



## 15537 - Cycle 26 COS FUV Target Acquisition Monitor

Cycle: 26, Proposal Category: CAL/COS

(Availability Mode: RESTRICTED)

### INVESTIGATORS

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### VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
25	(1) WD-1657+343	COS/FUV COS/NUV	2	07-Nov-2018 14:01:20.0	yes

2 Total Orbits Used

### ABSTRACT

Starting in Cycle 25, the COS Target Acquisition (TA) monitor was divided into two pieces, NUV and FUV. This program is the FUV portion and is designed specifically for FUV LP4. FUV LP4 uses NUM\_POS > 1 PEAKXDs for cross-dispersion TA. All previous LPs used NUM\_POS=1 PEAKXDs. The NUM\_POS=1 PEAKXDs required the routine monitoring of the grating-dependent WCA-to-PSA offsets. The NUM\_POS > 1 PEAKXDs do not use these flight software (FSW) patchable constants as they use the LTAPKD FSW macro used in ACQ/PEAKD, but re-purposed for use in the cross-dispersion (XD).

This program uses the HST standard star WD1657+343. This target was used previously in the COS TA Monitor programs, 13124 (C20), 13526 (C21), 13972 (C22), 14440 (C23), 14857 (C24) & 15386 (C25). In these programs, this target was used to co-align the PSA/MIRRORB and BOA/MIRRORA ACQ/IMAGE modes. We re-use this target here as it is safe with PSA/MIRRORA and visible almost year-round.

## **OBSERVING DESCRIPTION**

This program contains a single two-visit annual visit on a target with year-round visibility (WD1657+343). We request that this program execute in late 2018 (via a BETWEEN), and within 30 days of Visit PB of Program 15542 (via a visit-level comment).

The program is divided into 3 parts, one for each FUV grating, at LP4. The central wavelengths tested are C1291, C1280, and C1600. Each non-interruptible sequence follows the same initial steps.

- 1) Center the target with a PSA/MIRRORA ACQ/IMAGE
- 2) Take a picture of the target and the lamp to verify target centering
- 3) Take a low S/N spectrum (~5/RE) before any FUV tests - CENTERED in XD
- 4) Take a low S/N spectrum before any FUV tests at +1.3" in XD (ET adjusted to obtain ~ same S/N as CENTERED)
- 5) Take a low S/N spectrum before any FUV tests at -1.3" in XD (ET adjusted to obtain ~ same S/N as CENTERED)
- 6) Perform a NUM\_POS=3, STEP\_SIZE=1.3, CENTER=FLUX-WT PEAKXD at LP4
- 7) Take a confirmation low S/N spectrum - CENTERED in XD, after the PEAKXD

For G130M only (C1291) this series is extended to compare NUM\_POS=5 PEAKXDs to NUM\_POS=3 PEAKXDs, and to monitor PEAKD with the following exposures:

- 8) Take a low S/N spectrum at +1.8" in XD (ET adjusted to obtain ~ same S/N as CENTERED)
- 9) Take a low S/N spectrum at +0.9" in XD (ET adjusted to obtain ~ same S/N as CENTERED)
- 10) Take a low S/N spectrum at -0.9" in XD (ET adjusted to obtain ~ same S/N as CENTERED)
- 11) Take a low S/N spectrum at -1.8" in XD (ET adjusted to obtain ~ same S/N as CENTERED)
- 12) Perform a NUM\_POS=5, STEP\_SIZE=0.9, CENTER=FLUX-WT-FLR PEAKXD at LP4
- 13) Take a low S/N spectrum - CENTERED in XD, after the PEAKXD
- 14) Perform a NUM\_POS=5, STEP\_SIZE=0.9, CENTER=FLUX-WT-FLR PEAKD at LP4
- 15) Take a final low S/N spectrum - CENTERED in XD, after the PEAKD

Offsets achieved by "Y" POS\_TARGs in the offset spectra.

