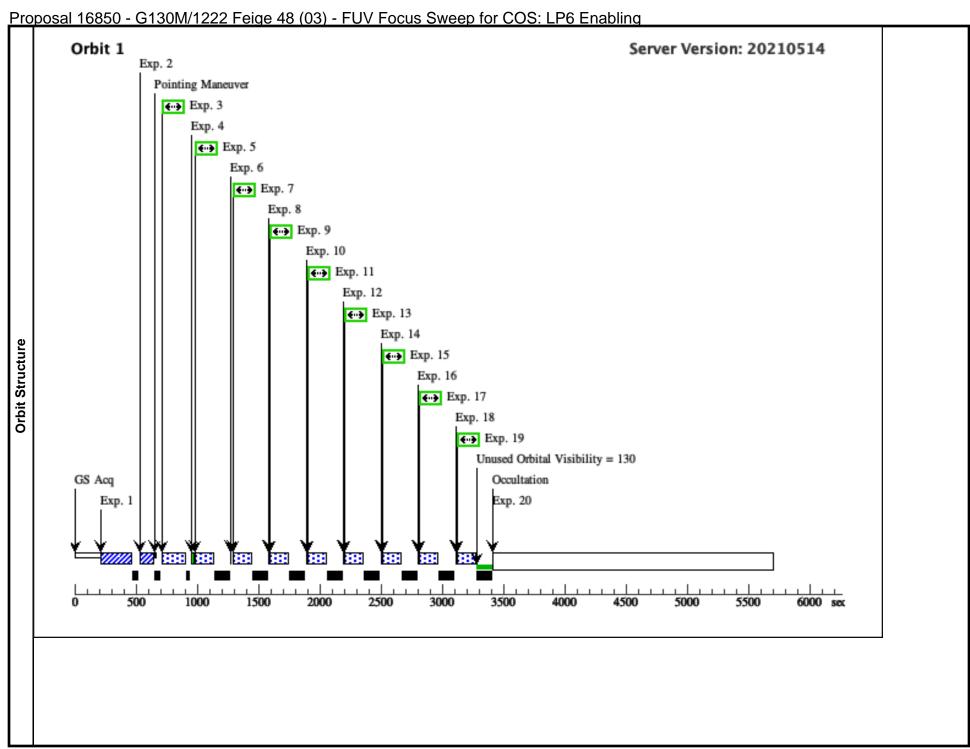
30	1222B_f+10 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3; POS TARG 0.0,0.0	100 Secs (100 Secs)	
	00 (COS.sp.153		1222 A	BUFFER-TIME=20	[==>]	
	6398)			0;		
				WAVECAL=NO;		
				FLASH=NO;		[2
				LIFETIME-POS=L P6;		
				SEGMENT=B		
Com	ments: This exposure time gives S	S/N=30 at 1300A (wavelength of redde	st, faintest window).		
Wav	ecals are turned off to mitigate lig	ght-leak issues above +5.5"/(i.e. WAVE	ECAL=NO, FLASH	=NO)		
31	Move to +80 NONE	COS, ALIGN/OSM		FOCUS=+800	0 Secs (0 Secs)	
					[==>]	[2
32	1222B_f+80 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3; POS TARG 0.0,0.0	100 Secs (100 Secs)	
	(COS.sp.153		1222 A	BUFFER-TIME=20 0;	[==>]	
	6398)			WAVECAL=NO;		
				FLASH=NO;		[2
				LIFETIME-POS=L		
				P6;		
C		EAL 20 -4 12004 (SEGMENT=B		
	•	S/N=30 at 1300A (wavelength of redde				
	ecals are turned off to mitigate lige Move to +60 NONE	ght-leak issues above +5.5" (i.e. WAVE COS, ALIGN/OSM	CCAL=NO, FLASH	= <i>NO</i>) FOCUS=+600	0 Secs (0 Secs)	
33	0	COS, ALIGIVOSWI		10005-1000	[==>]	[2
34	1222B_f+60 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3; POS TARG 0.0,0.0	100 Secs (100 Secs)	
	0 (COS.sp.153		1222 A	BUFFER-TIME=20	[==>]	
	6398)			0;		
				WAVECAL=NO;		
				FLASH=NO;		[2
				LIFETIME-POS=L P6;		
				SEGMENT=B		
Com	ments: This exposure time gives S	S/N=30 at 1300A (wavelength of redde	st, faintest window).		
2011	ecals are turned off to mitigate lig	ght-leak issues above +5.5"/(i.e. WAVE	ECAL=NO, FLASH	(=NO)		
		COS, ALIGN/OSM		FOCUS=+400	0 Secs (0 Secs)	
Wav	Move to +40 NONE				f==>1	[2
<u>Wav</u> 35	0					
<u>Wav</u> 35	0 1222B_f+40 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3; POS TARG 0.0,0.0	100 Secs (100 Secs)	
<u>Wav</u> 35	0 1222B_f+40 (4) FEIGE-48 0 (COS.sp.153	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; POS TARG 0.0,0.0 BUFFER-TIME=20 0;		
<u>Wav</u> 35	0 1222B_f+40 (4) FEIGE-48 0	COS/FUV, TIME-TAG, PSA		BUFFER-TIME=20	100 Secs (100 Secs)	
<u>Wav</u> 35	0 1222B_f+40 (4) FEIGE-48 0 (COS.sp.153	COS/FUV, TIME-TAG, PSA		BUFFER-TIME=20 0;	100 Secs (100 Secs)	[2
<u>Wav</u> 35	0 1222B_f+40 (4) FEIGE-48 0 (COS.sp.153	COS/FUV, TIME-TAG, PSA		BUFFER-TIME=20 0; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L	100 Secs (100 Secs)	[2
<u>Wav</u> 35	0 1222B_f+40 (4) FEIGE-48 0 (COS.sp.153	COS/FUV, TIME-TAG, PSA		BUFFER-TIME=20 0; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6;	100 Secs (100 Secs)	[2
<u>Wav</u> 35 36	0 1222B_f+40 (4) FEIGE-48 0 (COS.sp.153 6398)		1222 A	BUFFER-TIME=20 0; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6; SEGMENT=B	100 Secs (100 Secs)	[2
<u>Wav</u> 35 36	0 1222B_f+40 (4) FEIGE-48 0 (COS.sp.153 6398)	COS/FUV, TIME-TAG, PSA 5/N=30 at 1300A (wavelength of redde	1222 A	BUFFER-TIME=20 0; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6; SEGMENT=B	100 Secs (100 Secs)	[-

