16491 - FUV Focus Sweep Exploratory Program for COS at LP6

Cycle: 28, Proposal Category: CAL/COS

(Availability Mode: RESTRICTED)

INVESTIGATORS

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VISITS

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
01	(1) FEIGE-48 NONE	COS COS/FUV COS/NUV	2	13-May-2021 09:00:19.0	yes
02	(1) FEIGE-48 NONE	COS COS/FUV COS/NUV	2	13-May-2021 09:00:24.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
03	(1) FEIGE-48 DARK NONE	COS COS/FUV COS/NUV S/C	2	13-May-2021 09:00:29.0	yes
04	(1) FEIGE-48 NONE	COS COS/FUV COS/NUV	3	13-May-2021 09:00:34.0	yes
05	(1) FEIGE-48 NONE	COS COS/FUV COS/NUV	3	13-May-2021 09:00:38.0	yes
06	(1) FEIGE-48 DARK NONE	COS COS/FUV COS/NUV S/C	3	13-May-2021 09:00:43.0	yes

15 Total Orbits Used

ABSTRACT

This program is designed to search for the best focus for the G130M/1222 and G160M/1600 settings at 7", 9", 11" on the FUV detector as an exploratory program for Lifetime Position 6 (LP6). 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 of -350, 50, and 550 and 650, 1100, 1600 for the G130M/1222 and G160M/1600 settings, respectively, which were determined by extrapolation from adjacent focuses. This strategy is based on several earlier programs (LENA2 program at LP3 - ID 13635; LP4 focus sweep exploratory program - ID 14527; New COS/FUV cenwave focus sweep program - ID 15451), which all executed successfully. We will adjust the focus in steps of 200 as is typical for focus sweeps.

The target for this program is Feige 48, as in previous G130M focus sweeps such as PIDs 14527 and 14874. The exposure times at each step are defined to provide spectra with S/N > 30 in the G130M observations.

OBSERVING DESCRIPTION

Program structure: 6 visits NUV- ACQ/IMAGE - BOA/MIRRORA used in all 6 visits
Aperture moved to LP6_n position
Exposures designed to obtain minimum required S/N (30 / resolution element)

V01 - 03: Feige 48: G130M/1222 sweep at +7", +9", +11"
FUVB focus range: [-1000, +1000] sweep of relative focus in 200 step increments SEE EDITS BELOW
Sweep performed with FUVB only (FUVA off) to optimize the focus at the shorter wavelengths accessible with FUVB alone.

V04 - 06: Feige 48: G160M/1600 sweep at +7", +9", +11"
Visit 04/05: FUVA/B focus range: [-1000, +1000] sweep of relative focus in 200 step increments
Visit 06: FUVA/B focus range: [-1000, +800] sweep of relative focus in 200 step increments SEE EDITS BELOW

Range reduced to prevent passing upper soft stop of focus (+2505)
Wavecals are turned off to mitigate light-leak issues above +5.5" (i.e. WAVECAL=NO, FLASH=NO)
Data need to by-pass calibration and should therefore be unassociated

How are the focus values calculated? As LP6 is not yet defined, all moves are performed relative to LP2, including the aperture placement and focus.
Aperture Placement: Placement of the aperture at the three LP6 positions requires the following Optional Parameter / Special Requirement commands:

LP	Position on detector	POS TARG Y (Difference from LP2)	XAPER (Assumes 21 motor steps per ")
LP2	+3.5"	0"	0
LP6_1	+7.0"	+3.5"	-74
LP6_2	+9.0"	+5.5"	-116
LP6_3	+11.0"	+7.5"	-158

Focus: when performing a relative focus sweep of -1000 to +1000 steps across the estimated zero-point focus for the LP6 positions, those focus values are defined relative to the LP2 zero-point. The tables below give :

a) the absolute zero-point focus value for LP2 and the estimated absolute zero-point focus values across the three LP6 positions.

b) the relative focus sweep values at LP6 (-1000 to +1000) and the corresponding relative focus values from LP2

LP6 focus step relative to LP2 = LP6 focus step + (LP6 estimated absolute focus - LP2 absolute focus)

c) the resultant absolute focus values for each of the relative focus value moves.

Absolute focus step = LP2 focus + LP6 focus step relative to LP2

G130M/1222

a) Absolute Focus

LP2	LP6_1	LP6_2	LP6_3	LP6_3_NEW
-81	-350	50	550	550

b)

LP6 Focus step	Relative from LP2			LP6_3_NEW Focus Step
-1000	-540	-140	360	-1240	-2600
-800	-340	60	560	-840	-2200
-600	-140	260	760	-440	-1800
-400	60	460	960	-40	-1400
-200	260	660	1160	160	-1200
0	460	860	1360	360	-1000
200	660	1060	1560	760	-600
400	860	1260	1760	1160	-200
600	1060	1460	1960	1560	200
800	1260	1660	2160	1960	600
1000	1460	1860	2360	2360	1000

c)

Absolute from LP2			
-1350	-950	-450	-2050
-1150	-750	-250	-1650
-950	-550	-50	-1250
-750	-350	150	-850
-550	-150	350	-650

-350	50	550	-450	
-150	250	750	-50	
50	450	950	350	
250	650	1150	750	
450	850	1350	1150	
650	1050		1550	1550

EDIT 4/26/21 : AFTER INITIAL SWEEPS G130M/1222 LP6_1 AND LP6_2, FOCUS SWEEP MINIMA WERE FOUND TO BE VERY NEGATIVE (~-600, -900 RESPSECTIVELY). SWEEP FOCUS VALUES FOR LP6_3 WERE EXTENDED TO ADDRESS CONCERNS THAT FOCUS SWEEP MINIMUM WOULD FALL OUTSIDE GIVEN FOCUS RANGE. UPDATED RELATIVE AND ABSOLUTE FOCUS POSITIONS ARE PROVIDED IN COLUMN 'LP6_3_NEW', WITH THE NEW RELATIVE STEPS RANGING BETWEEN [-2600,+1000] IN 400 STEP INCREMENTS AND 200 STEP INCREMENTS AROUND -1200, THE ESTIMATED FOCUS MINIMUM.

G160M/1600

a) Absolute Focus

LP2	LP6_1	LP6_2	LP6_3	LP6_3_NEW
+116	+650	+1100	+1600	+1600

b) LP6 Focus step Relative from LP2 LP6_3_NEW Focus Step

-1000	-466	-16	484	-916	-2400
-800	-266	184	684	-516	-2000
-600	-66	384	884	-116	-1600
-400	134	584	1084	84	-1400
-200	334	784	1284	284	-1200
0	534	984	1484	484	-1000
200	734	1184	1684	684	-800
400	934	1384	1884	1084	-400
600	1134	1584	2084	1484	0
800	1334	1784	2284	1884	400
1000	1534	1984	(2484)		

c)

			Absolute from LP2
-350	100	600	-800
-150	300	800	-400
50	500	1000	0
250	700	1200	200
450	900	1400	400
650	1100	1600	600
850	1300	1800	800
1050	1500	2000	1200
1250	1700	2200	1600
1450	1900	2400	2000
1650	2100	(2600)	

EDIT 5/05/21 : AFTER INITIAL SWEEPS G160M/1600 LP6_1 AND LP6_2, FOCUS SWEEP MINIMA WERE *ALSO* FOUND TO BE VERY NEGATIVE (~-600, -900 RESPSECTIVELY). SWEEP FOCUS VALUES FOR LP6_3 WERE EXTENDED TO ADDRESS CONCERNS THAT FOCUS SWEEP MINIMUM WOULD FALL OUTSIDE GIVEN FOCUS RANGE. UPDATED RELATIVE AND ABSOLUTE FOCUS POSITIONS ARE PROVIDED IN COLUMN 'LP6_3_NEW', WITH THE NEW RELATIVE STEPS RANGING BETWEEN [-2400,+400] IN 400 STEP INCREMENTS AND 200 STEP INCREMENTS AROUND -1200, THE ESTIMATED FOCUS MINIMUM.

EDIT 5/10/21: Additional changes are as follows.

Efforts to remove focus step intolerance issues. Both Visits include focus moves back toward a focus offset of 0. Visit 03 will step back through twelve 200 step intervals from the last observation position, while Visit 06 will step back through two larger intervals. Both visits will then obtain an exposure using a different cenwave at nominal aperture and focus position to attempt to zero out the tolerance issues, as using a different cenwave resets the OSM focus macro for LP2.

Special requirement exposures changing the flag for Focus Step Intolerance. Each Visit includes an early exposure (X.004) that will contain verbiage to increase the tolerance level to 30 steps and dissuade the telescope from giving us a warning about how the focus steps are acting weird. We then include a final exposure at the end of each visit undoing this change, with further verbiage reducing the tolerance level back to 15 steps.

---SPECIAL REQUESTS:

1. Turn off calibration for the COS/FUV exposures.
2. Disassociate all exposures. SQL is required to perform these actions.

Visit 3 is ON HOLD until the data from visits 1 and 2 is analysed. EDIT 5/12/21: RESUBMITTED TO PROCEED WITH VISIT 03.
Visit 6 is OH HOLD until the data from visits 4 and 5 is analysed. EDIT 5/12/21: RESUBMITTED TO PROCEED WITH VISIT 06.

Visit

Proposal 16491, G130M_1222_focus_7arcsec_LP6_1 (01), completed Thu May 13 13:00:44 GMT 2021

Diagnostic Status: Warning

Scientific Instruments: COS, COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: LP2 Focus: -810
LP6_1 Estimated Focus: -350

LP6 focus step relative to LP2 = LP6 focus step + (LP6 estimated absolute focus - LP2 absolute focus)

Focus points set relative to LP2 for LP6_1 :
Focus range relative to LP6 zero-point [-1000,+1000]
Focus range relative to LP2 zero-point [-540, +1460]

Absolute focus step = LP2 focus + LP6 focus step relative to LP2

Absolute focus range = [-1350, +650]

- Bypass calibration for the COS/FUV exposures.
- Disassociate all exposures.