All of the G130M exposures are in the first orbit, all the G140L and G160M are in the second orbit.

Other Notes:

\* The default PEAKXD STEP-SIZE is 1.0" when NUM\_POS=5. However, at +/- 2", the POS\_TARGS would not create enough counts to track the operation of the NUM\_POS=5 PEAKXD. 5x0.9" is used instead.

\* Comments for each exposure give the Buffer Time calculations. However, in most cases we use slighter shorter buffer times in case the targets are brighter than expected. The logic being that if any of the PEAKXDs are not exactly perfect, the followup POS-TARGs will may be off and give different count rates than expected.

Proposal 15537 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25) - Cycle 26 COS FUV Target Acquisition Monitor

Wed Nov 07 19:01:22 GMT 2018

<b>Visit</b>	<p><b>Proposal 15537, PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25), implementation</b></p> <p><b>Diagnostic Status: Warning</b></p> <p>Scientific Instruments: COS/FUV, COS/NUV</p> <p>Special Requirements: SCHED 100%; BETWEEN 01-JAN-2019:00:00:00 AND 31-JAN-2019:00:00:00</p> <p><i>Comments: This visit has the following timing requirement:</i></p> <p>* It should execute between 11/1/18 and 12/31/18</p> <p>* It should execute within 30 days of visit PB of program 15542</p> <p><i>Note that there are 8 exposures with "Y" POS_TARGs to intentionally offset the target in XD by +/- 1.3" all gratings, and then +/- 0.9 and +/- 1.8 in a different sequence for G130M.</i></p>																
	<p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Form): For the best data quality, it is strongly recommended that the maximum number of allowed FP-POS positions is used when observing at a given COS CENWAVE setting. See full description for details.</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p>																
<b>Diagnostics</b>																	
<b>Fixed Targets</b>	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>WD-1657+343</td> <td>RA: 16 58 51.1202 (254.7130008d) Dec: +34 18 53.29 (34.31480d) Equinox: J2000</td> <td>Proper Motion RA: 11 mas/yr Proper Motion Dec: -31 mas/yr Epoch of Position: 2000 Radial Velocity: 78 km/sec</td> <td>V=16.1</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p><i>Comments: COS.ta.1032496 indicates S/N = 40 in 5.2s. SIMBAD coordinates are 16 58 51.1202 +34 18 53.293 Proper Motion from SIMBAD is Proper motions mas/yr : 11 -31 [3 3 133] C 2011MNRAS.417.1210G, RV=78</i></p> <p>B 16.12 [~] D ~ u (AB) 15.749 [0.005] B 2013yCat.5139....0A g (AB) 16.139 [0.003] B 2013yCat.5139....0A r (AB) 16.691 [0.004] B 2013yCat.5139....0A i (AB) 17.054 [0.005] B 2013yCat.5139....0A z (AB) 17.388 [0.015] C 2013yCat.5139....0A Category=STAR Description=[DA] Extended=NO</p>					#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	WD-1657+343	RA: 16 58 51.1202 (254.7130008d) Dec: +34 18 53.29 (34.31480d) Equinox: J2000	Proper Motion RA: 11 mas/yr Proper Motion Dec: -31 mas/yr Epoch of Position: 2000 Radial Velocity: 78 km/sec	V=16.1	Reference Frame: ICRS
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(1)	WD-1657+343	RA: 16 58 51.1202 (254.7130008d) Dec: +34 18 53.29 (34.31480d) Equinox: J2000	Proper Motion RA: 11 mas/yr Proper Motion Dec: -31 mas/yr Epoch of Position: 2000 Radial Velocity: 78 km/sec	V=16.1	Reference Frame: ICRS												

Proposal 15537 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25) - Cycle 26 COS FUV Target Acquisition Monitor