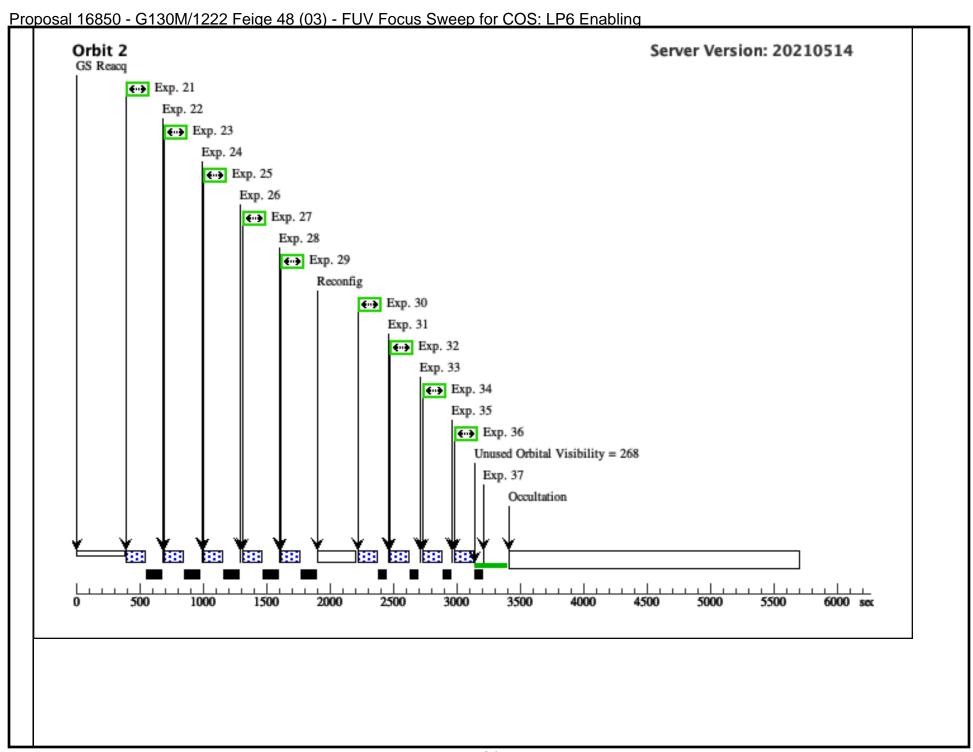
Proposal 16850 - G130M/1222 Feige 48 (03) - FUV Focus Sweep for COS: LP6 Enabling 37 Move to +20 NONE FOCUS=+200 COS, ALIGN/OSM 0 Secs (0 Secs) *I==>1* [2] 1222B_f+20 (4) FEIGE-48 COS/FUV, TIME-TAG, PSA G130M FP-POS=3; POS TARG 0.0,0.0 100 Secs (100 Secs) *[==>1* 1222 A BUFFER-TIME=20 (COS.sp.153 6398) WAVECAL=NO; FLASH=NO; [3] LIFETIME-POS=L P6; SEGMENT=B Comments: This exposure time gives S/N=30 at 1300A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 39 Move to +10 NONE COS. ALIGN/OSM FOCUS=+100 0 Secs (0 Secs) I = = > 1[3] 40 1222B_f+10 (4) FEIGE-48 100 Secs (100 Secs) COS/FUV, TIME-TAG, PSA G130M FP-POS=3; POS TARG 0.0,0.0 1222 A BUFFER-TIME=20 *[==>]* (COS.sp.153 6398) WAVECAL=NO; FLASH=NO; [3] LIFETIME-POS=L P6; SEGMENT=B Comments: This exposure time gives S/N=30 at 1300A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 41 Move to 0 NONE FOCUS=0 COS, ALIGN/OSM 0 Secs (0 Secs) *[==>1* [3] 1222B_f_0 (4) FEIGE-48 100 Secs (100 Secs) COS/FUV, TIME-TAG, PSA G130M FP-POS=3; POS TARG 0.0,0.0 (COS.sp.153 1222 A BUFFER-TIME=20 [==>] 6398) WAVECAL=NO; FLASH=NO; [3] LIFETIME-POS=L P6; SEGMENT=B Comments: This exposure time gives S/N=30 at 1300A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 43 Move to -10 NONE COS, ALIGN/OSM FOCUS=-100 0 Secs (0 Secs) [==>] [3]

