



15386 - COS FUV Target Acquisition Monitor

Cycle: 25, Proposal Category: CAL/COS

(Availability Mode: RESTRICTED)

INVESTIGATORS

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VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
25	(1) WD-1657+343	COS/FUV COS/NUV	2	06-Feb-2018 16:02:21.0	yes
90	(1) WD-1657+343	COS/FUV COS/NUV	1	06-Feb-2018 16:02:26.0	yes
91	(1) WD-1657+343	COS/FUV COS/NUV	1	06-Feb-2018 16:02:29.0	yes

4 Total Orbits Used

ABSTRACT

Starting in Cycle 25, the COS Target Acquisition (TA) monitor has been divided into two pieces, NUV (15389) and FUV (15386). 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).

Proposal 15386 (STScI Edit Number: 3, Created: Tuesday, February 6, 2018 4:02:30 PM EST) - Overview

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). 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.

Note that when presented to the mission office, the target 206W3 was listed as the target for this program. This target was a backup target in previous TA monitor programs and was the faintest of the 3 targets in the program. Switching to the next brighter target (WD1657+343) allows all the goals of this program to be accomplished in just 2 orbits. Also, as this target has been used for every generation of this program, the FUV monitoring can be bootstrapped to previous programs, if needed. See the observing description for more details.

The LTAIMAGE that started the second orbit of Visit 26 had the TDF down and the shutter closed. This caused the ACQ/IMAGE to miscenter the target by about 1.3".

Visit 90 was added as a partial repeat from HOPR 89665. This visit is as close to a repeat of the 2nd orbit of Visit 25 as possible. Due to time lost doing a full acq instead of a RE-ACQ, the following changes were made:

- 1) Changed Visit number to 90
- 2) Schedulability set to 90%
- 3) Before date set to Feb-19-2018, but the earlier the better (this is negotiable)
- 4) Increased Buffer Time for Exposures 90.010 and 90.014 to 976s ($2/3 * \text{ETC time}$)
- 5) Increased Buffer Time for Exposures 90.011 and 90.012 to 2000s ($976/0.45 = 2168\text{s}$)
- 6) Changed exposures times for 90.011 and 90.012 from 182 to 180s.

Visit 90 had a GS problem (RGA hold failure) and the entire visit had the shutter closed. HSTAR 14932 was filed along with the approved HOPR 89896. Visit 90 was copied to Visit 91 with the following changes:

- 1) Changed Visit number to 91
- 2) Before changed from 19-FEB-2018 to 19-MAR-2018

Note that there are 4 exposures with "Y" POS_TARGs in Visit 91 to intentionally offset the target in XD by +/- 1.3"; 2 are G140L and 2 are G160M.

We request that previously used, known good, Guide Stars be used, if possible.

OBSERVING DESCRIPTION

A single two-visit annual visit on a target with year-round visibility (WD1657+343). We have requested (via a "BEFORE") that this program execute in 2017.

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-interruptable 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.

Note that when presented to the mission office, the target 206W3 was listed as the target for this program. This target was a backup target in previous TA monitor programs and was the faintest of the 3 targets in those programs. Switching to the next brighter target in those monitors (WD1657+343) allows all the goals of this program to be accomplished in just 2 orbits. Also, as this target has been used for every generation of this program, the FUV monitoring can be bootstrapped to previous cycles and lifetime positions, if needed.

In addition, the NUM_POS=5 test of the G130M test can now be achieved at S/N=40, which was not possible with the fainter 206W3. AND, WD1657+343 has even better visibility than 206W3 allowing this program to execute essentially anytime during the year. The ACQ/IMAGE was changed from PSA/MIRRORA to PSA/MIRRORB to accommodate the brighter WD1657+343.