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	PSA/MIRRORB ACQ/IMAGE (COS.ta.103 2496)	(1) WD-1657+343	COS/NUV, ACQ/IMAGE, PSA	MIRRORB			Sequence 1-15 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	13 Secs (13 Secs) [==>]	[1]
<p>Comments: This target was used in Visit BA of 14857 (ldozbadhq). Bck subtracted counts in second image = 5430 ; S/N = 73.69, ET=13s</p> <p>For the Lamp, LAMP/CURRENT USED = P2/Medium, LAMP EXPTIME = 12.000 s                      Reported Lamp Events = 3316 counts : Rate = 276.33334 counts/s                      Lamp Background events in 50x300 TA BOX for lampflash time (12s) = 112 cts : Rate = 9.308 counts/s                      Actual Lamp Events = 3204 counts : Rate = 267.026 counts/s</p>									
2	PSA/MIRRORB LAMP +TARGET I MAGE (P2/MEDIUM) (COS.ta.103 2496)	(1) WD-1657+343	COS/NUV, TIME-TAG, PSA	MIRRORB	BUFFER-TIME=150; FLASH=S0060D015; CURRENT=MEDIUM	QESIPARM USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 1-15 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	15.0 Secs (15 Secs) [==>]	[1]
<p>Comments: PSA/MIRRORB/P2/MED current, see 25.001 for expected count rates. To get PtNe Lamp 2, there are 2 QESIPARMS set:                      USELAMP = LINE2                      CURRENT = MEDIUM</p>									
3	PSA/C1291/3 - CENTER (COS.sp.103 2420)	(1) WD-1657+343	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; FLASH=YES; BUFFER-TIME=300; LIFETIME-POS=L P4	QESIPARM USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 1-15 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	25 Secs (25 Secs) [==>]	[1]
<p>Comments: HST Standard Star, S/N ~ 5 in 25s. The BT should be <math>&lt; 2/3 * 486 = 326</math>. Any BT less than 326 s is a good BT, we use 300s in case the target is brighter than expected.</p> <p>Brightest Pixel (single exposure) (at 1216.21) 0.106 2.64                      Brightest Pixel in Segment A (at 1301.46) 0.030                      Brightest Pixel in Segment B (at 1216.21) 0.106                      Count rate entire detector 4,851.724                      Count rate Segment A 1,834.935                      Count rate Segment B 3,016.789</p>									
4	PSA/C1291/3 + 1.3arcsec conds in XD (COS.sp.103 2420)	(1) WD-1657+343	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; FLASH=YES; BUFFER-TIME=500; LIFETIME-POS=L P4	POS TARG null,1.3; QESIPARM USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 1-15 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	55 Secs (55 Secs) [==>]	[1]
<p>Comments: At R=1.3", the throughput is ~45%. To get the same counts, we need an exposure time of <math>25/0.45 = 55s</math>. <math>BT &lt; 326/0.45 = 725</math>. Anything BT less than 725s is a good BT, we use 500s in case the target is brighter than expected.</p>									
5	PSA/C1291/3 - 1.3arcsec conds in XD (COS.sp.103 2420)	(1) WD-1657+343	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; FLASH=YES; BUFFER-TIME=500; LIFETIME-POS=L P4	POS TARG null,-1.3; QESIPARM USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 1-15 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	55 Secs (55 Secs) [==>]	[1]
<p>Comments: At R=1.3", the throughput is ~45%. To get the same counts, we need an exposure time of <math>25/0.45 = 55s</math></p>									

Exposures

Proposal 15537 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25) - Cycle 26 COS FUV Target Acquisition Monitor