Diagnostics

(G130M_1222_focus_7arcsec_LP6_1 (01)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(G130M_1222_focus_7arcsec_LP6_1 (01)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	FEIGE-48	RA: 11 47 14.4421 (176.8101754d) Dec: +61 15 31.68 (61.25880d) Equinox: J2000	Proper Motion RA: -0.0035937440813851103 sec of time/yr Proper Motion Dec: -0.007394999965981697 arcsec/yr Epoch of Position: 2015.5	V=13.28	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=CALIBRATION
Description=[FOCUS TEST]
Extended=NO

Exposures

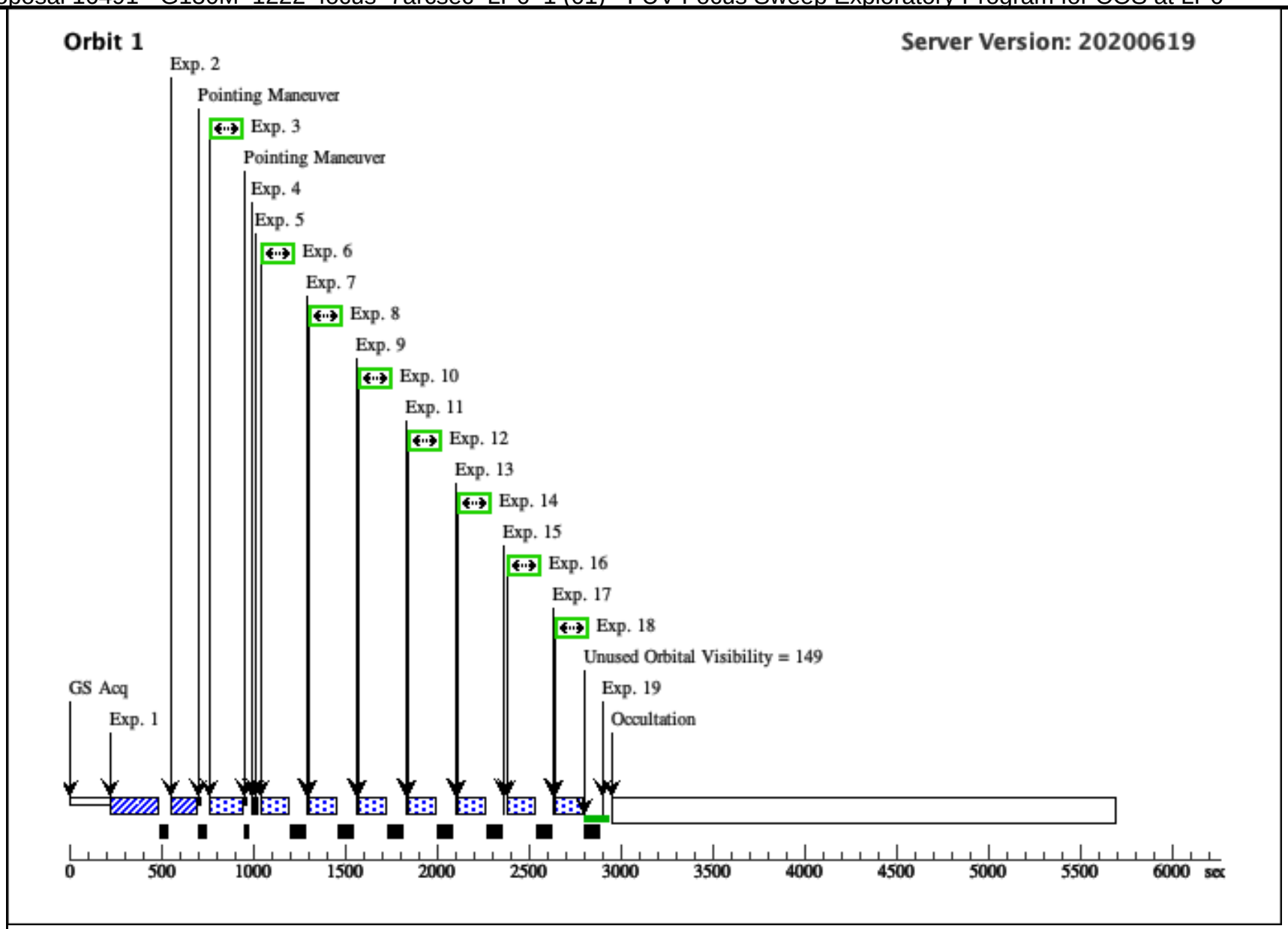
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IMAGE (COS.ta.607556)	(1) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				16 Secs (16 Secs) *[==>]*	*[1]*
2	ACQ/IMAGE (COS.ta.607556)	(1) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				16 Secs (16 Secs) *[==>]*	*[1]*
3	Initialize G130M/1222 at nominal aperture and focus position (COS.sp.606970)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; BUFFER-TIME=110; WAVECAL=NO; FLASH=NO; SEGMENT=B; LIFETIME-POS=LP2			0.1 Secs (0.1 Secs) *[==>]*	*[1]*
	Comments: This exposure sets the correct instrument configuration before the aperture is moved.								
4	Place aperture at +7.0 arcsec in XD	NONE	COS, ALIGN/APER		XAPER=-74; YAPER=0.0			0.0 Secs (0 Secs) *[==>]*	*[1]*
	Comments: Assumes 21 motor steps per " in XAPER. *This command moves the PSA from +3.5" (LP2) to +7.0" (LP6_1) - difference of +3.5"*								
5	Move to -1000 (=-540 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=-540			0 Secs (0 Secs) *[==>]*	*[1]*
	Comments: G130M/1222 focus at LP2: -810 *G130M/1222 focus at LP6_1: -350* *-1000 focus at LP6 using LP5 focus = -1000-(-350+810) = -540*								
6	1222_B_f-1000 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	POS TARG 0.0,+3.5		100 Secs (100 Secs) *[==>]*	*[1]*
	Comments: This exposure time give a S/N=30 at 1150 *Wavecals are turned off to mitigate light-leak issues above +5.5"|(i.e. WAVECAL=NO, FLASH=NO)*								
7	Move to -800 (=-340 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=-340			0 Secs (0 Secs) *[==>]*	*[1]*

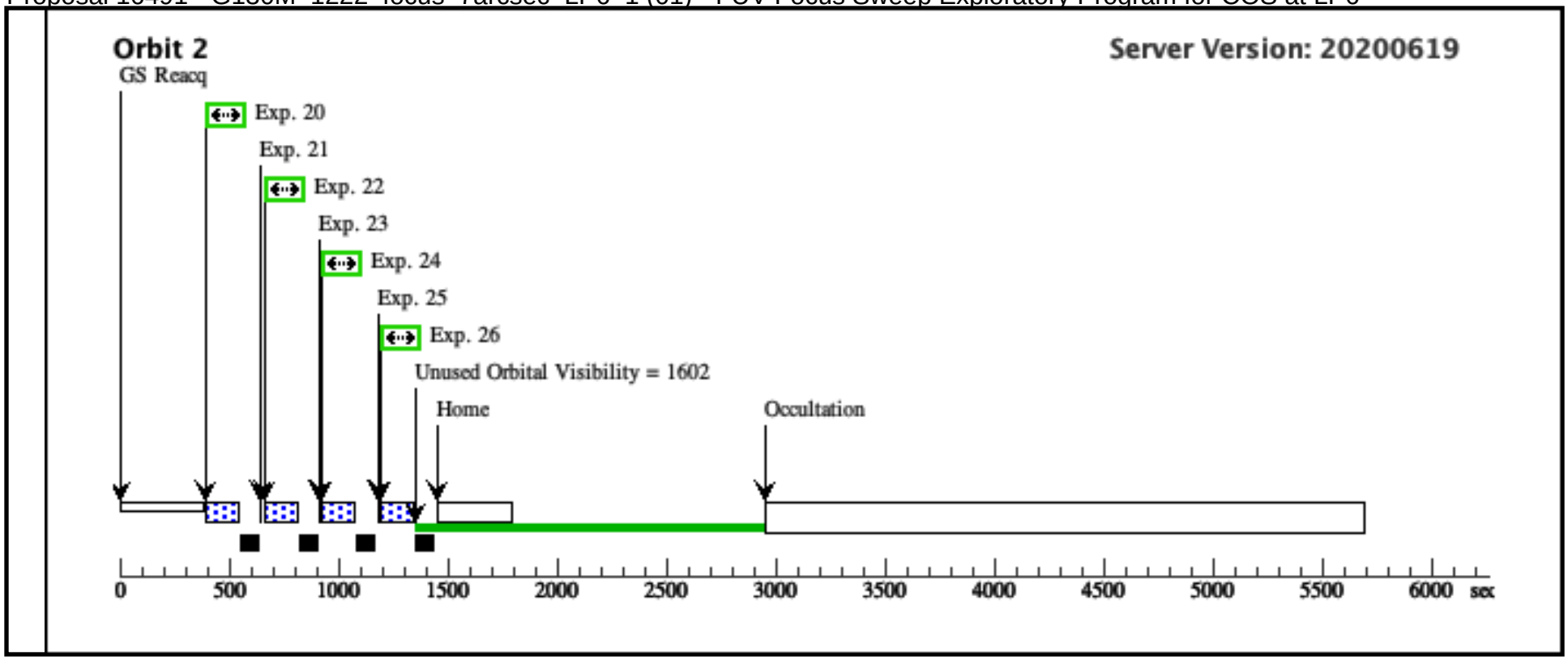
8	1222_B_f-800 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		***[1]***
Comments: This exposure time give a S/N=30 at 1150									
9	Move to -600 (=-140 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=-140		0 Secs (0 Secs) *[==>]*		***[1]***
10	1222_B_f-600 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		***[1]***
Comments: This exposure time give a S/N=30 at 1150									
11	Move to -400 (=+60 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+60		0 Secs (0 Secs) *[==>]*		***[1]***
12	1222_B_f-400 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		***[1]***
Comments: This exposure time give a S/N=30 at 1150									
13	Move to -200 (=+260 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+260		0 Secs (0 Secs) *[==>]*		***[1]***
14	1222_B_f-200 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		***[1]***
Comments: This exposure time give a S/N=30 at 1150									

15	Move to 0 (=+460 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+460		0 Secs (0 Secs) *[==>]*		***[1]***
16	1222_B_f-0 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		***[1]***
Comments: This exposure time give a S/N=30 at 1150									
17	Move to +200 (=+660 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+660		0 Secs (0 Secs) *[==>]*		***[1]***
18	1222_B_f+200 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		***[1]***
Comments: This exposure time give a S/N=30 at 1150									
19	Move to +400 (=+860 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+860		0 Secs (0 Secs) *[==>]*		***[1]***
20	1222_B_f+400 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		***[2]***
Comments: This exposure time give a S/N=30 at 1150									
21	Move to +600 (=+1060 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1060		0 Secs (0 Secs) *[==>]*		***[2]***

22	1222_B_f+600 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		
Comments: This exposure time give a S/N=30 at 1150									
23	Move to +800 (=+1260 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1260		0 Secs (0 Secs) *[==>]*		
24	1222_B_f+800 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		
Comments: This exposure time give a S/N=30 at 1150									
25	Move to +1000 (=+1460 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1460		0 Secs (0 Secs) *[==>]*		
26	1222_B_f+1000 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		
Comments: This exposure time give a S/N=30 at 1150									

Orbit Structure

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GS Reacq
Exp. 20
Exp. 21
Exp. 22
Exp. 23
Exp. 24
Exp. 25
Exp. 26
Unused Orbital Visibility = 1602
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16491, G130M_1222_focus_9arcsec_LP6_2 (02), completed Thu May 13 13:00:44 GMT 2021

Diagnostic Status: Warning

Scientific Instruments: COS, COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: LP2 Focus: -810
LP6_2 Estimated Focus: +50

LP6 focus step relative to LP2 = LP6 focus step + (LP6 estimated absolute focus - LP2 absolute focus)

Focus points set relative to LP2 for LP6_2 :
Focus range relative to LP6 zero-point [-1000,+1000]
Focus range relative to LP2 zero-point [-140, +1860]

Absolute focus step = LP2 focus + LP6 focus step relative to LP2

Absolute focus range = [-950, +1050]

- Bypass calibration for the COS/FUV exposures.
- Disassociate all exposures.