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 15386 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25) - COS FUV Target Acquisition Monitor

Tue Feb 06 21:02:30 GMT 2018

Visit	<p>Proposal 15386, PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25), failed</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: COS/FUV, COS/NUV</p> <p>Special Requirements: SCHED 100%; BEFORE 31-DEC-2017:00:00:00</p> <p><i>Comments: This visit has been defined with a timing requirement of executing during 2017. This requirement is designed to ensure that this programs' first execution is relatively early during the LP4 FUV tenure.</i></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>						
	Diagnostics	<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>					
Fixed Targets		#	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	
<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><i>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</i></p>							

Proposal 15386 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25) - 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><i>Comments: This target was most recently used in Visit BA of 14857 (ldozbadhq). Bck subtracted counts in second image = 5430 ; S/N = 73.69, ET=13s</i></p> <p><i>For the Lamp, LAMP/CURRENT USED = P2/Medium, LAMP EXPTIME = 12.000 s</i> <i>Reported Lamp Events = 3316 counts : Rate = 276.33334 counts/s</i> <i>Lamp Background events in 50x300 TA BOX for lampflash time (12s) = 112 cts : Rate = 9.308 counts/s</i> <i>Actual Lamp Events = 3204 counts : Rate = 267.026 counts/s</i></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=15 0; FLASH=S0060D01 5; 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><i>Comments: PSA/MIRRORB/P2/MED current, see 25.001 for expected count rates. To get PtNe Lamp 2, there are 2 QESIPARMs set:</i> <i>USELAMP = LINE2</i> <i>CURRENT = MEDIUM</i></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=30 0; 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><i>Comments: HST Standard Star, S/N ~ 5 in 25s. The BT should be $< 2/3 * 486 = 326$. Any BT less than 326 s is a good BT, we use 300s in case the target is brighter than expected.</i></p> <p><i>Brightest Pixel (single exposure) (at 1216.21) 0.106 2.64</i> <i>Brightest Pixel in Segment A (at 1301.46) 0.030</i> <i>Brightest Pixel in Segment B (at 1216.21) 0.106</i> <i>Count rate entire detector 4,851.724</i> <i>Count rate Segment A 1,834.935</i> <i>Count rate Segment B 3,016.789</i></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=50 0; 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><i>Comments: At R=1.3", the throughput is ~45%. To get the same counts, we need an exposure time of $25/0.45 = 55s$. $BT < 326/0.45 = 725$. Anything BT less than 725s is a good BT, we use 500s in case the target is brighter than expected.</i></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=50 0; 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><i>Comments: At R=1.3", the throughput is ~45%. To get the same counts, we need an exposure time of $25/0.45 = 55s$</i></p>									

Exposures

Proposal 15386 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25) - 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 < 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 < 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 < 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 15386 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25) - 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 15386 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25) - COS FUV Target Acquisition Monitor