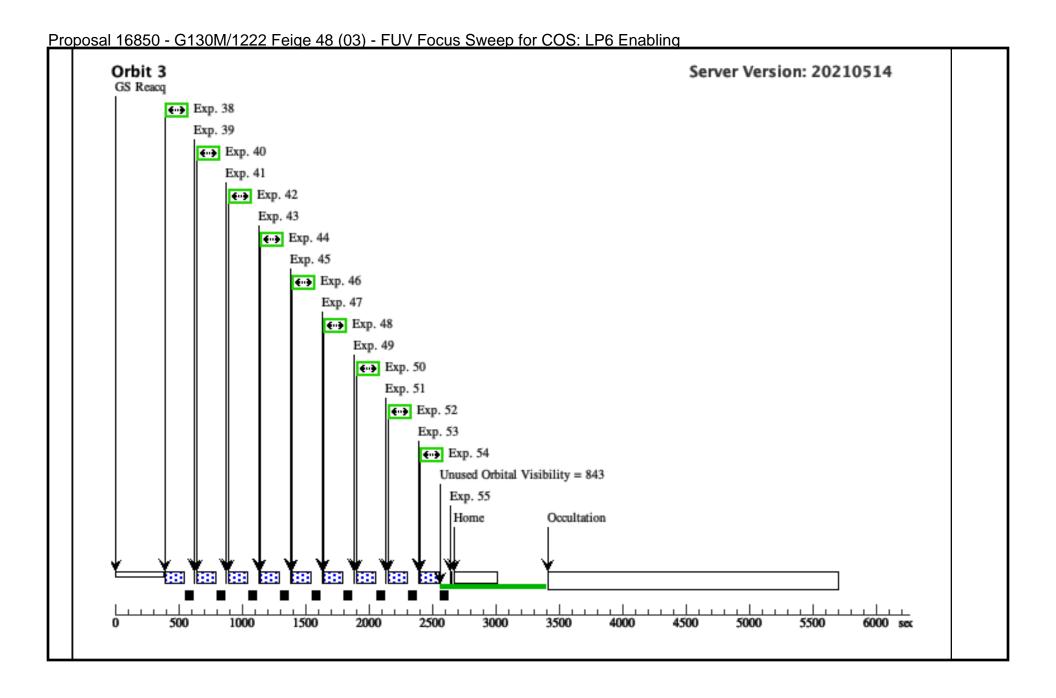
14	1222B_f-10 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3; POS TARG 0.0,0.0	100 Secs (100 Secs)	
	0 (COS.sp.153		1222 A	BUFFER-TIME=20	[==>]	
	6398)			0;		
				WAVECAL=NO;		
				FLASH=NO;		1
				LIFETIME-POS=L P6;		
				SEGMENT=B		
Com	ments: This exposure time give:	s S/N=30 at 1300A (wavelength of redde	st, faintest window	·).		
Wav	ecals are turned off to mitigate	light-leak issues above +5.5"/(i.e. WAVI	ECAL=NO, FLASH	I=NO)		
	Move to -20 NONE	COS, ALIGN/OSM		FOCUS=-200	0 Secs (0 Secs)	
	0				I = = > I	
16	1222B_f-20 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3; POS TARG 0.0,0.0	100 Secs (100 Secs)	
	0 (COS.sp.153 6398)		1222 A	BUFFER-TIME=20 0;	[==>]	
	6398)			WAVECAL=NO;		
				FLASH=NO;		
				LIFETIME-POS=L		
				P6;		
_				SEGMENT=B		
Com	ments: This exposure time give:	s S/N=30 at 1300A (wavelength of redde	st, faintest window	r).		
		light-leak issues above +5.5"/(i.e. WAVI	ECAL=NO, FLASH			
17	Move to -40 NONE 0	COS, ALIGN/OSM		FOCUS=-400	0 Secs (0 Secs)	
10		COS TINI TO SE TAG DOL	G1201.f	ED DOG A DOG TANG A A A A	[==>]	
18	1222B_f-40 (4) FEIGE-48 0	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3; POS TARG 0.0,0.0	100 Secs (100 Secs)	
	(COS.sp.153 6398)		1222 A	BUFFER-TIME=20 0;	[==>]	
	0398)			WAVECAL=NO;		
				FLASH=NO;		
				LIFETIME-POS=L		
				P6; SEGMENT=B		
Com	mants: This avnosura tima aiva	s S/N=30 at 1300A (wavelength of redde	est faintast window		L	
	1 0	, 0	, ,	,		
	Move to -60 NONE	light-leak issues above +5.5"/(i.e. WAVI COS, ALIGN/OSM	ECAL=NO, FLASE	FOCUS=-600	0 Secs (0 Secs)	
7)	0	COS, ALIGIT/OSIVI		1 0005000	[==>]	
50	1222B_f-60 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3; POS TARG 0.0,0.0	100 Secs (100 Secs)	
-	0		1222 A	BUFFER-TIME=20	[==>]	
	(COS.sp.153 6398)			0;		
				WAVECAL=NO;		
				FLASH=NO;		'
				LIFETIME-POS=L P6;		
				SEGMENT=B		
					•	
Com	ments: This exposure time give:	s S/N=30 at 1300A (wavelength of redde	st, faintest window	·).		

