

# 13636 - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update {LENA3}

Cycle: 21, 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) AZV18 (11) AZV18-OFFSET-NE-1.4AS	COS/FUV COS/NUV	1	10-Sep-2014 21:01:41.0	yes
02	(1) AZV18 (21) AZV18-OFFSET-AD-0.3 (22) AZV18-OFFSET-AD+0.5 DARK	COS/FUV COS/NUV S/C	2	10-Sep-2014 21:01:48.0	yes
03	(1) AZV18 (3) AZV18-OFFSET-XD+0.5 (4) AZV18-OFFSET-XD+1.0 (5) AZV18-OFFSET-XD+1.5	COS/FUV COS/NUV	2	10-Sep-2014 21:01:56.0	yes

Visit	Targets used in Visit	Configurations used in Visit	Orbits Used	Last Orbit Planner Run	OP Current with Visit?
04	(1) AZV18	COS/FUV	2	10-Sep-2014 21:02:02.0	yes
	(3) AZV18-OFFSET-XD+0.5	COS/NUV			
	(4) AZV18-OFFSET-XD+1.0				
	(5) AZV18-OFFSET-XD+1.5				
05	(1) AZV18	COS/FUV	2	10-Sep-2014 21:02:08.0	yes
	(3) AZV18-OFFSET-XD+0.5	COS/NUV			
	(4) AZV18-OFFSET-XD+1.0				
	(5) AZV18-OFFSET-XD+1.5				
06	(6) WD1657+343	COS/FUV	2	10-Sep-2014 21:02:16.0	yes
	(61) WD1657+343-OFFSET-SE- 1.4AS	COS/NUV			
	(62) WD1657+343-OFFSET-XD-1.0				

11 Total Orbits Used

#### **ABSTRACT**

Verify the ability of the Cycle 22 COS FSW to place an isolated point source at the center of the PSA, using FUV dispersed light target acquisition (TA) from the object and all three FUV gratings at the Third Lifetime Position (LP3). This program is modeled from the activity summary of LENA3.

This program should be executed after the LP3 HV, XD spectral positions, aperture mechanism position, and focus are determined and updated. In addition, initial estimates of the LIFETIME=ALTERNATE TA FSW parameters and subarrays should be updated prior to execution of this program. After Visit 01, the subarrays will be updated. After Visit 2, the FUV WCA-to-PSA offsets will be updated. Prior to Visit 6, LV56 will be installed will include new values for the LP3 FUV plate scales. VISIT 6 exposures use the default lifetime position (LP3).

NUV imaging TAs have previously been used to determine the correct locations for FUV spectra. We follow the same procedure here.

Note that the ETC runs here were made using ETC22.2 and are therefore valid for Mach 2014. Some TDS drop will likely have occured before these visits execute, but we have plenty of count to do what we need to do in this program.

#### **OBSERVING DESCRIPTION**

Successful FUV dispersed light centering (target acquisition, TA) of a point source within the PSA at the third lifetime position (LP3) is verified. This activity defines the FUV TA parameters in the Cycle 22 flight software (FSW) (LV56) and verifies that the FUV centering error is within the required thresholds. viz. 0.1 arcsec.

Visits 1-5 will be run at LIFETIME=ALTERNATE. Prior to execution, all the appropriate HV, SIAF, APERTURE, FOCUS, SUBARRAYS, and TA parameter updates must be available. The Subarrays, HV and SIAF are all part of the ground system, while the FOCUS values, APERTURE positions and the TA parameters are patchable constants in the FSW. Once we are ready to move to LP3 we will need to swap BEST (Currently LP2) and ALTERNATE (Currently LP3) such that BEST=LP3 and ALTERNATE=LP2, both in the FSW and in the SIAF file. Visit 6 wll execute at BEST after LV56 has been installed.

Visit 1 tests ACQ/SEARCH and also verifies that the updated FUV TA sub-arrays are correct for the LP3. After an NUV imaging TA and the standard NUV to FUV offset to the LP3, a 3x3x1.0" ACQ/SEARCH pattern is simulated by moving the target relative to the aperture via POSTARGS. At each position, a quick spectrum is taken at each location (with TAGFLASH). 1" was selected instead of the default 1.767" so that we ensure that no target light is missing the TA sub-arrays at locations relative to the PSA where target light still enters the PSA. An actual 3x3x1.0" ACQ/SEARCH is performed on the same centered target. Finally, a 3x3x1.767" ACQ/SEARCH is performed on a target offset by 1.414" in the aperture. Using the Roll angle on the data of the expected observation, the target will be offset by 1" in AD (Along Dispersion) and 1" in XD (cross-dispersion).

Visit 2 tests ACQ/PEAKD. From a centered position, simulate a wide ACQ/PEAKD pattern (i.e., 9 x 0.4"). Take spectra at all positions (via POSTARGs) using G130M/1309. Track Ly-alpha to make sure the Geocoronal light remains outside the TA extraction boxes (subarrays) at all offsets. Repeat an actual 9x0.4" ACQ/PEAKD for a centered target, then center on off-centered target in both directions. [9x0.3" (offset +0.3" Y) and 7x0.55" (offset -0.8" Y)]. Before moving the target away from the centered position, take G140L, G130M, and G160M spectra at centered and extreme CENWAVE positions. Use moderate FLASH exposures to track the slope of the WCA light on the detector to determine if CENWAVE specific WCA-to-PSA offsets are required.

Visits 1 and 2 use the same roll angle of 345 degrees +/- 1 degree.

Visits 3-5 test ACQ/PEAKXD and define the plate scales for each grating (Visit 3= G130M, Visit 4= G160M, Visit 5 = G140L). Take spectra as the target is stepped (via POS-TARGs) in the XD direction to determine the plate scales. WCA lamp will also be flashed to verify the plate scale at the WCA position and the PSA locations. Spectra will be taken at 9 XD locations +/- (0, 0.3, 0.6, 1.1, 1.6)". This will need to be done for each grating. We will need to test these plate scales (and possibly updated WCA to PSA offsets) in a followup visit. Also, test ACQ/PEAKXD at current and offset positions using the initial offsets and plate scales previously determined. The test sequence is centered, +/- 1.0, +/- 0.5, and +/-1.5 to determine the effects of gain sag on the centering accuracy (3 visits x 2 orbits each.) Also, take a centered G140L BOA spectrum in Visit 5. At the end of Visit 5, we test out the new PEAKXD with NUM\_POS > 1 TA for each FUV grating.

Visits 3-5 all use a roll angle of 30 degrees +/- 1 degree.

Visit 6 is the confirmation visit. Will test ACQ/SEARCH+PEAKXD+PEAKD on a target offset -1" in AD, and +1" off in XD. G160M will use a 3x3x1.767" ACQ/SEARCH + PEAKXD+ 7x0.45" PEAKD. G130M will use a PEAKXD+5x0.8" PEAKD. Also, test each grating for +/- 1.0" ACQ/PEAKXDs to verify plate scales and WCA-to-PSA offsets. We would like to run this Visit on as close to Cycle 22 conditions as possible. (LIFETIME=ALTERNATE, using FSW HV and focus values). There are also two PEAKXDs with NUM\_POS > 1 in this visit.

Visit 6 will use a roll angle of 298 +/- 1 degree. Visit 6 will be executed with the default lifetime position (which will be LP3 when it is executed.)

The HVs to be used during these visits are:

CENWAVE Lifetime Position HVA,HVB

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G130M (not 1222) Alternate (LP3) 167,163

G160M Alternate (LP3) 167,163

G130M/1222 Alternate (LP3) 171,167

G140L Alternate (LP3) 167,163

The Aperture Mech table should look like:

pcmech\_ApMXDispPosition=

```
Proposal 13636 (STScI Edit Number: 4, Created: Wednesday, September 10, 2014 8:02:19 PM EST) - Overview
 /* FUV NUV */
 /* --- */
  { 53, 126 }, /* PSA_B, best PSA position */
  {-226, -153}, /* BOA_B, best BOA position */
  {-226, -153 }, /* FCA_B, best FCA position */
  { 53, 126 }, /* WCA_B, best WCA position */
  { 181, 126 }, /* PSA_A, alternate PSA position */
  {-98, -153}, /* BOA_A, alternate BOA position */
  {-98, -153}, /* FCA_A, alternate FCA position */
  { 181, 126 }, /* WCA_A, alternate WCA position */
  { 126, 126 }, /* PSA_O, original PSA position */
  {-153, -153}, /* BOA_O, original BOA position */
  {-153, -153}, /* FCA_O, original FCA position */
  { 126, 126 } /* WCA_O, original WCA position */
};
The ALTERNATE SIAF entries should look like:
LFBOAA
           2014.188:00:00:00 230.9384 -239.2996 0.022600 0.094300 135.0 45.0
LFPSAA
           2014.188:00:00:00 230.9384 -239.2996 0.022600 0.094300 135.0 45.0
LAPTFBOAFA 2014.188:00:00:00 221.5642 -248.6738 0.022600 0.094300 135.0 45.0
LAPTFPSAFA 2014.188:00:00:00 240.3126 -229.9254 0.022600 0.094300 135.0 45.0
----- Additional Comments -----
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As of 7/3/2014, the planned schedule for 13636 is:

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SMS of Sept 8 visit 1 of 13636 1 orbit (external)
SMS of Sept 29 visit 2 of 13636 2 orbits (external)
SMS of Oct 27 visits 3-5 of 13636 6 orbits (external)
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SMS of Feb 9 visit 6 of 13636 2 orbits (external)

From APT (V22.2), the roll angles availble during these dates for the Visit 1-5 target, AzV18, are:

- 01 Sep 2014 302.06 350.46
- 02 Sep 2014 303.08 351.48
- 03 Sep 2014 304.10 352.50
- 04 Sep 2014 305.22 353.42
- 05 Sep 2014 306.23 354.43
- 06 Sep 2014 307.24 355.44
- 07 Sep 2014 308.25 356.45
- 08 Sep 2014 309.45 357.25 <- Visit 1, ROLL Angle set to 345d
- 09 Sep 2014 310.45 358.25
- 10 Sep 2014 311.45 359.25
- 11 Sep 2014 312.45 000.25
- 12 Sep 2014 313.54 001.14
- 13 Sep 2014 314.53 002.13
- 14 Sep 2014 315.51 003.11
- 15 Sep 2014 316.70 003.90
- 16 Sep 2014 317.68 004.88
- 17 Sep 2014 318.66 005.86
- 18 Sep 2014 319.63 006.83
- 19 Sep 2014 320.70 007.70
- 20 Sep 2014 321.67 008.67
- 21 Sep 2014 322.64 009.64
- 22 Sep 2014 323.70 010.50

- 23 Sep 2014 324.66 011.46
- 24 Sep 2014 325.62 012.42
- 25 Sep 2014 326.67 013.27
- 26 Sep 2014 327.63 014.23
- 27 Sep 2014 328.58 015.18
- 28 Sep 2014 329.72 015.92
- 29 Sep 2014 330.67 016.87 <- Visit 2, ROLL Angle also set to 345d
- 30 Sep 2014 331.71 017.71
- 01 Oct 2014 332.65 018.65
- 02 Oct 2014 333.59 019.59
- 03 Oct 2014 334.52 020.52
- 04 Oct 2014 335.45 021.45
- 05 Oct 2014 336.38 022.38
- 06 Oct 2014 337.41 023.21
- 07 Oct 2014 338.34 024.14
- 08 Oct 2014 339.36 024.96
- 09 Oct 2014 340.29 025.89
- 10 Oct 2014 341.21 026.81
- 11 Oct 2014 342.23 027.63
- 12 Oct 2014 343.14 028.54
- 13 Oct 2014 344.07 029.45
- 14 Oct 2014 344.98 030.36
- 15 Oct 2014 345.90 031.28
- 16 Oct 2014 346.90 032.10
- 17 Oct 2014 347.81 033.01
- 18 Oct 2014 348.72 033.92
- 19 Oct 2014 349.62 034.82
- 20 Oct 2014 350.53 035.73
- 21 Oct 2014 351.54 036.54

- 22 Oct 2014 352.44 037.44
- 23 Oct 2014 353.35 038.35
- 24 Oct 2014 354.25 039.25
- 25 Oct 2014 355.15 040.15
- 26 Oct 2014 356.06 041.06
- 27 Oct 2014 356.96 041.96 <- Visits 3,4 & 5, ROLL Angle set to 30d
- 28 Oct 2014 357.86 042.86
- 29 Oct 2014 358.76 043.76
- 30 Oct 2014 359.67 044.67
- 31 Oct 2014 000.57 045.57
- 01 Nov 2014 001.57 046.37
- 02 Nov 2014 002.47 047.27
- 03 Nov 2014 003.38 048.18
- 04 Nov 2014 021.68 031.68
- 05 Nov 2014 022.58 032.58
- 06 Nov 2014 023.49 033.49
- 07 Nov 2014 024.39 034.39
- 08 Nov 2014 025.30 035.30
- 09 Nov 2014 026.21 036.21
- 10 Nov 2014 027.12 037.12
- 11 Nov 2014 028.02 038.02
- 12 Nov 2014 028.93 038.93
- 13 Nov 2014 029.85 039.85
- 14 Nov 2014 030.76 040.76

From APT (V22.2), the roll angles availble for the Visit 6 target, WD1657, are:

- 31 Jan 2015 297.60 307.60
- 01 Feb 2015 296.71 306.71

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Proposal 13636 (STScI Edit Number: 4, Created: Wednesday, September 10, 2014 8:02:19 PM EST) - Overview
02 Feb 2015 295.82 - 305.82 <-Visit 6 target date. Roll angle set to 298, so that it will still work unti 2/10/15
03 Feb 2015 294.93 - 304.93
04 Feb 2015 294.05 - 304.05
05 Feb 2015 293.17 - 303.17
06 Feb 2015 292.29 - 302.29
07 Feb 2015 291.42 - 301.42
08 Feb 2015 290.55 - 300.55
09 Feb 2015 289.68 - 299.68
10 Feb 2015 288.82 - 298.82 <- Visit 6 target date. Roll angle set to 298, so that it will still work unti 2/10/15
11 Feb 2015 287.96 - 297.96
12 Feb 2015 287.10 - 297.10
13 Feb 2015 286.24 - 296.24
14 Feb 2015 285.39 - 295.39
15 Feb 2015 284.54 - 294.54
16 Feb 2015 283.69 - 293.69
17 Feb 2015 282.84 - 292.84
18 Feb 2015 281.99 - 291.99
19 Feb 2015 281.15 - 291.15
20 Feb 2015 280.30 - 290.30
21 Feb 2015 279.46 - 289.46
22 Feb 2015 278.62 - 288.62
23 Feb 2015 277.78 - 287.78
24 Feb 2015 276.94 - 286.94
25 Feb 2015 276.10 - 286.10
26 Feb 2015 257.86 - 302.66
27 Feb 2015 256.92 - 301.92
28 Feb 2015 256.09 - 301.09
```

Visit 6 is sometime in Feb 2015 (TBD), we will adjust the ROLL angle when we know the exact date of execution. Visit 6 will be the first COS visit

Proposal 13636 - ACQ/SEARCH TEST (01) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (LENA3) Proposal 13636, ACQ/SEARCH TEST (01), completed Thu Sep 11 01:02:19 GMT 2014 **Diagnostic Status: Warning** Scientific Instruments: COS/NUV, COS/FUV Special Requirements: SCHED 100%; ORIENT 344D TO 346 D; BETWEEN 08-SEP-2014:00:00:00 AND 11-SEP-2014:00:00:00 Comments: ACQ/SEARCH Test. The target is AVZ18 (the SMOV TA target). For a 3x3x1" spiral pattern, the telescope slew is [AD,XD] 0.000.001.00 0.00 1.00 1.00 1.00 0.001.00 -1.00 0.00 -1.00 -1.00 -1.00 0.00 -1.00 -1.00 The roll angle is constrained to 345 degrees +/- 1 degree, schedulability = 100%. First we use pos-targs to simulate the 3x3x1.0" pattern, taking TAGFLASHed spectra at each location. We then perform a 3x3x1.0" ACQ/SEARCH on the centered target. We then offset the target 1" in XD and 1" in AD and perform a 3x3x1.767" ACO/SEARCH on the target. (ACQ/SEARCH TEST (01)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (ACQ/SEARCH TEST (01)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (ACQ/SEARCH TEST (01)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(ACQ/SEARCH TEST (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.

(ACQ/SEARCH TEST (01)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	AZV18	RA: 00 47 12.1700 (11.8007083d)	Proper Motion RA: -0.0003 sec of time/yr	V=12.48	Reference Frame: ICRS				
			Dec: -73 06 32.68 (-73.10908d)	Proper Motion Dec: -0.0035 arcsec/yr	(B-V)=+0.04					
l			Equinox: J2000	Epoch of Position: 2000						
	Comments: B2Ia, Magellanic Clouds. Nominal ETC exposure times from spectrum supplied by D. Lennon:									
ırgets	FUV, G13 FUV, G14	RRORA, BOA: 27s (COS.ta. 30M, 1309, PSA: 2s (COS.s. 40L, 1105: 038s S/N=10 spe 60M, 1600: 0215s S/N=10 s	360711) a.360701) & 182s S/N=10 spectroscopy (COS.sp.3 ectroscopy (COS.sp.389720) epectroscopy (COS.sp.389715)	(60698)						
ļ <sup>e</sup>	(11)	AZV18-OFFSET-NE-	Offset from AZV18		V=12.48	Offset Position (AZV18-OFFSET-NE-				
eg		1.4AS RA Offset: -3.79451E-4 Degrees			(B-V)=+0.04	1.4AS)				
Fixe			Dec Offset: -0.366025 Arcsec							
1	Comment	s: This target is offset by 1"	in both AD (X) and XD (Y), so $sqrt(2)=1.414"$ total	al offset.						
	The U3 roll angle has been constrained to 345 +/- 1 degree									
AZV18 offset for ACQ/SEARCH (AD,XD)=(-1",-1")=-sqrt(2")@10d North of East dRA=+sqrt(2)"*cos(15)=+1.366025" =+0.000379451d dDEC=+sqrt(2)"*sin(15)=+0.366025"										
	To move t	the target to this location, th	ne offset should have the opposite sign in the offsets	s above.						

