12797 - Second COS FUV Lifetime Position: FUV Target Acquisition Parameter Update {FENA4}

Cycle: 19, Proposal Category: ENG/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 DARK	COS/FUV COS/NUV S/C	2	24-Jul-2012 21:28:18.0	yes
02	(1) AZV18 (13) AZV18-OFFSET-AD+0.3 (14) AZV18-OFFSET-AD-0.5 DARK	COS/FUV COS/NUV S/C	3	24-Jul-2012 21:29:10.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
03	(1) AZV18 (5) AZV18-OFFSET-XD+0.5 (10) AZV18-OFFSET-XD+1.0 (15) AZV18-OFFSET-XD+1.5 DARK	COS/FUV COS/NUV S/C	3	24-Jul-2012 21:30:02.0	yes
04	(1) AZV18 (5) AZV18-OFFSET-XD+0.5 (10) AZV18-OFFSET-XD+1.0 (15) AZV18-OFFSET-XD+1.5 DARK	COS/FUV COS/NUV S/C	3	24-Jul-2012 21:30:46.0	yes
05	(1) AZV18 (5) AZV18-OFFSET-XD+0.5 (10) AZV18-OFFSET-XD+1.0 (15) AZV18-OFFSET-XD+1.5 DARK	COS/FUV COS/NUV S/C	3	24-Jul-2012 21:31:42.0	yes
06	(2) WD1657+343 (21) WD1657+343-OFFSET-NW-1.4AS (22) WD1657+343-OFFSET-XD-1.0	COS/FUV COS/NUV	2	24-Jul-2012 21:32:37.0	yes
66	(2) WD1657+343 (21) WD1657+343-OFFSET-NW-1.4AS (22) WD1657+343-OFFSET-XD-1.0	COS/FUV COS/NUV	2	24-Jul-2012 21:33:28.0	yes
11	(1) AZV18 (11) AZV18-OFFSET-NE-1.4AS DARK	COS/FUV COS/NUV S/C	1	24-Jul-2012 21:33:55.0	yes
12	(1) AZV18 (13) AZV18-OFFSET-AD+0.3 (14) AZV18-OFFSET-AD-0.5 DARK	COS/FUV COS/NUV S/C	2	24-Jul-2012 21:34:39.0	yes

Visit	*Targets used in Visit*	*Configurations used in Visit*	*Orbits Used*	*Last Orbit Planner Run*	*OP Current with Visit?*
13	(1) AZV18 (5) AZV18-OFFSET-XD+0.5 (10) AZV18-OFFSET-XD+1.0 (15) AZV18-OFFSET-XD+1.5 DARK	COS/FUV COS/NUV S/C	2	24-Jul-2012 21:35:19.0	yes
14	(1) AZV18 (5) AZV18-OFFSET-XD+0.5 (10) AZV18-OFFSET-XD+1.0 (15) AZV18-OFFSET-XD+1.5 DARK	COS/FUV COS/NUV S/C	2	24-Jul-2012 21:36:01.0	yes
15	(1) AZV18 (5) AZV18-OFFSET-XD+0.5 (10) AZV18-OFFSET-XD+1.0 (15) AZV18-OFFSET-XD+1.5 DARK	COS/FUV COS/NUV S/C	2	24-Jul-2012 21:36:49.0	yes
16	(2) WD1657+343 (21) WD1657+343-OFFSET-NW-1.4AS (22) WD1657+343-OFFSET-XD-1.0 DARK	COS/FUV COS/NUV S/C	2	24-Jul-2012 21:37:46.0	yes

29 Total Orbits Used

ABSTRACT

Verify the ability of the Cycle 20 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 Second Lifetime Position (SLP). This program is modeled from the activity summary of FENA4.

This program should be executed after the new HV, XD spectral positions, and focus are determined and updated. In addition, the LIFETIME=ALTERNATE TA FSW parameters should be updated prior to execution of this program.

