18210 - LP12 Cross-Dispersion Profile

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	(1) WD0308-565 NONE	COS COS/FUV COS/NUV	1	11-Nov-2025 11:01:00.0	yes

1 Total Orbits Used

ABSTRACT

Determine the cross-dispersion profile of G130M/1291 at LP12. Data from this program will enable precise placement of G130M/1291 between LP1 and LP2, which is required to minimize the impact of existing gain sag. The target will be the bright continuum source WD0308.

OBSERVING DESCRIPTION

G130M/1291 observations will be taken at one offset location near the expected optimal position, which is estimated to be ~ -43 pixels from LP5. We will aim to have ~ 30 counts per 2x8 binned pixel (cross-dispersion x dispersion) to measure the modal gain across the profile, which will aid in

the optimal placement determination.

--SPECIAL NOTES--

-Special requirements are used to move the aperture block to the expected position between LP1 and LP2.

-Image calibration:
(1) Please turn off calibration for all the COS/FUV exposures. These data should not be used for scientific purposes.
(2) 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. For request (1) qexposure.control_id is modified. For request (2) qeassociation records are deleted. Contact the HST SOC SE team for further information about this process.

Visit

Proposal 18210, LP12 G130M/1291 position exploration (01), implementation Tue Nov 11 16:01:00 GMT 2025

Diagnostic Status: Warning

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

Special Requirements: SCHED 100%

Diagnostics

(LP12 G130M/1291 position exploration (01)) Warning (Form): For the best data quality, it is generally required to use all four FP-POS positions at a given COS cenwave (or 2 positions for certain exception cases). See extended explanation in the diagnostic browser.

(LP12 G130M/1291 position exploration (01)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(LP12 G130M/1291 position exploration (01)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT

Fixed Targets

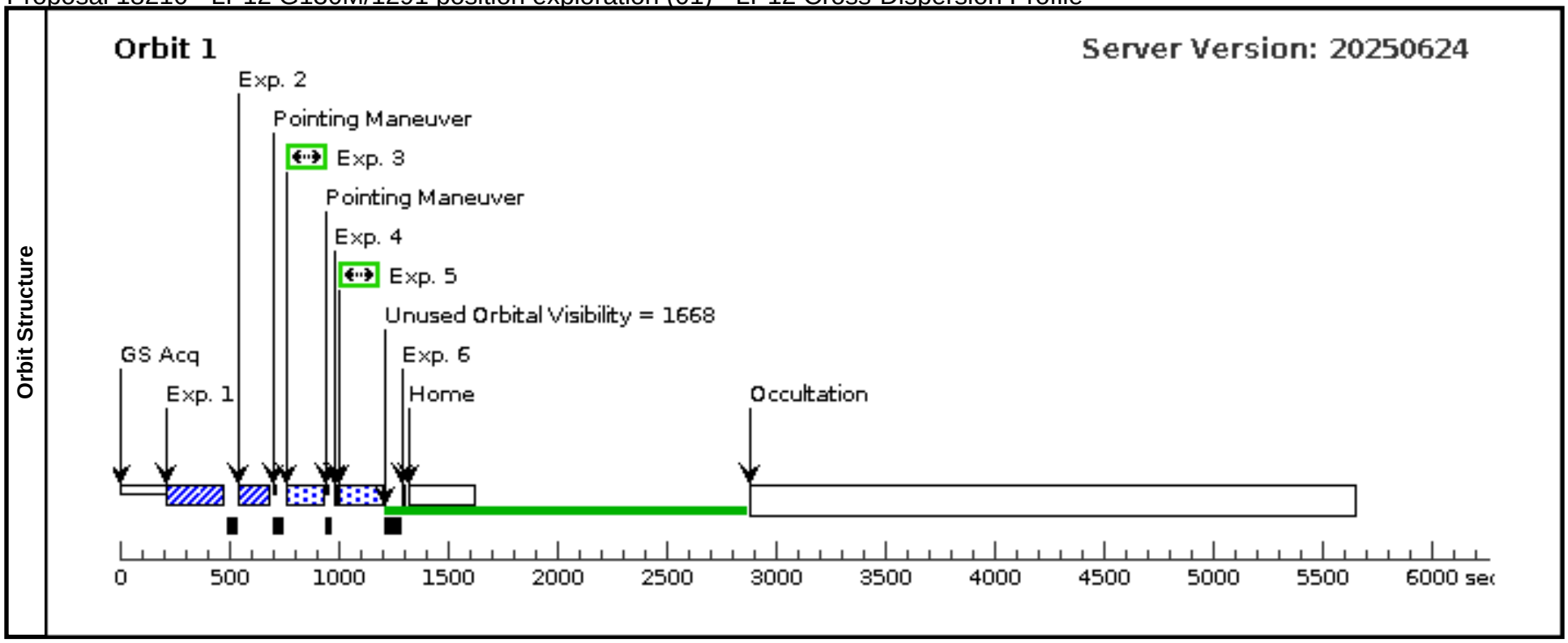
#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	WD0308-565	RA: 03 09 47.9178 (47.4496575d)	Proper Motion RA: 149.261 mas/yr	V=14.14	Reference Frame: ICRS
	Alt Name1: WG-7	Dec: -56 23 49.41 (-56.39706d)	Proper Motion Dec: 66.806 mas/yr		
		Equinox: J2000	Parallax: 0.0201813"		
			Epoch of Position: 2000		