Proposal 13636 - ACQ/SEARCH TEST (01) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (LENA3) Exp. Time (Total)/[Actual Dur.] Label **Target** Config, Mode, Aperture Spectral Els. Opt. Params. Special Regs. Groups Orbit (ETC Run) 2 nuv a/im (1) AZV18 COS/NUV, ACQ/IMAGE, BOA MIRRORA 31 Secs (31 Secs) (COS.ta.617 I = = > 1[1] 093) Comments: NUV ACO/IMAGE with BOA+MIRRORA to refine centering. COS.ta.617093, gives S/N=60.000 in 27.48 seconds, we go for 31s. G130M - B (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=44 180 Secs (180 Secs) ASELINE S 1309 A I ==> 1PECTRUM FP-POS=3; (COS.sp.617 094) FLASH=S0090D03 [1] 6: LIFETIME-POS=A LTERNATE Comments: Spectrum of source to define correct location of star when it is centered in NUV. (COS.sp.617094, simulates S/N=10 per RE in 125s) BT=666\*(2/3) = 444. This spectrum will be used to define the WCA-to -PSA offset for the G130M. Tagflash sequence is 36s on - 54 off - 36s on - 54 off (72s lamp time). \*\*NOTE THIS ETC RUN WAS MADE WITH ETC 22.2\*\* The TDS for these exposures is set for 03-31-2014. Therefore our target will appear slightly fainter than the ETC predictions, but we pack the orbits the best we can, and the counts should be sufficient for our purposes G130M - P (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=60 POS TARG 1.0,null 20 Secs (20 Secs) OSTARG + 1309 A *[==>1* SPECTRU FP-POS=3; M1(1,0)(COS.sp.617 FLASH=YES; [1] 094)LIFETIME-POS=A LTERNATE Exposures Comments: POSTARG TO SIMULATE ACQ/SEARCH. S/N = 60 is reached in 2 seconds. We want to get a decent look at the spectrum, so we'll observe for 20 seconds. (~16000 total counts(A+B)). at 1.0 off, the throu ghput will be 67%, so we leave the BT at 600s G130M - P (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=60 POS TARG 1.0,1.0 22 Secs (22 Secs) OSTARG + 1309 A [==>1 SPECTRU FP-POS=3; M2 (1,1)(Co FLASH=YES; [1] rner) (COS.sp.617 LIFETIME-POS=A 094) LTERNATE Comments: POSTARG TO SIMULATE ACQ/SEARCH 22 Secs (22 Secs) G130M - P (1) AZV18 COS/FUV. TIME-TAG. PSA G130M BUFFER-TIME=60 POS TARG 0.1.0 OSTARG + 1309 A *[==>]* **SPECTRU** FP-POS=3; M3(0,1)FLASH=YES; [1] (COS.sp.617 094) LIFETIME-POS=A LTERNATE Comments: POSTARG TO SIMULATE ACQ/SEARCH G130M - P (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=60 POS TARG -1,1 22 Secs (22 Secs) OSTARG + 1309 A [==>1 SPECTRU FP-POS=3: M4 (-1,1) (C FLASH=YES; [1] orner) (COS.sp.617 LIFETIME-POS=A 094) LTERNATE Comments: POSTARG TO SIMULATE ACO/SEARCH

Proposal 13636 - ACQ/SEARCH TEST (01) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (LENA3) G130M - P (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=60 POS TARG -1,null 20 Secs (20 Secs) OSTARG+ 1309 A *[==>1* SPECTRU FP-POS=3: M5(-1.0)(COS.sp.617 FLASH=YES: [1] 094)LIFETIME-POS=A LTERNATE Comments: POSTARG TO SIMULATE ACO/SEARCH COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=60 POS TARG -1,-1 22 Secs (22 Secs) G130M - P (1) AZV18 OSTARG + 1309 A I ==> ISPECTRU FP-POS=3; M6 (-1,-1) ( Corner) FLASH=YES; [1] (COS.sp.617 LIFETIME-POS=A 094) LTERNATE Comments: POSTARG TO SIMULATE ACQ/SEARCH G130M - P (1) AZV18 G130M 22 Secs (22 Secs) COS/FUV, TIME-TAG, PSA BUFFER-TIME=60 POS TARG 0,-1 OSTARG + 1309 A I = = > 1**SPECTRU** FP-POS=3; M7(0,-1)(COS.sp.617 FLASH=YES; [1] 094)LIFETIME-POS=A LTERNATE Comments: POSTARG TO SIMULATE ACO/SEARCH 10 G130M - P (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=60 POS TARG 1,-1 22 Secs (22 Secs) OSTARG + 1309 A [==>1 SPECTRU FP-POS=3; M8 (1,-1) (C FLASH=YES; [1] orner) (COS.sp.617 LIFETIME-POS=A 094)LTERNATE Comments: POSTARG TO SIMULATE ACQ/SEARCH G130M - A (1) AZV18 COS/FUV, ACO/SEARCH, PSA G130M SCAN-SIZE=3; 2 Secs (2 Secs) CQ/SEARC 1309 A STEP-SIZE=1.0; I = = > 1Η [1] (COS.sa.617 LIFETIME-POS=A 097) LTERNATE Comments: 3x3x1.0" ACQ/SEARCH on the centered target. COS.sa.617097. S/N = 60 is reached in 1.4 (A+B) seconds. This is performed on the actual target. G130M - B (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=44 110 Secs (110 Secs) ASELINE S 4; 1309 A [==>] PECTRUM FP-POS=3; (COS.sp.617 094) FLASH=YES: [1] LIFETIME-POS=A LTERNATE Comments: Spectrum of source to confirm the FUV ACQ/SEARCH centing. (COS.sp.617094, simulates S/N=10 per RE in 125s) BT=666\*(2/3) = 444. We use ~110 seconds to get ~S/N/RE=8. G130M - A (11) AZV18-OFFSE COS/FUV, ACO/SEARCH, PSA G130M SCAN-SIZE=3; 2 Secs (2 Secs) CO/SEARC T-NE-1.4AS 1309 A STEP-SIZE=1.767; [==>1 Η [1] (COS.sa.617 LIFETIME-POS=A 098) LTERNATE Comments: 3x3x1.767" ACQ/SEARCH. COS.sa.617097. S/N = 60 is reached in 1.4 (A+B) seconds. This is performed on the fictious target 1" to the NE, so the actual target is 1" to the SW. The target will be 1/3 vigne tted, in the center search position, but that's ok, that's what we want.

Proposal 13636 - ACQ/SEARCH TEST (01) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (LENA3) 110 Secs (110 Secs) G130M - B (11) AZV18-OFFSE COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=44 ASELINE S T-NE-1.4AS 1309 A [==>] PECTRUM FP-POS=3; (COS.sp.617 094) FLASH=YES: [1] LIFETIME-POS=A LTERNATE Comments: Spectrum of source to verify accurate centering (COS.sp.360698).  $BT=986*(2/3)=\sim630.182s$  gives S/N/RE=10. We use  $\sim110s$ econds to get  $\sim5/N/RE=8$ . Orbit 1 Server Version: 20140605 Pointing Maneuver **€--** Exp. 2 Pointing Maneuver **€--**≱ Ехр. 3 Pointing Maneuver €--> Exp. 4 Pointing Maneuver Pointing Maneuver **€--**• Exp. 6 Pointing Maneuver **€-->** Exp. 7 Pointing Maneuver Orbit Structure **€--**≱ Ехр. 8 Pointing Maneuver **€--≽** Exp. 9 Pointing Maneuver Pointing Maneuver ۥ• Ехр. 12 Pointing Maneuver **€--**ъ Ехр. 14 Occultation GS Acq Unused Orbital Visibility = 0 Ехр. 1 Ехр. 11 Exp. 13 Home 3500 2500 3000 5000

# Proposal 13636 - ACQ/PEAKD TEST (02) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (LENA3)

Proposal 13636, ACQ/PEAKD TEST (02), implementation

Thu Sep 11 01:02:21 GMT 2014

**Diagnostic Status: Warning** 

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

Special Requirements: SCHED 100%; ORIENT 344D TO 346 D; AFTER 01 BY 13 D TO 28 D

Comments: ACQ/PEAKD test on AVZ18. After NUV ACQ/IMAGE centering, we first take G130M, G160M, and G140L exposures at centered and extreme CENWAVES to define the WCA-to-PSA offsets, AND map the sloping WCA spectrum to see if CENWAVE dependent offsets are required. Then then we simulate a 9x0.4" ACQ/PEAKD taking short spectra. We start with the centered (0) position then go to -1.6" in X and proceed to +1.6" X. We flash the lamp at all positions.

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We then perform an actual 9x0.4" ACQ/PEAKD on the centered target, then attempt a 9x0.3" ACQ/PEAKD on a target offset by +0.3", then a 7x0.5" offset by -0.8".

The roll angle is constrained to 345 degrees, schedulability = 100%.

We balance the POSTARG'd spectra by the expected throughput (which is a function of radius)

OFFSET %LOSS ET equivalent/second ET 0.00 0.00 1.00 20s 0.40 0.00 1.00 20s 0.80 20.00 1.25 25s 1.20 46.67 2.1 37.5 1.60 73.33 3.75 75.0s

Diagnostics
(ACQ/I)
(ACQ/I)
(ACQ/I)

(ACQ/PEAKD TEST (02)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(ACQ/PEAKD TEST (02)) Warning (Form): COS ACQ/PEAKD exposure should be preceded by an ACQ/PEAKXD exposure in the Visit.

(ACQ/PEAKD TEST (02)) 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.

(ACQ/PEAKD TEST (02)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

Proposal 13636 - ACQ/PEAKD TEST (02) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update {LENA3}

	# Name		Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous			
	(1) AZV	18	RA: 00 47 12.1700 (11.8007083d)	Proper Motion RA: -0.0003 sec of time/yr	V=12.48	Reference Frame: ICRS			
			Dec: -73 06 32.68 (-73.10908d)	Proper Motion Dec: -0.0035 arcsec/yr	(B-V)=+0.04				
			Equinox: J2000	Epoch of Position: 2000					
	Comments: B2Ia,	Magellanic Clouds.	Nominal ETC exposure times from spectrum su	pplied by D. Lennon:					
	FUV, G130M, 130 FUV, G140L, 110	5: 038s S/N=10 spe	360711) a.360701) & 182s S/N=10 spectroscopy (COS.sp. actroscopy (COS.sp.389720) pectroscopy (COS.sp.389715)	.360698)					
	(21) AZV	18-OFFSET-AD-0.3	3 Offset from AZV18		V=12.48	Offset Position (AZV18-OFFSET-AD-0.3)			
			RA Offset: -7.217E-5 Degrees		(B-V)=+0.04				
			Dec Offset: 0.15 Arcsec						
ي ا	Comments: This to	arget is offset -0.3"	in +AD direction.						
Targets	The U3 roll angle has been constrained to be 345 +/- 1 degree								
Tar	This target can be used from Aug 27 to Oct 14, 2014.								
Fixed		(30d) = +0.25980762'	3",0)=-0.3"@30d N of W "=+0.00007217d						
	To move the targe	t to this location, th	e offset should have the opposite sign in the offse	ts above.					
		18-OFFSET-	Offset from AZV18		V=12.48	Offset Position (AZV18-OFFSET-AD+0.5)			
	AD+0	0.5	RA Offset: 1.2028E-4 Degrees		(B-V)=+0.04				
			Dec Offset: -0.25 Arcsec						
	Comments: This to	arget is offset +0.5"	' in the -AD direction.						
	The U3 roll angle	has been constrain	ed to be 345 +/- 1 degree						
	This target can be used from Aug 27 to Oct 14, 2014.								
		0d)=-0.43301269" =	0.5",0)=0.5"@30d N of West =-0.00012028d						
L	To move the targe	t to this location, th	e offset should have the opposite sign in the offse	ts above.					

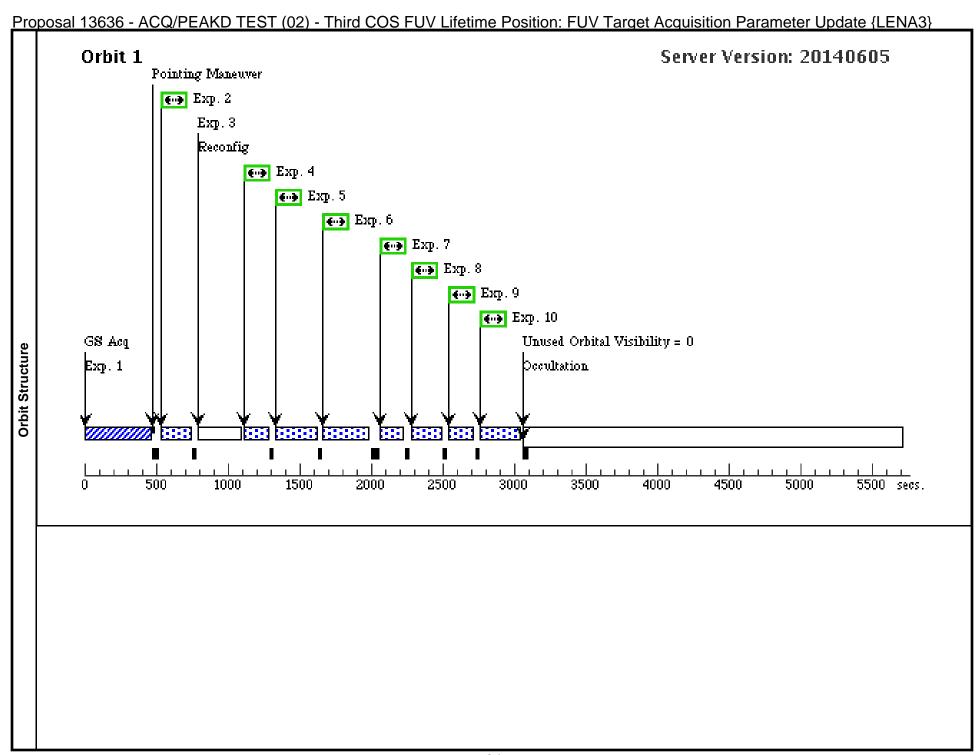
Proposal 13636 - ACQ/PEAKD TEST (02) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update {LENA3}

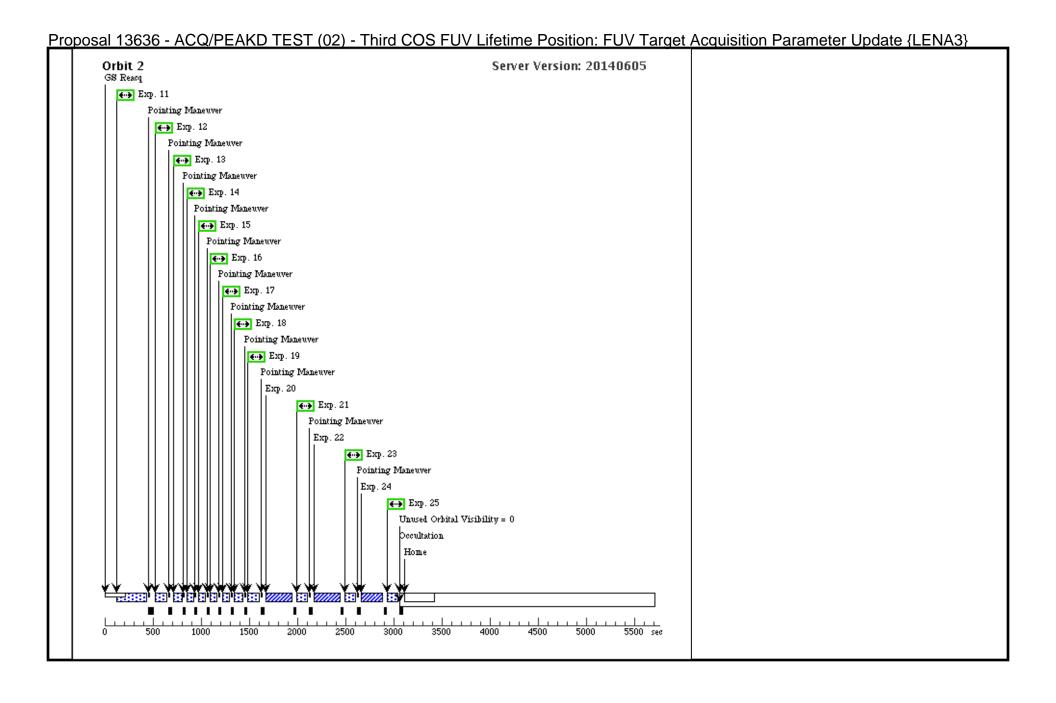
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbi
1	2 nuv a/im	(1) AZV18	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				30 Secs (30 Secs)	
	(COS.ta.617 093)							[==>]	[1]
Con	nments: NUV A	ACQ/IMAGE with	BOA+MIRRORA to refine centering. CC	S.ta.617093 , gives	S/N=60.000 in 27.48 sec	conds, we go for 30	s.		
2	G140L/1105	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L	BUFFER-TIME=40			30 Secs (30 Secs)	
	- BASELIN E SPECTR			1105 A	0;			[==>]	
	UM				FP-POS=3;				
	(COS.sp.617 110)				FLASH=S0200D03 0;				[1]
					WAVECAL=YES;				[-]
					LIFETIME-POS=A				
<i>C</i>			C d CHOLINE VD L C C		LTERNATE		CAMPE 10 (	1400 00A : 20 5	100
Con 2	nments: Spectr	um of source to a DARK	efine the G140L/1105 XD location of targ S/C, DATA, NONE	get when it is center	ea w/ NUV ACQ/IMAGE	QASISTATES C		$\frac{1400.00A \text{ in } 29.5 \text{ seconds. } BT=2/3  (600)=4}{1 \text{ Secs } (1 \text{ Secs})}$	00.
3		DAKK	S/C, DATA, NONE			FUV HVLOW H		[==>]	
						OW		[>]	[1]
Con	7,7		ons from SEGA to HVNOM. Exposure ad					269 (269	т —
4	G140L/1280 - BASELIN	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=40 0;			$36 \operatorname{Secs} (36 \operatorname{Secs})$ $I = > I$	
	E SPECTR UM			1280 A	FP-POS=3;			[==>]	
	(COS.sp.617				FLASH=S0200D03				
	114)				6;				[1]
					WAVECAL=YES;				
					LIFETIME-POS=A LTERNATE				
Con	nments: Spectr	um of source to d	efine the G140L/1280 XD location of tar	get when it is center	ed w/ NUV ACQ/IMAGE	E. COS.sp.617114 gi	ves S/N/RE = 10 at	1400A in 29.5 seconds. $BT=2/3$ (600) = 400	)
5	G160M/157	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=48			36 Secs (36 Secs)	
	7 - BASELI NE SPECT			1577 A	3;			[==>]	
	RUM				FP-POS=3;				
	(COS.sp.617 117)				FLASH=S0200D03 6;				[1]
					WAVECAL=YES;				[-]
					LIFETIME-POS=A LTERNATE				
Cor	nments: Snectr	um of source to d	efine WCA location for G160M/1577, ET	= IAMP TIMF = 3		s S/N/RF=10 @ 16	10A in 275s (RT=2/	3*725=483)	-
6	G160M/160		COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=51			190 Secs (190 Secs)	
	0 - BASELI NE SPECT			1600 A	3;			[==>]	
	RUM				FP-POS=3;				
	(COS.sp.617 118)				FLASH=S0200D03 6;				
	110)				WAVECAL=YES;				[1]
					LIFETIME-POS=A LTERNATE				
Con	nments: Spectr	um of source to d	efine WCA location for G160M/1600, ET	$= LAMP\ TIME = 3$		s S/N/RE=10 @ 161	OA in 275s. (BT=2/	3*769=513).	
2011		5, 50 11. 00 10 10	-J 212 toolahon Jon 213011/1000, <b>B1</b>				2,20, (21–2,		

ropc	<u>Sai 13030 - AU</u>	W/PEAND TEST (UZ)	<u> </u>	V Liletime Position. FC	JV Target Acquisition Pai	rameter Opuate (LEINA	<u>.3}</u>
7	G160M/162 (1) AZV	718 COS/FUV, TIME-T	AG, PSA G160M	BUFFER-TIME=54		36 Secs (36 Secs)	
	3 - BASELI NE SPECT		1623 A	5;		[==>]	
	RUM			FP-POS=3;			
	(COS.sp.617 119)			FLASH=S0200D03 6;			
	119)			WAVECAL=YES;			[1]
				LIFETIME-POS=A			
				LITETIME-FOS_A LTERNATE			
Co	nments: Spectrum of sou	rce to define WCA location for G1	$60M/1623$ , $ET = LAMP\ TII$	$ME = 36s. \ COS.sp.617119 \ gives S/N/s$	/RE=10 @ 1640A in 222s. (BT=2/3*818=	=545).	•
8	G130M/132 (1) AZV	718 COS/FUV, TIME-T	AG, PSA G130M	BUFFER-TIME=43		36 Secs (36 Secs)	
	7 - BASELI NE SPECT		1327 A	0;		[==>]	
	RUM			FP-POS=3;			
	(COS.sp.617 121)			FLASH=S0060D03			
	121)			6; WAVECAL=YES;			[1]
				LIFETIME-POS=A LTERNATE			
Co	nments: Spectrum of sou	rce to define correct location of sto	ır when it is centered in NU	V ( COS.sp.617121). BT=645*(2/3) =	= ~430. This will get us S/N~10 per RE in	n 122s. 36s lamp flash.	
9	G130M/129 (1) AZV	718 COS/FUV, TIME-T	AG, PSA G130M	BUFFER-TIME=47		36 Secs (36 Secs)	
	1 - BASELI NE SPECT		1291 A	4;		[==>]	
	RUM			FP-POS=3;			
	(COS.sp.617 124)			FLASH=S0060D03			
	124)			6; WAVECAL=YES;			[1]
				LIFETIME-POS=A LTERNATE			
Co.	nments: Spectrum of sou	rce to define correct location of sto	ır when it is centered in NU	V(COS.sp.617124). $BT=711*(2/3)=$	= ~474. This will get us S/N~10 per RE in	n 122s. 36s lamp flash	
10	G130M/122 (1) AZV			BUFFER-TIME=75	,	146 Secs (146 Secs)	
	2 - BASELI NE SPECT		1222 A	4;		[==>]	
	RUM			FP-POS=3;			
	(COS.sp.617			FLASH=S0200D03			
	126)			6;			[1]
				WAVECAL=YES;			
				LIFETIME-POS=A LTERNATE			
Co	nments: Spectrum of sou	rce to define correct location of sta	ır when it is centered in NI.		= $\sim$ 754. This will get us S/N $\sim$ 10 per RE i	in 119s. 36s lamp flash	-1
11	G130M/130 (1) AZV			BUFFER-TIME=44	Sequence 11-19 Non	170 Secs (170 Secs)	
	9 - BASELI		1309 A	4;	-Int in ACQ/PEAKD	[==>1	
	NE SPECT RUM			FP-POS=3;	TEST (02)		
	(COS.sp.617			FLASH=S0200D03			
	129)			6;			[2]
				WAVECAL=YES;			
				LIFETIME-POS=A LTERNATE			
Co	nments: Spectrum of sou	rce to define correct location of sta	ır when it is centered in NI		= ~444. This will get us S/N~10 per RE in	122. 36s lamp flash	1
	2F 2000 00 000	or recurrent of sic		(210) =	2 or wo on. To per RE we		