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

OBSERVING DESCRIPTION

Successful FUV dispersed light centering (target acquisition, TA) of a point source within the PSA at the second lifetime position (SLP) is verified. This activity confirms the FUV TA parameters in the cycle 20 flight software (FSW) and verifies that the FUV centering error is within the required thresholds. viz. 0.1 arcsec.

All Visits will be run at LIFETIME=ALTERNATE. Before each exposure, the focus is updated to the position recommended at the SLP. At the end of each visit, the focus positions are restored to their original values. Each orbit which uses a non-standard FUV Voltage at the time of execution (all of them) are wrapped by a single NON-INT sequence per orbit.

Visit 1 tests ACQ/SEARCH and also verifies that the updated FUV TA sub-arrays are correct for the 2LP. After an NUV imaging TA and the standard NUV to FUV offset to the 2LP, 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 (no 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 POS-TARGs) using G130M/1309. Track Ly 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 7x0.5” (offset -0.8” Y)]. Roll angle second week of April is 190 +/- 2.5°.
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 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 finally +/- 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.

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 20 conditions as possible. (LIFETIME=ALTERNATE, using FSW HV and focus values if possible)

Visits 11-16 are near duplicates of Visits 1-6 without the commanding at the beginning to reset the Detector HV to the second lifetime position value, and without the exposure at the end to return it to HVLOW. The NON-INT sequences in these visits are based upon the needs of the original program goals. The NON-INTs in Visits 1-6 (the executing visits) are set to be one per orbit to prevent the HV from being accidently reset during the orbits.

Visits 11-16 are on permant hold and are included only to demonstrate the actual desired timing of the Visits on-orbit. (The HV rampups will be performed before the orbit starts so that this time is not used up during the actual visit.)

On March 22, 2012 we decided on HV values of 157/153 for SegA/SegB and focus offsets for G130M (+190), G160M (+250), and G140L (+0). The G140L focus offset is unknown at this time as a contingency visit of 12796 will not have executed before this program.

On March 26, 2012 we realised that the breathing correction was not being applied correctly. Our new values for the focus offsets are G130M (+120), G160M (+160), and G140L (+0)

On March 26, 2012 we decided to slip Visits 1-5 by one week. New Roll angles have been calculated.
Then new roll angles are:
Visit 1 and 2: 195 +/- 2.5 (+5)
Visits 3-5 : 205 +/- 2.5 (no change)
Visit 6 : (225 +/- 2.5) (+45)

On March 29, 2012 we decided to execute visits 1 and 2 at the HV of FUVA/B = 167/163. Since it took 403s to ramp to 162/159 we need an additional 15s to get the A segment to 167 (3s per step), or 418s.

On April 24, 2012 we decided to slip Visit 5 to the week of May 14 or May 21, 2012 and Visit 6 to Jun 5, 2012.

So the roll angles are now : Visit 5 = 225 +/- 2.5 Visit 6 = 180 +/- 2.5

After the Comsic Bug Zapping event of late April 2012, we have once again been forced to move visits 3-6. Then new plan windows have
Visits 3-5: 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)
Visit 6 : 03-Jul-2012 til 07-Aug-2012
Visit 66: 06-Aug-2012 til 20-Aug-2012

ADDITIONAL COMMENTS
As of 3/5/2012, the planned schedule for 12797 is :

SMS of Apr 9 visit 1 of 12797 1 orbit (external)
SMS of Apr 9 visit 2 of 12797 2 orbits (external)
SMS of Apr 30 visits 3-5 of 12797 6 orbits (external)
SMS of May 21 or May 28 visit 6 (confirmation) of 12797 2 orbits (external)

From APT (V20.0.3), the roll angles availble during these dates are:

09 Apr 2012 181.27 - 191.27 (original Visit 1/2) (Visit 1) Target Date, Roll angle = 190 +/- 2.5
10 Apr 2012 182.18 - 192.18 (original Visit 1/2)
11 Apr 2012 183.08 - 193.08 (original Visit 1/2)
12 Apr 2012 183.98 - 193.98 (original Visit 1/2)
13 Apr 2012 184.88 - 194.88 (original Visit 1/2) (Visit 2) Target Date, Roll angle = 190 +/- 2.5
14 Apr 2012 185.78 - 195.78 (original Visit 1/2)