Diagnostics

(G130M_1222_focus_9arcsec_LP6_2 (02)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(G130M_1222_focus_9arcsec_LP6_2 (02)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	FEIGE-48	RA: 11 47 14.4421 (176.8101754d) Dec: +61 15 31.68 (61.25880d) Equinox: J2000	Proper Motion RA: -0.0035937440813851103 sec of time/yr Proper Motion Dec: -0.007394999965981697 arcsec/yr Epoch of Position: 2015.5	V=13.28	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=CALIBRATION
Description=[FOCUS TEST]
Extended=NO

Exposures

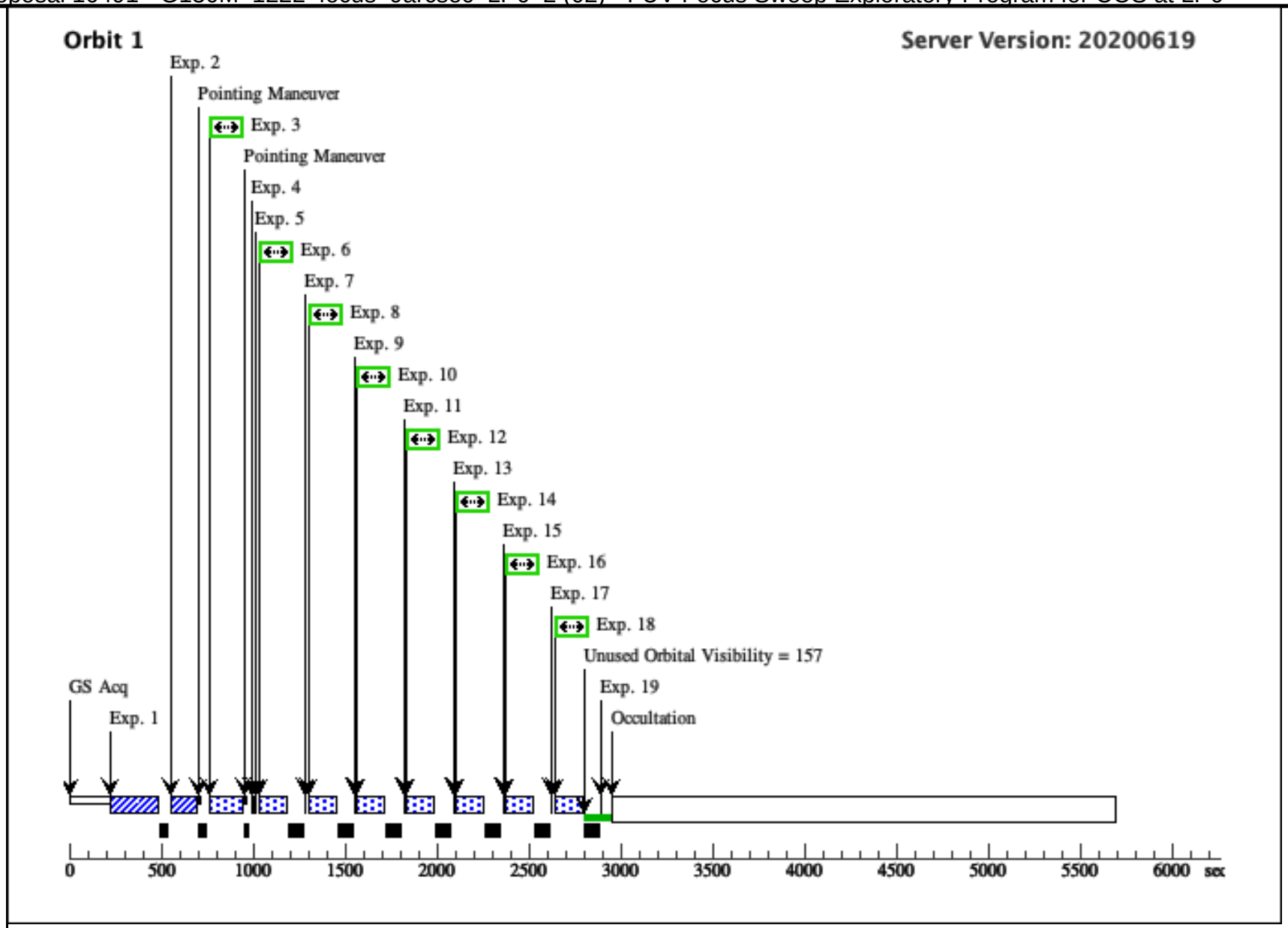
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IMAGE (COS.ta.607556)	(1) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				16 Secs (16 Secs) *[==>]*	*[1]*
2	ACQ/IMAGE (COS.ta.607556)	(1) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				16 Secs (16 Secs) *[==>]*	*[1]*
3	Initialize G130M/1222 at nominal aperture and focus position (COS.sp.606970)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; BUFFER-TIME=110; WAVECAL=NO; FLASH=NO; SEGMENT=B; LIFETIME-POS=LP2			0.1 Secs (0.1 Secs) *[==>]*	*[1]*
	Comments: This exposure sets the correct instrument configuration before the aperture is moved.								
4	Place aperture at +9.0 arcsec in XD	NONE	COS, ALIGN/APER		XAPER=-116; YAPER=0.0			0.0 Secs (0 Secs) *[==>]*	*[1]*
	Comments: Assumes 21 motor steps per " in XAPER. *This command moves the PSA from +3.5" (LP2) to +9.0" (LP6_2) - difference of +5.5"*								
5	Move to -1000 (=-140 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=-140			0 Secs (0 Secs) *[==>]*	*[1]*
	Comments: G130M/1222 focus at LP2: -880 *G130M/1222 focus at LP6_2: +50* *-1000 focus at LP6 using LP5 focus = -1000-(50+880) = -70*								
6	1222_B_f-1000 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	POS TARG 0.0,+5.5		100 Secs (100 Secs) *[==>]*	*[1]*
	Comments: This exposure time give a S/N=30 at 1150 *Wavecals are turned off to mitigate light-leak issues above +5.5"|(i.e. WAVECAL=NO, FLASH=NO)*								
7	Move to -800 (=+60 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+60			0 Secs (0 Secs) *[==>]*	*[1]*

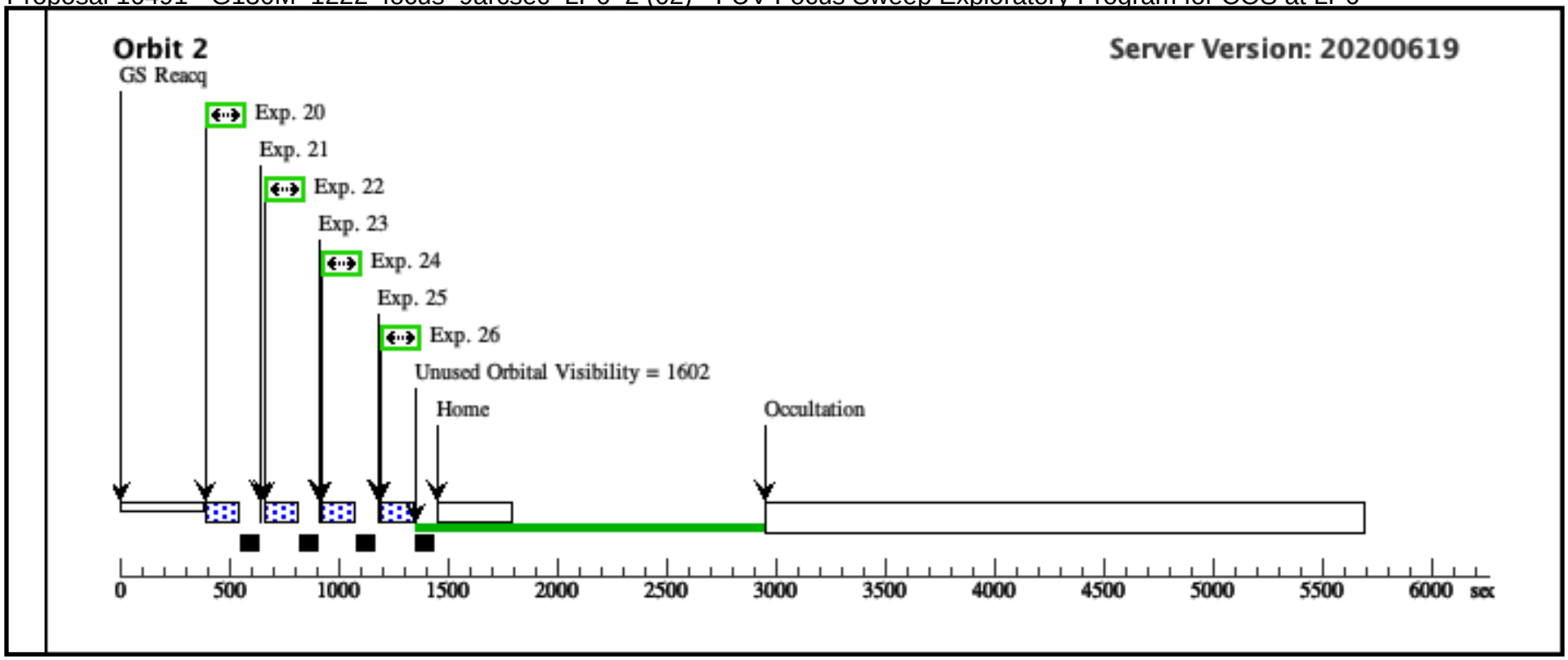
8	1222_B_f-800 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		***[1]***
Comments: This exposure time give a S/N=30 at 1150									
9	Move to -600 (=+260 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+260		0 Secs (0 Secs) *[==>]*		***[1]***
10	1222_B_f-600 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		***[1]***
Comments: This exposure time give a S/N=30 at 1150									
11	Move to -400 (=+460 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+460		0 Secs (0 Secs) *[==>]*		***[1]***
12	1222_B_f-400 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		***[1]***
Comments: This exposure time give a S/N=30 at 1150									
13	Move to -200 (=+660 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+660		0 Secs (0 Secs) *[==>]*		***[1]***
14	1222_B_f-200 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		***[1]***
Comments: This exposure time give a S/N=30 at 1150									

15	Move to 0 (=+860 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+860		0 Secs (0 Secs) *[==>]*		***[1]***
16	1222_B_f-0 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		***[1]***
Comments: This exposure time give a S/N=30 at 1150									
17	Move to +200 (=+1060 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1060		0 Secs (0 Secs) *[==>]*		***[1]***
18	1222_B_f+200 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		***[1]***
Comments: This exposure time give a S/N=30 at 1150									
19	Move to +400 (=+1260 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=1260		0 Secs (0 Secs) *[==>]*		***[1]***
20	1222_B_f+400 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*		***[2]***
Comments: This exposure time give a S/N=30 at 1150									
21	Move to +600 (=+1460 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1460		0 Secs (0 Secs) *[==>]*		***[2]***

22	1222_B_f+600 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*	***[2]***
Comments: This exposure time give a S/N=30 at 1150								
23	Move to +800 (=+1660 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1660		0 Secs (0 Secs) *[==>]*	***[2]***
24	1222_B_f+800 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*	***[2]***
Comments: This exposure time give a S/N=30 at 1150								
25	Move to +1000 (=+1860 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1860		0 Secs (0 Secs) *[==>]*	***[2]***
26	1222_B_f+1000 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 6	100 Secs (100 Secs) *[==>]*	***[2]***
Comments: This exposure time give a S/N=30 at 1150								

Orbit Structure

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Exp. 21
Exp. 22
Exp. 23
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Exp. 25
Exp. 26
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Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16491, G130M_1222_focus_11arcsec_LP6_3 (03), implementation Thu May 13 13:00:45 GMT 2021

Diagnostic Status: Error

Scientific Instruments: S/C, COS, COS/FUV, COS/NUV

Special Requirements: SCHED 100%

Comments: LP2 Focus: -810
LP6_3 Estimated Focus: +550

LP6 focus step relative to LP2 = LP6 focus step + (LP6 estimated absolute focus - LP2 absolute focus)

Focus points set relative to LP2 for LP6_3 :
Focus range relative to LP6 zero-point [-1000,+1000]
Focus range relative to LP2 zero-point [+360, +2360]

Absolute focus step = LP2 focus + LP6 focus step relative to LP2

Absolute focus range = [-450, +1550]

- Bypass calibration for the COS/FUV exposures.
- Disassociate all exposures.

Visit 3 is ON HOLD until the data from visits 1 and 2 is analysed.