6	PSA/C1291/ (1) WD-1657+343 PEAKXD/N P=3/DEF (COS.sa.103 2423)	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A	LIFETIME-POS=LP 4	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 1-15 Non-I nt in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring (25)	2 Secs (2 Secs) [==>]	[1]
<p>Comments: The NUM_POS and STEP_SIZE are not included to make sure that the correct DEFAULTS of NUM_POS=3 and STEP_SIZE=1.3", and CENTER = FLUX-WT are still inserted.</p> <p>Target is the HST Standard Star:WD-1657+343</p> <p>Requested Signal/Noise Ratio = 40.000 for Segment A and Segment B combined gives: Time = 0.4206 seconds Time Required for Requested SNR in Segment A only: 1.2717 Time Required for Requested SNR in Segment B only: 0.6284</p> <p>Brightest Pixel (single exposure) (at 1216.21) 0.106 0.04 Brightest Pixel in Segment A (at 1301.46) 0.030 Brightest Pixel in Segment B (at 1216.21) 0.106 Count rate entire detector 4,898.533 Count rate Segment A 1,856.745 Count rate Segment B 3,041.787</p>								
7	PSA/C1291/ (1) WD-1657+343 3 - After NU M_POS=3 P EAKXD (COS.sp.103 2420)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; FLASH=YES; BUFFER-TIME=30 0; LIFETIME-POS=L P4	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 1-15 Non-I nt in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring (25)	25 Secs (25 Secs) [==>]	[1]
<p>Comments: See comment in 25.003</p>								
8	PSA/C1291/ (1) WD-1657+343 3 + 1.8arcsec conds in XD (COS.sp.103 2420)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; FLASH=YES; BUFFER-TIME=10 00; LIFETIME-POS=L P4	POS TARG null,1.8; QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 1-15 Non-I nt in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring (25)	194 Secs (194 Secs) [==>]	[1]
<p>Comments: At R=1.8", the throughput is ~13%. To get the same counts, we need an exposure time of 25/0.13 = 194s. BT &lt; 320 / 0.13 = 2500. Any BT less than 2500s is a good BT, we use 1000s in case the target is brighter than expected.</p>								
9	PSA/C1291/ (1) WD-1657+343 3 + 0.9arcsec conds in XD (COS.sp.103 2420)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; FLASH=YES; BUFFER-TIME=40 0; LIFETIME-POS=L P4	POS TARG null,0.9; QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 1-15 Non-I nt in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring (25)	35 Secs (35 Secs) [==>]	[1]
<p>Comments: At R=0.9", the throughput is ~71%. To get the same counts, we need an exposure time of 25/0.71 = 35s. BT &lt; 320 / 0.71 = 450. Any BT less than 450s is a good BT, we use 400s in case the target is brighter than expected.</p>								
10	PSA/C1291/ (1) WD-1657+343 3 - 0.9arcsec conds in XD (COS.sp.103 2420)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; FLASH=YES; BUFFER-TIME=40 0; LIFETIME-POS=L P4	POS TARG null,-0.9 ; QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 1-15 Non-I nt in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring (25)	35 Secs (35 Secs) [==>]	[1]
<p>Comments: At R=0.9", the throughput is ~71%. To get the same counts, we need an exposure time of 25/0.71 = 35s. BT &lt; 320 / 0.71 = 450s. Any BT less than 450s is a good BT, we use 400s in case the target is brighter than expected.</p>								

Proposal 15537 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25) - Cycle 26 COS FUV Target Acquisition Monitor