15 Apr 2012 186.68 - 196.68 (original Visit 1/2)

30 Apr 2012 199.92 - 209.92 (original Visit 3-5)
01 May 2012 200.80 - 210.80 (original Visit 3-5)
02 May 2012 191.87 - 221.47 (original Visit 3-5)
03 May 2012 192.75 - 222.35 (original Visit 3-5) Target Date, Roll angle = 205 +/- 2.5
04 May 2012 193.62 - 223.22 (original Visit 3-5)
05 May 2012 194.49 - 224.09 (original Visit 3-5)
06 May 2012 195.37 - 224.97 (original Visit 3-5)

21 May 2012 179.12 - 218.12
22 May 2012 177.98 - 216.98
23 May 2012 176.83 - 215.83 (Visit 6) Target Date, Roll angle = 180 +/- 2.5
24 May 2012 175.68 - 214.68
25 May 2012 174.53 - 213.53
26 May 2012 173.38 - 212.38
27 May 2012 172.23 - 211.23

This version was created with the final APT build 20.0.3 APT (Mon Mar 19 2012)

On March 26, we decided to slip Visits 1-5 by one week. The new roll angles are :

16 Apr 2012 187.57 - 197.57 (revised Visit 1/2) (Visit 1) Target Date, Roll angle = 195 +/- 2.5 (+5)
17 Apr 2012 188.46 - 198.46 (revised Visit 1/2)
18 Apr 2012 189.35 - 199.35 (revised Visit 1/2)
19 Apr 2012 190.24 - 200.24 (revised Visit 1/2)
20 Apr 2012 191.13 - 201.13 (revised Visit 1/2) (Visit 2) Target Date, Roll angle = 195 +/- 2.5 (+5)
21 Apr 2012 192.01 - 202.01 (revised Visit 1/2)
22 Apr 2012 192.89 - 202.89 (revised Visit 1/2)

07 May 2012 193.84 - 226.06 (revised Visit 3-5)
08 May 2012 194.72 - 226.94 (revised Visit 3-5)
09 May 2012 195.59 - 227.84 (revised Visit 3-5)
10 May 2012 196.47 - 228.72 (revised Visit 3-5) Target Date, Roll angle = 205 +/- 2.5 (no change)
11 May 2012 197.34 - 229.62 (revised Visit 3-5)
12 May 2012 198.22 - 230.50 (revised Visit 3-5)
13 May 2012 199.09 - 231.37 (revised Visit 3-5)

21 May 2012 206.84 - 238.67
22 May 2012 207.72 - 239.55
23 May 2012 208.61 - 240.44 (Visit 6) Target Date, Roll angle = 225 +/- 2.5 (+45)
24 May 2012 209.50 - 241.41
25 May 2012 210.39 - 242.30
26 May 2012 211.18 - 243.29
27 May 2012 212.07 - 244.18
28 May 2012 212.97 - 245.08
29 May 2012 213.87 - 246.09
30 May 2012 214.77 - 246.99
31 May 2012 215.57 - 248.01
01 Jun 2012 216.48 - 248.92
02 Jun 2012 217.38 - 249.82
03 Jun 2012 218.29 - 250.86
04 Jun 2012 220.50 - 251.30

We are forced to slip Visit 5 to 14-MAY-2012 to 28-MAY-2012 &
Visit 6 to 05-JUN-2012 to 21-JUN-2012.
So, we are back to 180 degrees for Visit 6 ond 225 degrees for Visit 5