Proposal 16850 - G130M/1222 Feige 48 (03) - FUV Focus Sweep for COS: LP6 Enabling

51	Move to -80 N	IONE	COS, ALIGN/OSM		FOCUS=-800		0 Secs (0 Secs)	
	0						[==>]	[3]
52	1222B_f-80 (4	4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3;	POS TARG 0.0,0.0	100 Secs (100 Secs)	
	0 (COS.sp.153 6398)			1222 A	BUFFER-TIME=20 0;		[==>]	
	0398)				WAVECAL=NO;			
					FLASH=NO;			[3]
					LIFETIME-POS=L P6;			
					SEGMENT=B			
53	Move to -10 N	NONE	COS, ALIGN/OSM		FOCUS=-1000		0 Secs (0 Secs)	
00								
	00						[==>]	[3]
	1222B_f-10 (4	4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M	FP-POS=3;	POS TARG 0.0,0.0	[==>] 100 Secs (100 Secs)	[3]
	1222B_f-10 (4 00 (COS.sp.153	4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; BUFFER-TIME=20 0;	*	1 - 1	[3]
	1222B_f-10 (4	4) FEIGE-48	COS/FUV, TIME-TAG, PSA		BUFFER-TIME=20	*	100 Secs (100 Secs)	[3]
	1222B_f-10 (4 00 (COS.sp.153	4) FEIGE-48	COS/FUV, TIME-TAG, PSA		BUFFER-TIME=20 0;	*	100 Secs (100 Secs)	[3]
	1222B_f-10 (4 00 (COS.sp.153	4) FEIGE-48	COS/FUV, TIME-TAG, PSA		BUFFER-TIME=20 0; WAVECAL=NO;	*	100 Secs (100 Secs)	
54	1222B_f-10 (4 00 (COS.sp.153	4) FEIGE-48	COS/FUV, TIME-TAG, PSA		BUFFER-TIME=20 0; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L	*	100 Secs (100 Secs)	
54	1222B_f-10 (4 00 (COS.sp.153 6398)		COS/FUV, TIME-TAG, PSA VN=30 at 1300A (wavelength of redde.	1222 A	BUFFER-TIME=20 0; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6; SEGMENT=B	*	100 Secs (100 Secs)	
54	1222B_f-10 (4 00 (COS.sp.153 6398)	osure time gives S.		1222 A st, faintest window	BUFFER-TIME=20 0; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6; SEGMENT=B	*	100 Secs (100 Secs)	
54	1222B_f-10 (4 00 (COS.sp.153 6398)	osure time gives S.	/N=30 at 1300A (wavelength of redde	1222 A st, faintest window	BUFFER-TIME=20 0; WAVECAL=NO; FLASH=NO; LIFETIME-POS=L P6; SEGMENT=B	*	100 Secs (100 Secs)	