11	PSA/C1291/ (1) WD-1657+343 3 - 1.8arcsec onds in XD (COS.sp.103 2420)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; FLASH=YES; BUFFER-TIME=10 00; LIFETIME-POS=L P4	POS TARG null,-1.8 ; QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 1-15 Non-I nt in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring (25)	194 Secs (194 Secs) [==>]	[1]	
<i>Comments: At R=1.8", the throughput is ~13%. To get the same counts, we need an exposure time of 25/0.13 = 194s. Any BT less than 2500s is a good BT, we use 1000s in case the target is brighter than expected.</i>									
12	PSA/C1291/ (1) WD-1657+343 PEAKXD/N P=5/DEF (COS.sa.103 2423)	COS/FUV, ACQ/PEAKXD, PSA	G130M 1291 A	LIFETIME-POS=LP 4; NUM-POS=5; STEP-SIZE=0.9	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 1-15 Non-I nt in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring (25)	2 Secs (2 Secs) [==>]	[1]	
<i>Comments: The default STEP-SIZE is 1.0", but at +/- 2", the POS_TARGs would not create enough counts to track the operation of the NUM_POS=5 PEAKXD. 5x0.9" is used instead. Double check that the DEFAULT CENTER=FLUX-WT-FLR is used. It is left unspecified to test that the default APT logic is still correctly choosing the correct CENTER algorithm.</i>									
13	PSA/C1291/ (1) WD-1657+343 3 - After NU M_POS=5 P EAKXD (COS.sp.103 2420)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; FLASH=YES; BUFFER-TIME=30 0; LIFETIME-POS=L P4	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 1-15 Non-I nt in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring (25)	25 Secs (25 Secs) [==>]	[1]	
<i>Comments: HST Standard Star, S/N ~ 5 in 25s. See comment in 25.003</i>									
14	PSA/C1291/ (1) WD-1657+343 PEAKD/NP =5/DEF (COS.sa.103 2423)	COS/FUV, ACQ/PEAKD, PSA	G130M 1291 A	LIFETIME-POS=LP 4; NUM-POS=5; STEP-SIZE=0.9	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 1-15 Non-I nt in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring (25)	3 Secs (3 Secs) [==>]	[1]	
<i>Comments: We want to check the AD NUV to FUV SIAF alignment, so perform a good PEAKD. Double check that the DEFAULT CENTER=FLUX-WT-FLR is used. It is left unspecified to test that the default APT logic is still correctly choosing the correct CENTER algorithm.</i>									
15	PSA/C1291/ (1) WD-1657+343 3 - After PE AKD (COS.sp.103 2420)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; FLASH=YES; BUFFER-TIME=30 0; LIFETIME-POS=L P4	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 1-15 Non-I nt in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring (25)	25 Secs (25 Secs) [==>]	[1]	
<i>Comments: HST Standard Star, S/N ~ 5 in 25s.</i>									
16	PSA/MIRR ORB ACQ/I MAGE (COS.ta.103 2496)	(1) WD-1657+343 COS/NUV, ACQ/IMAGE, PSA	MIRRORB		GS ACQ SCENARI O BASE1B3	Sequence 16-22 Non -Int in PSA/MIRRO RB ACQ/IMAGE th en FUV TA Monitor ng (25)	13 Secs (13 Secs) [==>]	[2]	
<i>Comments: See comment in 25.001</i>									
17	PSA/MIRR ORB LAMP +TARGET I MAGE (P2/ MEDIUM) (COS.ta.103 2496)	(1) WD-1657+343 COS/NUV, TIME-TAG, PSA	MIRRORB	BUFFER-TIME=15 0; FLASH=S0060D01 5; CURRENT=MEDI UM	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 16-22 Non -Int in PSA/MIRRO RB ACQ/IMAGE th en FUV TA Monitor ng (25)	15.0 Secs (15 Secs) [==>]	[2]	
<i>Comments: PSA/MIRRORB/P2/MED current, see 25.001 for expected count rates. To get PtNe Lamp 2, there are 2 QESIPARMS set: USELAMP = LINE2 CURRENT = MEDIUM</i>									

Proposal 15537 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25) - Cycle 26 COS FUV Target Acquisition Monitor