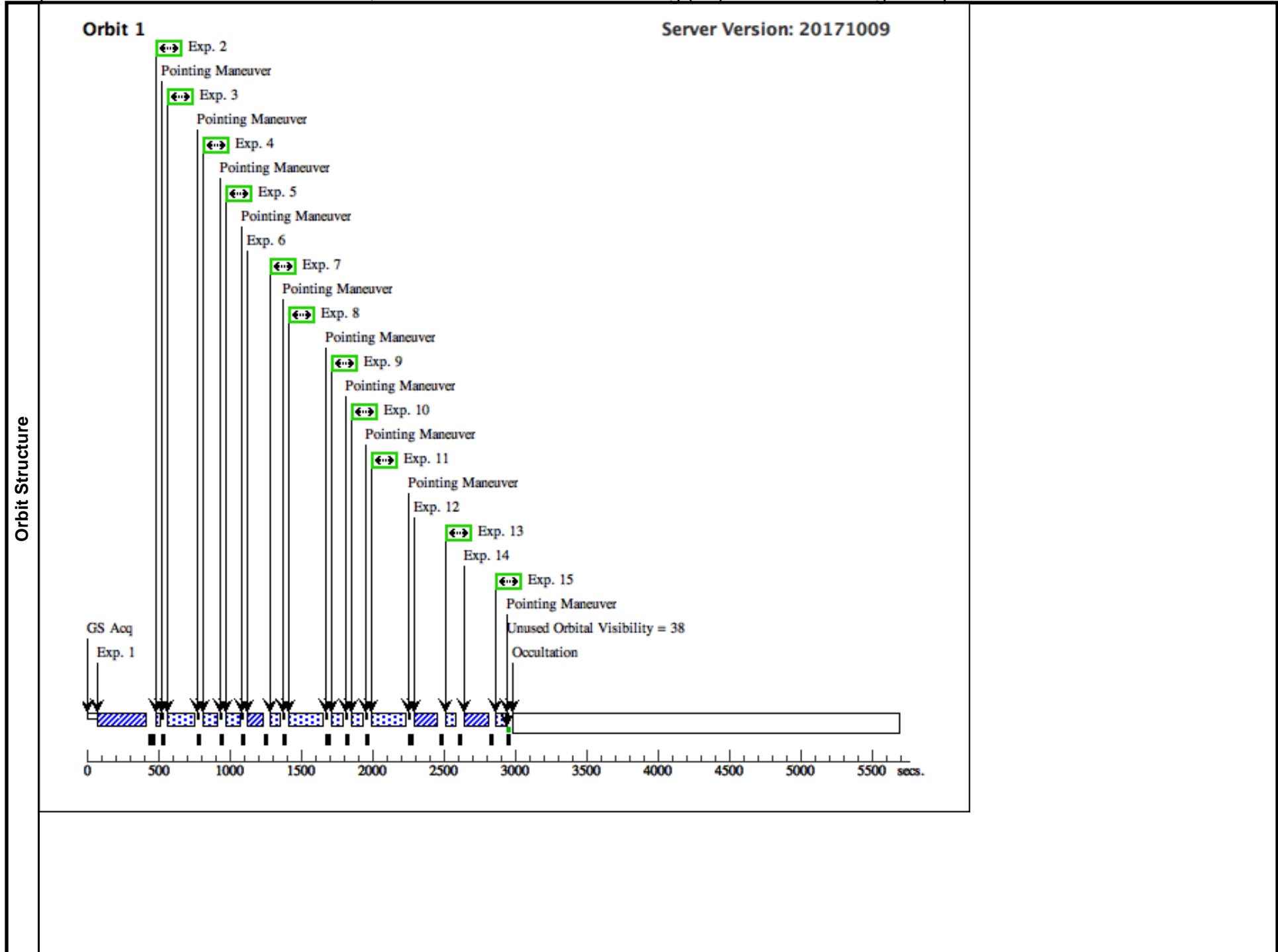
18	PSA/G140L (1) WD-1657+343 /1280/3 - CE NTER (COS.sp.103 2431)	COS/FUV, TIME-TAG, PSA	G140L 1280 A	FP-POS=3; FLASH=YES; BUFFER-TIME=400; LIFETIME-POS=L P4	QESIPARM USELA MP LINE2; QESIPARM CURRENT MEDIUM	Sequence 16-22 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25)	20 Secs (20 Secs) [==>]	[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 < 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>								