Proposal 16850 - G160M/1600 Feige 48 (04) - FUV Focus Sweep for COS: LP6 Enabling

	posai	10000 C 100W/ N	000 Feige 40 (04) - FOV FOCUS	owccp for OOO. Li o Litabil	ng	
	Proposal 1	16850, G160M/1600 Feige 4	8 (04), implementation			Tue Oct 19 11:00:45 GMT 2021
.±	Diagnostic	c Status: No Diagnostics				
/is	Scientific I	Instruments: COS, COS/FUV	/, COS/NUV			
_	Special Re	equirements: ON HOLD				
	On Hold C	Comments: Feige 48 observat	tions are supplementary in case the observing wind	low for the initial visits to AzV 75 close.		
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
ets	(4)	FEIGE-48	RA: 11 47 14.4421 (176.8101754d)	Proper Motion RA: -0.0035937440813851103	V=13.28	Reference Frame: ICRS
ge			Dec: +61 15 31.68 (61.25880d)	sec of time/yr		
Tarç			Equinox: J2000	Proper Motion Dec: -0.007394999965981697 arcsec/yr		
g				Epoch of Position: 2015.5		
I .≝			by the targetselector and retrieved from the SIMBA	AD database.		
证		EXT-STAR				
	Description Extended=					

Proposal 16850 - G160M/1600 Feige 48 (04) - FUV Focus Sweep for COS: LP6 Enabling