Proposal 13636 - ACQ/PEAKD TEST (02) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (LENA3) G130M - P (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=60 POS TARG -1.6, null Sequence 11-19 Non 75 Secs (75 Secs) OSTARG+ -Int in ACO/PEAKD 1309 A I = = > 1SPECTRU TEST (02) FP-POS=3: M1 (-1.6) (COS.sp.617 FLASH=YES: [2] 129) LIFETIME-POS=A LTERNATE Comments: POSTARG TO SIMULATE 9x0.4" ACO/PEAKD. This is the x=-1.6" position. S/N = 60 is reached in 2 seconds. We want to get a decent look at the spectrum, so we'll observe for 20 seconds. COS/FUV, TIME-TAG, PSA G130M G130M - P (1) AZV18 BUFFER-TIME=60 POS TARG -1.2, null Sequence 11-19 Non 37.5 Secs (37.5 Secs) OSTARG + -Int in ACO/PEAKD 1309 A I = = > 1SPECTRU TEST (02) FP-POS=3; M2(-1.2)(COS.sp.617 FLASH=YES; [2] 129) LIFETIME-POS=A LTERNATE Comments: POSTARG TO SIMULATE ACO/PEAKD, his is the x= -1.2 " position, S/N = 60 is reached in 2 seconds. We want to get a decent look at the spectrum, so we'll observe for 20 seconds. 14 G130M - P (1) AZV18 BUFFER-TIME=60 POS TARG -0.8,null Sequence 11-19 Non COS/FUV, TIME-TAG, PSA G130M 25 Secs (25 Secs) OSTARG + -Int in ACQ/PEAKD 1309 A I = = > 1**SPECTRU** TEST (02) FP-POS=3; M3(-0.8)(COS.sp.617 FLASH=YES; [2] 129) LIFETIME-POS=A LTERNATE Comments: POSTARG TO SIMULATE ACO/PEAKD. his is the x= -0.8" position. S/N = 60 is reached in 2 seconds. We want to get a decent look at the spectrum, so we'll observe for 20 seconds. G130M - P (1) AZV18 COS/FUV. TIME-TAG. PSA G130M BUFFER-TIME=44 POS TARG -0.4,null Sequence 11-19 Non 20 Secs (20 Secs) OSTARG + 4: -Int in ACO/PEAKD 1309 A **SPECTRU** TEST (02) FP-POS=3; M4(-0.4)FLASH=YES; [2] (COS.sp.617 129) LIFETIME-POS=A LTERNATE Comments: POSTARG TO SIMULATE ACQ/PEAKD. his is the x=-0.4" position. S/N = 60 is reached in 2 seconds. We want to get a decent look at the spectrum, so we'll observe for 20 seconds. G130M - P (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=44 POS TARG 0.4,null Sequence 11-19 Non 20 Secs (20 Secs) OSTARG + -Int in ACO/PEAKD 4; 1309 A I = = > 1SPECTRU TEST (02) FP-POS=3; M5(0.4)(COS.sp.617 FLASH=YES; [2] 129) LIFETIME-POS=A LTERNATE Comments: POSTARG TO SIMULATE ACO/PEAKD. This is the x = +0.4" position. S/N = 60 is reached in 2 seconds. We want to get a decent look at the spectrum, so we'll observe for 20 seconds. 17 G130M - P (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=60 POS TARG 0.8, null Sequence 11-19 Non 25 Secs (25 Secs) OSTARG + -Int in ACQ/PEAKD 1309 A I = = > 1**SPECTRU** TEST (02) FP-POS=3; M6(0.8)[2] (COS.sp.617 FLASH=YES; 129) LIFETIME-POS=A LTERNATE Comments: POSTARG TO SIMULATE ACO/PEAKD. This is the x = +0.8" position. S/N = 60 is reached in 2 seconds. We want to get a decent look at the spectrum, so we'll observe for 20 seconds. G130M - P (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=60 POS TARG 1.2,null Sequence 11-19 Non 37.5 Secs (37.5 Secs) -Int in ACQ/PEAKD OSTARG+ 0: 1309 A f = = > 1SPECTRU TEST (02) FP-POS=3; M7 (1.2) FLASH=YES; [2] (COS.sp.617 129) LIFETIME-POS=A LTERNATE Comments: POSTARG TO SIMULATE ACQ/PEAKD. This is the x = +1.2" position. S/N = 60 is reached in 2 seconds. We want to get a decent look at the spectrum, so we'll observe for 20 seconds.

G130M - P OSTARG +	(1) AZV18	COS/FUV, TIME-TAG, PSA	G1203 -							
		COS/TO V, THVIE-TAU, FSA	G130M	BUFFER-TIME=60	POS TARG 1.6,null	Sequence 11-19 Non	75 Secs (75 Secs)			
SPECTRU			1309 A	0; FP-POS=3;		-Int in ACQ/PEAKD TEST (02)	[==>]			
M8 (1.6) (COS.sp.617				FLASH=YES;				[2]		
(CO3.sp.017 129)				*				[2]		
				LTERNATE						
nents: POSTA ))	RG TO SIMULATE A	CQ/PEAKD. This is the $x = +1.6$ " pos	sition. $S/N = 60$ is re	eached in 2 seconds. We	want to get a decent lo	ook at the spectrum, so	we'll observe for 20 seconds (~16000 to	otal counts		
	(1) AZV18	COS/FUV, ACQ/PEAKD, PSA	G130M	NUM-POS=9;			2 Secs (2 Secs)			
			1309 A	STEP-SIZE=0.4;		-Int in ACQ/PEAKD TEST (02)	[==>]			
132)				LIFETIME-POS=A LTERNATE		(3 )		[2]		
nents: ACQ/PI	EAKD of a centered to	irget on the same 9x0.4" pattern S/.	N = 60 is reached in	ı 1.4 seconds.						
	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M	BUFFER-TIME=44			62 Secs (62 Secs)			
PECTRUM			1309 A	*		TEST (02)	[==>]			
(COS.sp.617				*				[2]		
129)				LIFETIME-POS=A				[2]		
		· · · · · · · · · · · · · · · · · · ·	<u> </u>		r RE in 122s, we are fo					
CQ/PEAKD T-ÁD-0.3	COS/FUV, ACQ/PEARD, PSA	Int in ACO/B	-Int in ACQ/PEAKD							
(COS.sa.617					1309 A	*		TEST (02)	[==>]	[2]
132)				LTERNATE				2-3		
nents: 9x0.3" A	ACQ/PEAKD on an of	f centered target. The target is define	ed 0.3" in the +AD a	lirection from the actual i	target, so the target w	ill actually now be 0.3"	off in the -AD direction.			
G130M - B	(21) AZV18-OFFSE	COS/FUV, TIME-TAG, PSA	G130M	BUFFER-TIME=44			62 Secs (62 Secs)			
PECTRUM	1-AD-0.3		1309 A			TEST (02)	[==>]			
(COS.sp.617				,		, ,		[2]		
129)								[2]		
nents: Confirm e target is act	nation spectrum after t ually at +0.8" when w	the 9x0.3" ACQ/PEAKD. Our coordi ve start the ACQ/PEAKD pattern. (C	nate system is now o OS.sp.617129). BT=	off by -0.3". Our next targ -666*(2/3) = ~444. This v	get is defined to be -0.5 will get us S/N~10 per	5" from the original loc RE in 122s, we are for	ation, which is now -0.8" from the orig	inal target		
G130M - A	(22) AZV18-OFFSE	COS/FUV, ACQ/PEAKD, PSA	G130M	NUM-POS=7;			2 Secs (2 Secs)			
	T-AD+0.5		1309 A	STEP-SIZE=0.55;			[==>]			
132)				LIFETIME-POS=A LTERNATE		1L51 (02)		[2]		
nents: 9x0.55	ACQ/PEAKD on an of	ff centered target, this time the target	t is 0.8" off to the +A	AD.				!		
		COS/FUV, TIME-TAG, PSA	G130M	BUFFER-TIME=44		Sequence 24-25 Non	63 Secs (63 Secs)			
	T-AD+0.5		1309 A			-Int in ACQ/PEAKD TEST (02)	[==>]			
(COS.sp.617				*				[2]		
129)								[2]		
				LIFETIME-POS=A LTERNATE						
2) CC(1 2 CZH(1 2 CC(1 2 CZH(1 2 CC(1 2 CZH(1 2 C	ments: POSTA.  ))  G130M - A  CQ/PEAKD (COS.sa.617  132)  ments: ACQ/Pi G130M - B  ASELINE S PECTRUM (COS.sp.617  129)  ments: Confirm G130M - A  CQ/PEAKD (COS.sa.617  132)  ments: 9x0.3" A  G130M - B  ASELINE S PECTRUM (COS.sp.617  129)  ments: Confirm e target is act G130M - A  CQ/PEAKD (COS.sp.617  129)  ments: Confirm e target is act G130M - A  CQ/PEAKD (COS.sp.617  129)  ments: SpectruM (COS.sp.617  132)  ments: 9x0.55 A  G130M - B  ASELINE S  PECTRUM (COS.sp.617  132)  ments: Spectru (COS.sp.617	nents: POSTARG TO SIMULATE ACO) G130M - A (1) AZV18 CQ/PEAKD (COS.sa.617 132) nents: ACQ/PEAKD of a centered to G130M - B (1) AZV18 ASELINE S PECTRUM (COS.sp.617 129) nents: Confirmation Spectrum after according to the second of the second	ments: POSTARG TO SIMULATE ACQ/PEAKD. This is the x= +1.6" pol.)  G130M - A (1) AZV18 COS/FUV, ACQ/PEAKD, PSA  CQ/PEAKD (COS.sa.617  132)  ments: ACQ/PEAKD of a centered target on the same 9x0.4" pattern S/ G130M - B (1) AZV18 COS/FUV, TIME-TAG, PSA  ASELINE S PECTRUM (COS.sp.617  129)  ments: Confirmation Spectrum after the PEAKD (COS.sp.617129). BT=6 G130M - A (21) AZV18-OFFSE COS/FUV, ACQ/PEAKD, PSA  CQ/PEAKD T-AD-0.3 (COS.sa.617  132)  ments: 9x0.3" ACQ/PEAKD on an off centered target. The target is define G130M - B (21) AZV18-OFFSE COS/FUV, TIME-TAG, PSA  ASELINE S T-AD-0.3 PECTRUM (COS.sp.617  129)  ments: Confirmation spectrum after the 9x0.3" ACQ/PEAKD. Our coordice target is actually at +0.8" when we start the ACQ/PEAKD pattern. (C) G130M - A (22) AZV18-OFFSE COS/FUV, ACQ/PEAKD, PSA  CQ/PEAKD T-AD+0.5 (COS.sa.617  132)  ments: 9x0.55 ACQ/PEAKD on an off centered target, this time the target G130M - B (22) AZV18-OFFSE COS/FUV, TIME-TAG, PSA  ASELINE S  T-AD+0.5 PECTRUM (COS.sp.617  129)	nents: POSTARG TO SIMULATE ACQ/PEAKD. This is the x= +1.6" position. S/N = 60 is resolved.  [130M - A (1) AZV18	LIFETIME-POS-A LIFETI	LIFE ININ-POS-A LITERNATE  101  G130M - A  (1) AZV18  COS/FUV, ACQ/PEAKD, PSA  G130M  STEP-SIZE=-0.4;  LIFETIME-POS-A  LIFETIM	LIFE INNEP POSSARG TO SIMULATE ACQPEAKD. This is the x= +1.6° position. SN = 60 is reached in 2 seconds. We want to get a decent look at the spectrum, so 1)  GI30M - A (1) AZV18 COS/FUV, ACQPEAKD, PSA GI30M NUM-POS=9; Sequence 20-21 Non-Inti in ACQPEAKD (COS.ss.617)  LIFETIME POSSA LIFETIME	Inference   Infe		





### Proposal 13636 - ACQ/PEAKXD TEST G130M (03) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (L...

Proposal 13636, ACQ/PEAKXD TEST G130M (03), implementation

Thu Sep 11 01:02:21 GMT 2014

**Diagnostic Status: Warning** 

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%; ORIENT 29D TO 31 D; BETWEEN 27-OCT-2014:00:00:00 AND 09-NOV-2014:00:00:00

Comments: ACQ/PEAKXD Test for G130M. The target is AVZ18. After obtaining a good spectrum of the centered target, take spectra at the following positions (-1.6,-1.1,-0.6,-0.3,0.3,0.6,1.1,1.6) " in the XD direction. This will allow us to measure the plate scale. The > +/-0.5" offsets have expanded exposure times to compensate for vignetting. To maintain S/N, the scale factor for the exposure times should be:

isit

 OFFSET
 %LOSS
 ET equivalent/second"

 0.00
 0.00
 1.00

 0.30
 0.00
 1.00

 0.60
 6.67
 1.07

 1.10
 40.00
 1.67

 1.60
 73.33
 3.75

We expect 1100 FUVA counts/sec over the  $\sim$ 2300 RE, the target spectrum is  $\sim$ flat, so we get 1 count/RE in 2s. To get 50 counts/RE, we need 100s exposures at abs(XD) < 0.5, 107s at +/- 0.6", 167s at +/-1.1, we only have time for 225s at +/- 1.6"

After obtaining the plate scales, we test PEAKXD at offsets of +/-0.5, +/-1.0 and +/-1.5", using the final WCA-to-PSA offsets, and the initial plate scales estimates.

The roll angle for 27-OCT-2014 till 9-Nov-2014 is 30 degrees (+/- 1 degree, visits 3-5)

Diagnostics
(DCA)

(ACQ/PEAKXD TEST G130M (03)) Warning (Form): COS ACQ/PEAKXD exposure should be followed by an ACQ/PEAKD exposure in the Visit.

(ACQ/PEAKXD TEST G130M (03)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(ACQ/PEAKXD TEST G130M (03)) 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.

(ACQ/PEAKXD TEST G130M (03)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

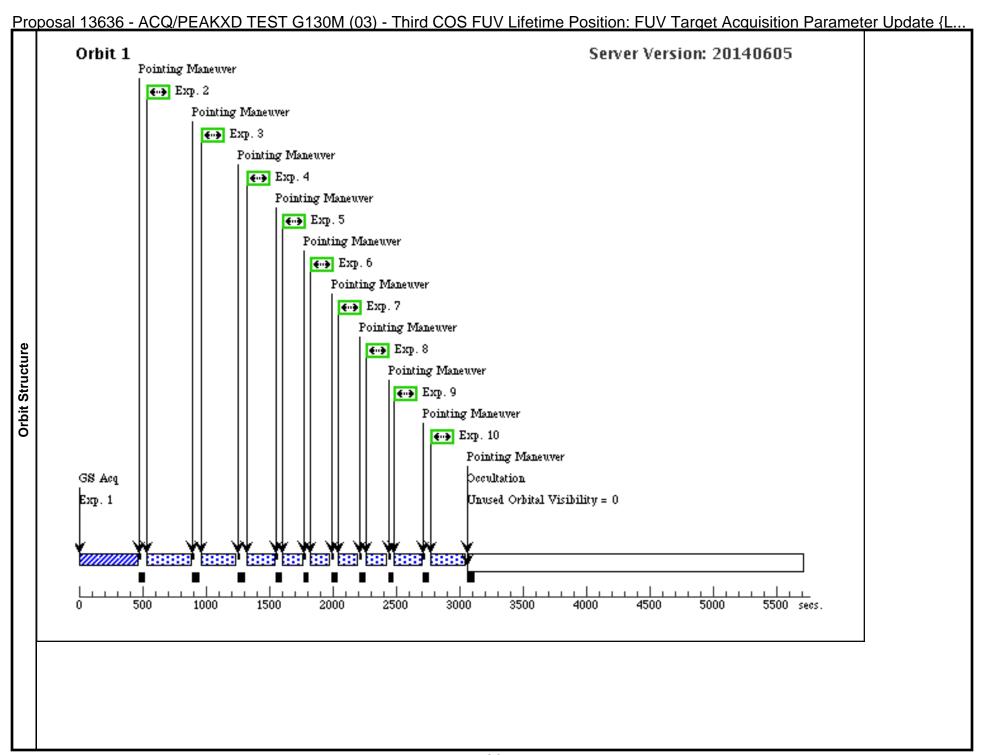
<u>Pro</u>	<u> 008al 1</u>	<u> 3636 - ACQ/PE/</u>	<u> AKXD TEST G130M (03) - Thi</u>	<u>ird COS FUV Lifetime Positio</u> i	<u>n: FUV Target Acqu</u>	isition Parameter Update {L				
ļ	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	AZV18	RA: 00 47 12.1700 (11.8007083d)	Proper Motion RA: -0.0003 sec of time/yr	V=12.48	Reference Frame: ICRS				
			Dec: -73 06 32.68 (-73.10908d)	Proper Motion Dec: -0.0035 arcsec/yr	(B-V)=+0.04					
			Equinox: J2000	Epoch of Position: 2000						
	Comments:	B2Ia, Magellanic Clouds.	Nominal ETC exposure times from spectrum sup	plied by D. Lennon:						
	NUV, MIRRORA, BOA: 27s (COS.ta.360711) FUV, G130M, 1309, PSA: 2s (COS.sa.360701) & 182s S/N=10 spectroscopy (COS.sp.360698) FUV, G140L, 1105: 038s S/N=10 spectroscopy (COS.sp.389720) FUV, G160M, 1600: 0215s S/N=10 spectroscopy (COS.sp.389715)									
	(3)	AZV18-OFFSET-	Offset from AZV18		V=12.48	Offset Position (AZV18-OFFSET-XD+0.5)				
		XD+0.5	RA Offset: 1.34156E-4 Degrees		(B-V)=+0.04					
			Dec Offset: 0.12941 Arcsec							
	Comments:	This target is offset 1.0" in	the XD direction, and is valid for visits 3-5 only.							
	The roll angle is 30 +/- 1 degree and is valid for 14-OCT-2014 till 14-Nov-2014.									
	AZV18 0.5" offset for ACQ/PEAKXD (dAD,dXD)=(0,-0.5")=0.5"@15d West of South dRA=-0.5"*cos(15d)=-0.482963"=-0.000134156d dDEC=-0.5"*sin(15d)=-0.129410"									
ľĝ	To move the target to this location, the offset should have the opposite sign in the offsets above.									
Ta	(4) A	AZV18-OFFSET-	Offset from AZV18		V=12.48	Offset Position (AZV18-OFFSET-XD+1.0)				
Fixed	. ,	XD+1.0	RA Offset: 2.68313E-4 Degrees		(B-V)=+0.04	, , , , , , , , , , , , , , , , , , ,				
ı <u>×</u>			Dec Offset: 0.258819 Arcsec		` '					
	Comments:	his target is offset 1.0" in	the XD direction, and is valid for visits 3-5 only.							
	The roll ang	The roll angle is 30 +/- 1 degree and is valid for 14-OCT-2014 till 14-Nov-2014.								
	dRA=-1.0"	' offset for ACQ/PEAKXD ( *cos(15d)=-0.965926"=-0. )"*sin(15d)=-0.258819"	(0,-1.0")=1"@15d W of S 000268313d							
	To move the	e target to this location, the	e offset should have the opposite sign in the offset.	s above.						
ı	(5)	AZV18-OFFSET-	Offset from AZV18		V=12.48	Offset Position (AZV18-OFFSET-XD+1.5)				
	, ,	XD+1.5	RA Offset: 4.02469E-4 Degrees		(B-V)=+0.04	, in the second of the second				
			Dec Offset: 0.388229 Arcsec							
	Comments:	his target is offset 1.0" in	the XD direction, and is valid for visits 3-5 only.							
		0 30	is valid for 14-OCT-2014 till 14-Nov-2014.							
	dRA = -1.5"	' offset for ACQ/PEAKXD ( *cos(15d)=-1.44889" =-0.0 5"*sin(15d)=-0.388229"	(0,-1.5")=1.5"@15d W of S 000402469d							
	To move the	e target to this location, the	e offset should have the opposite sign in the offset.	s above.						