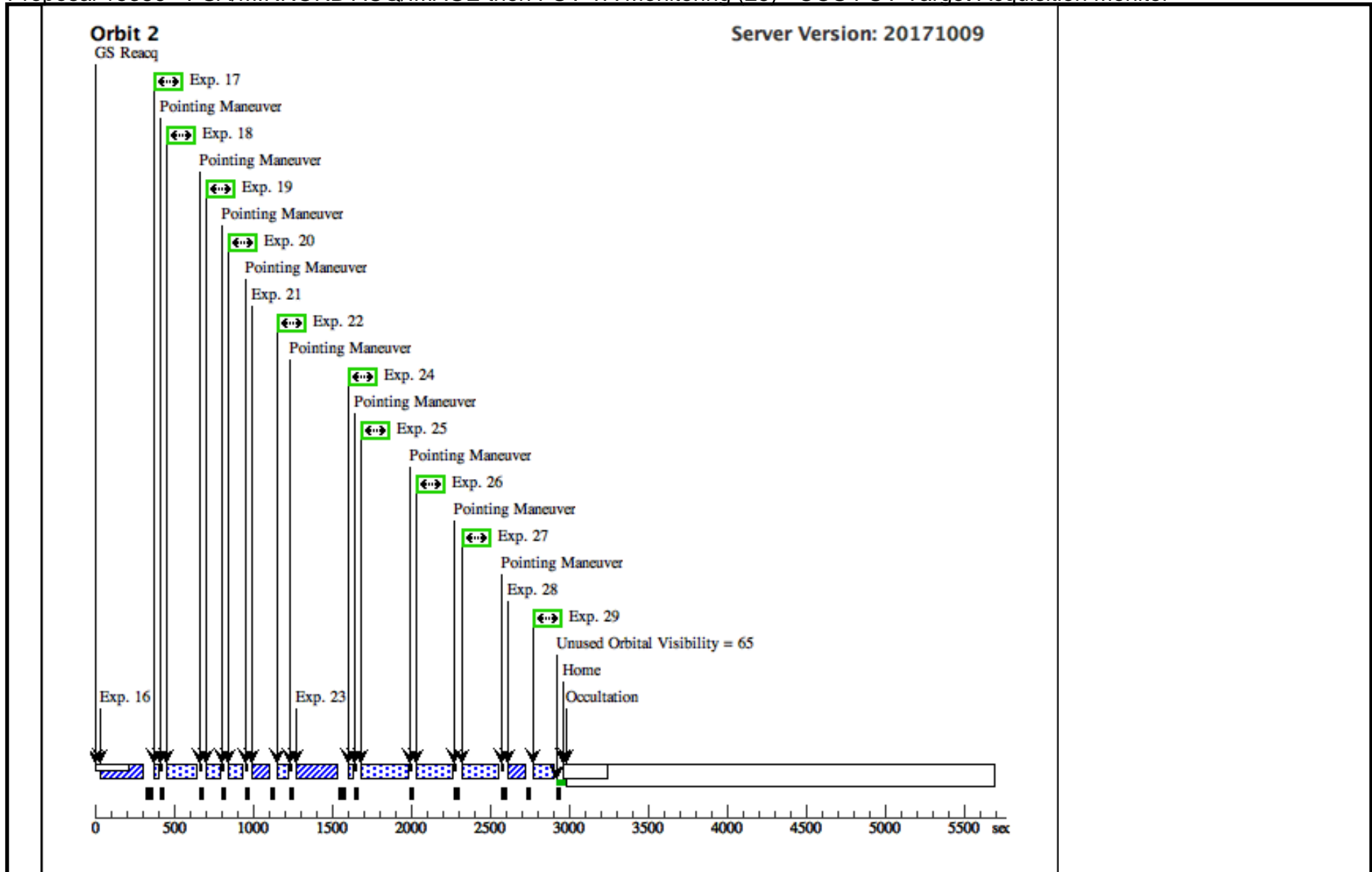
Proposal 15386 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25) - COS FUV Target Acquisition Monitor

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 < 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 < 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 < 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 15386 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring (25) - 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; 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>									





Proposal 15386 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90) - COS FUV Target Acquisition Monitor

Tue Feb 06 21:02:31 GMT 2018

Visit	<p>Proposal 15386, PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90), completed</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: COS/FUV, COS/NUV</p> <p>Special Requirements: SCHED 90%; BEFORE 19-FEB-2018:00:00:00</p> <p><i>Comments: This visit is a partial repeat from HOPR 89665. The LTAIMAGE that started the second orbit of Visit 26 had the TDF down and the shutter closed. This caused the ACQ/IMAGE to miscenter the target by about 1.3".</i></p> <p><i>This visit is as close to a repeat of the 2nd orbit of Visit 25 as possible. Due to time lost doing a full acq instead of a RE-ACQ, the following changes were made:</i></p> <ol style="list-style-type: none"> 1) Changed Visit number to 90 2) Schedulability set to 90% 3) Before date set to Feb-19-2018, but the earlier the better (this is negotiable) 4) Increased Buffer Time for Exposures 90.010 and 90.014 to 976s (2/3 * ETC time) 5) Increased Buffer Time for Exposures 90.011 and 90.012 to 2000s (976/0.45 = 2168s) 6) Changed exposures times for 90.011 and 90.012 from 182 to 180s. <p><i>Note that there are 8 exposures with "Y" POS TARGs to intentionally offset the target in XD by +/- 1.3" all G140L and G160M.</i></p>																	
	<p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)) Warning (Form): COS ACQ/PEAKXD exposure should be followed by an ACQ/PEAKD exposure in the Visit.</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)) 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 of G140L & G160M (90)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p>																	
Diagnosics	<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</i></p> <p><i>Proper Motion from SIMBAD is Proper motions mas/yr : 11 -31 [3 3 133] C 2011MNRAS.417.1210G, RV=78</i></p> <p><i>B 16.12 [~] D ~</i></p> <p><i>u (AB) 15.749 [0.005] B 2013yCat.5139....0A</i></p> <p><i>g (AB) 16.139 [0.003] B 2013yCat.5139....0A</i></p> <p><i>r (AB) 16.691 [0.004] B 2013yCat.5139....0A</i></p> <p><i>i (AB) 17.054 [0.005] B 2013yCat.5139....0A</i></p> <p><i>z (AB) 17.388 [0.015] C 2013yCat.5139....0A</i></p> <p><i>Category=STAR</i></p> <p><i>Description=[DA]</i></p> <p><i>Extended=NO</i></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
	#	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													
<p>Fixed Targets</p>																		

