18181 - COS FUV LP10 Calibration: Lamp Templates

Cycle: 33, Proposal Category: CAL/COS

(Calibration)

(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	WAVE	COS/FUV	2	10-Sep-2025 16:01:05.0	yes

2 Total Orbits Used

ABSTRACT

This program obtains COS FUV PtNe lamp template data at LP10 for the wavelength calibration of LP10 data. Dispersion coefficients vary with absolute focus position, which is different for different lifetime positions. Because lamp template reference files in use at other lifetime positions (LP2, LP3, LP4, LP5, LP6) have different disperson solutions than what will be observed at LP10, we must create new lamp template reference files using PtNe spectra observed at the LP10 WCA location using LP10 focus values.

OBSERVING DESCRIPTION

First, a long (1800 s) lamp exposure is used to wait for the OSM to settle before lamp template data are taken. The PtNe wavecal lamp is regularly flashed during this long exposure (30 seconds ON, 90 seconds OFF), using special engineering mode flash durations (FLASH = S0120D030). These data will be used to understand the OSM drift in the time period before the lamp template data are taken.

Observations are being taken using the G160M grating at cenwaves 1533, 1577, 1589, 1600, 1611, and 1623, each at all 4 FP-POS. Each exposure is 210 s long, during which the PtNe lamp is flashed ON for 30 seconds, then OFF for 30 seconds (FLASH = S0060D030), resulting in a cumulative lamp ON time of 120 s over the 210 s exposure. The ON/OFF cycling is done to ensure that the lamp does not get too hot, which could reduce its lifetime.

The buffer time is set at 210 seconds in order to maximize the time between successive exposures (buffer-time=exposure time, so the full data buffer will be read out). This is done to enable cooling of the PtNe lamp between exposures, since the lamp is ON for both the first and last 30 s of every 210 s exposure.

The lamp spectra will be obtained at the contemporaneous wavecal location designated for LP10 observations.

All exposures are completed in a single visit that consists of 2 internal orbits.

The structure of this program is based on programs 11488 (SMOV LP1 lamp templates), 14856 (LP3 lamp templates), 15369 (LP4 lamp templates), 16469 (LP5 lamp templates), and 16909 (LP6 lamp templates)

Proposal 18181 - G160M for LP10 (01) - COS FUV LP10 Calibration: Lamp Templates

Visit	**Proposal 18181, G160M for LP10 (01)** Wed Sep 10 20:01:06 GMT 2025 **Diagnostic Status: Warning** Scientific Instruments: COS/FUV Special Requirements: (none)
Diagnostics	(G160M for LP10 (01)) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS (G160M for LP10 (01)) Warning (Orbit Planner): LAMP EXPOSURE EXCEEDS 300 SECONDS (G160M for LP10 (01)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB VISIT