18	PSA/G140L (1) WD-1657+343 /1280/3 - CE NTER (COS.sp.103 2431)	COS/FUV, TIME-TAG, PSA	G140L 1280 A	FP-POS=3; FLASH=YES; BUFFER-TIME=400; LIFETIME-POS=L P4	QESIPARM USELA MP LINE2; QESIPARM CURRENT MEDIUM	Sequence 16-22 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	20 Secs (20 Secs) [==>]	[2]
<p>Comments: COS.sp.1032431 S/N Ratio = 10 at wavelength 1310. (per RE) : Time = 18.5567 sec. BT 2/3 * 725 = 500s. Any BT less that 500s is a good BT, we use 400s in case the target is brighter than expected.</p> <p>Brightest Pixel (single exposure) (at 1281.07) 0.162 3.00                  Brightest Pixel in Segment A (at 1281.07) 0.162                  Brightest Pixel in Segment B (at 1180.98) 0.109                  Count rate entire detector 3,165.106                  Count rate Segment A 2,114.082                  Count rate Segment B 1,051.024</p>								
19	PSA/G140L (1) WD-1657+343 /1280/3 +1.3 arcseconds in XD (COS.sp.103 2431)	COS/FUV, TIME-TAG, PSA	G140L 1280 A	FP-POS=3; FLASH=YES; BUFFER-TIME=800; LIFETIME-POS=L P4	POS TARG null,1.3; QESIPARM USELA MP LINE2; QESIPARM CURRENT MEDIUM	Sequence 16-22 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	44 Secs (44 Secs) [==>]	[2]
<p>Comments: At R=1.3", the throughput is ~45%. To get the same counts, we need an exposure time of 20/0.45 = 44s. BT &lt; 500/0.45 = 1100s. Any BT less that 1100s is a good BT, we use 800s in case the target is brighter than expected.</p>								
20	PSA/G140L (1) WD-1657+343 /1280/3 -1.3 arcseconds in XD (COS.sp.103 2431)	COS/FUV, TIME-TAG, PSA	G140L 1280 A	FP-POS=3; FLASH=YES; BUFFER-TIME=800; LIFETIME-POS=L P4	POS TARG null,-1.3; QESIPARM USELA MP LINE2; QESIPARM CURRENT MEDIUM	Sequence 16-22 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	44 Secs (44 Secs) [==>]	[2]
<p>Comments: At R=1.3", the throughput is ~45%. To get the same counts, we need an exposure time of 20/0.45 = 44s. Any BT less that 1100s is a good BT, we use 800s in case the target is brighter than expected.</p>								
21	PSA/G140L (1) WD-1657+343 /PEAKXD/ NP=3/DEF (COS.sa.103 2455)	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=LP 4; NUM-POS=3; STEP-SIZE=1.3	QESIPARM USELA MP LINE2; QESIPARM CURRENT MEDIUM	Sequence 16-22 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	3 Secs (3 Secs) [==>]	[2]
<p>Comments: COS.sa.1032455 Requested Signal/Noise Ratio = 40.000 for Segment A and Segment B combined gives: Time = 1.6519 seconds Time Required for Requested SNR in Segment A only: 1.6519</p> <p>Brightest Pixel (single exposure) (at 1281.07) 0.162 0.27                  Brightest Pixel in Segment A (at 1281.07) 0.162                  Brightest Pixel in Segment B (at 1180.98) 0.109                  Count rate entire detector 3,211.915                  Count rate Segment A 2,135.893                  Count rate Segment B 1,076.022</p>								
22	PSA/G140L (1) WD-1657+343 /1280/3 (COS.sp.103 2431)	COS/FUV, TIME-TAG, PSA	G140L 1280 A	FP-POS=3; FLASH=YES; BUFFER-TIME=400; LIFETIME-POS=L P4	QESIPARM USELA MP LINE2; QESIPARM CURRENT MEDIUM	Sequence 16-22 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	20 Secs (20 Secs) [==>]	[2]
<p>Comments: See comment in 25.018</p>								



Proposal 15537 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25) - Cycle 26 COS FUV Target Acquisition Monitor