Diagnostics

(Move to +1000 (=+2360 relative to 1222 LP2 focus) (03.026)) Error (Form): This attribute cannot have this value due to other choices: Optional_Parameter=FOCUS=+2360.
The value chosen is outside the legal range: Range = [-2000.0 2000.0] increment 1.0

(Move to +2160 relative to 1222 LP2 focus (03.028)) Error (Form): This attribute cannot have this value due to other choices: Optional_Parameter=FOCUS=+2160.
The value chosen is outside the legal range: Range = [-2000.0 2000.0] increment 1.0

(G130M_1222_focus_11arcsec_LP6_3 (03)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(G130M_1222_focus_11arcsec_LP6_3 (03)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	FEIGE-48	RA: 11 47 14.4421 (176.8101754d) Dec: +61 15 31.68 (61.25880d) Equinox: J2000	Proper Motion RA: -0.0035937440813851103 sec of time/yr Proper Motion Dec: -0.007394999965981697 arcsec/yr Epoch of Position: 2015.5	V=13.28	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=CALIBRATION
Description=[FOCUS TEST]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IMAGE (COS.ta.607556)	(1) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				16 Secs (16 Secs) *[==>]*	*[1]*
2	ACQ/IMAGE (COS.ta.607556)	(1) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				16 Secs (16 Secs) *[==>]*	*[1]*
3	Initialize G130M/1222 at nominal aperture and focus position (COS.sp.606970)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; BUFFER-TIME=110; WAVECAL=NO; FLASH=NO; SEGMENT=B; LIFETIME-POS=LP2			0.1 Secs (0.1 Secs) *[==>]*	*[1]*
Comments: This exposure sets the correct instrument configuration before the aperture is moved.									
4	Change the Focus Step Intolerance to 30	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELSETFOCTOL; QESIPARM POSTOL 30		2 Secs (2 Secs) *[==>]*	*[1]*
Comments: Special commanding exposure to set the focus step intolerance level higher and prevent warning flags from being raised.									
5	Place aperture at +11.0 arcsec in XD	NONE	COS, ALIGN/APER		XAPER=-158; YAPER=0.0			0.0 Secs (0 Secs) *[==>]*	*[1]*
Comments: Assumes 21 motor steps per " in XAPER. *This command moves the PSA from +3.5" (LP2) to +11.0" (LP6_3) = difference of +7.5"*									
6	Move to -2600 (=-1240 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=-1240			0 Secs (0 Secs) *[==>]*	*[1]*
Comments: G130M/1222 focus at LP2: -810 *G130M/1222 focus at LP6_3: +550* *-2600 focus at LP6 using LP2 focus = goal focus offset + difference between LP2 and (estimated) LP6_3 absolute focii = -2600 + (550+810) = -1240*									
7	1222_B_f-2600 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	POS TARG 0.0,+7.5		100 Secs (100 Secs) *[==>]*	*[1]*
Comments: This exposure time give a S/N=30 at 1150 *Wavecals are turned off to mitigate light-leak issues above +5.5"|(i.e. WAVECAL=NO, FLASH=NO)*									

8	Move to -2200 (=-840 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM			FOCUS=-840		0 Secs (0 Secs) *[==>]*	***[1]***
9	1222_B_f-2200 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A		FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 7	100 Secs (100 Secs) *[==>]*	***[1]***
Comments: This exposure time give a S/N=30 at 1150									
10	Move to -1800 (=-440 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM			FOCUS=-440		0 Secs (0 Secs) *[==>]*	***[1]***
11	1222_B_f-1800 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A		FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 7	100 Secs (100 Secs) *[==>]*	***[1]***
Comments: This exposure time give a S/N=30 at 1150									
12	Move to -1400 (=-40 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM			FOCUS=-40		0 Secs (0 Secs) *[==>]*	***[1]***
13	1222_B_f-1400 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A		FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 7	100 Secs (100 Secs) *[==>]*	***[1]***
Comments: This exposure time give a S/N=30 at 1150									
14	Move to -1200 (=+160 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM			FOCUS=+160		0 Secs (0 Secs) *[==>]*	***[1]***

15	1222_B_f-1200 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 7	100 Secs (100 Secs)	*[==>]*	***[1]***
Comments: This exposure time give a S/N=30 at 1150									
16	Move to -1000 (=+360 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+360		0 Secs (0 Secs)	*[==>]*	***[1]***
17	1222_B_f-1000 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 7	100 Secs (100 Secs)	*[==>]*	***[1]***
Comments: This exposure time give a S/N=30 at 1150									
18	Move to -600 (=+760 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+760		0 Secs (0 Secs)	*[==>]*	***[1]***
19	1222_B_f-600 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 7	100 Secs (100 Secs)	*[==>]*	***[1]***
Comments: This exposure time give a S/N=30 at 1150									
20	Move to -200 (=+1160 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1160		0 Secs (0 Secs)	*[==>]*	***[2]***
21	1222_B_f-200 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A	FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 7	100 Secs (100 Secs)	*[==>]*	***[2]***
Comments: This exposure time give a S/N=30 at 1150									

22	Move to +200 (=+1560 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM			FOCUS=+1560		0 Secs (0 Secs) *[==>]*	**[2]**
23	1222_B_f+200 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A		FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 7	100 Secs (100 Secs) *[==>]*	**[2]**
	Comments: This exposure time give a S/N=30 at 1150								
24	Move to +600 (=+1960 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM			FOCUS=+1960		0 Secs (0 Secs) *[==>]*	**[2]**
	Comments: Error flag for the focus value being outside the legal range: Range = [-2000.0 2000.0] is incorrect as the focus offset remains within the absolute focus range and does not pass the upper soft stop of focus (+2505). See proposal description for more information.								
25	1222_B_f+600 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A		FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 7	100 Secs (100 Secs) *[==>]*	**[2]**
	Comments: This exposure time give a S/N=30 at 1150								
26	Move to +1000 (=+2360 relative to 1222 LP2 focus)	NONE	COS, ALIGN/OSM			FOCUS=+2360		0 Secs (0 Secs) *[==>]*	**[2]**
	Comments: Error flag for the focus value being outside the legal range: Range = [-2000.0 2000.0] is incorrect as the focus offset remains within the absolute focus range and does not pass the upper soft stop of focus (+2505). See proposal description for more information.								
27	1222_B_f+1000 (COS.sp.607559)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1222 A		FP-POS=3; SEGMENT=B; BUFFER-TIME=129; LIFETIME-POS=LP2; WAVECAL=NO; FLASH=NO	SAME POS AS 7	100 Secs (100 Secs) *[==>]*	**[2]**
	Comments: This exposure time give a S/N=30 at 1150								

28	Move to +21 60 relative to 1222 LP2 focus	NONE	COS, ALIGN/OSM	FOCUS=+2160	0 Secs (0 Secs) *[==>]*	***[2]***

Comments: Exposures 3.028 - 3.039 are performed as an experiment to avoid intolerance issues moving back from large focus offsets.

Error flag for the focus value being outside the legal range: Range = [-2000.0 2000.0] is incorrect as the focus offset remains within the absolute focus range and does not pass the upper soft stop of focus (+2505). See proposal description for more information.

29	Move to +19 60 relative to 1222 LP2 focus	NONE	COS, ALIGN/OSM	FOCUS=+1960	0 Secs (0 Secs) *[==>]*	***[2]***

Comments: Exposures 3.028 - 3.039 are performed as an experiment to avoid intolerance issues moving back from large focus offsets.

30	Move to +17 60 relative to 1222 LP2 focus	NONE	COS, ALIGN/OSM	FOCUS=+1760	0 Secs (0 Secs) *[==>]*	***[2]***

Comments: Exposures 3.028 - 3.039 are performed as an experiment to avoid intolerance issues moving back from large focus offsets.

31	Move to +15 60 relative to 1222 LP2 focus	NONE	COS, ALIGN/OSM	FOCUS=+1560	0 Secs (0 Secs) *[==>]*	***[2]***

Comments: Exposures 3.028 - 3.039 are performed as an experiment to avoid intolerance issues moving back from large focus offsets.

32	Move to +13 60 relative to 1222 LP2 focus	NONE	COS, ALIGN/OSM	FOCUS=+1360	0 Secs (0 Secs) *[==>]*	***[2]***

Comments: Exposures 3.028 - 3.039 are performed as an experiment to avoid intolerance issues moving back from large focus offsets.

33	Move to +11 60 relative to 1222 LP2 focus	NONE	COS, ALIGN/OSM	FOCUS=+1160	0 Secs (0 Secs) *[==>]*	***[2]***

Comments: Exposures 3.028 - 3.039 are performed as an experiment to avoid intolerance issues moving back from large focus offsets.

34	Move to +960 relative to 1222 LP2 focus	NONE	COS, ALIGN/OSM	FOCUS=+960	0 Secs (0 Secs) *[==>]*	***[2]***

Comments: Exposures 3.028 - 3.039 are performed as an experiment to avoid intolerance issues moving back from large focus offsets.

35	Move to +760 relative to 1222 LP2 focus	NONE	COS, ALIGN/OSM	FOCUS=+760	0 Secs (0 Secs) *[==>]*	***[2]***

Comments: Exposures 3.028 - 3.039 are performed as an experiment to avoid intolerance issues moving back from large focus offsets.

36	Move to +560 relative to 1222 LP2 focus	NONE	COS, ALIGN/OSM	FOCUS=+560	0 Secs (0 Secs) *[==>]*	***[2]***

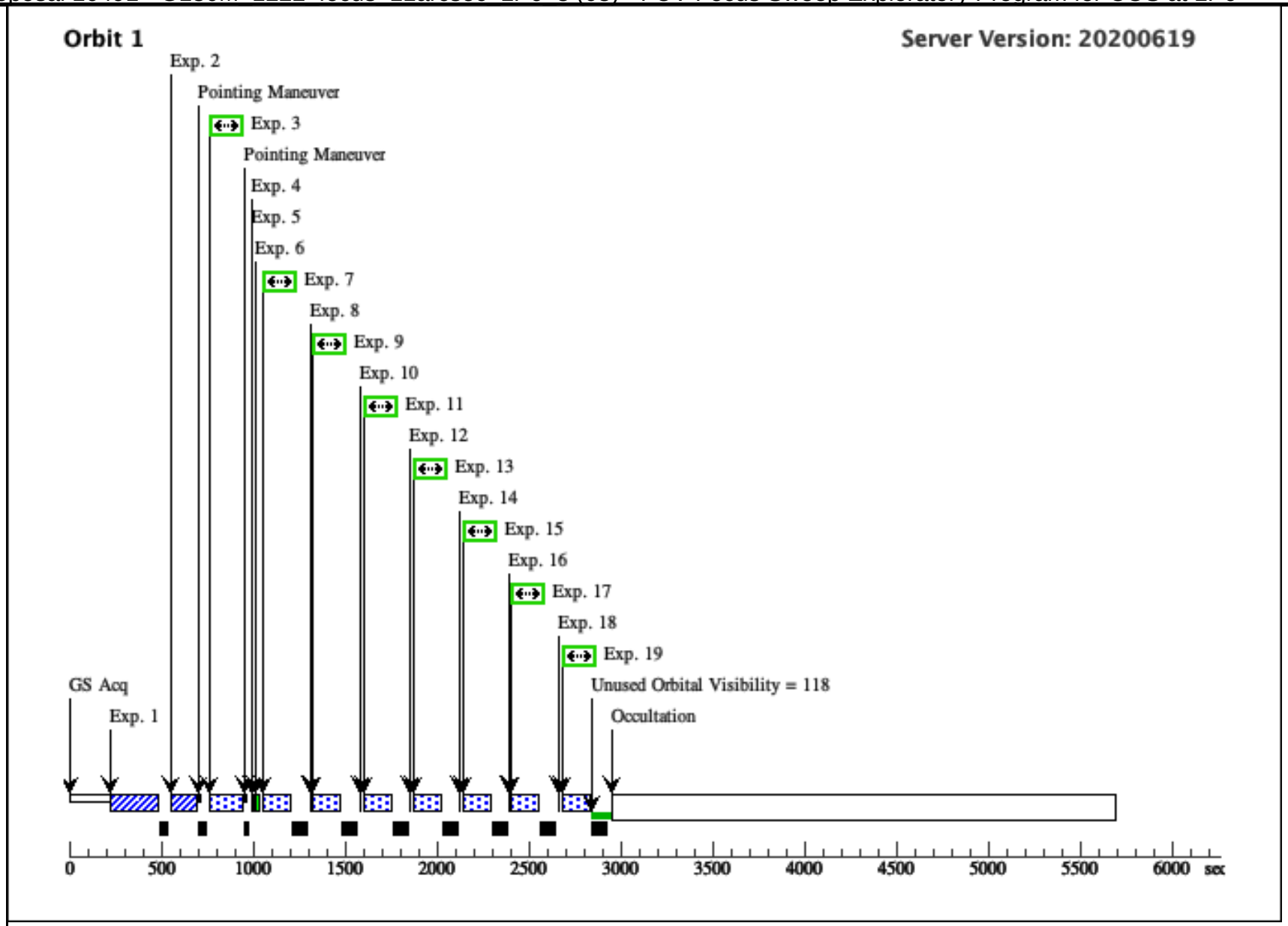
Comments: Exposures 3.028 - 3.039 are performed as an experiment to avoid intolerance issues moving back from large focus offsets.