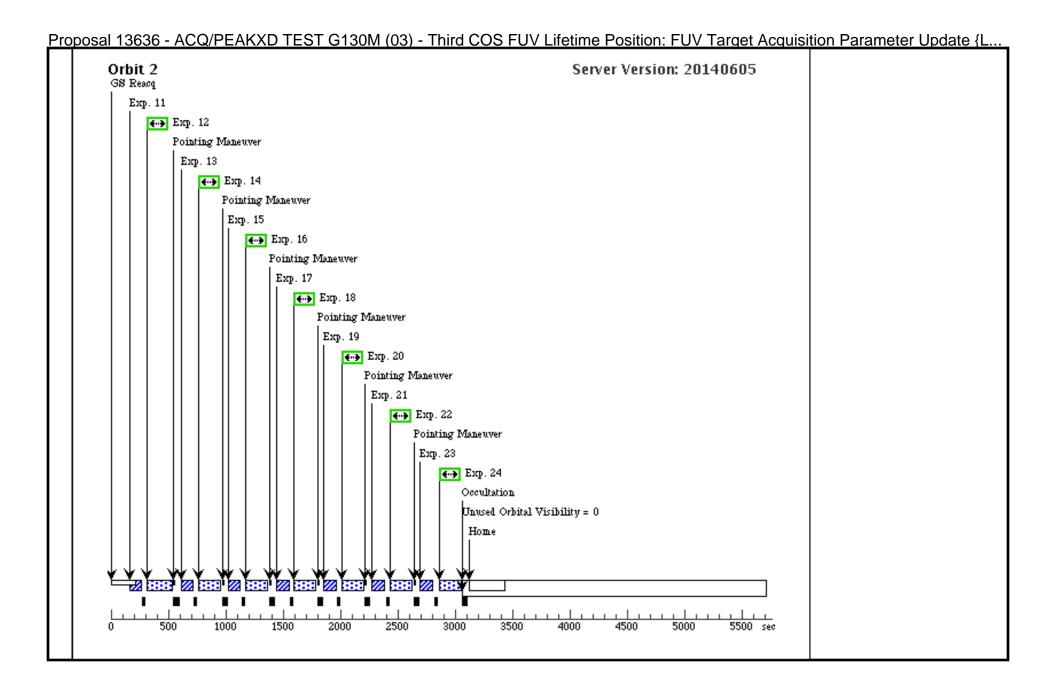
Proposal 13636 - ACQ/PEAKXD TEST G130M (03) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (L., Label **Target** Config, Mode, Aperture Spectral Els. Opt. Params. Special Regs. Groups Exp. Time (Total)/[Actual Dur.] Orbit (ETC Run) 2 nuv a/im (1) AZV18 COS/NUV, ACQ/IMAGE, BOA MIRRORA 30 Secs (30 Secs) (COS.ta.617 I = = > 1[1] 093) Comments: NUV ACO/IMAGE with BOA+MIRRORA to refine centering. COS.ta.617093, gives S/N=60.000 in 27.48 seconds, we go for 30s. G130M - B (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=44 Sequence 2-10 Non-I 176 Secs (176 Secs) ASELINE S nt in ACQ/PEAKXD 1309 A I ==> 1TEST G130M (03) PECTRUM FP-POS=3; (COS.sp.617 094) FLASH=S0200D03 [1] LIFETIME-POS=A LTERNATE Comments: Spectrum of source to define correct location of star when it is centered using NUV ACO/IMAGE. COS.sp.617094 gives S/N/RE = 10 in 125 seconds, BT=2/3\*666 or 444. G130M - P (1) AZV18 COS/FUV, TIME-TAG, PSA BUFFER-TIME=60 POS TARG null,-1.6 Sequence 2-10 Non-I 225 Secs (225 Secs) G130M OSTARG + nt in ACQ/PEAKXD 1309 A I = = > 1SPECTRU TEST G130M (03) FP-POS=3: M1 (-1.6) (COS.sp.617 FLASH=YES; [1] 094) LIFETIME-POS=A LTERNATE Comments: POSTARG TO Move to Y=-1.6. S/N = 60 is reached in 2 seconds. But, we are trying to determine the local plate scale of the detector, so want to get a decent look at the spectrum, so we'll observe for 200 econds, since it is heavily vignetted. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations. G130M - P (1) AZV18 COS/FUV. TIME-TAG. PSA G130M BUFFER-TIME=60 POS TARG null,-1.1 Sequence 2-10 Non-I 167 Secs (167 Secs) OSTARG + nt in ACO/PEAKXD 1309 A Exposures **SPECTRU** TEST G130M (03) FP-POS=3; M2(-1.1)FLASH=YES; [1] (COS.sp.617 094) LIFETIME-POS=A LTERNATE Comments: POSTARG TO Move to Y=-1.1". S/N = 60 is reached in 2 seconds. But, we are trying to determine the local plate scale of the detector, so want to get a decent look at the spectrum, so we'll observe for 150 seconds, since are >40% vignetted. G130M - P (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=50 POS TARG null,-0.6 Sequence 2-10 Non-I 107 Secs (107 Secs) OSTARG + 0: nt in ACO/PEAKXD 1309 A [==>1 **SPECTRU** TEST G130M (03) FP-POS=3: M3 (-0.6) (COS.sp.617 FLASH=YES: [1] 094) LIFETIME-POS=A LTERNATE Comments: POSTARG TO Move to Y=-0.6". S/N=60 is reached in 2 seconds. But, we are trying to determine the local plate scale of the detector, so want to get a decent look at the spectrum, so we'll observe for 100 and 100 are trying to determine the local plate scale of the detector, so want to get a decent look at the spectrum, so we'll observe for 100 are trying to determine the local plate scale of the detector, so want to get a decent look at the spectrum, so we'll observe for 100 are trying to determine the local plate scale of the detector, so want to get a decent look at the spectrum, so we'll observe for 100 are trying to determine the local plate scale of the detector. seconds. G130M - P (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=44 POS TARG null,-0.3 Sequence 2-10 Non-I 100 Secs (100 Secs) nt in ACQ/PEAKXD OSTARG + 1309 A I = = > 1TEST G130M (03) **SPECTRU** FP-POS=3: M4 (-0.3) (COS.sp.617 FLASH=YES: [1] 094)LIFETIME-POS=A LTERNATE Comments: POSTARG TO Move to Y=-0.3. SN = 60 is reached in 2 seconds. But, we are trying to determine the local plate scale of the detector, so want to get a decent look at the spectrum, so we'll observe for 100

posal 13636	- ACQ/PEAK	(XD TEST G130M (03)	) - Third CC	S FUV Lifetime	Position: FU	V Target Acqu	isition Parameter Up	pdate {L
7 G130M - P ( OSTARG + SPECTRU M5 (+0.3) (COS.sp.617 094)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=44 4; FP-POS=3; FLASH=YES; LIFETIME-POS=A LTERNATE	POS TARG null,0.3	Sequence 2-10 Non-I nt in ACQ/PEAKXD TEST G130M (03)	100 Secs (100 Secs) [==>]	[1]
Comments: POSTAR conds.	RG TO Move to Y=0.3	3. $S/N = 60$ is reached in 2 seconds. E	But, we are trying t		e scale of the detector,	so want to get a decent	t look at the spectrum, so we'll o	bserve for 100 s
8 G130M - P ( OSTARG + SPECTRU M6 (+0.6) (COS.sp.617 094)		COS/FUV, TIME-TAG, PSA	G130M 1309 A	0; FP-POS=3; FLASH=YES; LIFETIME-POS=A LTERNATE		Sequence 2-10 Non-I nt in ACQ/PEAKXD TEST G130M (03)	[==>]	[1]
Comments: POSTAR conds.	RG TO Move to Y=0.6	6. S/N = 60  is reached in 2 seconds. E	But, we are trying t	o determine the local plai	e scale of the detector,	so want to get a decent	t look at the spectrum, so we'll of	bserve for 100 s
9 G130M - P ( OSTARG + SPECTRU M7 (-1.1) (COS.sp.617 094)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=60 0; FP-POS=3; FLASH=YES; LIFETIME-POS=A LTERNATE	POS TARG null,1.1	Sequence 2-10 Non-I nt in ACQ/PEAKXD TEST G130M (03)	167 Secs (167 Secs) [==>]	[1]
Comments: POSTAR conds, since are >40		1. $S/N = 60$ is reached in 2 seconds. E	But, we are trying t	o determine the local plan	e scale of the detector,	so want to get a decent	t look at the spectrum, so we'll of	bserve for 150 s
10 G130M - P (OSTARG + SPECTRU M8 (-1.6) (COS.sp.617 094)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=60 0; FP-POS=3; FLASH=YES; LIFETIME-POS=A LTERNATE	POS TARG null,1.6	Sequence 2-10 Non-I nt in ACQ/PEAKXD TEST G130M (03)	225 Secs (225 Secs) [==>]	[1]
Comments: POSTAR econds, since it is he		5''. $S/N = 60$ is reached in 2 seconds.	But, we are trying		ate scale of the detector	r, so want to get a decer	t look at the spectrum, so we'll o	observe for 200
11 G130M - PE (		COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=A LTERNATE		Sequence 11-12 Non -Int in ACQ/PEAKX D TEST G130M (03	10 Secs (10 Secs) [==>]	[2]
•	•	140 Requested Signal/Noise Ratio =	60.000 gives: Time	e = 1.3755 seconds. Time	Required for Requeste	ed SNR in Segment A on	ly: 2.3416	
12 G130M - B ( ASELINE S PECTRUM (COS.sp.617 094)	s right, the target show (1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=44 4; FP-POS=3; FLASH=YES; LIFETIME-POS=A LTERNATE		Sequence 11-12 Non -Int in ACQ/PEAKX D TEST G130M (03 )	169 Secs (169 Secs) [==>]	[2]
		vious ACQ/PEAKXD centering. CO			nds, BT=2/3*666 or 44		10.0	
13 G130M - PE ( AKXD-XD - +0.5		COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=A LTERNATE		Sequence 13-14 Non -Int in ACQ/PEAKX D TEST G130M (03	10 Secs (10 Secs) [==>]	[2]

14   G130M - B   G3) AZV18-OFFSET   COS/FUV, TIME-TAG, PSA   G130M   ASELINE S   XD+0.5   FLASH=YES;   LIFETIME-POS=A   LTERNATE	[2]
FP-POS=3;   DTEST GI30M (03   PF-POS=3;   DTEST GI30M (03   PF-POS=3;   PLASH=YES;   LIFETIME-POS=A   LTERNATE	
(COS.sp.617 094)    FI-FOS_3	
LIFETIME-POS=A LTERNATE  Comments: Spectrum of source to test previous ACQ/PEAKXD centering. COS.sp.617094 gives S/N/RE = 10 in 125 seconds, BT=2/3*666 or 444.  15 G130M - PE (1) AZV18 COS/FUV, ACQ/PEAKXD, PSA G130M LIFETIME-POS=A LTERNATE  AKXD-XD- 0.5 (COS.sa.617 140)  Comments: Back on original target, -0.5". ,Requested Signal/Noise Ratio = 60.000 gives: Time = 1.3755 seconds. Time Required for Requested SNR in Segment A only: 2.3416  16 G130M - B (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=44 Sequence 15-16 Non -Int in ACQ/PEAKX PECTRUM (COS.sp.617)  1309 A 4;	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	[2]
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	[2]
AKXD-XD- 0.5 (COS.sa.617 140)  Comments: Back on original target, -0.5". ,Requested Signal/Noise Ratio = 60.000 gives: Time = 1.3755 seconds. Time Required for Requested SNR in Segment A only: 2.3416  16 G130M - B (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=44 Sequence 15-16 Non ASELINE S PECTRUM (COS.sp.617  AKXD-XD- 1309 A  LTERNATE  -Int in ACQ/PEAKX D TEST G130M (03	[2]
0.5 (COS.sa.617 140)  Comments: Back on original target, -0.5". ,Requested Signal/Noise Ratio = 60.000 gives: Time = 1.3755 seconds. Time Required for Requested SNR in Segment A only: 2.3416  16 G130M - B (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=44 Sequence 15-16 Non ASELINE S PECTRUM 4; Int in ACQ/PEAKX PECTRUM COS.sp.617  1309 A 4; D TEST G130M (03   I==>	[2]
140    Comments: Back on original target, -0.5". ,Requested Signal/Noise Ratio = 60.000 gives: Time = 1.3755 seconds. Time Required for Requested SNR in Segment A only: 2.3416    16   G130M - B   (1) AZV18   COS/FUV, TIME-TAG, PSA   G130M   BUFFER-TIME=44   Sequence 15-16 Non ASELINE S   -Int in ACQ/PEAKX PECTRUM   4;	[2]
Comments: Back on original target, -0.5". ,Requested Signal/Noise Ratio = 60.000 gives: Time = 1.3755 seconds. Time Required for Requested SNR in Segment A only: 2.3416    10	
16 G130M - B (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=44 Sequence 15-16 Non -Int in ACQ/PEAKX PECTRUM (COS.sp.617 FP-POS=3; ) 140 Secs (140 Secs)   140 Secs (140 Secs	
ASELINE S PECTRUM (COS.sp.617   1309 A   4;	1
(COS.sp.617 FP-POS=3; )	
094) FLASH=YES;	
	[2]
LIFETIME-POS=A LTERNATE	
Comments: Spectrum of source to test previous ACQ/PEAKXD centering. COS.sp.617094 gives S/N/RE = 10 in 125 seconds, BT=2/3*666 or 444.	
17 G130M -PE (4) AZV18-OFFSET COS/FUV, ACQ/PEAKXD, PSA G130M LIFETIME-POS=A Sequence 17-18 Non 15 Secs (15 Secs)	
AKXD- XD -XD+1.0 +1.0 1309 A LTERNATE -Int in ACQ/PEAKX D TEST G130M (03 $[==>]$	
(COS.sa.617 )	[2]
140)  Comments: $ACQ/PEAKXD$ on the target offset by +1.0". $COS.sa.617140$ gives $S/N=60$ in 1.5. At, $XD=1$ ", the target will be vignetted by 1/3. 10s should still be plenty.	
18 G130M - B (4) AZV18-OFFSET COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=44 Sequence 17-18 Non 140 Secs (140 Secs)	
ASELINE S -XD+1.0 4; -Int in ACQ/PEAKX /	
PECTRUM (COS.sp.617   D TEST G130M (03   l==>)	
094) FLASH=YES;	[2]
LIFETIME-POS=A LTERNATE	
Comments: Spectrum of source to test previous ACO/PEAKXD centering. COS.sp.617094 gives $S/N/RE = 10$ in 125 seconds, $BT = 2/3*666$ or 444. At, $XD = 1$ ", the target will be vignetted by 1/3.	
19 G130M - PE (1) AZV18 COS/FUV, ACQ/PEAKXD, PSA G130M LIFETIME-POS=A Sequence 19-20 Non 15 Secs (15 Secs)	
AKXD-XD- 1309 $\Delta$ LTERNATE -Int in ACQ/PEAKX $I_{C->I}$	
1.0 (COS.sa.617 D TEST G130M (03   1 7	[2]
140)	
Comments: ACQ/PEAKXD on the target offset by +1.0". COS.sa.617140 gives S/N=60 in 1.5. At, XD = 1", the target will be vignetted by 1/3. 10s should still be plenty.	
20 G130M - B (1) AZV18 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=44 Sequence 19-20 Non ASELINE S 4; Sequence 19-20 Non Int in ACQ/PEAKX	
PECTRUM D TEST G130M (03 $^{17}$	
(COS.sp.617 094) FLASH=YES;	[2]
LIFETIME-POS=A	
LTERNATE	
Comments: ACQ/PEAKD confirmation spectrum, the target should be centered. COS.sp.617094 gives S/N/RE = 10 in 125 seconds, BT=2/3*666 or 444.	
101 C120M DE (5) A7V10 DEEDET COCCEUV ACO/DEALVED DOA C120M THEFTIAE DOGA G 01 20 N 100 N 100 C 100 C	
21 G130M - PE (5) AZV18-OFFSET COS/FUV, ACQ/PEAKXD, PSA G130M LIFETIME-POS=A Sequence 21-22 Non 20 Secs (20 Secs)	
AKXD-XD -XD+1.5	[2]
AKXD-XD -XD+1.5 LTERNATE -Int in ACQ/PEAKX	[2]

Proposal 13636 - ACQ/PEAKXD TEST G130M (03) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (L... G130M - B (5) AZV18-OFFSET COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=44 Sequence 21-22 Non 140 Secs (140 Secs) -Int in ACQ/PEAKX D TEST G130M (03 ASELINE S -XD+1.5 4; 1309 A PECTRUM FP-POS=3; (COS.sp.617 094) FLASH=YES; [2] LIFETIME-POS=A LTERNATE Comments: Spectrum of source to test previous ACQ/PEAKXD centering. COS.sp.617094 gives S/N/RE = 10 in 125 seconds, BT=2/3\*666 or 444. G130M - PE (1) AZV18 COS/FUV, ACO/PEAKXD, PSA G130M LIFETIME-POS=A Sequence 23-24 Non 20 Secs (20 Secs) AKXD-XD-LTERNATE -Int in ACQ/PEAKX [==>] 1309 A D TEST G130M (03 1.5 [2] (COS.sa.617 140) Comments: ACQ/PEAKXD on the target offset by -1.5". COS.sa.617140, S/N = 60 is reached in 1.5 seconds (FUVA). At 1.5", the target wil be vignetted by 2/3, so we should still get S/N =60 in 10s, but we go to 15 be cause we have time. G130M - B (1) AZV18 BUFFER-TIME=44 Sequence 23-24 Non 140 Secs (140 Secs) COS/FUV. TIME-TAG. PSA G130M -Int in ACO/PEAKX ASELINE S 1309 A *[==>1* D TEST G130M (03 PECTRUM FP-POS=3; (COS.sp.617 094) FLASH=YES; [2] LIFETIME-POS=A LTERNATE Comments: Spectrum of source to test previous ACO/PEAKXD centering. COS.sp.617094 gives S/N/RE = 10 in 125 seconds, BT=2/3\*666 or 444.