Proposal 15386 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90) - 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		GS ACQ SCENARIO BASE1B3	Sequence 1-7 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)	13 Secs (13 Secs) [==>]	[1]
<i>Comments: See comment in 25.001</i>									
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 1-7 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)	15.0 Secs (15 Secs) [==>]	[1]
<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>									
3	PSA/G140L/1280/3 - CE NTER (COS.sp.103 2431)	(1) WD-1657+343	COS/FUV, TIME-TAG, PSA	G140L 1280 A	FP-POS=3; FLASH=YES; BUFFER-TIME=400; LIFETIME-POS=L P4	QESIPARM USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 1-7 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)	20 Secs (20 Secs) [==>]	[1]
<i>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 than 500s is a good BT, we use 400s in case the target is brighter than expected.</i>									
<i>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</i>									
4	PSA/G140L/1280/3 +1.3 arcseconds in XD (COS.sp.103 2431)	(1) WD-1657+343	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 USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 1-7 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)	44 Secs (44 Secs) [==>]	[1]
<i>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 < 500/0.45 = 1100s. Any BT less than 1100s is a good BT, we use 800s in case the target is brighter than expected.</i>									
5	PSA/G140L/1280/3 -1.3 arcseconds in XD (COS.sp.103 2431)	(1) WD-1657+343	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 USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 1-7 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)	44 Secs (44 Secs) [==>]	[1]
<i>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 than 1100s is a good BT, we use 800s in case the target is brighter than expected.</i>									