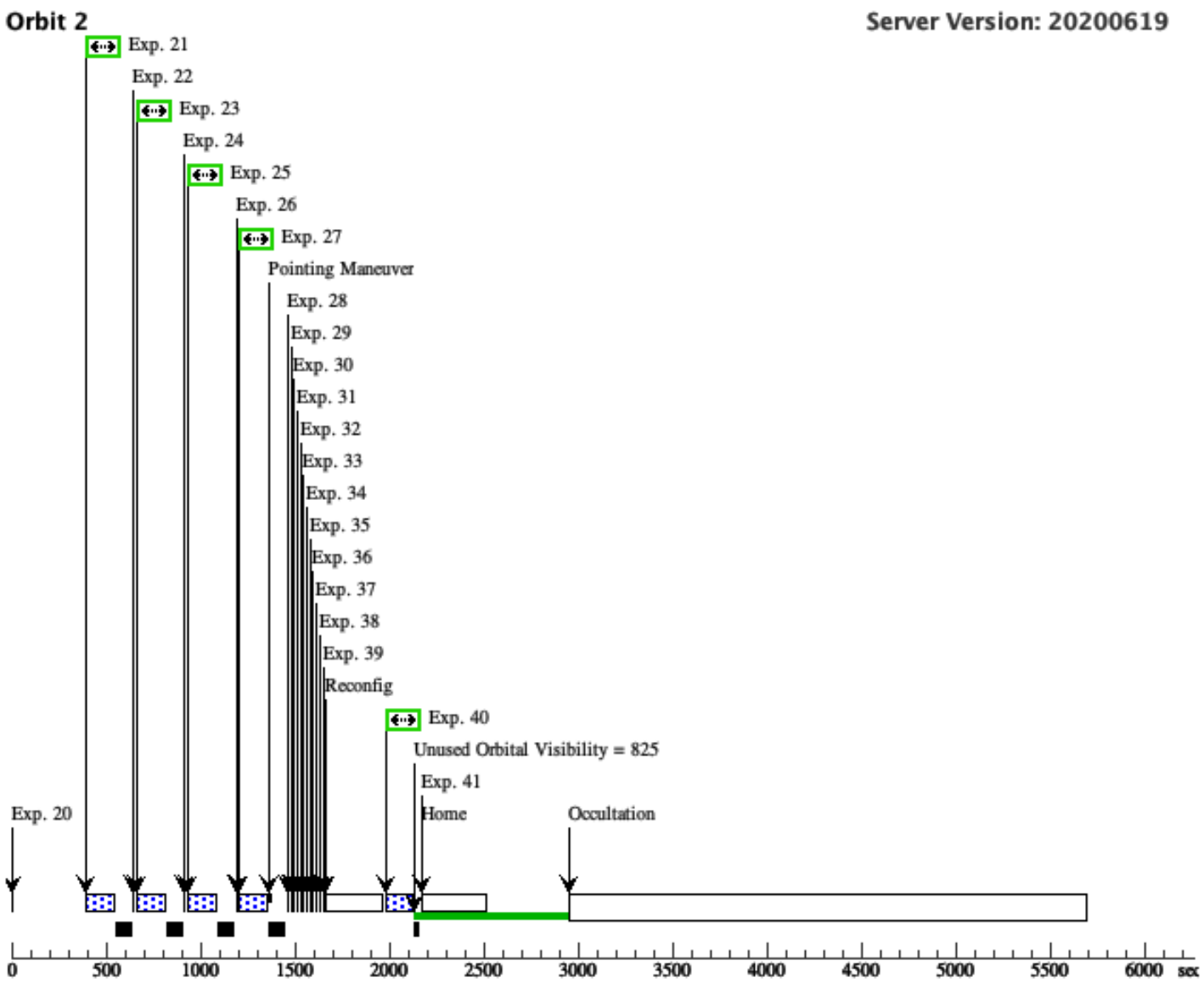
37	Move to +360 relative to 1222 LP2 focus	NONE	COS, ALIGN/OSM	FOCUS=+360	0 Secs (0 Secs) *[==>]*	***[2]***

Comments: Exposures 3.028 - 3.039 are performed as an experiment to avoid intolerance issues moving back from large focus offsets.

38	Move to +160 relative to 1222 LP2 focus	NONE	COS, ALIGN/OSM		FOCUS=+160	0 Secs (0 Secs) *[==>]*		***[2]***
Comments: Exposures 3.028 - 3.039 are performed as an experiment to avoid intolerance issues moving back from large focus offsets.								
39	Move to +0 relative to 1222 LP2 focus	NONE	COS, ALIGN/OSM		FOCUS=0	0 Secs (0 Secs) *[==>]*		***[2]***
Comments: Exposures 3.028 - 3.039 are performed as an experiment to avoid intolerance issues moving back from large focus offsets.								
40	Reset focus using G130M/1300 at LP2 (COS.sp.60821 9)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G130M 1300 A	FP-POS=3; BUFFER-TIME=1000; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	0.1 Secs (0.1 Secs) *[==>]*		***[2]***
Comments: This is an exposure using a different G130M cenwave (1300) at nominal aperture and focus position to attempt to zero out possible focus step intolerance issues. Using a different cenwave resets the OSM focus macro for LP2.								
41	Change the Focus Step Intolerance to 15	DARK	S/C, DATA, NONE		SAA CONTOUR 31; SPEC COM INSTR ELSETFOCTOL; QESIPARM POSTOL NOMINAL	2 Secs (2 Secs) *[==>]*		***[2]***
Comments: Special commanding exposure to set the focus step intolerance level higher and prevent warning flags from being raised.								

Orbit Structure

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Exp. 22
Exp. 23
Exp. 24
Exp. 25
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Exp. 27
Pointing Maneuver
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Exp. 30
Exp. 31
Exp. 32
Exp. 33
Exp. 34
Exp. 35
Exp. 36
Exp. 37
Exp. 38
Exp. 39
Reconfig
Exp. 40
Unused Orbital Visibility = 825
Exp. 41
Exp. 20
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16491, G160M_1600_focus_7arcsec_LP6_1 (04), completed Thu May 13 13:00:45 GMT 2021

Diagnostic Status: Warning

Scientific Instruments: COS, COS/FUV, COS/NUV

Special Requirements: (none)

Comments: LP2 Focus: +116
LP6_1 Estimated Focus: +650

LP6 focus step relative to LP2 = LP6 focus step + (LP6 estimated absolute focus - LP2 absolute focus)

Focus points set relative to LP2 for LP6_1 :
Focus range relative to LP6 zero-point [-1000,+1000]
Focus range relative to LP2 zero-point [-466, +1534]

Absolute focus step = LP2 focus + LP6 focus step relative to LP2

Absolute focus range = [-350, +1650]

- Bypass calibration for the COS/FUV exposures.
- Disassociate all exposures.

Diagnostics

(G160M_1600_focus_7arcsec_LP6_1 (04)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(G160M_1600_focus_7arcsec_LP6_1 (04)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	FEIGE-48	RA: 11 47 14.4421 (176.8101754d) Dec: +61 15 31.68 (61.25880d) Equinox: J2000	Proper Motion RA: -0.0035937440813851103 sec of time/yr Proper Motion Dec: -0.007394999965981697 arcsec/yr Epoch of Position: 2015.5	V=13.28	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=CALIBRATION
Description=[FOCUS TEST]
Extended=NO

Exposures

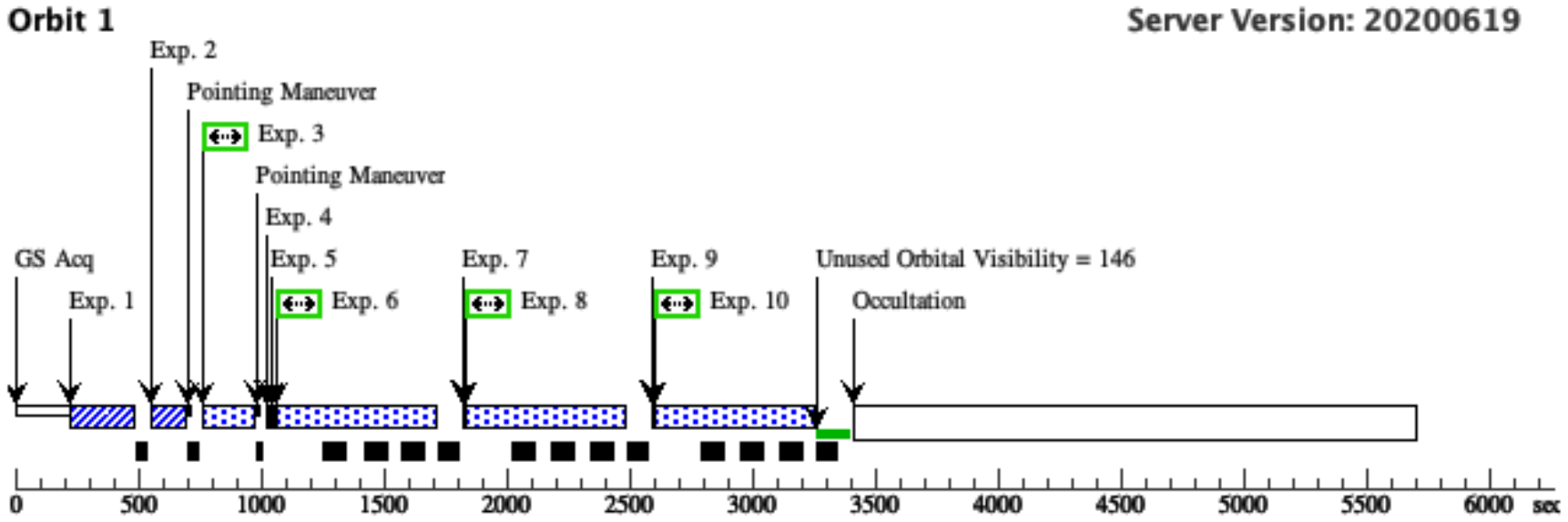
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IMAGE (COS.ta.607556)	(1) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				16 Secs (16 Secs) *[==>]*	***[1]***
	Comments: S/N=60 *Exposure time and ETC calculation taken from LENA2 (Program 13635)*								
2	ACQ/IMAGE (COS.ta.607556)	(1) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				16 Secs (16 Secs) *[==>]*	***[1]***
	Comments: S/N=60 *Exposure time and ETC calculation taken from LENA2 (Program 13635)*								
3	Initialize G160M/1600 at LP2 (COS.sp.608219)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=1000; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2			0.1 Secs (0.1 Secs) *[==>]*	***[1]***
	Comments: Initializing G160M/1600 at nominal aperture and focus position								
4	Place aperture at +7.0 arcsec in XD	NONE	COS, ALIGN/APER		XAPER=-74; YAPER=0.0			0.0 Secs (0 Secs) *[==>]*	***[1]***
	Comments: Assumes 21 motor steps per " in XAPER. *This command moves the PSA from +3.5" (LP2) to +7.0" (LP6_1).*								
5	Move to -1000 (=-466 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=-466			0 Secs (0 Secs) *[==>]*	***[1]***
	Comments: G160M/1600 focus at LP2: +116 *G160M/1600 focus at LP6_1: +650* *-1000 focus at LP6 using LP5 focus = -1000+(650-116) = -466*								
6	1600_f-1000 (COS.sp.608219)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	POS TARG 0.0,+3.5		600 Secs (600 Secs) *[==>]*	***[1]***
	Comments: S/N=36 expected at wavelength 1607 A *Exposure times taken from FENA3 and LENA2 programs (same configuration).* *Wavecals are turned off to mitigate light-leak issues above +5.5"|(i.e. WAVECAL=NO, FLASH=NO)*								
7	Move to -800 (=-266 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=-266			0 Secs (0 Secs) *[==>]*	***[1]***