### Proposal 13636 - ACQ/PEAKXD TEST G160M (04) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (L...

Proposal 13636, ACQ/PEAKXD TEST G160M (04), implementation

Thu Sep 11 01:02:21 GMT 2014

**Diagnostic Status: Warning** 

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%; ORIENT 29D TO 31 D; BETWEEN 27-OCT-2014:00:00:00 AND 09-NOV-2014:00:00:00

Comments: ACQ/PEAKXD Test for G160M. The target is AVZ18 (the SMOV TA target). After obtaining a good spectrum of the centered target, take spectra at the following positions (-1.6,-1.1,-0.6,-0.3,0.6,1.1,1.6) " in the XD direction. This will allow us to measure the plate scale. The > +/- 0.5" offsets have expanded exposure times to compensate for vignetting. To maintain S/N, the scale factor for the exposure times should be:

<u>si</u>

```
OFFSET %LOSS ET equivalent/second"
```

 0.00
 0.00
 1.00

 0.30
 0.00
 1.00

 0.60
 6.67
 1.07

 1.10
 40.00
 1.67

 1.60
 73.33
 3.75

We expect 800 FUVA counts/sec over the  $\sim$ 2300 RE, the target spectrum is  $\sim$ flat, so we get 1 count/RE in 4s. To get 25 counts/RE, we need 95s exposures at abs(XD) < 0.5, 107s at +/- 0.6", 167s at +/-1.1, we only have time for 225s at +/-1.6"

We then proceed to test PEAKXD at offsets of  $\pm 0.5$ ,  $\pm 1.0$  and  $\pm 1.5$ ".

The roll angle for 27-OCT-2014 till 9-Nov-2014 is 30 degrees (+/- 1 degree, visits 3-5)

Diagnostics

(ACQ/PEAKXD TEST G160M (04)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(ACQ/PEAKXD TEST G160M (04)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(ACQ/PEAKXD TEST G160M (04)) 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.

(ACQ/PEAKXD TEST G160M (04)) Warning (Form): COS ACQ/PEAKXD exposure should be followed by an ACQ/PEAKD exposure in the Visit.

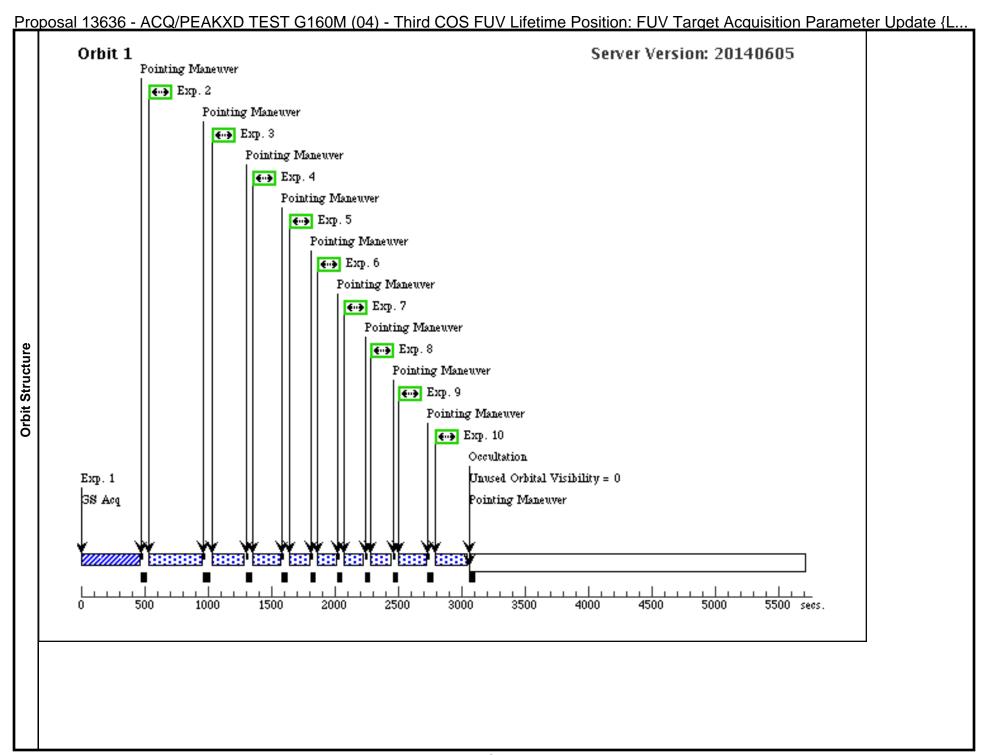
<u>Pro</u>	posal 1	<u> 3636 - ACQ/PE</u>	<u> AKXD TEST G160M (04) - Thi</u>	<u>ird COS FUV Lifetime Positio</u> i	<u>n: FUV Target Acqu</u>	isition Parameter Update {L				
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous				
	(1)	AZV18	RA: 00 47 12.1700 (11.8007083d)	Proper Motion RA: -0.0003 sec of time/yr	V=12.48	Reference Frame: ICRS				
			Dec: -73 06 32.68 (-73.10908d)	Proper Motion Dec: -0.0035 arcsec/yr	(B-V)=+0.04					
			Equinox: J2000	Epoch of Position: 2000						
	Comments:	B2Ia, Magellanic Clouds.	Nominal ETC exposure times from spectrum sup	plied by D. Lennon:						
	NUV, MIRRORA, BOA: 27s (COS.ta.360711) FUV, G130M, 1309, PSA: 2s (COS.sa.360701) & 182s S/N=10 spectroscopy (COS.sp.360698) FUV, G140L, 1105: 038s S/N=10 spectroscopy (COS.sp.389720) FUV, G160M, 1600: 0215s S/N=10 spectroscopy (COS.sp.389715)									
	(3)	AZV18-OFFSET-	Offset from AZV18		V=12.48	Offset Position (AZV18-OFFSET-XD+0.5)				
		XD+0.5	RA Offset: 1.34156E-4 Degrees		(B-V)=+0.04					
			Dec Offset: 0.12941 Arcsec							
	Comments:	This target is offset 1.0" in	the XD direction, and is valid for visits 3-5 only.							
	The roll angle is 30 +/- 1 degree and is valid for 14-OCT-2014 till 14-Nov-2014.									
Targets	AZV18 0.5" offset for ACQ/PEAKXD (dAD,dXD)=(0,-0.5")=0.5"@15d West of South dRA=-0.5"*cos(15d)=-0.482963"=-0.000134156d dDEC=-0.5"*sin(15d)=-0.129410"									
rg	To move the target to this location, the offset should have the opposite sign in the offsets above.									
Та	(4) A	AZV18-OFFSET-	Offset from AZV18		V=12.48	Offset Position (AZV18-OFFSET-XD+1.0)				
Fixed	` /	XD+1.0	RA Offset: 2.68313E-4 Degrees		(B-V)=+0.04	, , , , , , , , , , , , , , , , , , ,				
×			Dec Offset: 0.258819 Arcsec		,					
ш	Comments:	his target is offset 1.0" in	the XD direction, and is valid for visits 3-5 only.							
	The roll ang	The roll angle is 30 +/- 1 degree and is valid for 14-OCT-2014 till 14-Nov-2014.								
	dRA=-1.0"	" offset for ACQ/PEAKXD *cos(15d)=-0.965926"=-0. "*sin(15d)=-0.258819"	(0,-1.0")=1"@15d W of S .000268313d							
	To move the	e target to this location, the	e offset should have the opposite sign in the offset.	s above.						
	(5)	AZV18-OFFSET-	Offset from AZV18		V=12.48	Offset Position (AZV18-OFFSET-XD+1.5)				
	,	XD+1.5	RA Offset: 4.02469E-4 Degrees		(B-V)=+0.04	, in the second of the second				
			Dec Offset: 0.388229 Arcsec		, ,					
	Comments:	his target is offset 1.0" in	the XD direction, and is valid for visits 3-5 only.							
		0 00	is valid for 14-OCT-2014 till 14-Nov-2014.							
	dRA=-1.5"	" offset for ACQ/PEAKXD *cos(15d)=-1.44889" =-0.0 5"*sin(15d)=-0.388229"	(0,-1.5")=1.5"@15d W of S 000402469d							
	To move the	e target to this location, the	e offset should have the opposite sign in the offset.	s above.						

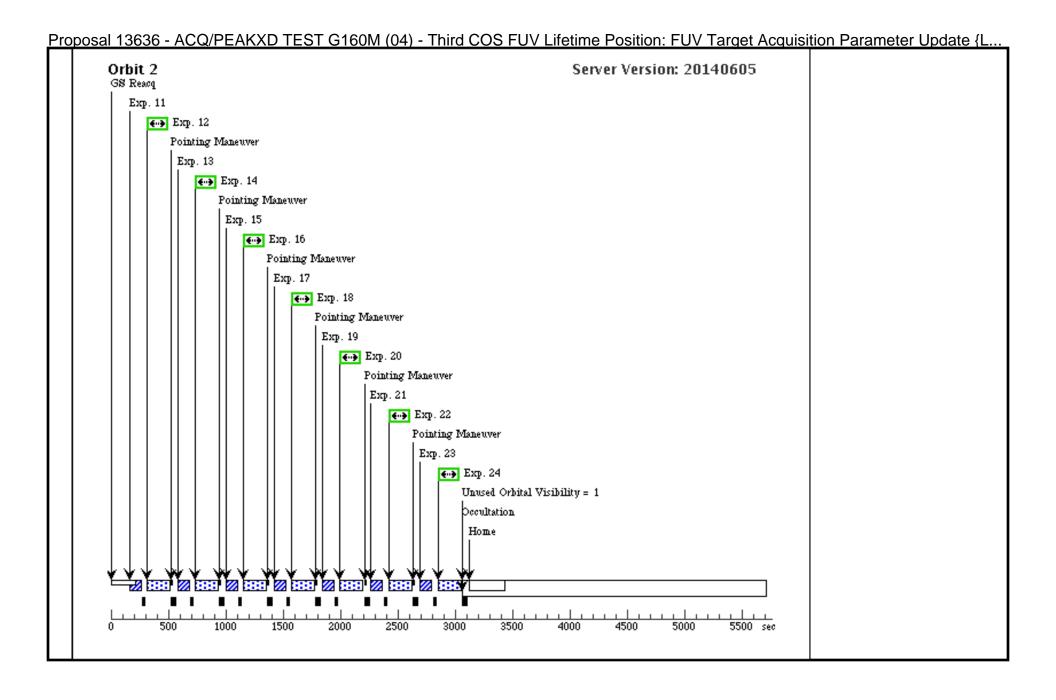
Proposal 13636 - ACQ/PEAKXD TEST G160M (04) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (L., Label **Target** Config, Mode, Aperture Spectral Els. Opt. Params. Special Regs. Groups Exp. Time (Total)/[Actual Dur.] Orbit (ETC Run) 2 nuv a/im (1) AZV18 COS/NUV, ACQ/IMAGE, BOA MIRRORA 30 Secs (30 Secs) (COS.ta.617 I = = > 1[1] 093) Comments: NUV ACO/IMAGE with BOA+MIRRORA to refine centering. COS.ta.617093, gives S/N=60.000 in 27.48 seconds, we go for 32s. G160M - B (1) AZV18 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=51 Sequence 2-10 Non-I 205 Secs (205 Secs) ASELINE S nt in ACQ/PEAKXD 3; 1600 A I ==> 1TEST G160M (04) PECTRUM FP-POS=3; (COS.sp.617 142) FLASH=YES: [1] LIFETIME-POS=A LTERNATE Comments: Spectrum of source to define G160M/1600 location of a target when it is centered w/ NUV ACO/IMAGE. COS.sp.617142, S/N/RE=10 (1620Å) = 220. BT=2/3\*769=513G160M - P (1) AZV18 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=80 POS TARG null,-1.6 Sequence 2-10 Non-I 205 Secs (205 Secs) OSTARG + nt in ACQ/PEAKXD 1600 A I = = > 1SPECTRU TEST G160M (04) FP-POS=3: M1 (-1.6) (COS.sp.617 FLASH=YES; [1] 142) LIFETIME-POS=A LTERNATE Comments: POSTARG TO Move to Y=-1.6. S/N = 60 in 4-6s. But, we are trying to determine the local plate scale of the detector, so want to get a decent look at the spectrum, so we'll observe for 205 seconds, since it is s heavily vignetted (67%) G160M - P (1) AZV18 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=70 POS TARG null,-1.1 Sequence 2-10 Non-I 167 Secs (167 Secs) OSTARG + nt in ACO/PEAKXD 1600 A Exposures **SPECTRU** TEST G160M (04) FP-POS=3; M2(-1.1)FLASH=YES; [1] (COS.sp.617 142) LIFETIME-POS=A LTERNATE Comments: POSTARG TO Move to Y=-1.1. S/N = 60 in 4-6s. But, we are trying to determine the local plate scale of the detector, so want to get a decent look at the spectrum, so we'll observe for 167 seconds, since it is s 33% vignetted. G160M - P (1) AZV18 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=60 POS TARG null,-0.6 Sequence 2-10 Non-I 107 Secs (107 Secs) OSTARG + 0: nt in ACO/PEAKXD 1600 A [==>1 **SPECTRU** TEST G160M (04) FP-POS=3: M3 (-0.6) (COS.sp.617 FLASH=YES: [1] 142) LIFETIME-POS=A LTERNATE Comments: POSTARG TO Move to Y=-0.6. S/N = 60 in 4-6s. But, we are trying to determine the local plate scale of the detector, so want to get a decent look at the spectrum, so we'll observe for 107 seconds. G160M - P (1) AZV18 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=51 POS TARG null,-0.3 Sequence 2-10 Non-I 100 Secs (100 Secs) OSTARG + nt in ACO/PEAKXD 3; 1600 A I = = > 1TEST G160M (04) SPECTRU FP-POS=3; M4 (-0.3) (COS.sp.617 FLASH=YES; [1] 142) LIFETIME-POS=A LTERNATE Comments: POSTARG TO Move to Y=-0.3. S/N = 60 in 4-6s. But, we are trying to determine the local plate scale of the detector, so want to get a decent look at the spectrum, so we'll observe for 107 seconds. COS.sp. 617142, S/N/RE=10 (1620A) = 220. BT=2/3\*769=513

pos	<u>sai 13636</u>	) - AUQ/PEAI	<u>KXD TEST G160M (04)</u>	- Third COS	<u>5 FUV Litetime</u>	Position: FU	<u>/ Target Acqu</u>	<u>isition Parameter Upda</u>	<u>te {L</u>
7	G160M - P (1) A OSTARG + SPECTRU M5 (0.3) (COS.sp.617 142)		COS/FUV, TIME-TAG, PSA	G160M 1600 A		POS TARG null,0.3		100 Secs (100 Secs)	
					FP-POS=3;			[==>]	
					FLASH=YES;				[1]
					LIFETIME-POS=A LTERNATE				
Com 1714	ments: POSTA 42, S/N/RE=10	$RG\ TO\ Move\ to\ Y=0.$ (1620A) = 220. BT=2	.3. $S/N = 60$ in 4-6s. But, we are trying $2/3*769 = 513$	to determine the lo	cal plate scale of the de	tector, so want to get a	decent look at the spec	etrum, so we'll observe for 100 seconds	s. COS.sp.0
8	G160M - P (1) OSTARG + SPECTRU M6 (0.6) (COS.sp.617 142)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A		POS TARG null,0.6 Sequence nt in ACQ TEST G1	Sequence 2-10 Non-I	107 Secs (107 Secs)	
					0; FP-POS=3;		nt in ACQ/PEAKXD TEST G160M (04)	[==>]	
					FLASH=YES;				[1]
					LIFETIME-POS=A LTERNATE				
Com	ments: POSTA	RG TO Move to Y=0.	.6. $S/N = 60$ in 4-6s. But, we are trying	to determine the lo		tector, so want to get a	decent look at the spec	trum, so we'll observe for ~107 secon	ds.
)	G160M - P	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A		POS TARG null,1.1	Sequence 2-10 Non-I nt in ACQ/PEAKXD TEST G160M (04)		
	OSTARG + SPECTRU M7 (1.1) (COS.sp.617 142)				0; FP-POS=3;			[==>]	
					FLASH=YES;				[1]
					LIFETIME-POS=A LTERNATE				'-'
	ments: POSTA vignetted.	RG TO Move to Y=1.	.1. $S/N = 60$ in 4-6s. But, we are trying	to determine the lo		tector, so want to get a	decent look at the spec	etrum, so we'll observe for 167 second	s, since it is
	G160M - P (1) AZV18 OSTARG + SPECTRU M8 (1.6) (COS.sp.617 142)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=80	80 POS TARG null,1.6	Sequence 2-10 Non-I nt in ACQ/PEAKXD TEST G160M (04)	205 Secs (205 Secs)	
				1600 A	0;			[==>]	
				FP-POS=3; FLASH=YES;		, ,		[1]	
					LIFETIME-POS=A LTERNATE				[1]
	ments: POSTA ily vignetted (6		.6. $S/N = 60$ in 4-6s. But, we are trying	to determine the lo		tector, so want to get a	decent look at the spec	etrum, so we'll observe for 205 seconds	s, since it is
	G160M - PE (1) AZV18 AKXD - Ce ntered (COS.sa.617 141)	,	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=A LTERNATE		Sequence 11-12 Non -Int in ACQ/PEAKX D TEST G160M (04	10 Secs (10 Secs)	T
								[==>]	
									[2]
Com	ments: COS.sa	a.617141. S/N = 60.00	0: Time Required for Requested SNR	in Segment A only:	4.2322				
12	G160M - B (1) AZ ASELINE S PECTRUM (COS.sp.617 142)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=60 0;	Sequence 11-12 Non	150 Secs (150 Secs)		
					FP-POS=3;		-Int in ACQ/PEAKX D TEST G160M (04 )	[==>]	
					FLASH=YES;				[2]
					LIFETIME-POS=A LTERNATE				
		o.617142, S/N/RE=10 xposure time has been	O(1620A) = 220. $BT=2/3*769 = 513$ . We also dropped to $140s$ .	Ve attempt to scale t	this to April 2012 by mu	$ltiplying\ by\ 0.75 => ET$	T = 215s, $BT = (2/3*956)$	(*0.75) = 480s (we use 420 to be safe)	, due to tim
13	G160M - PE (3	(3) AZV18-OFFSET	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=A LTERNATE		Sequence 13-14 Non -Int in ACQ/PEAKX D TEST G160M (04		
AKX 5)								[==>]	
	(COS.sa.617 141)						)		[2]
Com	ments: COS.sa	a.617141. S/N = 60.00	0: Time Required for Requested SNR	in Segment A only:	4.2s				

