



14855 - COS FUV Internal/External Wavelength Scale Monitor

Cycle: 24, Proposal Category: CAL/COS

(Calibration)

(Availability Mode: RESTRICTED)

INVESTIGATORS

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VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(1) AV75 DARK	COS/FUV COS/NUV S/C	3	30-Jan-2017 21:06:56.0	yes

3 Total Orbits Used

ABSTRACT

This program monitors the offset between the internal and external dispersion solutions. This offset is referred to as DELTA in the wavelength dispersion reference file and corrects for the shift between the WCA and PSA in TV03 versus the shift between WCA and PSA on orbit. Analysis indicates that DELTA is independent of cenwave and FP-POS for a given grating, but is grating dependent. To monitor this, the program observes selected cenwaves at multiple FP-POS positions for all FUV gratings.

OBSERVING DESCRIPTION

To continue monitoring the COS/FUV dispersion solutions at lifetime position 3, we re-instate the full monitoring program that was adopted in Cycle 21 program 13522. This comprehensive monitoring includes taking spectra with the G130M/1096-1222-1291 and 1327, the G160M/1577 and 1623 and the G140L/1280 and 1105. FP-POS are alternated between exposures to fulfill our S/N requirements and mitigate the effects of gain sag. Orients have been put in place to avoid field objects that are too bright for the PSA/MIRRORA when performing the TA with the BOA. The detailed clearance of the target and crowded field was done in the CS review of calibration program 13070. Data from calibration programs in previous cycles were used for updating the Cycle 24 ETC calculations. To mitigate issues with GS acquisition for this target and field we added a ACQ/SEARCH in the TA sequence. Such change was applied to P13931 (LCAL2) with success. This change in TA strategy should be carried forward for this target to avoid future failures (see HOPR 83980). In Cycle 24, this program needs to execute before the move of COS FUV operations to lifetime position 4 (July 2017). To that effect, a BETWEEN is added at the visit level to secure scheduling of the program in the March 2017 window.

Proposal 14855 - Visit 01 - COS FUV Internal/External Wavelength Scale Monitor

Visit	Proposal 14855, Visit 01, scheduling Tue Jan 31 02:06:58 GMT 2017 Diagnostic Status: Warning Scientific Instruments: S/C, COS/FUV, COS/NUV Special Requirements: SCHED 100%; ORIENT 275D TO 60 D; ORIENT 160D TO 165 D; BETWEEN 01-MAR-2017:00:00:00 AND 31-MAR-2017:00:00:00 <i>Comments: An ACQ/SEARCH was added to the TA sequence in cycle 23 and should be carried over each cycle to avoid GS issues. This is a crowded field. The program needs to execute before move to LP4 (July 2017), hence restriction to just 1 window (March 2017) in cycle 24 only.</i>																
	Diagnosics (Visit 01) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.																
Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>AV75</td> <td>RA: 00 50 32.3900 (12.6349583d) Dec: -72 52 36.48 (-72.87680d) Equinox: J2000</td> <td></td> <td>V=12.79</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table>					#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	AV75	RA: 00 50 32.3900 (12.6349583d) Dec: -72 52 36.48 (-72.87680d) Equinox: J2000		V=12.79	Reference Frame: ICRS
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<i>Comments: This object was generated by the targetselector and retrieved from the SIMBAD database. Extended=NO</i>																	

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#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	(COS.ta.836 (1) AV75 946)	COS/NUV, ACQ/SEARCH, BOA	MIRRORA	STEP-SIZE=1.767; SCAN-SIZE=2; CENTER=FLUX-W T			7.3 Secs (7.3 Secs) [==>]	[1]
	2	(COS.ta.836 (1) AV75 947)	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				13.0 Secs (13 Secs) [==>]	[1]
	3	(COS.sp.751 (1) AV75 604)	COS/FUV, TIME-TAG, PSA	G130M 1096 A	BUFFER-TIME=29 0; FP-POS=2			620. Secs (620 Secs) [==>]	[1]
	4	(COS.sp.751 (1) AV75 604)	COS/FUV, TIME-TAG, PSA	G130M 1096 A	BUFFER-TIME=29 0; FP-POS=4			620. Secs (620 Secs) [==>]	[1]
	5	(COS.sp.751 (1) AV75 610)	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=12 0; FP-POS=1			226. Secs (226 Secs) [==>]	[1]
	6	(COS.sp.751 (1) AV75 610)	COS/FUV, TIME-TAG, PSA	G130M 1222 A	BUFFER-TIME=12 0; FP-POS=3			226. Secs (226 Secs) [==>]	[2]
	7	(COS.sp.751 (1) AV75 619)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=12 0; FP-POS=2			191. Secs (191 Secs) [==>]	[2]
	8	(COS.sp.751 (1) AV75 619)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=12 0; FP-POS=4			191. Secs (191 Secs) [==>]	[2]
	9	(COS.sp.751 (1) AV75 620)	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=12 0; FP-POS=1			192. Secs (192 Secs) [==>]	[2]
	10	(COS.sp.751 (1) AV75 620)	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=12 0; FP-POS=3			192. Secs (192 Secs) [==>]	[2]
	11	(COS.sp.751 (1) AV75 626)	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=12 4; FP-POS=2			305 Secs (305 Secs) [==>]	[2]
	12	(COS.sp.751 (1) AV75 626)	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=12 4; FP-POS=4			305. Secs (305 Secs) [==>]	[3]
	13	(COS.sp.751 (1) AV75 627)	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=15 4; FP-POS=1			369. Secs (369 Secs) [==>]	[3]
	14	(COS.sp.751 (1) AV75 627)	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=15 4; FP-POS=3			369. Secs (369 Secs) [==>]	[3]
	15	(COS.sp.751 (1) AV75 629)	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=80; FP-POS=3			80. Secs (80 Secs) [==>]	[3]
	16		DARK	S/C, DATA, NONE			QASISTATES COS FUV HVLOW HVL OW	1 Secs (1 Secs) [==>]	[3]

Comments: Eliminates SPSS induced reconfiguration gaps.

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17	(COS.sp.751 (1) AV75 630)	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=80; FP-POS=3	80 Secs (80 Secs)	
					[==>]	[3]