	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IMAG	(4) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				4 Secs (4 Secs)	
	E (COS.ta.153							[==>]	[1]
	7872)								[-]
	ments: S/N=30							T	
2	ACQ/IMAG E	(4) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				4 Secs (4 Secs)	
	(COS.ta.153 7872)							[==>]	[1]
Com	ments: S/N=30								
3	Initialize G1 60M/1600 at	(4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M	FP-POS=3;			0.1 Secs (0.1 Secs)	
	nominal ape			1600 A	BUFFER-TIME=11 0;			[==>]	
	rture and foc us position				WAVECAL=NO;				
	(COS.sp.153				FLASH=NO;				[1]
	6397)				LIFETIME-POS=L				
					P6				
Com	ments: This ex	posure sets the cor	rect instrument configuration before the	e aperture is moved.					
Preli	iminary G160N	1/1600 absolute foo	cus value f =+78						
4	Move to -10	NONE	COS, ALIGN/OSM		FOCUS=-1000			0 Secs (0 Secs)	
	00							[==>]	[1]
5	1600_f-1000	(4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=15			860 Secs (860 Secs)	
	(COS.sp.153 6397)			1600 A	0;			[==>]	
	,				FLASH=NO;				
					LIFETIME-POS=L P6:				[1]
					P6;				[1]
									[1]
Comi	ments: This ex	posure time gives S	S/N=28 at 1700A (wavelength of reddes	t, faintest window).	P6; WAVECAL=NO;				[1]
	•			,	P6; WAVECAL=NO; FP-POS=3				[1]
Wave	ecals are turne	ed off to mitigate lig	ght-leak issues above +5.5"/(i.e. WAVE	,	P6; WAVECAL=NO; FP-POS=3			0 Secs (0 Secs)	[1]
Wave	•	ed off to mitigate lig		,	P6; WAVECAL=NO; FP-POS=3			0 Secs (0 Secs) [==>]	
Wave	Move to -80 0	ed off to mitigate lig	ght-leak issues above +5.5"/(i.e. WAVE	,	P6; WAVECAL=NO; FP-POS=3			0 Secs (0 Secs) $I = > I$ 860 Secs (860 Secs)	
Vave	Move to -80 0 1600_f-800 (COS.sp.153	ed off to mitigate lig NONE	cos, ALIGN/OSM	CAL=NO, FLASH=	P6; WAVECAL=NO; FP-POS=3 NO) FOCUS=-800 BUFFER-TIME=15 0;			[==>]	
Wave	Move to -80 0	ed off to mitigate lig NONE	cos, ALIGN/OSM	CAL=NO, FLASH=	P6; WAVECAL=NO; FP-POS=3 NO) FOCUS=-800 BUFFER-TIME=15			[==>] 860 Secs (860 Secs)	
Wave	Move to -80 0 1600_f-800 (COS.sp.153	ed off to mitigate lig NONE	cos, ALIGN/OSM	CAL=NO, FLASH=	P6; WAVECAL=NO; FP-POS=3 NO) FOCUS=-800 BUFFER-TIME=15 0; FLASH=NO; LIFETIME-POS=L			[==>] 860 Secs (860 Secs)	[1]
Wave	Move to -80 0 1600_f-800 (COS.sp.153	ed off to mitigate lig NONE	cos, ALIGN/OSM	CAL=NO, FLASH=	P6; WAVECAL=NO; FP-POS=3 NO) FOCUS=-800 BUFFER-TIME=15 0; FLASH=NO; LIFETIME-POS=L P6;			[==>] 860 Secs (860 Secs)	[1]
Wave	Move to -80 0 1600_f-800 (COS.sp.153	ed off to mitigate lig NONE	cos, ALIGN/OSM	CAL=NO, FLASH=	P6; WAVECAL=NO; FP-POS=3 NO) FOCUS=-800 BUFFER-TIME=15 0; FLASH=NO; LIFETIME-POS=L P6; WAVECAL=NO;			[==>] 860 Secs (860 Secs)	[1]
Wave 6	Move to -80 0 1600_f-800 (COS.sp.153 6397)	NONE (4) FEIGE-48	cht-leak issues above +5.5"/(i.e. WAVE) COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA	G160M 1600 A	P6; WAVECAL=NO; FP-POS=3 NO) FOCUS=-800 BUFFER-TIME=15 0; FLASH=NO; LIFETIME-POS=L P6;			[==>] 860 Secs (860 Secs)	[1]
Wave 5	Move to -80 0 1600_f-800 (COS.sp.153 6397)	NONE (4) FEIGE-48 posure time gives S	COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA 5/N=30 at 1700A (wavelength of reddes	G160M 1600 A	P6; WAVECAL=NO; FP-POS=3 NO) FOCUS=-800 BUFFER-TIME=15 0; FLASH=NO; LIFETIME-POS=L P6; WAVECAL=NO; FP-POS=3			[==>] 860 Secs (860 Secs)	[1]
Wave 6 7 Comi	Move to -80 0 1600_f-800 (COS.sp.153 6397)	none (4) FEIGE-48 posure time gives Seed off to mitigate light	COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1700A (wavelength of reddes the leak issues above +5.5"/(i.e. WAVE)	G160M 1600 A	P6; WAVECAL=NO; FP-POS=3 NO) FOCUS=-800 BUFFER-TIME=15 0; FLASH=NO; LIFETIME-POS=L P6; WAVECAL=NO; FP-POS=3			[==>] 860 Secs (860 Secs) [==>]	[1]
Wave 6 7 Comi	Move to -80 0 1600_f-800 (COS.sp.153 6397)	none (4) FEIGE-48 posure time gives Seed off to mitigate light	COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA 5/N=30 at 1700A (wavelength of reddes	G160M 1600 A	P6; WAVECAL=NO; FP-POS=3 NO) FOCUS=-800 BUFFER-TIME=15 0; FLASH=NO; LIFETIME-POS=L P6; WAVECAL=NO; FP-POS=3				[1]
Wave 6 7 Comi	Move to -80 0 1600_f-800 (COS.sp.153 6397) ments: This expecals are turne Move to -60	none (4) FEIGE-48 posure time gives Seed off to mitigate light	COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1700A (wavelength of reddes the leak issues above +5.5"/(i.e. WAVE)	G160M 1600 A	P6; WAVECAL=NO; FP-POS=3 NO) FOCUS=-800 BUFFER-TIME=15 0; FLASH=NO; LIFETIME-POS=L P6; WAVECAL=NO; FP-POS=3			[==>] 860 Secs (860 Secs) [==>]	[1]
Wave 6 7 Comi	Move to -80 0 1600_f-800 (COS.sp.153 6397) ments: This expecals are turne Move to -60	none (4) FEIGE-48 posure time gives Seed off to mitigate light	COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1700A (wavelength of reddes the leak issues above +5.5"/(i.e. WAVE)	G160M 1600 A	P6; WAVECAL=NO; FP-POS=3 NO) FOCUS=-800 BUFFER-TIME=15 0; FLASH=NO; LIFETIME-POS=L P6; WAVECAL=NO; FP-POS=3				[1]