07 May 2012 193.84 - 226.06
08 May 2012 194.72 - 226.94
09 May 2012 195.59 - 227.84
10 May 2012 196.47 - 228.72
11 May 2012 197.34 - 229.62
12 May 2012 198.22 - 230.50
13 May 2012 199.09 - 231.37
14 May 2012 199.97 - 232.30 -> Visit 5 is 225 +/- 2.5
15 May 2012 200.85 - 233.18
16 May 2012 201.73 - 234.11
17 May 2012 202.61 - 234.99
18 May 2012 203.49 - 235.87
19 May 2012 204.37 - 236.82
20 May 2012 205.25 - 237.70
21 May 2012 206.84 - 238.67 -> Visit 5 is 225 +/- 2.5
22 May 2012 207.72 - 239.55
23 May 2012 208.61 - 240.44
24 May 2012 209.50 - 241.41
25 May 2012 210.39 - 242.30
26 May 2012 211.18 - 243.29
27 May 2012 212.07 - 244.18
28 May 2012 212.97 - 245.08

05 Jun 2012 163.51 - 199.31 -> Visit 6, back to 180 degrees
06 Jun 2012 162.38 - 198.18
07 Jun 2012 161.44 - 196.84
08 Jun 2012 160.31 - 195.71
09 Jun 2012 159.19 - 194.59
10 Jun 2012 158.06 - 193.46

11 Jun 2012 151.99 - 195.77
12 Jun 2012 150.87 - 194.65

Due to the 'bonus counts' anamoly, visits 3-5 have been shifted to the Jun 13 to Jun 30 window.
The available roll angles are :

13 Jun 2012 220.83 - 260.57 -> Visit 3-5 is 250 +/- 2.5 works for the entire window
14 Jun 2012 221.77 - 261.51
15 Jun 2012 222.61 - 262.63
16 Jun 2012 223.56 - 263.58
17 Jun 2012 224.50 - 264.52
18 Jun 2012 230.06 - 265.68
19 Jun 2012 231.01 - 266.63
20 Jun 2012 231.97 - 267.59
21 Jun 2012 232.83 - 268.76
22 Jun 2012 233.79 - 269.72
23 Jun 2012 234.76 - 270.69
24 Jun 2012 235.73 - 271.66
25 Jun 2012 239.81 - 271.61
26 Jun 2012 240.78 - 272.58
27 Jun 2012 241.76 - 273.56
28 Jun 2012 242.75 - 274.55
29 Jun 2012 243.63 - 275.63
30 Jun 2012 244.62 - 276.62 -> Visit 3-5 is 250 +/- 2.5 works for the entire window

Visit 6 is now sometime in July (TBD), we can cover this entire window with a roll constlrtaint of 135+-/-2.5

Visit 6 performed on July 23, 2012, BUT the wrong SIAF file was in the TRANS. That is, it used the BEST positon as requested, which on July 23rd was

the SLP. However, when the program was TRANSed on July 10ish, the 'BEST' was the OLP, so that is where it left it !!

Re-executiving Visit 6 as Visit 66, the roll angle was relaxed, so we may not get exactly what we want (135=orient), but we can do the math and figure out the correct motions.

Visit

Proposal 12797, HV+ACQ/SEARCH TEST (01), completed Wed Jul 25 01:38:04 GMT 2012

Diagnostic Status: Warning

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

Special Requirements: SCHED 100%; ORIENT 192.5D TO 197.5 D; BETWEEN 16-APR-2012 AND 22-APR-2012

Comments: ACQ/SEARCH Test. The target is AVZ18 (the SMOV TA target).

For a 3x3x1" spiral pattern, the telescope slew is [AD,XD]

0.00	*0.00*
1.00	*0.00*
1.00	*1.00*
0.00	*1.00*
-1.00	*1.00*
-1.00	*0.00*
-1.00	*-1.00*
0.00	*-1.00*
1.00	*-1.00*

The roll angle is constrained to 195 +/- 2.5 degrees, 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" ACQ/SEARCH on the target.

Diagnostics

(HV+ACQ/SEARCH TEST (01)) Warning (Orbit Planner): VISIBILITY OVERRUN

(HV+ACQ/SEARCH TEST (01)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

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

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

(HV+ACQ/SEARCH TEST (01)) Warning (Orbit Planner): VISIBILITY OVERRUN

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

(HV+ACQ/SEARCH TEST (01)) Warning (Orbit Planner): VISIBILITY OVERRUN

(HV+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.