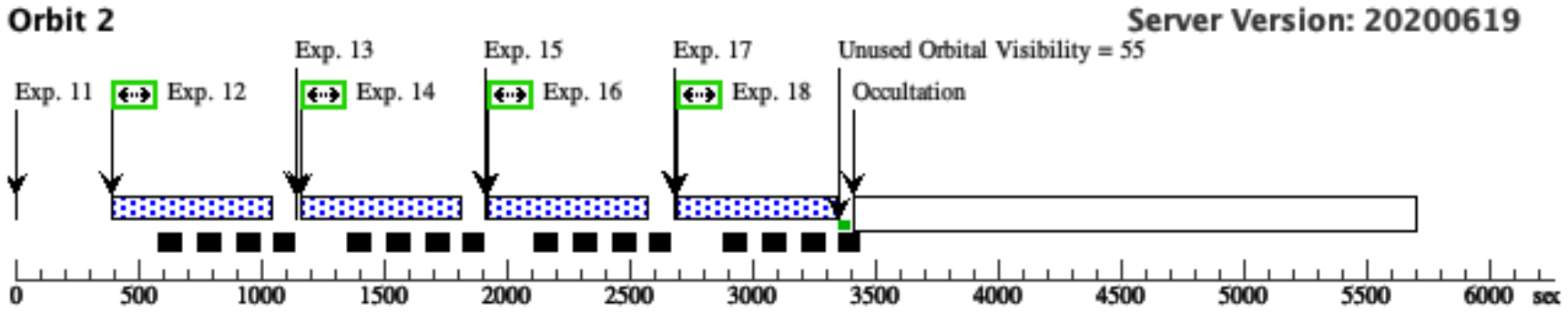
8	1600_f-800 (COS.sp.608 219)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	**[1]**
Comments: S/N=36 expected at wavelength 1607 A *Exposure times taken from FENA3 and LENA2 programs (same configuration).*									
9	Move to -600(=-66 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=-66		0 Secs (0 Secs) *[==>]*	**[1]**
10	1600_f-600 (COS.sp.608 219)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	**[1]**
11	Move to -400 (=+134 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+134		0 Secs (0 Secs) *[==>]*	**[2]**
12	1600_f-400 (COS.sp.608 219)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	**[2]**
13	Move to -200 (=+334 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+334		0 Secs (0 Secs) *[==>]*	**[2]**
14	1600_f-200 (COS.sp.608 220)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	**[2]**
Comments: S/N=38 at wavelength 1607 A									
15	Move to 0 (=+534 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=534		0 Secs (0 Secs) *[==>]*	**[2]**

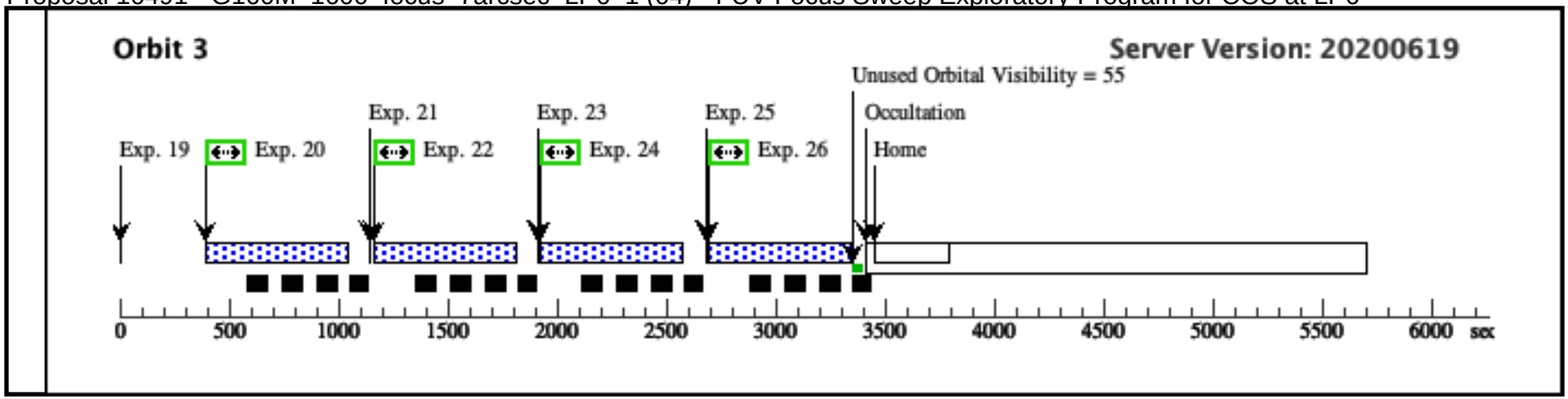
16	1600_f-0 (COS.sp.608 220)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	**[2]**
17	Move to +200 (=+734 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+734		0 Secs (0 Secs) *[==>]*	**[2]**
18	1600_f+200 (COS.sp.608 220)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	**[2]**
19	Move to +400 (=+934 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+934		0 Secs (0 Secs) *[==>]*	**[3]**
20	1600_f+400 (COS.sp.608 221)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	**[3]**
Comments: S/N=35 at 1607 A								
21	Move to +600 (=+1134 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1134		0 Secs (0 Secs) *[==>]*	**[3]**
22	1600_f+600 (COS.sp.608 221)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	**[3]**
23	Move to +800 (=+1334 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1334		0 Secs (0 Secs) *[==>]*	**[3]**

	24	1600_f+800 (COS.sp.608 221)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	***[3]***
	25	Move to +1000 (=+1534 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1534		0 Secs (0 Secs) *[==>]*	***[3]***
	26	1600_f+1000 (COS.sp.608 221)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	***[3]***

Orbit Structure



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Server Version: 20200619
Unused Orbital Visibility = 55
Exp. 19
Exp. 20
Exp. 21
Exp. 22
Exp. 23
Exp. 24
Exp. 25
Exp. 26
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16491, G160M_1600_focus_9arcsec_LP6_2 (05), completed Thu May 13 13:00:45 GMT 2021

Diagnostic Status: Warning

Scientific Instruments: COS, COS/FUV, COS/NUV

Special Requirements: (none)

Comments: LP2 Focus: +116
LP6_2 Estimated Focus: +1100

LP6 focus step relative to LP2 = LP6 focus step + (LP6 estimated absolute focus - LP2 absolute focus)

Focus points set relative to LP2 for LP6_2 :
Focus range relative to LP6 zero-point [-1000,+1000]
Focus range relative to LP2 zero-point [-16, +1984]

Absolute focus step = LP2 focus + LP6 focus step relative to LP2

Absolute focus range = [+100, +2100]

- Bypass calibration for the COS/FUV exposures.
- Disassociate all exposures.

Diagnostics

(G160M_1600_focus_9arcsec_LP6_2 (05)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(G160M_1600_focus_9arcsec_LP6_2 (05)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	FEIGE-48	RA: 11 47 14.4421 (176.8101754d) Dec: +61 15 31.68 (61.25880d) Equinox: J2000	Proper Motion RA: -0.0035937440813851103 sec of time/yr Proper Motion Dec: -0.007394999965981697 arcsec/yr Epoch of Position: 2015.5	V=13.28	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=CALIBRATION
Description=[FOCUS TEST]
Extended=NO

Exposures

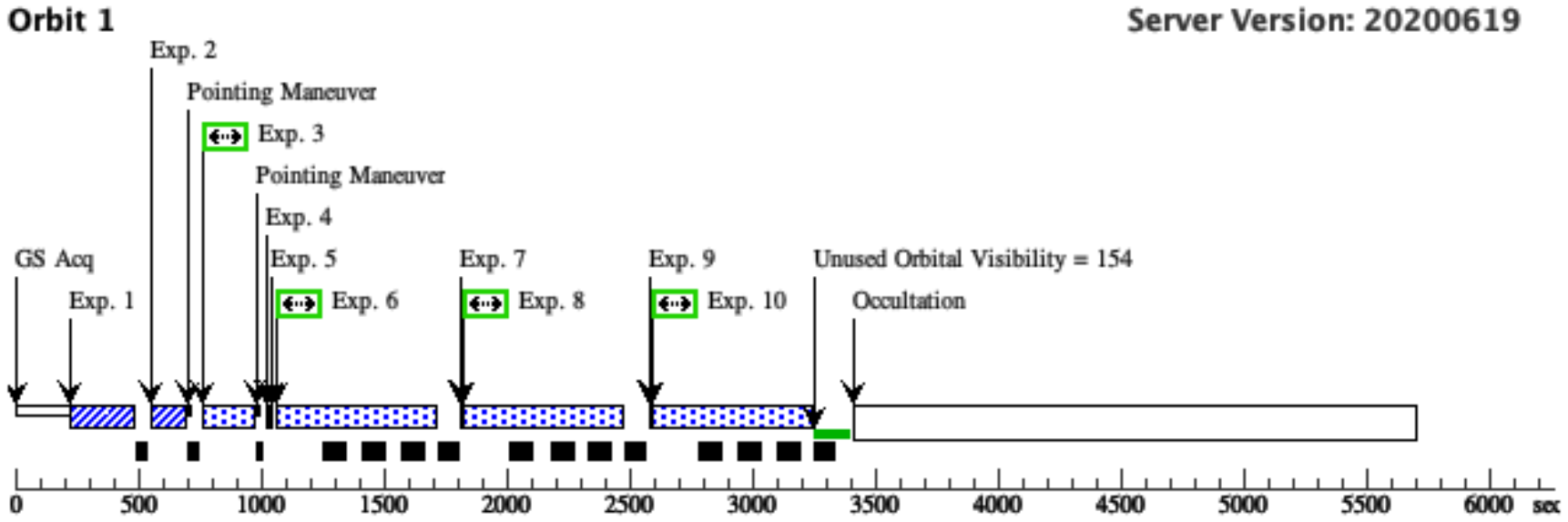
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IMAGE (COS.ta.607556)	(1) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				16 Secs (16 Secs) *[==>]*	***[1]***
	Comments: S/N=60 *Exposure time and ETC calculation taken from LENA2 (Program 13635)*								
2	ACQ/IMAGE (COS.ta.607556)	(1) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				16 Secs (16 Secs) *[==>]*	***[1]***
	Comments: S/N=60 *Exposure time and ETC calculation taken from LENA2 (Program 13635)*								
3	Initialize G160M/1600 at LP2 (COS.sp.608219)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=1000; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2			0.1 Secs (0.1 Secs) *[==>]*	***[1]***
	Comments: Initializing G160M/1600 at nominal aperture and focus position								
4	Place aperture at +9.0 arcsec in XD	NONE	COS, ALIGN/APER		XAPER=-116; YAPER=0.0			0.0 Secs (0 Secs) *[==>]*	***[1]***
	Comments: Assumes 21 motor steps per " in XAPER. *This command moves the PSA from +3.5" (LP2) to +9.0" (LP6_1).*								
5	Move to -1000 (=-16 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=-16			0 Secs (0 Secs) *[==>]*	***[1]***
	Comments: G160M/1600 focus at LP2: +116 *G160M/1600 focus at LP6_2: +1100* *-1000 focus at LP6 using LP5 focus = -1000+(1100-116) = -16*								
6	1600_f-1000 (COS.sp.608219)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	POS TARG 0.0,+5.5		600 Secs (600 Secs) *[==>]*	***[1]***
	Comments: S/N=36 expected at wavelength 1607 A *Exposure times taken from FENA3 and LENA2 programs (same configuration).* *Wavecals are turned off to mitigate light-leak issues above +5.5"|(i.e. WAVECAL=NO, FLASH=NO)*								
7	Move to -800 (=+184 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=184			0 Secs (0 Secs) *[==>]*	***[1]***