23	PSA/MIRRORB ACQ/IMAGE (COS.ta.103 2496)	(1) WD-1657+343	COS/NUV, ACQ/IMAGE, PSA	MIRRORB			Sequence 23-29 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	13 Secs (13 Secs)	[==>]	[2]
<i>Comments: See comment in 25.001</i>										
24	PSA/MIRRORB LAMP +TARGET IMAGE (P2/MEDIUM) (COS.ta.103 2496)	(1) WD-1657+343	COS/NUV, TIME-TAG, PSA	MIRRORB	BUFFER-TIME=150; FLASH=S0060D015; CURRENT=MEDIUM	QESIPARM USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 23-29 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	15.0 Secs (15 Secs)	[==>]	[2]
<i>Comments: PSA/MIRRORB/P2/MED current, see 25.001 for expected count rates. To get PtNe Lamp 2, there are 2 QESIPARMs set: USELAMP = LINE2 CURRENT = MEDIUM</i>										
25	PSA/G160M/1600/3 - CENTER (COS.sp.103 2449)	(1) WD-1657+343	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; FLASH=YES; BUFFER-TIME=800; LIFETIME-POS=L P4	QESIPARM USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 23-29 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	82 Secs (82 Secs)	[==>]	[2]
<i>Comments: S/N Ratio = 4 at wavelength 1610.00 (per RE) gives: Time = 81.8415 seconds. BT &lt; 2/3 * 1,463 = ~1000s. Any BT less than 1000s is a good BT, we use 800s in case the target is brighter than expected.</i>										
<i>Brightest Pixel (single exposure) (at 1410.02) 0.021 1.69 Brightest Pixel in Segment A (at 1601.01) 0.005 Brightest Pixel in Segment B (at 1410.02) 0.021 Count rate entire detector 1,611.740 Count rate Segment A 313.782 Count rate Segment B 1,297.958 Buffer Time (sec) 1,463</i>										
26	PSA/G160M/1600/3 + 1.3arcseconds in XD (COS.sp.103 2449)	(1) WD-1657+343	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; FLASH=YES; BUFFER-TIME=1000; LIFETIME-POS=L P4	POS TARG null,1.3; QESIPARM USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 23-29 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	182 Secs (182 Secs)	[==>]	[2]
<i>Comments: At R=1.3", the throughput is ~45%. To get the same counts, we need an exposure time of 82/0.45 = 182s. BT &lt; 1000/0.45 = 2222. Any BT less than 2222s is a good BT, we use 1000s in case the target is brighter than expected.</i>										
27	PSA/G160M/1600/3 -1.3arcseconds in XD (COS.sp.103 2449)	(1) WD-1657+343	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; FLASH=YES; BUFFER-TIME=1000; LIFETIME-POS=L P4	POS TARG null,-1.3; QESIPARM USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 23-29 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	182 Secs (182 Secs)	[==>]	[2]
<i>Comments: At R=1.3", the throughput is ~45%. To get the same counts, we need an exposure time of 82/0.45 = 182s. BT &lt; 1000/0.45 = 2222s. Any BT less than 2222s is a good BT, we use 1000s in case the target is brighter than expected.</i>										
28	PSA/G160M/PEAKXD/NP=3/DEF (COS.sa.103 2454)	(1) WD-1657+343	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=L P4; NUM-POS=3; STEP-SIZE=1.3	QESIPARM USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 23-29 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	3 Secs (3 Secs)	[==>]	[2]
<i>Comments: COS.sa.1032454 Requested Signal/Noise Ratio = 40.000 for Segment A and Segment B combined gives: Time = 1.0545 seconds Time Required for Requested SNR in Segment A only: 5.8385 Time Required for Requested SNR in Segment B only: 1.2868</i>										

Proposal 15537 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25) - Cycle 26 COS FUV Target Acquisition Monitor

29	PSA/G160 M/1600/3 (COS.sp.103 2449)	(1) WD-1657+343	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; FLASH=YES; BUFFER-TIME=80 0; LIFETIME-POS=L P4	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 23-29 Non -Int in PSA/MIRRO RB ACQ/IMAGE th en FUV TA Monitori ng (25)	82 Secs (82 Secs) [==>]	[2]
<i>Comments: See comment in 25.025</i>									