00	<u>sai 13636 - ACC</u>	<u> </u>	<u>(XD TEST G160M (04)</u>	<u>) - Third C(</u>	<u>OS FUV Lifetime Posi</u>	<u>tion: FUV Target Acqu</u>	<u>isition Parameter l</u>	<u>Jpdate {L</u>	
14		8-OFFSET	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=60	Sequence 13-14 Non	150 Secs (150 Secs)		
	ASELINE S -XD+0.5 PECTRUM	-XD+0.5			0;	-Int in ACQ/PEAKX D TEST G160M (04	[==>]		
	(COS.sp.617				FP-POS=3;	)			
	142)				FLASH=YES;			[2]	
					LIFETIME-POS=A LTERNATE				
Con me l	ments: COS.sp.617142, S has been dropped to 140s.	S/N/RE=10	(1620A) = 220. BT = 2/3*769 = 513. V	We attempt to sca	tle this to April 2012 by multiplying	by $0.75 = ET = 215s$ , $BT = (2/3*956)$	b) = 600s, due to time constrain	nts, the exposure	
15	G160M - PE (1) AZV1	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=A LTERNATE	Sequence 15-16 Non -Int in ACQ/PEAKX D TEST G160M (04	10 Secs (10 Secs)		
	AKXD (-0.5						[==>]		
	(COS.sa.617					)		[2]	
7011	141)	S/N = 60.00	: Time Required for Requested SNR	in Seamont A on	du 12c				
	G160M - B (1) AZV18		COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=51	Sequence 15-16 Non	150 Secs (150 Secs)		
U	ASELINE S	(1) AZV16			3;	-Int in ACQ/PEAKX			
	PECTRUM				FP-POS=3;	D TEST G160M (04	[>]		
	(COS.sp.617 142)				FLASH=YES;	)		[2]	
	,				LIFETIME-POS=A				
					LTERNATE				
Con	<u>,                                      </u>		(1620A) = 220. BT = 2/3*769 = 513. I		raints, the exposure time has been d				
7	G160M - PE (4) AZV1 AKXD-XD -XD+1.0	8-OFFSET	COS/FUV, ACQ/PEAKXD, PSA	G160M	LIFETIME-POS=A	Sequence 17-18 Non -Int in ACQ/PEAKX	13 Secs (13 Secs)		
	(+1.0)	-XD+1.0		1600 A	LTERNATE -Int i D TE	D TEST G160M (04	[==>]		
	COS.sa.617				)		[2]		
C	141)	E/M = 60.00	. Time Descriped for Descripted CND	in Coomant A on	du 42a vienetted by 1/2 cm company				
. <i>on</i> 18	mments: COS.sa.617141. S/N = 60.00: Time Required for Requested SNR in Segment A only: 4.2s, vignetted by 1/3, up exposure time to 1.5 * 8 =~13s  G160M - B (4) AZV18-OFFSET COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=51 Sequence 17-18 Non 150 Secs (150 Secs)								
O	ASELINE S -XD+1.0	o-Ollise1	COS/TOV, TIME-TAG, TSA		3;	-Int in ACQ/PEAKX	[==>]		
	PECTRUM			1600 A	FP-POS=3;	D TEST G160M (04	[==>]		
	(COS.sp.617 142)				FLASH=YES;	)		[2]	
	,				LIFETIME-POS=A				
					LTERNATE				
Con	ments: COS.sp.617142, S	S/N/RE=10	(1620A) = 220. BT = 2/3*769 = 513. I	Due to time const	raints, the exposure time has been d				
19	G160M - PE (1) AZV1 AKXD TES	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=A LTERNATE	Sequence 19-20 Non -Int in ACQ/PEAKX	13 Secs (13 Secs)		
	T-XD (-1.0)					D TEST G160M (04	[==>]		
	(COS.sa.617 141)					)		[2]	
Con	,	S/N = 60.00	: Time Required for Requested SNR	in Seoment A on	dv: 42s vignetted by 1/3 un exposu	ure time to 13s			
20	G160M - B (1) AZV1		COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=51	Sequence 19-20 Non	150 Secs (150 Secs)		
	ASELINE S	(1) 112 110	COS/10 1, TIME TAO, 15/1	1600 A	3;	-Int in ACQ/PEAKX	[==>]		
	PECTRUM (COS.sp.617				FP-POS=3;	D TEST G160M (04	[>]		
	142)				FLASH=YES;	,		[2]	
					LIFETIME-POS=A				
					LTERNATE				
	<u>,                                      </u>		(1620A) = 220. BT = 2/3*769 = 513. I		•				
21	G160M - PE (5) AZV18-OFFSET AKXD (+1XD+1.5		COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=A LTERNATE	Sequence 21-22 Non -Int in ACQ/PEAKX D TEST G160M (04	18 Secs (18 Secs)		
	5)	[==>]					[2]		
(COS.sa.617 141)					)		[2]		
Con	ments: COS.sa.617141. S	S/N = 60.00	: Time Required for Requested SNR	in Segment A on	ly: 4.2s. Ok, one last time from 1.5'	" away, so increase the exposure time	due to the vignetting.		

Proposal 13636 - ACQ/PEAKXD TEST G160M (04) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (L... G160M - B (5) AZV18-OFFSET COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=51 Sequence 21-22 Non 150 Secs (150 Secs) -Int in ACQ/PEAKX D TEST G160M (04 ASELINE S -XD+1.5 3; 1600 A PECTRUM FP-POS=3; (COS.sp.617 142) FLASH=YES; [2] LIFETIME-POS=A LTERNATE Comments: COS.sp.617142, S/N/RE=10 (1620A) = 220. BT=2/3\*769=513. Due to time constraints, the exposure time has been dropped to 1540s G160M - PE (1) AZV18 COS/FUV, ACQ/PEAKXD, PSA G160M LIFETIME-POS=A Sequence 23-24 Non 18 Secs (18 Secs) AKXD (-1.5 LTERNATE -Int in ACQ/PEAKX [==>] 1600 A D TEST G160M (04 [2] (COS.sa.617 141) Comments: COS.sa.617141. S/N = 60.00: Time Required for Requested SNR in Segment A only: 4.2s Ok, one last time from 1.5" away, so increase the exposure time due to the vignetting (vignetted by 2/3, so 3x the 6 24 G160M - B (1) AZV18 G160M BUFFER-TIME=51 Sequence 23-24 Non 150 Secs (150 Secs) COS/FUV, TIME-TAG, PSA -Int in ACO/PEAKX ASELINE S 3; 1600 A *[==>1* D TEST G160M (04 PECTRUM FP-POS=3; (COS.sp.617 142) FLASH=YES; [2] LIFETIME-POS=A LTERNATE Comments: COS.sp.617142, S/N/RE=10 (1620A) = 220. BT=2/3\*769=513. Due to time constraints, the exposure time has been dropped to 150s.





## Proposal 13636 - ACQ/PEAKXD TEST G140L (05) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update {LE...

Thu Sep 11 01:02:22 GMT 2014

Proposal 13636, ACQ/PEAKXD TEST G140L (05), implementation

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: SCHED 100%; ORIENT 29D TO 31 D; BETWEEN 27-OCT-2014:00:00:00 AND 09-NOV-2014:00:00:00

Comments: ACQ/PEAKXD Test for G140L The target is AVZ18 (the SMOV TA target). After obtaining a good spectrum of the centered target, We then proceed to take spectra at the following positions (-1.6,-1.1,-0.6,-0.3,0.3,0.6,1.1,1.6)" in the XD direction. This will allow us to measure the plate scale. This will allow us to measure the plate scale. The > +/-0.5" offsets have expanded exposure times to compensate for vignetting. To maintain S/N, the scale factor for the exposure times should be:

OFFSET %LOSS ET

 OFFSET
 %LOSS
 ET equivalent/second ET

 0.00
 0.00
 1.00
 28s

 0.30
 0.00
 1.00
 28s

 0.60
 6.67
 1.07
 30s

 1.10
 40.00
 1.67
 47s

 1.60
 73.33
 3.75
 105s

We then proceed to test PEAKXD at offsets of +/-0.5, +/-1.0 and +/-1.5".

The roll angle for 27-OCT-2014 till 9-Nov-2014 is 30 degrees (+/- 1 degree, visits 3-5)

**Diagnostics** 

(ACQ/PEAKXD TEST G140L (05)) 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.

(ACQ/PEAKXD TEST G140L (05)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(ACQ/PEAKXD TEST G140L (05)) Warning (Form): COS ACQ/PEAKXD exposure should be followed by an ACQ/PEAKD exposure in the Visit.

(ACQ/PEAKXD TEST G140L (05)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

Proposal 13636 - ACQ/PEAKXD TEST G140L (05) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update {LE..

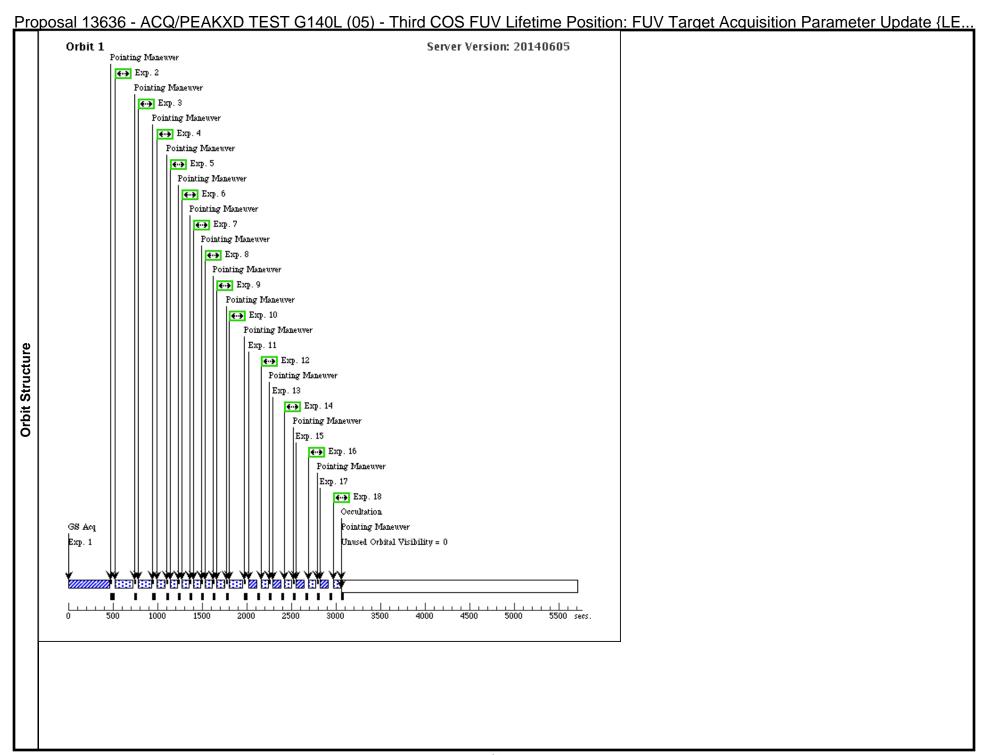
Pro			<u> AKXD TEST G140L (05) - Thi</u>		<u>n: FUV Target Acqu</u>	isition Parameter Update {LE						
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous						
	(1)	AZV18	RA: 00 47 12.1700 (11.8007083d)	Proper Motion RA: -0.0003 sec of time/yr	V=12.48	Reference Frame: ICRS						
			Dec: -73 06 32.68 (-73.10908d)	Proper Motion Dec: -0.0035 arcsec/yr	(B-V)=+0.04							
			Equinox: J2000	Epoch of Position: 2000								
	Comments:	: B2Ia, Magellanic Clouds.	Nominal ETC exposure times from spectrum sup	pplied by D. Lennon:								
	FUV, G130 FUV, G140	OL, 1105: 038s S/N=10 spe	360711) 1.360701) & 182s S/N=10 spectroscopy (COS.sp. 1.50505 (COS.sp.389720) 1.50505 (COS.sp.389715)	360698)								
	(3)	AZV18-OFFSET-	Offset from AZV18		V=12.48	Offset Position (AZV18-OFFSET-XD+0.5)						
		XD+0.5	RA Offset: 1.34156E-4 Degrees		(B-V)=+0.04							
			Dec Offset: 0.12941 Arcsec									
	Comments:	: This target is offset 1.0" is	n the XD direction, and is valid for visits 3-5 only									
	The roll angle is 30 +/- 1 degree and is valid for 14-OCT-2014 till 14-Nov-2014.											
ets	AZV18 0.5" offset for ACQ/PEAKXD (dAD,dXD)=(0,-0.5")=0.5"@15d West of South dRA=-0.5"*cos(15d)=-0.482963"=-0.000134156d dDEC=-0.5"*sin(15d)=-0.129410"											
Targets	To move th	e target to this location, th										
Ë	(4)	AZV18-OFFSET-	Offset from AZV18		V=12.48	Offset Position (AZV18-OFFSET-XD+1.0)						
Fixed		XD+1.0	RA Offset: 2.68313E-4 Degrees		(B-V)=+0.04							
iř			Dec Offset: 0.258819 Arcsec									
_	Comments:	: his target is offset 1.0" in	the XD direction, and is valid for visits 3-5 only.									
	The roll angle is 30 +/- 1 degree and is valid for 14-OCT-2014 till 14-Nov-2014.											
	dRA=-1.0"	" offset for ACQ/PEAKXD *cos(15d)=-0.965926"=-0 0"*sin(15d)=-0.258819"										
	To move th	e target to this location, th	e offset should have the opposite sign in the offset	s above.								
	(5)	AZV18-OFFSET-	Offset from AZV18		V=12.48	Offset Position (AZV18-OFFSET-XD+1.5)						
		XD+1.5	RA Offset: 4.02469E-4 Degrees		(B-V)=+0.04							
			Dec Offset: 0.388229 Arcsec									
	Comments:	: his target is offset 1.0" in	the XD direction, and is valid for visits 3-5 only.									
	The roll an	gle is 30 +/- 1 degree and	is valid for 14-OCT-2014 till 14-Nov-2014.									
	dRA=-1.5"	" offset for ACQ/PEAKXD *cos(15d)=-1.44889" =-0. 5"*sin(15d)=-0.388229"	(0,-1.5")=1.5"@15d W of S 000402469d									
	To move th	e target to this location, th	e offset should have the opposite sign in the offset	s above.								

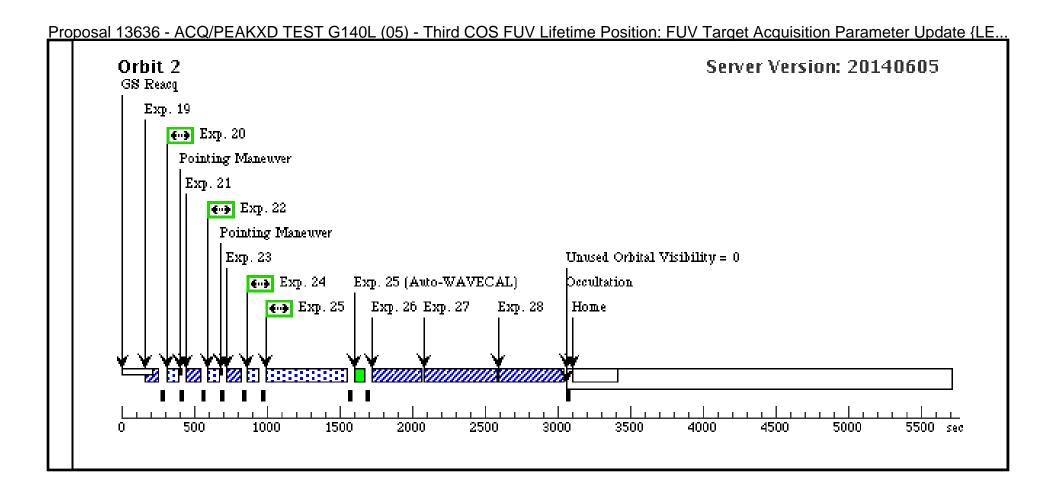
Proposal 13636 - ACQ/PEAKXD TEST G140L (05) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (LE. Label **Target** Config, Mode, Aperture Spectral Els. Opt. Params. Special Regs. Groups Exp. Time (Total)/[Actual Dur.] Orbit (ETC Run) 2 nuv a/im (1) AZV18 COS/NUV, ACQ/IMAGE, BOA MIRRORA 28 Secs (28 Secs) (COS.ta.617 I = = > 1[1] 093) Comments: NUV ACO/IMAGE with BOA+MIRRORA to refine centering, COS.ta.617093, gives S/N=60.000 in 27.48 seconds. BUFFER-TIME=40 G140L - BA (1) AZV18 COS/FUV, TIME-TAG, PSA G140L Sequence 2-10 Non-I 28 Secs (28 Secs) SELINE SP nt in ACQ/PEAKXD 1280 A I = = > 1**ECTRUM** TEST G140L (05) FP-POS=3; (COS.sp.617 114) FLASH=YES: [1] LIFETIME-POS=A LTERNATE Comments: Spectrum of source to define the G140L/1280 XD location of target when it is centered w/NUV ACO/IMAGE. COS.sp.617114 gives S/N/RE = 10 at 1400A in 29.5 seconds. BT=2/3 (600) = 400 G140L-PO (1) AZV18 COS/FUV, TIME-TAG, PSA G140L BUFFER-TIME=80 POS TARG null,-1.6 Sequence 2-10 Non-I 100 Secs (100 Secs) STARG + Snt in ACQ/PEAKXD 1280 A I = = > 1TEST G140L (05) PECTRUM FP-POS=3: 1(-1.6)(COS.sp.617 FLASH=YES; [1] 114) LIFETIME-POS=A LTERNATE Comments: POSTARG TO Move to Y=-1.6. COS.sp.617114 gives S/N/RE=10 at 1400A in 29.5 seconds. BT=2/3 (600) = 400. We want 113s, but only have time for 100s G140L - PO (1) AZV18 COS/FUV. TIME-TAG. PSA G140L BUFFER-TIME=60 POS TARG null,-1.1 Sequence 2-10 Non-I 45 Secs (45 Secs) STARG + Snt in ACO/PEAKXD 0; 1280 A PECTRUM TEST G140L (05) FP-POS=3; Exposures 2(-1.1)(COS.sp.617 FLASH=YES; [1] 114) LIFETIME-POS=A LTERNATE Comments: POSTARG TO Move to Y=-1.1". COS.sp.617114 gives S/N/RE = 10 at 1400A in 29.5 seconds. BT=2/3 (600) = 400s. 50s to account for vignetting. BUFFER-TIME=44 POS TARG null.-0.6 Sequence 2-10 Non-I 29 Secs (29 Secs) G140L - PO (1) AZV18 COS/FUV. TIME-TAG. PSA G140L STARG + S0; nt in ACO/PEAKXD 1280 A I = = > 1PECTRUM TEST G140L (05) FP-POS=3: 3 (-0.6) (COS.sp.617 FLASH=YES; [1] 114) LIFETIME-POS=A LTERNATE Comments: POSTARG TO Move to Y=-0.6". COS.sp.617114 gives S/N/RE = 10 at 1400A in 29.5 seconds G140L - PO (1) AZV18 COS/FUV, TIME-TAG, PSA G140L BUFFER-TIME=40 POS TARG null,-0.3 Sequence 2-10 Non-I 27 Secs (27 Secs) STARG + Snt in ACQ/PEAKXD 1280 A I = = > 1TEST G140L (05) PECTRUM FP-POS=3: 4 (-0.3) (COS.sp.617 FLASH=YES: [1] 114) LIFETIME-POS=A LTERNATE Comments: POSTARG TO Move to Y=-0.3". COS.sp.617114 gives S/N/RE = 10 at 1400A in 29.5 seconds G140L - PO (1) AZV18 COS/FUV, TIME-TAG, PSA G140L BUFFER-TIME=40 POS TARG null,0.3 Sequence 2-10 Non-I 27 Secs (27 Secs) STARG + Snt in ACO/PEAKXD 1280 A PECTRUM TEST G140L (05) FP-POS=3; 5 (0.3) (COS.sp.617 FLASH=YES; [1] 114) LIFETIME-POS=A LTERNATE Comments: POSTARG TO Move to Y=0.3". COS.sp.617114 gives S/N/RE = 10 at 1400A in 29.5 seconds