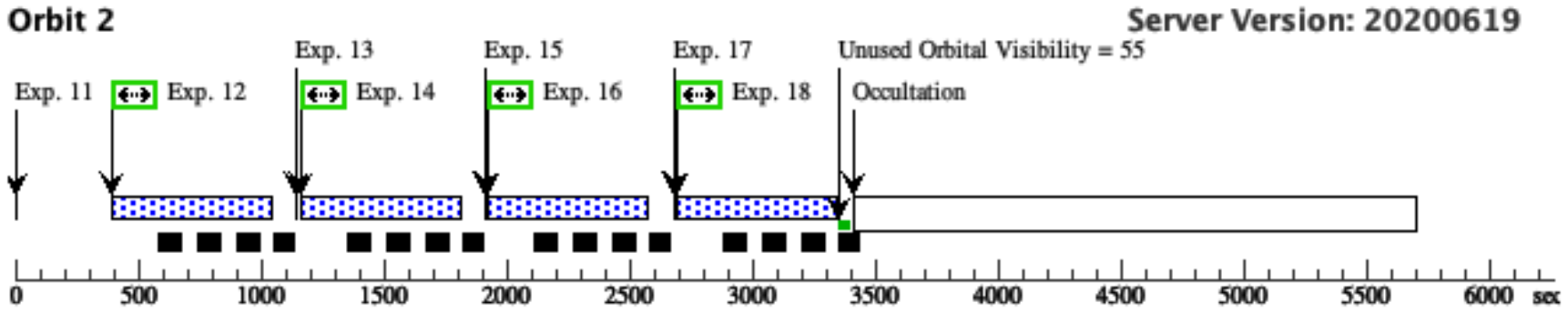
8	1600_f-800 (COS.sp.608 219)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	**[1]**
Comments: S/N=36 expected at wavelength 1607 A *Exposure times taken from FENA3 and LENA2 programs (same configuration).*									
9	Move to -600(=+384 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+384		0 Secs (0 Secs) *[==>]*	**[1]**
10	1600_f-600 (COS.sp.608 219)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	**[1]**
11	Move to -400 (=+584 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+584		0 Secs (0 Secs) *[==>]*	**[2]**
12	1600_f-400 (COS.sp.608 219)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	**[2]**
13	Move to -200 (=+784 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+784		0 Secs (0 Secs) *[==>]*	**[2]**
14	1600_f-200 (COS.sp.608 220)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	**[2]**
Comments: S/N=38 at wavelength 1607 A									
15	Move to 0 (=+984 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+984		0 Secs (0 Secs) *[==>]*	**[2]**

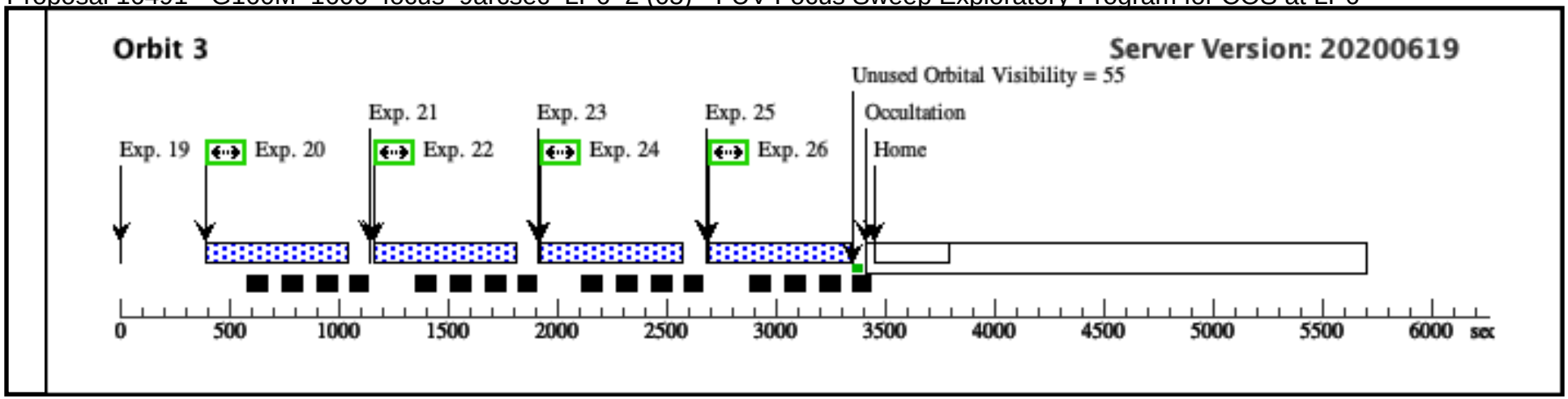
16	1600_f-0 (COS.sp.608 220)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	*[2]*
17	Move to +200 (=+1184 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1184		0 Secs (0 Secs) *[==>]*	*[2]*
18	1600_f+200 (COS.sp.608 220)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	*[2]*
19	Move to +400 (=+1384 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1384		0 Secs (0 Secs) *[==>]*	*[3]*
20	1600_f+400 (COS.sp.608 221)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; FLASH=NO; WAVECAL=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	*[3]*
Comments: S/N=35 at 1607 A								
21	Move to +600 (=+1584 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1584		0 Secs (0 Secs) *[==>]*	*[3]*
22	1600_f+600 (COS.sp.608 221)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	*[3]*
23	Move to +800 (=+1784 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1784		0 Secs (0 Secs) *[==>]*	*[3]*

	24	1600_f+800 (COS.sp.608 221)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	***[3]***
	25	Move to +1000 (=+1984 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1984		0 Secs (0 Secs) *[==>]*	***[3]***
	26	1600_f+1000 (COS.sp.608 221)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 6	600 Secs (600 Secs) *[==>]*	***[3]***

Orbit Structure



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Exp. 19
Exp. 20
Exp. 21
Exp. 22
Exp. 23
Exp. 24
Exp. 25
Exp. 26
Occultation
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000
sec

Visit

Proposal 16491, G160M_1600_focus_11arcsec_LP6_3 (06), implementation Thu May 13 13:00:45 GMT 2021

Diagnostic Status: Warning

Scientific Instruments: S/C, COS, COS/FUV, COS/NUV

Special Requirements: (none)

Comments: LP2 Focus: +116
LP6_1 Estimated Focus: +1600

LP6 focus step relative to LP2 = LP6 focus step + (LP6 estimated absolute focus - LP2 absolute focus)

Focus points set relative to LP2 for LP6_3 :
Focus range relative to LP6 zero-point [-1000,+800]
Focus range relative to LP2 zero-point [+484, +2284]

Absolute focus step = LP2 focus + LP6 focus step relative to LP2

Absolute focus range = [+600, +2400]

Focus range relative to LP6 reduced from +1000 to +800 to prevent passing upper soft stop of focus (+2505)

- Bypass calibration for the COS/FUV exposures.
- Disassociate all exposures.

Visit 6 is OH HOLD until the data from visits 4 and 5 is analysed.

Diagnostics

(G160M_1600_focus_11arcsec_LP6_3 (06)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(G160M_1600_focus_11arcsec_LP6_3 (06)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	FEIGE-48	RA: 11 47 14.4421 (176.8101754d) Dec: +61 15 31.68 (61.25880d) Equinox: J2000	Proper Motion RA: -0.0035937440813851103 sec of time/yr Proper Motion Dec: -0.007394999965981697 arcsec/yr Epoch of Position: 2015.5	V=13.28	Reference Frame: ICRS

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.
Category=CALIBRATION
Description=[FOCUS TEST]
Extended=NO