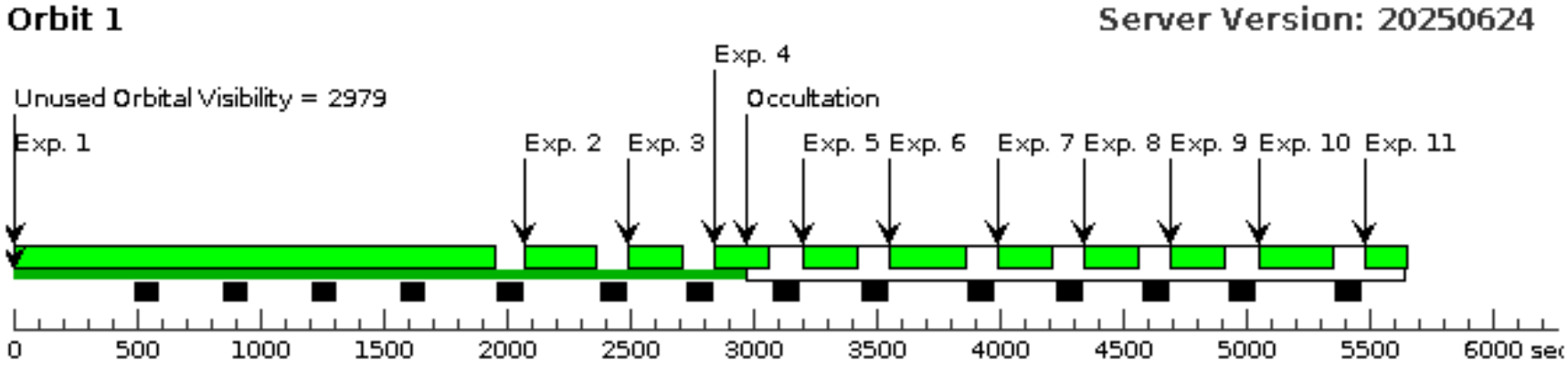
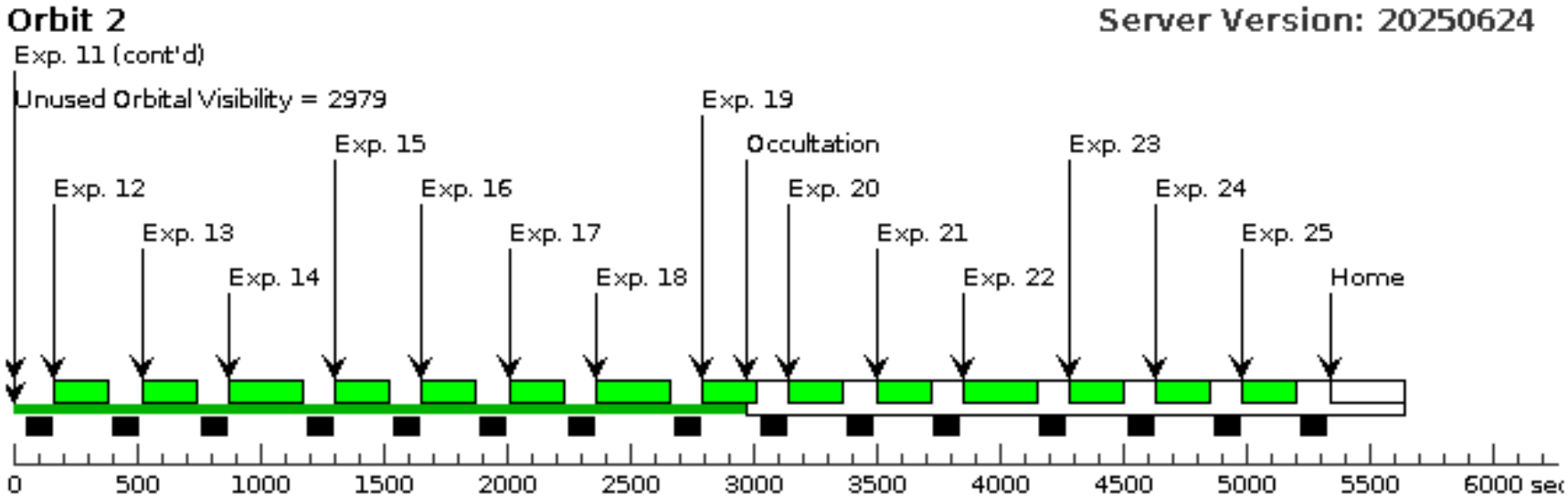
Exposures

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1		WAVE	COS/FUV, TIME-TAG, WCA	G160M 1533 A	LIFETIME-POS=LP10; SEGMENT=BOTH; BUFFER-TIME=360; FP-POS=3; FLASH=S0120D030			1800 Secs (1800 Secs) *[==>]*	*[1]*
2		WAVE	COS/FUV, TIME-TAG, WCA	G160M 1533 A	LIFETIME-POS=LP10; SEGMENT=BOTH; BUFFER-TIME=210; FP-POS=1; FLASH=S0060D030			210 Secs (210 Secs) *[==>]*	*[1]*
3		WAVE	COS/FUV, TIME-TAG, WCA	G160M 1533 A	LIFETIME-POS=LP10; SEGMENT=BOTH; BUFFER-TIME=210; FP-POS=2; FLASH=S0060D030			210 Secs (210 Secs) *[==>]*	*[1]*
4		WAVE	COS/FUV, TIME-TAG, WCA	G160M 1533 A	LIFETIME-POS=LP10; SEGMENT=BOTH; BUFFER-TIME=210; FP-POS=3; FLASH=S0060D030			210 Secs (210 Secs) *[==>]*	*[1]*
5		WAVE	COS/FUV, TIME-TAG, WCA	G160M 1533 A	LIFETIME-POS=LP10; SEGMENT=BOTH; BUFFER-TIME=210; FP-POS=4; FLASH=S0060D030			210 Secs (210 Secs) *[==>]*	*[1]*
6		WAVE	COS/FUV, TIME-TAG, WCA	G160M 1577 A	LIFETIME-POS=LP10; SEGMENT=BOTH; BUFFER-TIME=210; FP-POS=1; FLASH=S0060D030			210 Secs (210 Secs) *[==>]*	*[1]*