Comments: This object was generated by the targetselector and retrieved from the SIMBAD database.

SIMBAD listed proper motion for this target. When retrieving targets with PM from SIMBAD, APT requests the coordinates be calculated with an epoch of the year 2000. Do not modify this epoch. Always review coordinates using the Target Confirmation tool, which graphically displays the PM.
Category=STAR
Description=[DB]
Extended=NO

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	First TA (COS.ta.2070078)	(1) WD0308-565	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				20 Secs (20 Secs) *[==>]*	*[1]*
2	Second TA (COS.ta.2070078)	(1) WD0308-565	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				20 Secs (20 Secs) *[==>]*	*[1]*
3	Initializing LP2 exposure (COS.sp.2183181)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	LIFETIME-POS=LP2; FLASH=NO; WAVECAL=NO; FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=80			0.1 Secs (0.1 Secs) *[==>]*	*[1]*
	Comments: Initializing exposure to set the focus and HV. *Note: WAVECAL and FLASH are set to NO since wavelength calibration is not needed.*								
4	Move aperture to LP12 position	NONE	COS, ALIGN/APER		XAPER=37			0 Secs (0 Secs) *[==>]*	*[1]*
	*Comments: FUVA pixel = 557.75 - (0.5567 * LAPXSTP)* *LP1 LAPXSTP = +126 --> pixel = 488* *LP2 LAPXSTP = +53 --> pixel = 528* *LP5 LAPXSTP = +13 --> pixel = 551* *Since we want to go to -43 pixels from LP5 (based on pre-exploratory analysis), the target pixel position is 551 - 43 = 508 pixels. Using the equation above, a value of LAPXSTP of +89.36 (rounded up to +90) should put the aperture block in the correct position. This is also roughly halfway between LP1 and LP2, as expected.* *Since we are starting at LP2 with the initialization exposure, we need to move from +53 to +90. Therefore,* *destination - source = 90 - 53 = +37 steps* *so we should add +37 steps to LP2 to put the aperture block at the correct position. Note that positive changes in XAPER move the aperture block lower on the detector.*								
5	G130M/1291 exposure (COS.sp.2183182)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	LIFETIME-POS=LP2; FLASH=NO; WAVECAL=NO; FP-POS=3; SEGMENT=BOTH; BUFFER-TIME=268	POS TARG null,-1.762		150 Secs (150 Secs) *[==>]*	*[1]*
	Comments: Since the aperture block was moved +37 steps from LP2, a POS TARG Y offset is needed. There are 21 steps per arc second so a change of 37 steps is equivaent to 1.762". However, since this is a move in the negative Y direction from LP2 we add a -1.762" POS TARG Y offset.								
6	Reset aperture block position	NONE	COS, ALIGN/APER		XAPER=0	QESIPARM XSTEPS -37		0 Secs (0 Secs) *[==>]*	*[1]*
	Comments: Resetting the aperture block back to the LP2 position. XAPER set to 0 and XSTEPS set to -37.								


Orbit Structure
Orbit 1
Server Version: 20250624
Exp. 2
Pointing Maneuver
Exp. 3
Pointing Maneuver
Exp. 4
Exp. 5
Unused Orbital Visibility = 1668
GS Acq
Exp. 1
Exp. 6
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
6000 sec