	1600_f-600 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=15	860 Secs (860 Secs)	
	(COS.sp.153 6397)		1600 A	0;	[==>]	
	0391)			FLASH=NO;		
				LIFETIME-POS=L P6;		[2
				WAVECAL=NO;		
				FP-POS=3		
⁷ on	ments: This exposure time gives	S/N=30 at 1700A (wavelength of redde	est faintest window			
	•	ght-leak issues above +5.5"/(i.e. WAVE				
	Move to -40 NONE	COS, ALIGN/OSM	TOTIL - IVO, I ENGI	FOCUS=-400	0 Secs (0 Secs)	
	0				[==>]	[2
1	1600_f-400 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=15	860 Secs (860 Secs)	
	(COS.sp.153 6397)		1600 A	0;	[==>]	
				FLASH=NO;		
				LIFETIME-POS=L P6;		[2
				WAVECAL=NO;		
				FP-POS=3		
Con	ments: This exposure time gives	S/N=30 at 1700A (wavelength of redde	st, faintest window).		
Wav	recals are turned off to mitigate li	ght-leak issues above +5.5"/(i.e. WAVE	ECAL=NO, FLASH	=NO)		
12	Move to -20 NONE	COS, ALIGN/OSM		FOCUS=-200	0 Secs (0 Secs)	
					[==>]	[2
13	1600_f-200 (4) FEIGE-48	· · · · · · · · · · · · · · · · · · ·	G160M	BUFFER-TIME=15 0;	860 Secs (860 Secs)	
	(COS.sp.153 6397)		1600 A	FLASH=NO;	[==>]	
				LIFETIME-POS=L		
				P6;		[2
				WAVECAL=NO;		
				FP-POS=3		
Con	nments: This exposure time gives	S/N=30 at 1700A (wavelength of redde	st, faintest window,).		
	•	S/N=30 at 1700A (wavelength of redde ght-leak issues above +5.5"/(i.e. WAVE		=NO)		
Wav	vecals are turned off to mitigate lig Move to -10 NONE				0 Secs (0 Secs)	
<i>Wav</i> 14	necals are turned off to mitigate light Move to -10 NONE	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	ECAL=NO, FLASH	=NO) FOCUS=-100	[==>]	[3
<i>Wav</i> 14	Move to -10 NONE 0 1600_f-100 (4) FEIGE-48	ght-leak issues above +5.5"/(i.e. WAVE	G160M	FOCUS=-100 BUFFER-TIME=15	[==>] 860 Secs (860 Secs)	[3
<i>Wav</i> 14	necals are turned off to mitigate light Move to -10 NONE	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	ECAL=NO, FLASH	FOCUS=-100 BUFFER-TIME=15 0;	[==>]	
<i>Wav</i> 14	Move to -10 NONE 0 1600_f-100 (4) FEIGE-48 (COS.sp.153	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	G160M	FOCUS=-100 BUFFER-TIME=15 0; FLASH=NO;	[==>] 860 Secs (860 Secs)	
<i>Wav</i> 14	Move to -10 NONE 0 1600_f-100 (4) FEIGE-48 (COS.sp.153	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	G160M	FOCUS=-100 BUFFER-TIME=15 0;	[==>] 860 Secs (860 Secs)	
<i>Wav</i> 14	Move to -10 NONE 0 1600_f-100 (4) FEIGE-48 (COS.sp.153	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	G160M	FOCUS=-100 BUFFER-TIME=15 0; FLASH=NO; LIFETIME-POS=L	[==>] 860 Secs (860 Secs)	
<i>Wav</i> 14	Move to -10 NONE 0 1600_f-100 (4) FEIGE-48 (COS.sp.153	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	G160M	FOCUS=-100 BUFFER-TIME=15 0; FLASH=NO; LIFETIME-POS=L P6;	[==>] 860 Secs (860 Secs)	
14 115	Move to -10 NONE 1600_f-100 (4) FEIGE-48 (COS.sp.153 6397)	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM	G160M 1600 A	FOCUS=-100 BUFFER-TIME=15 0; FLASH=NO; LIFETIME-POS=L P6; WAVECAL=NO; FP-POS=3	[==>] 860 Secs (860 Secs)	
Wav 14 15 Con Wav	Move to -10 NONE 1600_f-100 (4) FEIGE-48 (COS.sp.153 6397) ments: This exposure time gives a specals are turned off to mitigate light and the specals are turned off to mitigate light.	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1700A (wavelength of redde	G160M 1600 A	FOCUS=-100 BUFFER-TIME=15 0; FLASH=NO; LIFETIME-POS=L P6; WAVECAL=NO; FP-POS=3).	[==>] 860 Secs (860 Secs) [==>]	
Wav 14 15 Con Wav	Move to -10 NONE 1600_f-100 (4) FEIGE-48 (COS.sp.153 6397) ments: This exposure time gives in the second of the mitigate light of	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1700A (wavelength of redde	G160M 1600 A	FOCUS=-100 BUFFER-TIME=15 0; FLASH=NO; LIFETIME-POS=L P6; WAVECAL=NO; FP-POS=3	[==>] 860 Secs (860 Secs) [==>] 0 Secs (0 Secs)	
Wav 14 15 Con Wav	Move to -10 NONE 1600_f-100 (4) FEIGE-48 (COS.sp.153 6397) ments: This exposure time gives a specals are turned off to mitigate light and the specals are turned off to mitigate light.	ght-leak issues above +5.5"/(i.e. WAVE COS, ALIGN/OSM COS/FUV, TIME-TAG, PSA S/N=30 at 1700A (wavelength of redde	G160M 1600 A	FOCUS=-100 BUFFER-TIME=15 0; FLASH=NO; LIFETIME-POS=L P6; WAVECAL=NO; FP-POS=3).	[==>] 860 Secs (860 Secs) [==>]	[3