8	G140L - PO (1) AZV18	COS/FUV, TIME-TAG, PSA	G140L	BUFFER-TIME=44	POS TARG null,0.6	Sequence 2-10 Non-I	29 Secs (29 Secs)	
	STARG + S		1280 A	0;		nt in ACQ/PEAKXD TEST G140L (05)	[==>]	
	PECTRUM 6 (0.6)			FP-POS=3;		1ES1 G140L (05)	. ,	
	(COS.sp.617			FLASH=YES;				[1
	114)			LIFETIME-POS=A				
om	ments: POSTARG TO Move	to Y=0.6". COS.sp.617114 gives S/N/RE = 1	0 at 1400A in 29	LTERNATE  2.5 seconds				
	G140L - PO (1) AZV18	COS/FUV, TIME-TAG, PSA	G140L		POS TARG null 1.1	Sequence 2-10 Non-I	45 Secs. (45 Secs.)	
	STARG + S		1280 A	0;	1 05 17 It 0 Itali, 1.1	nt in ACQ/PEAKXD	I==>1	
	PECTRUM 7 (1.1)		120071	FP-POS=3;		TEST G140L (05)	[>]	
	(COS.sp.617			FLASH=YES;				[2
	114)			LIFETIME-POS=A LTERNATE				
Com	ments: POSTARG TO Move	to $Y=+1.1$ ". COS.sp.617114 gives S/N/RE =	10 at 1400A in 2		= 400s. 50s to accour	nt for vignetting.		
	G140L - PO (1) AZV18	COS/FUV, TIME-TAG, PSA	G140L			Sequence 2-10 Non-I	100 Secs (100 Secs)	
	STARG + S PECTRUM		1280 A	0;	nt in ACQ/PEAKX TEST G140L (05)	nt in ACQ/PEAKXD	[==>]	
	8 (1.6)			FP-POS=3;		1E31 G140L (03)		
	(COS.sp.617			FLASH=YES;				[.
	114)			LIFETIME-POS=A LTERNATE				
		to $Y=1.6$ ". OS.sp.617114 gives $S/N/RE = 10$		*	gnetting by observing j		T	
1	G140L - PE (1) AZV18 AKXD-Cent		G140L	LIFETIME-POS=A LTERNATE		Sequence 11-12 Non -Int in ACQ/PEAKX	3 Secs (3 Secs)	
	ered		1280 A	LIERNAIE		D TEST G140L (05)	[==>]	_
	(COS.sa.617 154)							[-
Com	ments: ACQ/PEAKXD test of	n a centered target. ETC Request ID: COS.s.	a.617154: SNR =	= 60 : Time Required for Red	quested SNR in Segmer	ıt A only: 1.7966		
2	G140L - BA (1) AZV18 COS/FUV, TIME-TAG, PSA SELINE SP ECTRUM (COS.sp.617 114)	G140L	BUFFER-TIME=40			28 Secs (28 Secs)		
			1280 A	0;		-Int in ACQ/PEAKX D TEST G140L (05)	[==>]	
			FP-POS=3;		D TEST GITOE (03)			
				FLASH=YES;				
				LIFETIME-POS=A LTERNATE				
		S/N/RE = 10 at 1400A in 29.5 seconds. BT					T	
3	G140L - PE (3) AZV18-O AKXD-XD -XD+0.5	FFSET COS/FUV, ACQ/PEAKXD, PSA	G140L	LIFETIME-POS=A LTERNATE		Sequence 13-14 Non -Int in ACQ/PEAKX	3 Secs (3 Secs)	
	+0.5		1280 A	BIERWIL		D TEST G140L (05)	[==>]	
	(COS.sa.617 154)							[-
om	ments: ACQ/PEAKXD on the	target offset by +0.5".						<u>'</u>
4		FFSET COS/FUV, TIME-TAG, PSA	G140L	BUFFER-TIME=56		Sequence 13-14 Non		
	SELINE SP -XD+0.5 ECTRUM		1280 A	0;		-Int in ACQ/PEAKX D TEST G140L (05)	[==>]	
	(COS.sp.617	COS.sp.617		FP-POS=3;		D 1E31 0140E (03)		_
	114)			FLASH=YES;				
				LIFETIME-POS=A LTERNATE				
70***	mants: COS on 617111 airea	S/N/RE = 10 at 1400A in 29.5 seconds. BT	-2/3 (600) - 400					
om	menis. COs.sp.01/114 gives	5/14/KL = 10 th 1400A in 29.3 seconds. B1	-2/3 (000) - 400	,				

15	G140L - PE (1) AZV AKXD-XD- 0.5 (COS.sa.617	18	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=A LTERNATE	Sequence 15-16 Non -Int in ACQ/PEAKX D TEST G140L (05)	4 Secs (4 Secs) [==>]	[1]
C	154)	1	- (C 1 L 0 5 !!					
	ments: ACQ/PEAKXD of G140L- BA (1) AZV		COS/FUV, TIME-TAG, PSA	G140L	BUFFER-TIME=56	Sequence 15-16 Non	28 Secs. (28 Secs.)	
10	SELINE SP ECTRUM (COS.sp.617 114)		COST OV, TIME THO, TSA	1280 A	0; FP-POS=3; FLASH=YES; LIFETIME-POS=A	-Int in ACQ/PEAKX D TEST G140L (05)	[==>]	[1]
					LTERNATE			
Con			= 10 at 1400A in 29.5 seconds. BT=					
17	G140L - PE (4) AZV AKXD-XD - XD+1.0		COS/FUV, ACQ/PEAKXD, PSA	G140L	LIFETIME-POS=A LTERNATE	Sequence 17-18 Non -Int in ACQ/PEAKX	8 Secs (8 Secs)	
	+1.0 (COS.sa.617 154)			1280 A		D TEST G140L (05)	[==>]	[1]
Con	ments: ACQ/PEAKXD o						_	
18			COS/FUV, TIME-TAG, PSA	G140L	BUFFER-TIME=56 0;	Sequence 17-18 Non -Int in ACQ/PEAKX	` /	
	SELINE SP -XD+1.0 ECTRUM (COS.sp.617 114)	,		1280 A	o; FP-POS=3;	D TEST G140L (05)	[==>]	
					FLASH=YES;			[1]
-					LIFETIME-POS=A LTERNATE			
Con	ments: COS.sp.617114	gives S/N/RE	= 10 at 1400A in 29.5 seconds. BT=	2/3 (600) = 400	<u> </u>			
19	G140L - PE (1) AZV18 AKXD-XD-	18	COS/FUV, ACQ/PEAKXD, PSA	G140L	LIFETIME-POS=A	Sequence 19-20 Non		
	1.0 (COS.sa.617 154)			1280 A	LTERNATE	-Int in ACQ/PEAKX D TEST G140L (05)	[==>]	[2]
Con	ments: ACQ/PEAKXD o	on the target	offset by -1.0".					
20	G140L - BA (1) AZV		COS/FUV, TIME-TAG, PSA	G140L	BUFFER-TIME=56	Sequence 19-20 Non	28 Secs (28 Secs)	
	SELINE SP ECTRUM			1280 A	0;	-Int in ACQ/PEAKX D TEST G140L (05)	[==>]	
	(COS.sp.617			FP-POS=3;	D 1E31 G140E (03)			
	114)				FLASH=YES; LIFETIME-POS=A			[2]
Con	ments: COS en 617114	aives S/N/RF	= 10 at 1400A in 29.5 seconds. BT=	2/3 (600) – 400	LTERNATE			
21		-	COS/FUV, ACO/PEAKXD, PSA	G140L	LIFETIME-POS=A	Sequence 21-22 Non	12 Secs (12 Secs)	
	AKXD-XD -XD+1.5 +1.5			1280 A	LTERNATE	-Int in ACQ/PEAKX D TEST G140L (05)	[==>]	
	(COS.sa.617 154)							[2]
Con	ments: ACQ/PEAKXD o	on the target	offset by -1.5".					
22		ZV18-OFFSET COS/FUV, TIME-TAG, PSA	G140L	BUFFER-TIME=56	Sequence 21-22 Non	28 Secs (28 Secs)		
	SELINE SP -XD+1.5 ECTRUM	,		1280 A	0; FP-POS=3;	-Int in ACQ/PEAKX D TEST G140L (05)	[==>]	
	(COS.sp.617 114)				FLASH=YES;			[2]
	•,				LIFETIME-POS=A LTERNATE			[ [2]

<u>oposal 13636</u>	<u>ACQ/PEAKXD</u>	TEST G140L (05) -	<ul> <li>Third COS</li> </ul>	FUV Lifetime Position: FUV	<u> Target Acqui</u>	<u>sition Parameter Upda</u>	<u>ite {LE</u>
23 G140L - PE (1)		/FUV, ACQ/PEAKXD, PSA	G140L	LIFETIME-POS=A	Sequence 23-24 Non	12 Secs (12 Secs)	
AKXD-XD-			1280 A	LTERNATE	-Int in ACQ/PEAKX D TEST G140L (05)	[==>]	
1.5 (COS.sa.617					D TEST G140L (03)		[2]
154)							
Comments: ACQ/PEAK	XD on the target offset b	vy -1.5".					
24 G140L - BA (1)	AZV18 COS/	FUV, TIME-TAG, PSA	G140L	BUFFER-TIME=40	Sequence 23-24 Non	28 Secs (28 Secs)	
SELINE SP ECTRUM			1280 A	0;	-Int in ACQ/PEAKX D TEST G140L (05)	[==>]	
(COS.sp.617				FP-POS=3;	D 1E31 G1+0E (03)		
114)				FLASH=YES;			[2]
				LIFETIME-POS=A LTERNATE			
Comments: COS on 617	7114 gives S/N/PF = 10 c	at 1400A in 29.5 seconds. BT=2	2/3 (600) = 400	LIERNATE			
25 BOA-G140 (1)	· ·	/FUV, TIME-TAG, BOA	G140L	LIFETIME-POS=A		500 Secs (500 Secs)	
25 BOA-G140 (1) L	AZV16 COS/	ruv, IIME-IAU, bua		LTERNATE;			
(COS.sp.617			1280 A	BUFFER-TIME=80		[==>]	
153)				00;			[2]
				FP-POS=3			
Comments: SNR = 10.0	000 at wavelength 1310.0	00A Time = 3,173. seconds. We'	ll just observe for a	s long as we can.			
26 G140L - AC (1)	AZV18 COS/	FUV, ACQ/PEAKXD, PSA	G140L	LIFETIME-POS=A		10 Secs (10 Secs)	
Q/PEAKXD - NUM PO			1280 A	LTERNATE;		[==>]	
S=9 -				NUM-POS=9;			[2]
(COS.sa.617 159)				STEP-SIZE=0.3			1-7
· · · · · · · · · · · · · · · · · · ·	).3 ACO/PEAKXD using	NUM POS $> 3$ (9). We have sp	ectra at +/-1.6". +/-	-1.1", +/-0.6, +/-0.3, and 0.0, so the 0.3" pat	tern at least matches th	ne center 5 spectra at offsets of 0. +/-	0.3". +/-0.6"
, +/-0.9", +/-1.2"	sa.617159, SN=60, ET=2	_		, , , , , , , , , , , , , , , , , , , ,		JJ	,
27 G130M - A (1)		/FUV, ACQ/PEAKXD, PSA	G130M	LIFETIME-POS=A		10 Secs (10 Secs)	
CQ/PEAKX	AZV16 COS/	TOV, ACQ/I LAKAD, I SA	1309 A	LTERNATE;		[==>]	
D -NUM_P			1509 A	NUM-POS=9;		[==>]	
OS = 9 (COS.sa.617				STEP-SIZE=0.3			[2]
160)							
	0.3 ACQ/PEAKXD using	$S_{S} NUM_POS > 3$ (9). We have $S_{P}$	pectra at +/-1.6", +/	/-1.1", +/-0.6, +/-0.3, and 0.0, so the 0.3" pa	ttern at least matches t	he center 5 spectra at offsets of $0$ , +/	-0.3", +/-0.6
", +/-0.9", +/-1.2"	sa 617160 SN- 60 gives	s: Time = 1.3755 seconds					
Tîme Required fo	r Requested SNR in Segn	nent A only: 2.3416					
Time Required fo	r Requested SNR in Segn	nent B only: 3.3342					
28 G160M - A (1)	AZV18 COS/	FUV, ACQ/PEAKXD, PSA	G160M	LIFETIME-POS=A		10 Secs (10 Secs)	
CQ/PEAKX D - NUM P			1600 A	LTERNATE;		[==>]	
OS = 9				NUM-POS=9;			[2]
(COS.sa.617 161)				STEP-SIZE=0.3			
- /	0 3 ACO/PEAKXD using	NUM POS > 3 (9) We have so	nectra at +/-1 6" +-	/-1.1", +/-0.6, +/-0.3, and 0.0, so the 0.3" pa	ttern at least matches t	he center 5 spectra at offsets of $0^{-+}$	-0.3". +/-0.6
", +/-0.9", +/-1.2"	_	- -	, cesta an 1/ 1.0 , 1/	1.1 , ., o.o, ., o.o, and o.o , so me o.o pa	ai icasi maiches i	the center of spectra at offsets of 0, 17	5.5 , 17 0.0
	sa.617161, S/N = 60, ,Tii r Requested SNR in Segn						
	r Requested SNR in Segn r Reauested SNR in Segn						ļ





## Proposal 13636 - LP3 Verification Visit (06) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (LENA3)

Proposal 13636, LP3 Verification Visit (06), implementation

**Diagnostic Status: Warning** 

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: ORIENT 297D TO 299 D; BETWEEN 01-FEB-2015:00:00:00 AND 28-FEB-2015:00:00:00

Comments: Test ACQ/PEAKXD for each grating, then perform two full TA sequences, one with G160M, one with G130M. Orientation for Visit 6 is currently set to 298deg, which is good from Jan 31th to Feb 10th, 2015. After that, we will need to change the roll angle and redefine the targets. We start with a G130M PEAKXD to see if the SIAF file is off in the XD, and to make sure the plate scales are correct. There are no focus or HV adjustments in this visit.

Thu Sep 11 01:02:22 GMT 2014

**Diagnostics** 

**Fixed Targets** 

(LP3 Verification Visit (06)) 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.

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(6)	WD1657+343	RA: 16 58 51.1200 (254.7130000d)	Proper Motion RA: 12 mas/yr	V=16.4+/-0.1	Reference Frame: ICRS
		Dec: +34 18 53.30 (34.31481d)	Proper Motion Dec: -32 mas/yr		
		Equinox: J2000	Epoch of Position: 2000		
			Radial Velocity: 78 km/sec		
Com	ments: This object is visible all y	year. The roll angle for the offsets is set to 30	(29-Jan-2015 to 08-Feb-2015)		
The o	original proposal used [0.0014 s 5 coord. (ep=J2000): 16 58 51.	12 +34 18 53.3	provided by A. Aloisi (extrapolated in wavelens		
(61)	WD1657+343-OFFSET		Radial Velocity: 78 km/sec	V=16.4+/-0.1	Offset Position (WD1657+343-OFFSET-
(01)	SE-1.4AS	RA Offset: -3.46855E-4 Degrees	Radial Velocity. /8 km/sec	V=10.4+/-0.1	SE-1.4AS)
		Dec Offset: 0.663933 Arcsec			
Com	ments: The new roll anale is set	to 298. This target is offset 1" in delta[AD,XI	01-(-1.1)"		
	· ·		97-(-1,1)		
WD1	657+343 offset for ACQ Sequen	ce for a roll angle of 298: (Feb 2-10, 2015)			
dRA=	0,dXD)=(-1",+1")=-sqrt(2") ~SE =+sqrt(2)*cos(45-17 )=-1.24866 C=-sqrt(2)" *sin(28 )=-0.66393.	8'' = +0.000346855deg			
То т	ove the target to this location, th	ne offset should have the opposite sign in the o	ffsets above.		
(62)		Offset from WD1657+343	Radial Velocity: 78 km/sec	V=16.4+/-0.1	Offset Position (WD1657+343-OFFSET-
	XD-1.0	RA Offset: 8.12144E-5 Degrees			XD-1.0)
		Dec Offset: -0.956305 Arcsec			
Com	ments: The new roll angle is set	to 298. This offset is 1" in -XD:			

WD1657+343 offset for ACQ Sequence for a roll angle of 298: (Feb 2-10, 2015)

 $(dAD, dXD) = (0, 1.0") = 1" \sim NNW$ 

dRA = -1"\*sin(17) = -0.292372" = -8.12144e-05d dDEC=1"\*cos(17)=+0.956305"

To move the target to this location, the offset should have the opposite sign in the offsets above.

Proposal 13636 - LP3 Verification Visit (06) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update {LENA3}