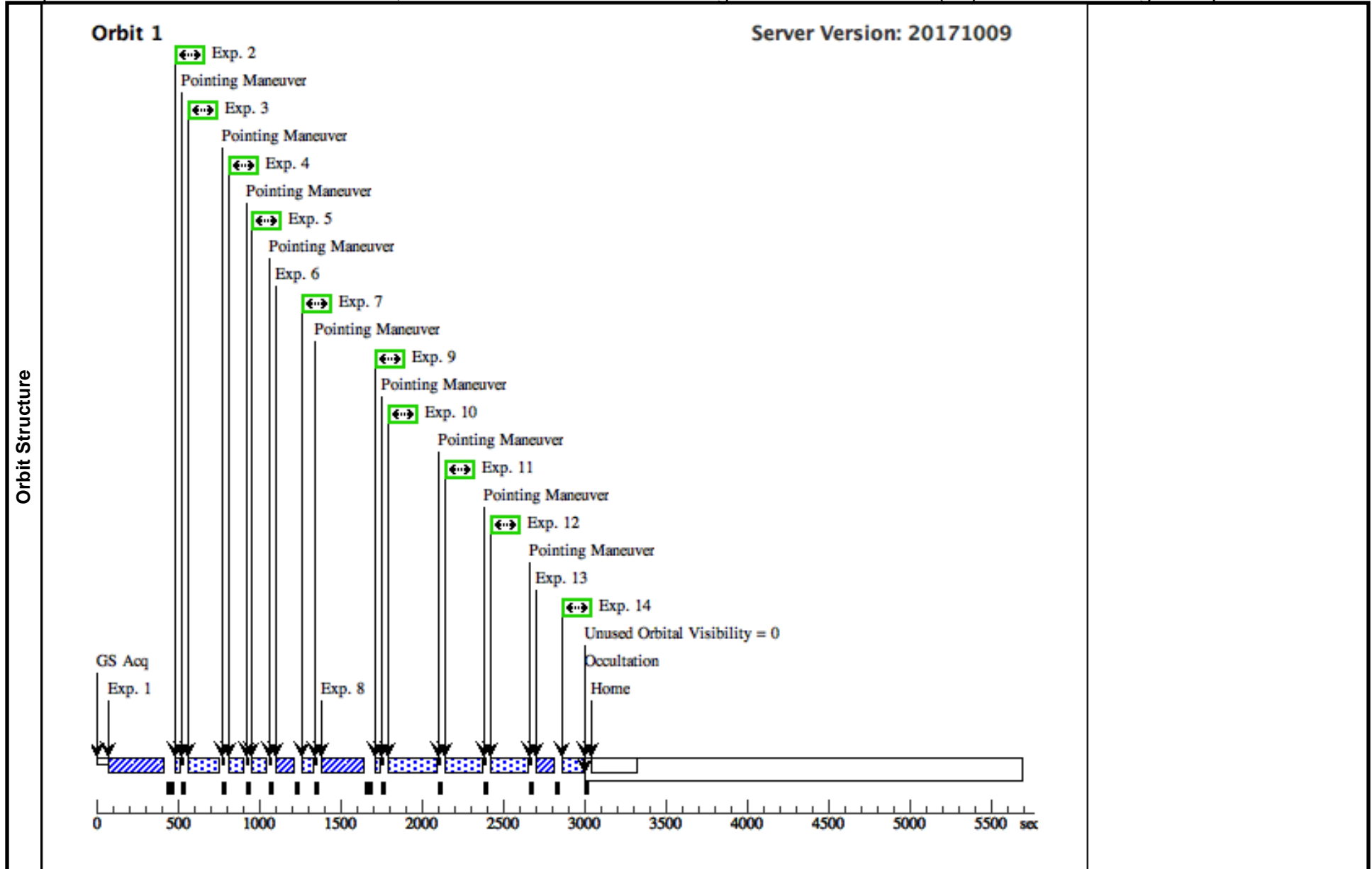
Exposures

Proposal 15386 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90) - COS FUV Target Acquisition Monitor

6	PSA/G140L /PEAKXD/ NP=3/DEF (COS.sa.103 2455)	(1) WD-1657+343	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=LP 4; NUM-POS=3; STEP-SIZE=1.3	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 1-7 Non-Int in PSA/MIRRORB ACQ/IMAGE then F UV TA Monitoring o f G140L & G160M (90)	3 Secs (3 Secs) [==>]	[1]
<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>									
7	PSA/G140L /1280/3 (COS.sp.103 2431)	(1) WD-1657+343	COS/FUV, TIME-TAG, PSA	G140L 1280 A	FP-POS=3; FLASH=YES; BUFFER-TIME=40 0; LIFETIME-POS=L P4	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 1-7 Non-Int in PSA/MIRRORB ACQ/IMAGE then F UV TA Monitoring o f G140L & G160M (90)	20 Secs (20 Secs) [==>]	[1]
<p>Comments: See comment in 25.018</p>									
8	PSA/MIRR ORB ACQ/I MAGE (COS.ta.103 2496)	(1) WD-1657+343	COS/NUV, ACQ/IMAGE, PSA	MIRRORB			Sequence 8-14 Non-Int in PSA/MIRRORB ACQ/IMAGE then F UV TA Monitoring of G140L & G160M (90)	13 Secs (13 Secs) [==>]	[1]
<p>Comments: See comment in 25.001</p>									
9	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 8-14 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)	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>									
10	PSA/G160 M/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=97 6; LIFETIME-POS=L P4	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 8-14 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)	82 Secs (82 Secs) [==>]	[1]
<p>Comments: S/N Ratio = 4 at wavelength 1610.00 (per RE) gives: Time = 81.8415 seconds. BT < 2/3 * 1,463 = 976s. Any BT less than 1000s is a good BT, we use 800s in case the target is brighter than expected.</p> <p>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</p>									

Proposal 15386 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90) - COS FUV Target Acquisition Monitor