Exposures

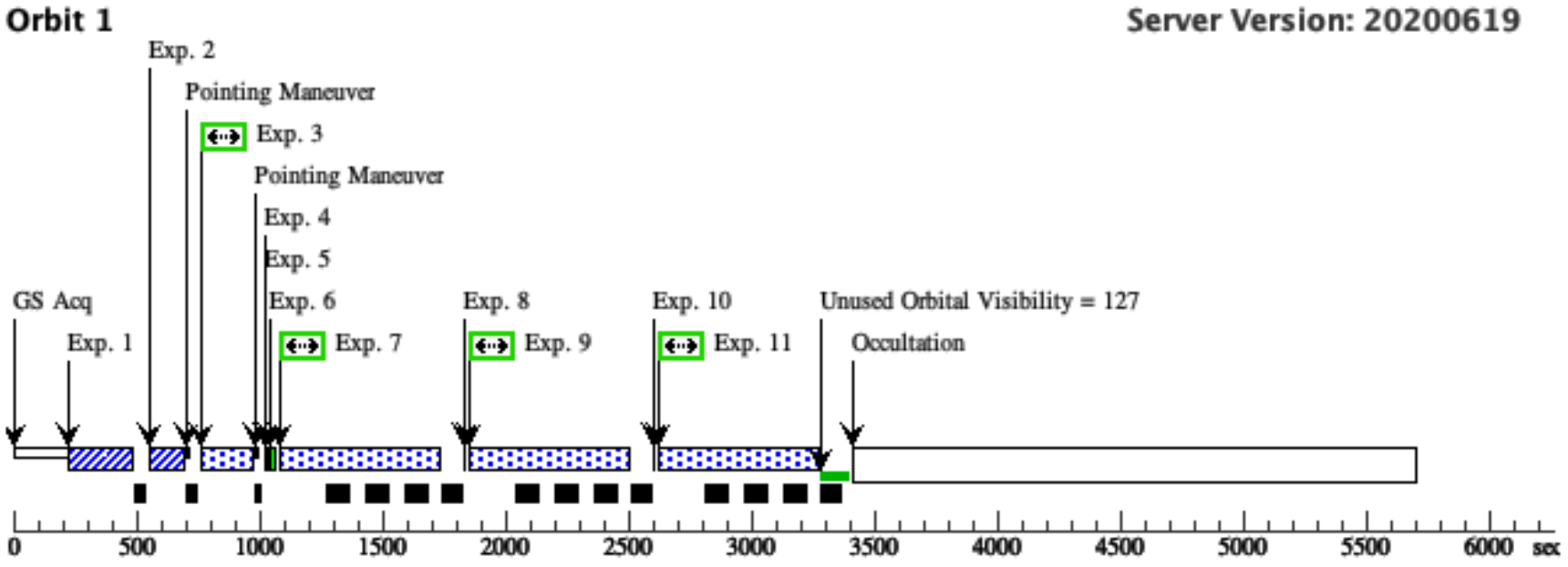
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IMAGE (COS.ta.607556)	(1) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				16 Secs (16 Secs) *[==>]*	*[1]*
	Comments: S/N=60 *Exposure time and ETC calculation taken from LENA2 (Program 13635)*								
2	ACQ/IMAGE (COS.ta.607556)	(1) FEIGE-48	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				16 Secs (16 Secs) *[==>]*	*[1]*
	Comments: S/N=60 *Exposure time and ETC calculation taken from LENA2 (Program 13635)*								
3	Initialize G160M/1600 at LP2 (COS.sp.608219)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=10000; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2			0.1 Secs (0.1 Secs) *[==>]*	*[1]*
	Comments: Initializing G160M/1600 at nominal aperture and focus position								
4	Change the Focus Step Intolerance to 30	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELSETFOCTOL; QESIPARM POSTOL 30		2 Secs (2 Secs) *[==>]*	*[1]*
	Comments: Special commanding exposure to set the focus step intolerance level higher and prevent warning flags from being raised.								
5	Place aperture at +11.0 arcsec in XD	NONE	COS, ALIGN/APER		XAPER=-158; YAPER=0.0			0.0 Secs (0 Secs) *[==>]*	*[1]*
	Comments: Assumes 21 motor steps per " in XAPER. *This command moves the PSA from +3.5" (LP2) to +11.0" (LP6_3).*								
6	Move to -2400 (=-916 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=-916			0 Secs (0 Secs) *[==>]*	*[1]*
	Comments: G160M/1600 focus at LP2: +116 *G160M/1600 focus at LP6_2: +1600* *-2400 focus at LP6 using LP5 focus = -2400+(1600-116) = -916*								
7	1600_f-2400 (COS.sp.608219)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	POS TARG 0.0,+7.5		600 Secs (600 Secs) *[==>]*	*[1]*
	Comments: S/N=36 expected at wavelength 1607 A *Exposure times taken from FENA3 and LENA2 programs (same configuration).* *Wavecals are turned off to mitigate light-leak issues above +5.5"|(i.e. WAVECAL=NO, FLASH=NO)*								

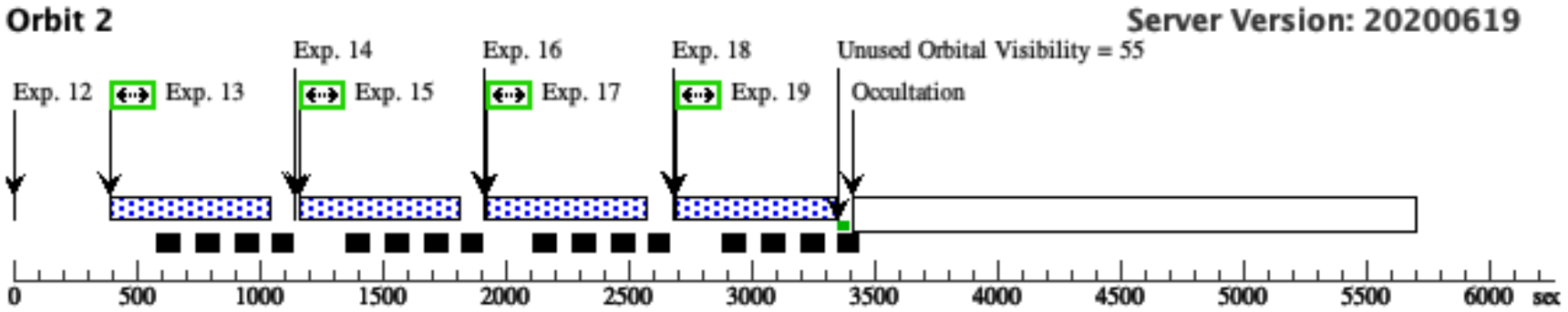
8	Move to -2000 (=-516 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=-516		0 Secs (0 Secs) *[==>]*		***[1]***
9	1600_f-2000 (COS.sp.60821 9)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 7	600 Secs (600 Secs) *[==>]*		***[1]***
Comments: S/N=36 expected at wavelength 1607 A *Exposure times taken from FENA3 and LENA2 programs (same configuration).*									
10	Move to -1600(=-116 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=-116		0 Secs (0 Secs) *[==>]*		***[1]***
11	1600_f-1600 (COS.sp.60821 9)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 7	600 Secs (600 Secs) *[==>]*		***[1]***
12	Move to -1400 (=+84 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+84		0 Secs (0 Secs) *[==>]*		***[2]***
13	1600_f-1400 (COS.sp.60821 9)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 7	600 Secs (600 Secs) *[==>]*		***[2]***
14	Move to -1200 (=+284 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+284		0 Secs (0 Secs) *[==>]*		***[2]***
15	1600_f-1200 (COS.sp.60822 0)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 7	600 Secs (600 Secs) *[==>]*		***[2]***
Comments: S/N=38 at wavelength 1607 A									
16	Move to -1000 (=+484 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+484		0 Secs (0 Secs) *[==>]*		***[2]***

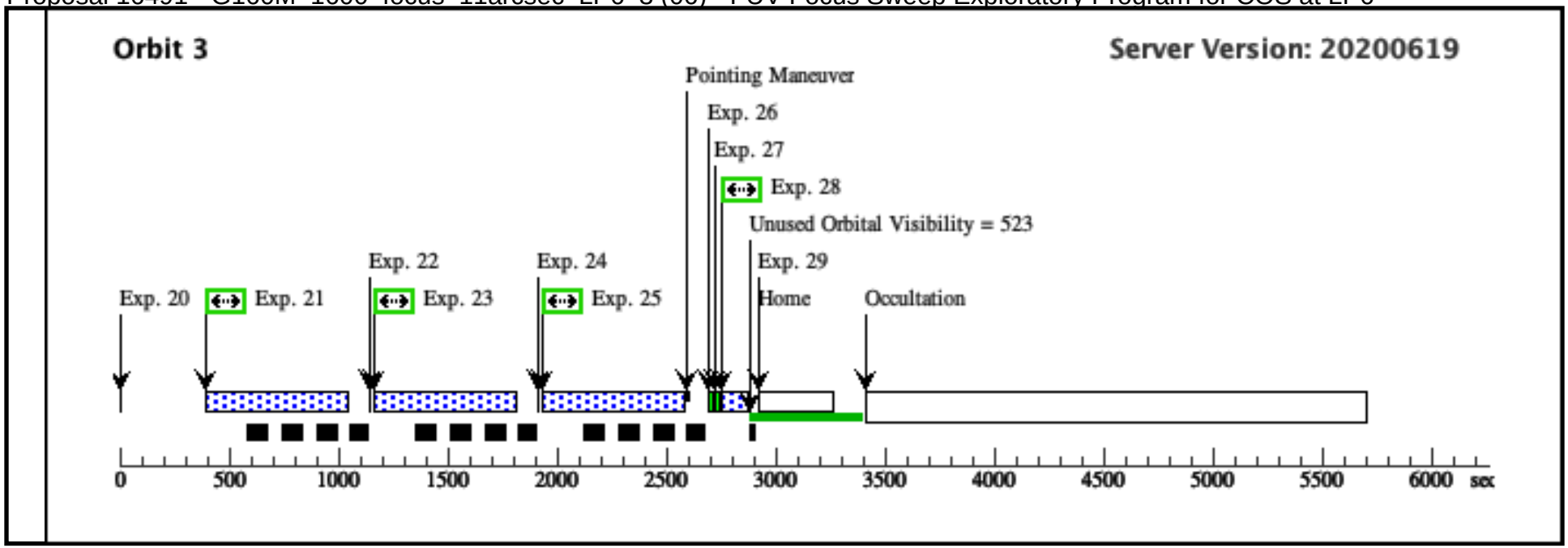
17	1600_f-1000 (COS.sp.608 220)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 7	600 Secs (600 Secs) *[==>]*	***[2]***
18	Move to -800 (=+684 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+684		0 Secs (0 Secs) *[==>]*	***[2]***
19	1600_f-800 (COS.sp.608 220)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 7	600 Secs (600 Secs) *[==>]*	***[2]***
20	Move to -400 (=+1084 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1084		0 Secs (0 Secs) *[==>]*	***[3]***
21	1600_f-400 (COS.sp.608 221)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 7	600 Secs (600 Secs) *[==>]*	***[3]***
Comments: S/N=35 at 1607 A								
22	Move to +0 (=+1484 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1484		0 Secs (0 Secs) *[==>]*	***[3]***
23	1600_f+0 (COS.sp.608 221)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 7	600 Secs (600 Secs) *[==>]*	***[3]***
24	Move to +400 (=+1884 relative to 1600 LP2 focus)	NONE	COS, ALIGN/OSM		FOCUS=+1884		0 Secs (0 Secs) *[==>]*	***[3]***

25	1600_f+400 (COS.sp.608 221)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; BUFFER-TIME=159; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2	SAME POS AS 7	600 Secs (600 Secs) *[==>]*	***[3]***
Comments: No focus at +1000 is performed as it would set the absolute focus to +2600, outside of the upper soft stop limit of +2505.								
26	Move to +1000 relative to 1600 LP2 focus	NONE	COS, ALIGN/OSM		FOCUS=+1000		0 Secs (0 Secs) *[==>]*	***[3]***
Comments: Exposures 6.026 - 6.027 are performed as an experiment to avoid intolerance issues moving back from large focus offsets.								
27	Move to +100 relative to 1600 LP2 focus	NONE	COS, ALIGN/OSM		FOCUS=+100		0 Secs (0 Secs) *[==>]*	***[3]***
Comments: This move is performed to avoid intolerance issues moving back from large focus offsets.								
28	Reset focus using G160M/1589 at LP2 (COS.sp.608 219)	(1) FEIGE-48	COS/FUV, TIME-TAG, PSA	G160M 1589 A	FP-POS=3; BUFFER-TIME=1000; WAVECAL=NO; FLASH=NO; LIFETIME-POS=LP2		0.1 Secs (0.1 Secs) *[==>]*	***[3]***
Comments: This is an exposure using a different G160M cenwave (1589) at nominal aperture and focus position to attempt to zero out possible focus step intolerance issues. Using a different cenwave resets the OSM focus macro for LP2.								
29	Change the Focus Step Intolerance to 15	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELSETFOCTOL; QESIPARM POSTOL NOMINAL	2 Secs (2 Secs) *[==>]*	***[3]***
Comments: Special commanding exposure to set the focus step intolerance level higher and prevent warning flags from being raised.								

Orbit Structure



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Server Version: 20200619
Pointing Maneuver
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Exp. 27
Exp. 28
Unused Orbital Visibility = 523
Exp. 29
Exp. 20
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Exp. 23
Exp. 24
Exp. 25
Home
Occultation
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3500
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6000
sec