ted Signal/l (box of 9 x ce 23,922 3 ground 0.0 y 8.133e-05 urk Current e st Pixel (sir tate entire ce 130M - PE KXD - No inal COS.sa.617 63) mts: ACQ/H quest ID: (cime Requir 130M - O FSET SPE TRUM COS.sp.617 66) mts: ETC R	ACQ/IMAGE with BO. Noise Ratio = 60.000 [9 pixels] 8,609.76 60.08 165 9.79 3.13 15 0.01 0.11 1 0.065 9.78 3.13 18 egion 23.987 3,619.55 18 detector 862.791 19 (6) WD1657+343  PEAKXD at the nomin COS.sa.617163, SN = 10.000 19 ed for Requested SNR 19 (62) WD1657+343  OFFSET-XD-1.0		G130M 1309 A	BUFFER-TIME=29 5; FP-POS=3;		Sequence 3-5 Non-In t in LP3 Verification Visit (06)		[1]
nts: NUV A ted Signal/I (box of 9 x ce 23.922 3 ground 0.0 y 8.133e-05 urk Current s t Pixel (sin ate entire t 130M - PE KXD - No inal COS.sa.617 63) nts: ACQ/F quest ID: ( ime Requir 130M - O FSET SPE TRUM COS.sp.617 66) nts: ETC R	ACQ/IMAGE with BO. Noise Ratio = 60.000 [9 pixels] 8,609.76 60.08 165 9.79 3.13 15 0.01 0.11 1 0.065 9.78 3.13 18 egion 23.987 3,619.55 18 detector 862.791 19 (6) WD1657+343  PEAKXD at the nomin COS.sa.617163, SN = 10.000 19 ed for Requested SNR 19 (62) WD1657+343  OFFSET-XD-1.0	gives: Time = 150 seconds  5 60.16  501.16  COS/FUV, ACQ/PEAKXD, PSA  tal position to test any SIAF file issue in 40.000, gives: Time = 0.3526 seconds 8 in Segment A only: 0.9820	G130M 1309 A in the XD.	5; FP-POS=3;		t in LP3 Verification	3 Secs (3 Secs)  [==>]  17 Secs (17 Secs)	
ted Signal/l (box of 9 x ce 23,922 3 ground 0.0 y 8.133e-05 urk Current e st Pixel (sir tate entire ce 130M - PE KXD - No inal COS.sa.617 63) mts: ACQ/H quest ID: (cime Requir 130M - O FSET SPE TRUM COS.sp.617 66) mts: ETC R	Noise Ratio = 60.000 (19 pixels) (19 pixels) (19 pixels) (19 0.08 (19 5) (19 11 11 11 11 11 11 11 11 11 11 11 11 1	gives: Time = 150 seconds  5 60.16  501.16  COS/FUV, ACQ/PEAKXD, PSA  tal position to test any SIAF file issue in 40.000, gives: Time = 0.3526 seconds 8 in Segment A only: 0.9820	G130M 1309 A in the XD.	5; FP-POS=3;		t in LP3 Verification	[==>]  17 Secs (17 Secs)	[1]
ce 23.922 3 ground 0.0 yrk Current y selected re st Pixel (sin tate entire of 130M - PE KXD - No inal COS.sa.617 63) nts: ACQ/I quest ID: ( ime Requir 130M - O FSET SPE TRUM COS.sp.617 66) nts: ETC R	8,609.76 60.08 165 9.79 3.13 5 0.01 0.11 1 0.065 9.78 3.13 1 0.065 9.78 3.13 1 0.065 9.78 3.13 1 0.065 9.78 3.13 1 0.065 9.78 3.13 2 0.065 2.38 2.13 2 0.065 2.79 2 0.065 2.79	COS/FUV, ACQ/PEAKXD, PSA  all position to test any SIAF file issue in 40.000, gives: Time = 0.3526 seconds in Segment A only: 0.9820	1309 A  n the XD.  G130M	5; FP-POS=3;		t in LP3 Verification	[==>]  17 Secs (17 Secs)	[1]
KXD - No inal COS.sa.617 (20) (20) (20) (20) (20) (20) (20) (20)	PEAKXD at the nomin COS.sa.617163, SN = red for Requested SNR (62) WD1657+343- OFFSET-XD-1.0	al position to test any SIAF file issue in 40.000, gives: Time = 0.3526 seconds in Segment A only: 0.9820	1309 A  n the XD.  G130M	5; FP-POS=3;	1	t in LP3 Verification	[==>]  17 Secs (17 Secs)	[1]
inal COS.sa.617 63) nts: ACQ/I equest ID: Comme Requir 130M - O FSET SPE TRUM COS.sp.617 66) nts: ETC R	PEAKXD at the nomin COS.sa.617163, SN = red for Requested SNR (62) WD1657+343- OFFSET-XD-1.0	40.000, gives: Time = 0.3526 seconds in Segment A only: 0.9820	n the XD.	5; FP-POS=3;	1	t in LP3 Verification	17 Secs (17 Secs)	[1]
equest ID: 0 ime Requir 130M - 0 FSET SPE TRUM COS.sp.617 66) nts: ETC R	COS.sa.617163, SN = red for Requested SNR (62) WD1657+343- OFFSET-XD-1.0	40.000, gives: Time = 0.3526 seconds in Segment A only: 0.9820	G130M	5; FP-POS=3;	,	t in LP3 Verification		
FSET SPE TRUM COS.sp.617 66) nts: ETC R	OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA		5; FP-POS=3;	)	t in LP3 Verification		-
TRUM COS.sp.617 66) <i>nts: ETC R</i>	,		1309 A	FP-POS=3;			r . 1	
nts: ETC R	Request ID: COS sn 61			FLASH=YES		. 2222 (0.0)	[==>]	[1]
		7166, $SNR/RE = 3.000$ at wavelength	1310.00A gives: T		3T=2/3*(441)=295			.1
130M - PE		COS/FUV, ACO/PEAKXD, PSA	G130M			Sequence 3-5 Non-In	4 Secs (4 Secs)	
	OFFSET-XD-1.0	,	1309 A			t in LP3 Verification Visit (06)	[==>]	
COS.sa.617 53)						Visit (00)		[1]
			G1207.f	DATES TO SE			1.50 (1.50 )	
		COS/FUV, TIME-TAG, PSA		5;	,	t in LP3 Verification		+
ION SPEC			1309 A	FP-POS=3;		Visit (06)	[==>]	
COS.sp.617	,			FLASH=YES				[1]
- /	Request ID: COS sp 61	17166 SN = 3 000 at wavelength 1310	00A (per resolutio	on element) gives: Time	= 8.6358 seconds			.1
				, V		Sequence 6-8 Non-In	17 Secs (17 Secs)	Τ
FSET SPE	. ,	200/10 1, 11110, 15/1	1309 A	5;		t in LP3 Verification	f==>1	
CTRUM (COS.sp.617 166)					V1s1t (06)		[1]	
,	Reauest ID: COS.sp.61	77166. $SN = 3.000$ at wavelength 1310.	00A (per resolutio		= 8.6358 seconds			.1
		COS/FUV, ACQ/PEAKXD, PSA	G130M	, 3			3 Secs (3 Secs)	
KXD-XD 1.0 COS.sa.617 53)			1309 A			t in LP3 Verification Visit (06)	[==>]	[1]
nts: ACQ/I	PEAKKD							
1 N I I R C 6 1 1 I I I C 6	ats: ACQ/a 30M - C NFIRMA ON SPEC 2UM OS.sp.617 6) 30M - O SET SPE RUM OS.sp.617 6) 0S.sp.617 6) 0S.sp.617 30M - PE CXD-XD .0 OS.sa.617 3)	30M - C (62) WD1657+343- NFIRMA OFFSET-XD-1.0 ON SPEC (UM) OS.sp.617 6) 30M - O (6) WD1657+343 SET SPE (RUM) OS.sp.617 6) aus: ETC Request ID: COS.sp.617 60 OS.sp.617 60 OS.sp.617	### ACQ/PEAKKD, see previous comment  30M - C (62) WD1657+343- COS/FUV, TIME-TAG, PSA NFIRMA OFFSET-XD-1.0 ON SPEC RUM OS.sp.617 6) #### ACQ/PEAKKD, see previous comment  COS/FUV, TIME-TAG, PSA SET SE SPE RUM OS.sp.617 6) #### COS/FUV, TIME-TAG, PSA SET SPE RUM OS.sp.617 6) ###################################	### ACQ/PEAKKD, see previous comment  30M - C (62) WD1657+343- COS/FUV, TIME-TAG, PSA G130M  NFIRMA OFFSET-XD-1.0 1309 A  BUM  OS.sp.617  6)  #### ACQ/PEAKKD, see previous comment  1309 A  1309 A	### ACQ/PEAKKD, see previous comment    Signature   Comment	30M - C (62) WD1657+343- COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=29 STRIPM OFFSET-XD-1.0 1309 A 5; PP-POS=3; PLASH=YES 6)  30M - O (62) WD1657+343 COS/FUV, TIME-TAG, PSA G130M FLASH=YES 6)  30S - O (82) WD1657+343 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=29 STRUM OS.sp.617 60 FLASH=YES 1309 A 5; PP-POS=3; PP-POS=3	30M - C (62) WD1657+343 COS/FUV, TIME-TAG, PSA G130M BUFFER-TIME=29 Sequence 3-5 Non-In tin LP3 Verification Visit (06)  SEQUENCE SUM ON SPEC BUSINESS SPECTOR (Company)  AUXION ON SPECTOR (Company)  AUXION O	### ACQ/PEAKKD, see previous comment    30M - C   (62) WD1657+343

Proposal 13636 - LP3 Verification Visit (06) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (LENA3) BUFFER-TIME=29 G130M - C (6) WD1657+343 COS/FUV, TIME-TAG, PSA G130M Sequence 6-8 Non-In 17 Secs (17 Secs) ONFIRMA t in LP3 Verification 5: 1309 A *[==>1* TION SPEC Visit (06) FP-POS=3: TRUM [1] (COS.sp.617 FLASH=YES Comments: ETC Request ID: COS.sp.617166, SN = 3.000 at wavelength 1310.00A (per resolution element) gives: Time = 8.6358 seconds G140L - BA (62) WD1657+343- COS/FUV, TIME-TAG, PSA G140L BUFFER-TIME=42 Sequence 9-11 Non-I 9 Secs (9 Secs) SELINE SP OFFSET-XD-1.0 nt in LP3 Verificatio 7; 1280 A l==>1**ECTRUM** n Visit (06) FP-POS=3; [1] (COS.sp.617 FLASH=YES 167) Comments: ETC Request ID: COS.sp.617167, SNR = 3.000 at wavelength 1310A (per resolution element) gives: Time = 1.5274 seconds, BT = 2/3\*(641)=427 G140L - PE (62) WD1657+343- COS/FUV, ACO/PEAKXD, PSA G140L Sequence 9-11 Non-I 3 Secs (3 Secs) AKXD-XD- OFFSET-XD-1.0 nt in LP3 Verificatio 1280 A I==>11.0 n Visit (06) [1] (COS.sp.617 168) Comments: ETC Request ID: COS.sa.617168, SN = 60.000 gives: Time = 1.7966 seconds G140L - CO (62) WD1657+343- COS/FUV, TIME-TAG, PSA G140L BUFFER-TIME=42 Sequence 9-11 Non-I 9 Secs (9 Secs) NFIRMATI OFFSET-XD-1.0 nt in LP3 Verificatio 1280 A I==>1ON SPECT n Visit (06) FP-POS=3; RUM [1] (COS.sa.389 FLASH=YES Comments: ETC Request ID: COS.sp.617166, SN = 3.000 at wavelength 1310.00A (per resolution element) gives: Time = 8.6358 seconds G140L - BA (6) WD1657+343 COS/FUV, TIME-TAG, PSA G140L BUFFER-TIME=42 Sequence 12-14 Non 9 Secs (9 Secs) SELINE SP -Int in LP3 Verificati 1280 A I==>1ECTRUM on Visit (06) FP-POS=3: [1] (COS.sp.617 167) FLASH=YES Comments: ETC Request ID: COS.sp.617167, SNR = 3.000 at wavelength 1310A (per resolution element) gives: Time = 1.5274 seconds, BT = 2/3\*(641)=427 G140L - PE (6) WD1657+343 COS/FUV. ACO/PEAKXD. PSA G140L Sequence 12-14 Non 3 Secs (3 Secs) -Int in LP3 Verificati AKXD-XD 1280 A I = = > 1+1.0on Visit (06) [1] (COS.sp.617 168) Comments: ETC Request ID: COS.sa.617168, SN = 60.000 gives: Time = 1.7966 seconds G140L - CO (6) WD1657+343 COS/FUV, TIME-TAG, PSA G140L BUFFER-TIME=42 Sequence 12-14 Non 9 Secs (9 Secs) NFIRMATI -Int in LP3 Verificati 1280 A *[==>1* ON SPECT on Visit (06) FP-POS=3; RUM [1] FLASH=YES (COS.sp.617 Comments: ETC Request ID: COS.sp.617167, SNR = 3.000 at wavelength 1310A (per resolution element) gives: Time = 1.5274 seconds, BT = 2/3\*(641)=427G160M - B (62) WD1657+343- COS/FUV, TIME-TAG, PSA BUFFER-TIME=51 Sequence 15-17 Non 23 Secs (23 Secs) G160M -Int in LP3 Verificati ASELINE S OFFSET-XD-1.0 3; 1600 A I = = > 1PECTRUM on Visit (06) FP-POS=3; [1] (COS.sp.617 FLASH=YES 173) Comments: ETC Request ID: COS.sp.617173, SNR/RE = 3 at wavelength 1610A gives: Time = 24.8232 seconds, BT=2/3 \*769 = 513

Proposal 13636 - LP3 Verification Visit (06) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (LENA3) G160M - PE (62) WD1657+343- COS/FUV, ACO/PEAKXD, PSA G160M Sequence 15-17 Non 10 Secs (10 Secs) -Int in LP3 Verificati AKXD-XD- OFFSET-XD-1.0 1600 A *[==>1* on Visit (06) 1.0 [1] (COS.sa.617 171) Comments: ETC Request ID: COS.sa.617171, SNR = 60, Time = 2.0012 seconds Time Required for Requested SNR in Segment A only: 9.9563 Time Required for Requested SNR in Segment B only: 2.5045 G160M - C (62) WD1657+343- COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=51 Sequence 15-17 Non 23 Secs (23 Secs) ONFIRMA OFFSET-XD-1.0 -Int in LP3 Verificati 3; I = = > 11600 A TION SPEC on Visit (06) FP-POS=3: TRUM [1] (COS.sp.617 FLASH=YES 173) Comments: ETC Request ID: COS.sp.617173, SNR/RE = 3 at wavelength 1610A gives: Time = 24.8232 seconds G160M - O (6) WD1657+343 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=51 Sequence 18-20 Non 23 Secs (23 Secs) FFSET SPE -Int in LP3 Verificati 3; I = = > 11600 A **CTRUM** on Visit (06) FP-POS=3; [2] (COS.sp.617 173) FLASH=YES Comments: Check spectrum location. G160M - PE (6) WD1657+343 COS/FUV, ACO/PEAKXD, PSA G160M Sequence 18-20 Non 10 Secs (10 Secs) AKXD-XD -Int in LP3 Verificati 1600 A I = = > 1+1.0on Visit (06) [2] (COS.sa.617 Comments: ETC Request ID: COS.sa.617171. SNR = 60. Time = 2.0012 seconds Time Required for Requested SNR in Segment A only: 9.9563 Time Required for Requested SNR in Segment B only: 2.5045 20 G160M - C (6) WD1657+343 COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=51 Sequence 18-20 Non 23 Secs (23 Secs) **ONFIRMA** -Int in LP3 Verificati 3; 1600 A [==>1 TION SPEC on Visit (06) FP-POS=3; TRUM [2] (COS.sp.617 FLASH=YES 173) Comments: confirmation spectrum G130M G130M - O (6) WD1657+343 COS/FUV, TIME-TAG, PSA BUFFER-TIME=29 Sequence 21-26 Non 12 Secs (12 Secs) FESET SPE -Int in LP3 Verificati 5; 1309 A I = = > 1CTRUM on Visit (06) FP-POS=3; [2] (COS.sp.617 FLASH=YES Comments: ETC Request ID: COS.sp.617166, SN = 3.000 at wavelength 1310.00A (per resolution element) gives: Time = 8.6358 seconds. BT=2/3\*(441)=295 G130M - PE (6) WD1657+343 COS/FUV, ACO/PEAKXD, PSA G130M Sequence 21-26 Non 4 Secs (4 Secs) AKXD -Int in LP3 Verificati 1309 A I = = > 1(COS.sa.617 on Visit (06) [2] 163) Comments: ETC Request ID: COS.sa.617163, SN = 40.000, gives: Time = 0.3526 seconds Time Required for Requested SNR in Segment A only: 0.9820 23 G130M - C (6) WD1657+343 COS/FUV. TIME-TAG. PSA G130M BUFFER-TIME=29 Sequence 21-26 Non | 12 Secs (12 Secs) **ONFIRMA** -Int in LP3 Verificati 5; 1309 A I = = > 1TION SPEC on Visit (06) FP-POS=3; TRUM [2] FLASH=YES (COS.sp.617 166) Comments: ETC Request ID: COS.sp.617166, SN = 3.000 at wavelength 1310.00A (per resolution element) gives: Time = 8.6358 seconds. BT=2/3\*(441)=295

4		(6) WD1657+343	COS/FUV, ACQ/PEAKD, PSA	G130M	NUM-POS=5;	Sequence 21-26 Non	3 Secs (3 Secs)	
	AKD (COS.sa.617 170)			1309 A	STEP-SIZE=0.8	-Int in LP3 Verificati on Visit (06)	[==>]	[2]
Com	Time Require	ed for Requested SNR	7170, SNR/RE = 60.000. gives: Time in Segment A only: 2.2088 in Segment B only: 1.2375	= 0.7931 second	S			
25		(6) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M	BUFFER-TIME=29	Sequence 21-26 Non	12 Secs (12 Secs)	
	ONFIRMA TION SPEC		1309 A	5;	-Int in LP3 Verificati on Visit (06)	[==>]		
	TRUM (COS.sp.617 166)				FP-POS=3; FLASH=YES	on visit (oo)		[2
Com	ments: ETC R	equest ID: COS.sp.61	77166, $SN = 3.000$ at wavelength $1310$ .	.00A (per resolui	tion element) gives: Time = 8.6358 sec	conds. BT=2/3*(441)=295		•
26	G130M - PE (6) WD1657+34	(6) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G130M	NUM-POS=5;	Sequence 21-26 Non	3 Secs (3 Secs)	
	AKXD with NUM_POS			1309 A	STEP-SIZE=0.8	-Int in LP3 Verificati on Visit (06)	[==>]	
	=5 (COS.sa.617 170)					0.1 (1.0.1)		[2]
Com	Time Require	ed for Requested SNR	7170, SNR/RE = 60.000. gives: Time : in Segment A only: 2.2088 in Segment B only: 1.2375	= 0.7931 second	S			•
27	FFSET SPE OFFSET-SE-1.4A CTRUM (COS.sp.617		- COS/FUV, TIME-TAG, PSA S	G160M 1600 A	BUFFER-TIME=51	Sequence 27-34 Non -Int in LP3 Verificati on Visit (06)	23 Secs (23 Secs)	
		OFFSET-SE-1.4AS			3;		[==>]	
					FP-POS=3;	on visit (00)		[2
~	173)	ID GOG 61	17172 CVP/PF 2		FLASH=YES	2		
			17173, SNR/RE = 3 at wavelength 1610 COS/FUV, ACQ/SEARCH, PSA	G160M	= 24.8232  seconds, B1 = 2/3 */09 = 313 CENTER=FLUX-W		5 Secs (5 Secs)	
	CQ/SEARC OFFSET-SE-1.4AS		1600 A	T-FLR;	-Int in LP3 Verificati	[==>]		
	H on OFFS ET (COS.sa.617 174)			1000 A	SCAN-SIZE=3	on Visit (06)		[2]
Сот	ments: ETC R Time Requir	ed for Requested SNR	7174,SNR = 60, gives: Time = 1.2549 3 in Segment A only: 4.2322 3 in Segment B only: 1.7838	seconds			L	
29			COS/FUV, TIME-TAG, PSA	G160M	BUFFER-TIME=51	Sequence 27-34 Non	23 Secs (23 Secs)	
	ONFIRMA TION SPEC	OFFSET-SE-1.4AS		1600 A	3;	-Int in LP3 Verificati on Visit (06)	[==>]	
	TRUM (COS.sp.617 173)				FP-POS=3; FLASH=YES	on visit (oo)		[2]
Com	ments: ETC R	equest ID: COS.sp.61	17173, SNR/RE = 3 at wavelength 1610	OA gives: Time =	24.8232 seconds, BT=2/3 *769 = 513	3		
30	G160M - A	(61) WD1657+343-	COS/FUV, ACQ/PEAKXD, PSA	G160M		Sequence 27-34 Non		
	D on OFFS	ET (COS.sa.617		1600 A		-Int in LP3 Verificati on Visit (06)	[==>]	
	ET (COS.sa.617 171)					. ,		[2
Com	ments: ETC R Time Requir	ed for Requested SNR	7171, SNR = 60, Time = 2.0012 second in Segment A only: 9.9563 in Segment B only: 2.5045	ads				,

Proposal 13636 - LP3 Verification Visit (06) - Third COS FUV Lifetime Position: FUV Target Acquisition Parameter Update (LENA3) G160M - C (61) WD1657+343- COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=51 Sequence 27-34 Non 23 Secs (23 Secs) -Int in LP3 Verificati ONFIRMA OFFSET-SE-1.4AS 3; 1600 A I = = > 1TION SPEC on Visit (06) FP-POS=3; TRUM [2] (COS.sp.617 FLASH=YES 173) Comments: ETC Request ID: COS.sp.617173, SNR/RE = 3 at wavelength 1610A gives: Time = 24.8232 seconds, BT=2/3 \*769 = 513 G160M - A (61) WD1657+343- COS/FUV, ACQ/PEAKD, PSA G160M NUM-POS=7; Sequence 27-34 Non | 5 Secs (5 Secs) -Int in LP3 Verificati I==>1CQ/PEAKD OFFSET-SE-1.4AS 1600 A STEP-SIZE=0.45 on OFFSET on Visit (06) [2] (COS.sa.617 174) Comments: ETC Request ID: COS.sa.617174,SNR = 60, gives: Time = 1.2549 seconds Time Required for Requested SNR in Segment A only: 4.2322 Time Required for Requested SNR in Segment B only: 1.7838 G160M - C (61) WD1657+343- COS/FUV, TIME-TAG, PSA G160M BUFFER-TIME=51 POS TARG 0.333,nu Sequence 27-34 Non 23 Secs (23 Secs) ONFIRMA OFFSET-SE-1.4AS -Int in LP3 Verificati *I*==>1 1600 A TION SPEC on Visit (06) FP-POS=3; TRUM [2] (COS.sp.617 FLASH=YES 173) Comments: ETC Request ID: COS.sp.617173, SNR/RE = 3 at wavelength 1610A gives: Time = 24.8232 seconds, BT=2/3 \*769 = 513 G160M - A (61) WD1657+343- COS/FUV, ACQ/PEAKXD, PSA G160M NUM-POS=3; Sequence 27-34 Non 11 Secs (11 Secs) CQ/PEAKX OFFSET-SE-1.4AS -Int in LP3 Verificati 1600 A STEP-SIZE=1.3 I = = > 1D on OFFS on Visit (06) ET NUM\_P [2] OS=3(COS.sa.617 171) Comments: ETC Request ID: COS.sa.617171, SNR = 60, Time = 2.0012 seconds Time Required for Requested SNR in Segment A only: 9.9563

Time Required for Requested SNR in Segment B only: 2.5045