11	PSA/G160 M/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=20 00; LIFETIME-POS=L P4	POS TARG null,1.3; QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 8-14 Non-I nt in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)	180 Secs (180 Secs) [==>]	[1]
<p>Comments: At R=1.3", the throughput is ~45%. To get the same counts, we need an exposure time of $82/0.45 = 182s$. $BT < 1000/0.45 = 2222s$. Any BT less than 2222s is a good BT, we use 2000s in case the target is brighter than expected.</p>									
12	PSA/G160 M/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=20 00; LIFETIME-POS=L P4	POS TARG null,-1.3 ; QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 8-14 Non-I nt in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)	180 Secs (180 Secs) [==>]	[1]
<p>Comments: At R=1.3", the throughput is ~45%. To get the same counts, we need an exposure time of $82/0.45 = 182s$. $BT < 1000/0.45 = 2222s$. Any BT less than 2222s is a good BT, we use 1000s in case the target is brighter than expected.</p>									
13	PSA/G160 M/PEAKX D/NP=3/DE F (COS.sa.103 2454)	(1) WD-1657+343	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=LP 4; NUM-POS=3; STEP-SIZE=1.3	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 8-14 Non-I nt in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)	3 Secs (3 Secs) [==>]	[1]
<p>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</p>									
14	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=97 6; LIFETIME-POS=L P4	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 8-14 Non-I nt in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (90)	82 Secs (82 Secs) [==>]	[1]
<p>Comments: See comment in 25.025</p>									



Proposal 15386 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91) - COS FUV Target Acquisition Monitor

Tue Feb 06 21:02:31 GMT 2018

Visit	<p>Proposal 15386, PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)</p> <p>Diagnostic Status: Warning</p> <p>Scientific Instruments: COS/FUV, COS/NUV</p> <p>Special Requirements: SCHED 90%; BEFORE 19-MAR-2018:00:00:00</p> <p><i>Comments: Visit 90 had a GS problem (RGA hold failure) and the entire visit had the shutter closed. HSTAR 14932 was filed along with the approved HOPR 89896. Visit 90 was copied to Visit 91 with the following changes:</i></p> <p>1) Changed Visit number to 91 2) Before changed from 19-FEB-2018 to 19-MAR-2018</p> <p><i>Note that there are 4 exposures with "Y" POS_TARGs to intentionally offset the target in XD by +/- 1.3"; 2 are G140L and 2 are G160M.</i></p> <p><i>We request that previously used, known good, Guide Stars be used, if possible.</i></p>																
	<p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)) Warning (Form): COS ACQ/PEAKXD exposure should be followed by an ACQ/PEAKD exposure in the Visit.</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)) 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 of G140L & G160M (91)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p> <p>(PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE NO ORIENT</p>																
Diagnosics																	
Fixed Targets	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>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>	#	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	<p><i>Comments: COS.ta.1032496 indicates S/N = 40 in 5.2s. SIMBAD cordinates 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><i>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</i></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												

Proposal 15386 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91) - 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		GS ACQ SCENARIO BASE1B3	Sequence 1-7 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)	13 Secs (13 Secs) [==>]	[1]
<i>Comments: See comment in 25.001</i>									
2	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 1-7 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)	15.0 Secs (15 Secs) [==>]	[1]
<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>									
3	PSA/G140L/1280/3 - CE NTER (COS.sp.103 2431)	(1) WD-1657+343	COS/FUV, TIME-TAG, PSA	G140L 1280 A	FP-POS=3; FLASH=YES; BUFFER-TIME=400; LIFETIME-POS=L P4	QESIPARM USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 1-7 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)	20 Secs (20 Secs) [==>]	[1]
<i>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.</i>									
<i>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</i>									
4	PSA/G140L/1280/3 +1.3 arcseconds in XD (COS.sp.103 2431)	(1) WD-1657+343	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 USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 1-7 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)	44 Secs (44 Secs) [==>]	[1]
<i>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 < 500/0.45 = 1100s. Any BT less that 1100s is a good BT, we use 800s in case the target is brighter than expected.</i>									
5	PSA/G140L/1280/3 -1.3 arcseconds in XD (COS.sp.103 2431)	(1) WD-1657+343	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 USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 1-7 Non-Int in PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)	44 Secs (44 Secs) [==>]	[1]
<i>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.</i>									

Exposures

Proposal 15386 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91) - COS FUV Target Acquisition Monitor