	7	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1577 A	LIFETIME-POS=LP 10; SEGMENT=BOTH; BUFFER-TIME=21 0; FP-POS=2; FLASH=S0060D03 0	210 Secs (210 Secs) *[==>]*	***[1]***
	8	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1577 A	LIFETIME-POS=LP 10; SEGMENT=BOTH; BUFFER-TIME=21 0; FP-POS=3; FLASH=S0060D03 0	210 Secs (210 Secs) *[==>]*	***[1]***
	9	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1577 A	LIFETIME-POS=LP 10; SEGMENT=BOTH; BUFFER-TIME=21 0; FP-POS=4; FLASH=S0060D03 0	210 Secs (210 Secs) *[==>]*	***[1]***
	10	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1589 A	LIFETIME-POS=LP 10; SEGMENT=BOTH; BUFFER-TIME=21 0; FP-POS=1; FLASH=S0060D03 0	210 Secs (210 Secs) *[==>]*	***[1]***
	11	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1589 A	LIFETIME-POS=LP 10; SEGMENT=BOTH; BUFFER-TIME=21 0; FP-POS=2; FLASH=S0060D03 0	210 Secs (210 Secs) *[==>]*	***[1]***
	12	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1589 A	LIFETIME-POS=LP 10; SEGMENT=BOTH; BUFFER-TIME=21 0; FP-POS=3; FLASH=S0060D03 0	210 Secs (210 Secs) *[==>]*	***[2]***

	13	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1589 A	LIFETIME-POS=LP 10; SEGMENT=BOTH; BUFFER-TIME=21 0; FP-POS=4; FLASH=S0060D03 0	210 Secs (210 Secs) *[==>]*	***[2]***
	14	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1600 A	LIFETIME-POS=LP 10; SEGMENT=BOTH; BUFFER-TIME=21 0; FP-POS=1; FLASH=S0060D03 0	210 Secs (210 Secs) *[==>]*	***[2]***
	15	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1600 A	LIFETIME-POS=LP 10; SEGMENT=BOTH; BUFFER-TIME=21 0; FP-POS=2; FLASH=S0060D03 0	210 Secs (210 Secs) *[==>]*	***[2]***
	16	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1600 A	LIFETIME-POS=LP 10; SEGMENT=BOTH; BUFFER-TIME=21 0; FP-POS=3; FLASH=S0060D03 0	210 Secs (210 Secs) *[==>]*	***[2]***
	17	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1600 A	LIFETIME-POS=LP 10; SEGMENT=BOTH; BUFFER-TIME=21 0; FP-POS=4; FLASH=S0060D03 0	210 Secs (210 Secs) *[==>]*	***[2]***
	18	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1611 A	LIFETIME-POS=LP 10; SEGMENT=BOTH; BUFFER-TIME=21 0; FP-POS=1; FLASH=S0060D03 0	210 Secs (210 Secs) *[==>]*	***[2]***

	19	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1611 A	LIFETIME-POS=LP10; SEGMENT=BOTH; BUFFER-TIME=210; FP-POS=2; FLASH=S0060D030	210 Secs (210 Secs) *[==>]*	***[2]***
	20	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1611 A	LIFETIME-POS=LP10; SEGMENT=BOTH; BUFFER-TIME=210; FP-POS=3; FLASH=S0060D030	210 Secs (210 Secs) *[==>]*	***[2]***
	21	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1611 A	LIFETIME-POS=LP10; SEGMENT=BOTH; BUFFER-TIME=210; FP-POS=4; FLASH=S0060D030	210 Secs (210 Secs) *[==>]*	***[2]***
	22	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1623 A	LIFETIME-POS=LP10; SEGMENT=BOTH; BUFFER-TIME=210; FP-POS=1; FLASH=S0060D030	210 Secs (210 Secs) *[==>]*	***[2]***
	23	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1623 A	LIFETIME-POS=LP10; SEGMENT=BOTH; BUFFER-TIME=210; FP-POS=2; FLASH=S0060D030	210 Secs (210 Secs) *[==>]*	***[2]***
	24	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1623 A	LIFETIME-POS=LP10; SEGMENT=BOTH; BUFFER-TIME=210; FP-POS=3; FLASH=S0060D030	210 Secs (210 Secs) *[==>]*	***[2]***

	25	WAVE	COS/FUV, TIME-TAG, WCA	G160M 1623 A	LIFETIME-POS=LP 10; SEGMENT=BOTH; BUFFER-TIME=210; FP-POS=4; FLASH=S0060D030	210 Secs (210 Secs) *[==>]*	*[2]*

Orbit Structure