



## 15484 - COS FUV G140L/800 Lamp Template

Cycle: 25, Proposal Category: CAL/COS

(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	DARK WAVE	COS/FUV S/C	1	23-May-2018 19:05:03.0	yes

1 Total Orbits Used

### ABSTRACT

A new mode for COS using the G140L grating, with a central wavelength CENWAVE setting of 800 will be implemented starting in Cycle 26. The new mode is designed to allow observations from 800 - 1950Å in a single setting utilizing COS Detector Segment A, with Segment B turned off. The mode is designed to reduce the astigmatic height of the spectrum at wavelengths in the 912-1100Å wavelength region, thereby reducing the background and increasing sensitivity. This proposal is for the lamp template of the new G140L/800 mode.

## **OBSERVING DESCRIPTION**

This program follows the outline of the LP4 program 15369 (PI: Snyder) which obtained lamp template data for all cenwaves. In turn, this was based on SMOV program 11488 and Cycle 24 program 14856. First, a long (1800 sec) lamp exposure is used to allow the OSM Mechanism to settle before the lamp template data is taken. The lamp is regularly flashed for 30 sec every 120 sec during the long exposure using special engineering mode to sample the drift at defined regular intervals for later analysis. We then take 450 sec lamp exposures for cenwave G140L/800 in each of the four FP-POS. The lamp is flashed in eight 30 sec on and off intervals using special engineering mode during these exposures as well, so as to not overheat the lamp. Each lamp exposure has a total lamp on time of 240 sec (8 x 30) per FP-POS, and therefore does not exceed the 300 second limit per exposure as indicated in the warnings.

Since the wavelength calibration spectra land at LP2 for LP4 observations, we need special commanding to raise the HV to highest possible values to mitigate any gain sag holes. Lamp template data will be taken at all four FP-POS, and since the new mode has not yet been implemented, we will use the TEST row to specify the parameters required for the observations.

### ----SPECIAL REQUESTS:----

1. Please turn off calibration for the COS/FUV exposures.
2. Please disassociate all exposures.
3. Please set minwave = 800 for the COS/FUV exposures.

SQL is used to meet the above requests.

In case 1 qexposure.control\_id is modified.

In case 2 qeassociation records are deleted.

In case 3 qelogsheet.minwave is modified.

Please see G. Chapman / M. Reinhart.

# Proposal 15484 - Visit 01 - COS FUV G140L/800 Lamp Template

<b>Visit</b>	<b>Proposal 15484, Visit 01, implementation</b> <b>Diagnostic Status: Warning</b> Scientific Instruments: S/C, COS/FUV Special Requirements: PARALLEL	Wed May 23 23:05:05 GMT 2018
<b>Diagnostics</b>	(Visit 01) Warning (Orbit Planner): INEFFICIENT ORDERING OF FP-POS POSITIONS (Visit 01) Warning (Orbit Planner): LAMP EXPOSURE EXCEEDS 300 SECONDS (Visit 01) Warning (Orbit Planner): LAMP EXPOSURE EXCEEDS 300 SECONDS (Visit 01) Warning (Orbit Planner): LAMP EXPOSURE EXCEEDS 300 SECONDS (Visit 01) Warning (Orbit Planner): LAMP EXPOSURE EXCEEDS 300 SECONDS (Visit 01) Warning (Orbit Planner): LAMP EXPOSURE EXCEEDS 300 SECONDS (Visit 01) Warning (Orbit Planner): LAMP EXPOSURE EXCEEDS 300 SECONDS (Visit 01) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU	

Proposal 15484 - Visit 01 - COS FUV G140L/800 Lamp Template

#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
Exposures	1	Special Com mand -TEST - Redefine C ENWAVE= 800 with foc us position - 1487 absolut e	DARK	S/C, DATA, NONE				14 Secs (14 Secs) [==>]	[1]
	<p>Comments: Special Commanding to overwrite the G140L/TEST settings with the G140L/800 settings. OSM1 should be set to position of 1615, +17 steps from the G140L/1105 position of 1598. This shifts the Segment A coverage to 815-1948A (for FP-POS=3). FOCUS is at -1487, -1074 steps from the focus of G140L/1105 (-413). Focus value was determined by program 15451.</p>								
	2	Dark - Raise HV	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHVADJPROP; NEW ALIGNMENT ; QESIPARM ENDC TSA 178	56 Secs (56 Secs) [==>]	[1]
	<p>Comments: Nominal HV is 163 for LP4 FUV observations. We are going up to 178. Max HV change is 178 - 163 = 15 steps Exposure time = 39 + ceiling(1.1*15) = 56 seconds</p>								
3	OSM Calibr ation	WAVE	COS/FUV, TIME-TAG, WCA	G140L 1105 A		FLASH=S0120D030 ; FP-POS=3; LIFETIME-POS=L P4; SEGMENT=A		1800 Secs (1800 Secs) [==>]	[1]
<p>Comments: SQL is required to set qelogsheet.minwave to 800, to bypass calibration and to delete qeassociations.</p>									
4	G140L/FUV A/800 Lamp - FP-POS 1	WAVE	COS/FUV, TIME-TAG, WCA	G140L 1105 A		LIFETIME-POS=LP 4; FLASH=S0060D03 0; SEGMENT=A; FP-POS=1		450 Secs (450 Secs) [==>]	[1]
<p>Comments: SQL is required to set qelogsheet.minwave to 800, to bypass calibration and to delete qeassociations.</p>									

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5	G140L/FUV WAVE A/800 Lamp - FP-POS 2	COS/FUV, TIME-TAG, WCA	G140L 1105 A	LIFETIME-POS=LP 4; FLASH=S0060D03 0; SEGMENT=A; FP-POS=2	450 Secs (450 Secs) [==>]	[1]
<i>Comments: SQL is required to set qelogsheet.minwave to 800, to bypass calibration and to delete qeassociations.</i>						
6	G140L/FUV WAVE A/800 Lamp - FP-POS 3	COS/FUV, TIME-TAG, WCA	G140L 1105 A	LIFETIME-POS=LP 4; FLASH=S0060D03 0; SEGMENT=A; FP-POS=3	450 Secs (450 Secs) [==>]	[1]
<i>Comments: SQL is required to set qelogsheet.minwave to 800, to bypass calibration and to delete qeassociations.</i>						
7	G140L/FUV WAVE A/800 Lamp - FP-POS 4	COS/FUV, TIME-TAG, WCA	G140L 1105 A	LIFETIME-POS=LP 4; FLASH=S0060D03 0; SEGMENT=A; FP-POS=4	450 Secs (450 Secs) [==>]	[1]
<i>Comments: SQL is required to set qelogsheet.minwave to 800, to bypass calibration and to delete qeassociations.</i>						
8	Dark - Lowe r HV	S/C, DATA, NONE		SAA CONTOUR 31; SPEC COM INSTR ELHVADJPROP; NEW ALIGNMENT ; QESIPARM ENDC TSA 163	39 Secs (39 Secs) [==>]	[1]
<i>Comments: Adjust HV back to 163 for LP4 observations.</i>						
<i>HV is decreasing on Segment A.</i>						
<i>Exposure time = 39 seconds.</i>						
9	Special Com mand - TES T - Action R estore	S/C, DATA, NONE		SPEC COM INSTR ELOSMTEST; QESIPARM ACTIO N RESTORE	14 Secs (14 Secs) [==>]	[1]
<i>Comments: Special Commanding to restore G140L/TEST settings.</i>						