6	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 CURR ENT MEDIUM	Sequence 1-7 Non-Int in PSA/MIRRORB ACQ/IMAGE then F UV TA Monitoring o f G140L & G160M (91)	3 Secs (3 Secs) [==>]	[1]
<p><i>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</i></p> <p><i>Brightest Pixel (single exposure) (at 1281.07) 0.162 0.27</i> <i>Brightest Pixel in Segment A (at 1281.07) 0.162</i> <i>Brightest Pixel in Segment B (at 1180.98) 0.109</i> <i>Count rate entire detector 3,211.915</i> <i>Count rate Segment A 2,135.893</i> <i>Count rate Segment B 1,076.022</i></p>								
7	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=40 0; LIFETIME-POS=L P4	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 1-7 Non-Int in PSA/MIRRORB ACQ/IMAGE then F UV TA Monitoring o f G140L & G160M (91)	20 Secs (20 Secs) [==>]	[1]
<p><i>Comments: See comment in 25.018</i></p>								
8	PSA/MIRRORB ACQ/IMAGE (COS.ta.103 2496)	COS/NUV, ACQ/IMAGE, PSA	MIRRORB			Sequence 8-14 Non-Int in PSA/MIRRORB ACQ/IMAGE then F UV TA Monitoring o f G140L & G160M (91)	13 Secs (13 Secs) [==>]	[1]
<p><i>Comments: See comment in 25.001</i></p>								
9	PSA/MIRRORB LAMP +TARGET IMAGE (P2/ MEDIUM) (COS.ta.103 2496)	COS/NUV, TIME-TAG, PSA	MIRRORB	BUFFER-TIME=15 0; FLASH=S0060D01 5; CURRENT=MEDIUM	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 8-14 Non-Int in PSA/MIRRORB ACQ/IMAGE then F UV TA Monitoring o f G140L & G160M (91)	15.0 Secs (15 Secs) [==>]	[1]
<p><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></p>								
10	PSA/G160M/1600/3 - CENTER (COS.sp.103 2449)	COS/FUV, TIME-TAG, PSA	G160M 1600 A	FP-POS=3; FLASH=YES; BUFFER-TIME=97 6; LIFETIME-POS=L P4	QESIPARM USELA MP LINE2; QESIPARM CURR ENT MEDIUM	Sequence 8-14 Non-Int in PSA/MIRRORB ACQ/IMAGE then F UV TA Monitoring o f G140L & G160M (91)	82 Secs (82 Secs) [==>]	[1]
<p><i>Comments: S/N Ratio = 4 at wavelength 1610.00 (per RE) gives: Time = 81.8415 seconds. BT < 2/3 * 1,463 = 976s. Any BT less than 1000s is a good BT, we use 800s in case the target is brighter than expected.</i></p> <p><i>Brightest Pixel (single exposure) (at 1410.02) 0.021 1.69</i> <i>Brightest Pixel in Segment A (at 1601.01) 0.005</i> <i>Brightest Pixel in Segment B (at 1410.02) 0.021</i> <i>Count rate entire detector 1,611.740</i> <i>Count rate Segment A 313.782</i> <i>Count rate Segment B 1,297.958</i> <i>Buffer Time (sec) 1,463</i></p>								

Proposal 15386 - PSA/MIRRORB ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91) - COS FUV Target Acquisition Monitor

11	PSA/G160 M/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=2000; LIFETIME-POS=L P4	POS TARG null,1.3; QESIPARM USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 8-14 Non-Int in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)	180 Secs (180 Secs) [==>]	[1]
<p>Comments: At R=1.3", the throughput is ~45%. To get the same counts, we need an exposure time of $82/0.45 = 182s$. $BT < 1000/0.45 = 2222s$. Any BT less than 2222s is a good BT, we use 2000s in case the target is brighter than expected.</p>									
12	PSA/G160 M/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=2000; LIFETIME-POS=L P4	POS TARG null,-1.3; QESIPARM USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 8-14 Non-Int in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)	180 Secs (180 Secs) [==>]	[1]
<p>Comments: At R=1.3", the throughput is ~45%. To get the same counts, we need an exposure time of $82/0.45 = 182s$. $BT < 1000/0.45 = 2222s$. Any BT less than 2222s is a good BT, we use 1000s in case the target is brighter than expected.</p>									
13	PSA/G160 M/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 8-14 Non-Int in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)	3 Secs (3 Secs) [==>]	[1]
<p>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</p>									
14	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=976; LIFETIME-POS=L P4	QESIPARM USELAMP LINE2; QESIPARM CURRENT MEDIUM	Sequence 8-14 Non-Int in PSA/MIRROR B ACQ/IMAGE then FUV TA Monitoring of G140L & G160M (91)	82 Secs (82 Secs) [==>]	[1]
<p>Comments: See comment in 25.025</p>									