17	1600_f_0 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=15	860 Secs (860 Secs)	
	(COS.sp.153 6397)		1600 A	0;	[==>]	
	0391)			FLASH=NO;		
				LIFETIME-POS=L P6;		[3
				WAVECAL=NO;		
				FP-POS=3		
Con	ments: This exposure time gives S	S/N=30 at 1700A (wavelength of redde	st faintest window			
	•	ght-leak issues above +5.5"/(i.e. WAVI	·			
	Move to +10 NONE	COS, ALIGN/OSM	ECAL=NO, FLASII	FOCUS=+100	0 Secs (0 Secs)	
	0				[==>]	[3]
19	1600_f+100 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=15	860 Secs (860 Secs)	
	(COS.sp.153 6397)		1600 A	0;	[==>]	
	0371)			FLASH=NO;		
				LIFETIME-POS=L P6;		[3]
				WAVECAL=NO;		
				FP-POS=3		
Con	ments: This exposure time gives S	S/N=30 at 1700A (wavelength of redde	st, faintest window			
	1	ght-leak issues above +5.5"/(i.e. WAVI				
	Move to +20 NONE	COS, ALIGN/OSM	,	FOCUS=+200	0 Secs (0 Secs)	
	0				[==>]	[4
21	1600_f+200 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=15	860 Secs (860 Secs)	
	(COS.sp.153 6397)		1600 A	0;	[==>]	
	,			FLASH=NO;		
				LIFETIME-POS=L P6;		[4]
				WAVECAL=NO;		
				FP-POS=3		
Con	nments: This exposure time gives S	S/N=30 at 1700A (wavelength of redde	st, faintest window).		
Waı	vecals are turned off to mitigate lig	ght-leak issues above +5.5"/(i.e. WAVI	ECAL=NO, FLASH	(=NO)		
22	Move to +40 NONE	COS, ALIGN/OSM		FOCUS=+400	0 Secs (0 Secs)	
					[==>]	[4]
23	1600_f+400 (4) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=15	860 Secs (860 Secs)	
	(COS.sp.153 6397)		1600 A	0; FLASH=NO;	[==>]	
				LIFETIME-POS=L		
				P6;		[4
				WAVECAL=NO;		
				FP-POS=3		
Con	nments: This exposure time gives S	S/N=30 at 1700A (wavelength of redde	st, faintest window).		
Waı	ecals are turned off to mitigate lig	ght-leak issues above +5.5"/(i.e. WAVI	ECAL=NO, FLASH	,		
	Move to +60 NONE	COS, ALIGN/OSM		FOCUS=+600	0 Secs (0 Secs)	
24	0				[==>]	1
24					1, ,	
24					1	[4]

Proposal 16850 - G160M/1600 Feige 48 (04) - FUV Focus Sweep for COS: LP6 Enabling 1600_f+600 (4) FEIGE-48 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=15 860 Secs (860 Secs) (COS.sp.153 6397) 0: 1600 A *[==>1* FLASH=NO; LIFETIME-POS=L [4] P6; WAVECAL=NO; FP-POS=3 Comments: This exposure time gives S/N=30 at 1700A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) 26 Move to +80 NONE COS, ALIGN/OSM FOCUS=+800 0 Secs (0 Secs) I = = > 1[5] 1600_f+800 (4) FEIGE-48 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=15 860 Secs (860 Secs) (COS.sp.153 1600 A I = = > 16397) FLASH=NO; LIFETIME-POS=L [5] WAVECAL=NO; FP-POS=3 Comments: This exposure time gives S/N=30 at 1700A (wavelength of reddest, faintest window). Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO) Move to +10 NONE COS, ALIGN/OSM FOCUS=+1000 0 Secs (0 Secs) *[5]* 1600_f+100 (4) FEIGE-48 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=15 860 Secs (860 Secs) 1600 A [==>] (COS.sp.153 FLASH=NO; 6397) LIFETIME-POS=L [5] P6; WAVECAL=NO; FP-POS=3 Comments: This exposure time gives S/N=30 at 1700A (wavelength of reddest, faintest window).

Wavecals are turned off to mitigate light-leak issues above +5.5"/(i.e. WAVECAL=NO, FLASH=NO)

COS, ALIGN/OSM

30 Move to 0 NONE

FOCUS=0

0 Secs (0 Secs)

[5]

I==>1