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

Fixed Targets

#	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 supplied 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)

(11)	AZV18-OFFSET-NE-1.4AS	Offset from AZV18 by		V=12.48	Offset Position (AZV18-OFFSET-NE-1.4AS)
		RA Offset: -3.7945E-4 Degrees		(B-V)=+0.04	Reference Frame: ICRS
		Dec Offset: 0.366025 Arcsec			

Comments: This target is offset by 1" in both AD (X) and XD (Y), so sqrt(2)=1.414" total offset.
The U3 roll angle has been constrained to 190 +/- 2.5 degree.

AZV18 offset for ACQ/SEARCH (AD,XD)=(-1",-1")=-sqrt(2")@10°N of W
*RA=-sqrt(2)"*cos(10°)=-1.3927"=-0.000386869°*
*DEC=+sqrt(2)"*sin(10°)= 0.24558"*

3/26/12: Target changed to 195 +/- 2.5 degrees
AZV18 offset for ACQ/SEARCH (AD,XD)=(-1",-1")=-sqrt(2")@15°N of W
*RA=-sqrt(2)"*cos(15°)=-1.36603" =-0.00037945°*
*DEC=+sqrt(2)"*sin(15°)= 0.366025"*

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	FUV HV R AMPUP (167/163)	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF; QASISTATES COS FUV HVLOW HVNOM; QESIPARM ENDCTSA 167; QESIPARM ENDCTSB 163	Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	418 Secs *[==>]*	***[1]***
	Comments: SQL required for qexposure to specify the si_used = "COS". *The special commanding here sets the the nominal high voltage for this visit (HVNOM) for segments A and B (ENDCTSA and ENDCTS B) to 167 and 163, respectively. 403s is the correct rampup time for 162/159. An allow 3 additional seconds for every positive unit of offset is required. Therefore, the rampup time is 403+(167-162)*3 = 418*								
2	2 nuv a/im (COS.ta.360711)	(1) AZV18	COS/NUV, ACQ/IMAGE, BOA	MIRRORA			Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	27 Secs *[==>]*	***[1]***
	Comments: NUV ACQ/IMAGE with BOA+MIRRORA to refine centering. *COS.ta.360711 , gives S/N=60.000 in 27.4 seconds*								
3	S/C to update the G130M/1309 focus from 170 to 290 (+120)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 290	Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	8 Secs *[==>]*	***[1]***
	Comments: Special Commanding to overwrite the G130M/1309 settings with the SLP focus position. FENA3 Results suggest we need a +120 focus step adjustment from these values. So, G130M/1309 goes from 170 to +290 *The SCR 344 FSW has the following focus G130M positions;* *const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =* *{ {0, 1055, 8095, -170, 2750, 7402}, /* G130M, OSM1 */* *{0, 1096, 8078, -170, 2665, 7312}, /* G130M, OSM1 */* *{0, 1291, 7999, -170, 2259, 6898}, /* G130M, OSM1 */* *{0, 1300, 7995, 0, 2238, 6877}, /* G130M, OSM1 */* *{0, 1309, 7991, 170, 2218, 6857}, /* G130M, OSM1 */* *{0, 1318, 7987, 340, 2198, 6837}, /* G130M, OSM1 */* *{0, 1327, 7983, 511, 2177, 6816}, /* G130M, OSM1 */*								

4	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=S0090D036; LIFETIME-POS=ALTERNATE		Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	180 Secs *[==>]*		***[1]***

Comments: Spectrum of source to define correct location of star when it is centered in NUV. (COS.sp.360698, simulates S/N=10 per RE, BT=986(2/3) = 629. 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 BEFORE THE CYCLE 20 ETC UPDATE TO ETC20.1.1

(This is a good thing since it is probably closer to reality than the pessimistic sensitivities used in ETC20.1.1) The G140L and G160M ETC simulations were made using 20.1.1 and will be scaled back to match the G130M sensitivities assumed here.
The ETC20.1.1 Simulation of the G130M/1309 (COS.sp.389705) gives S/N/RE=10 in 258s.
Our scaling factor is therefore >=182/258=0.71 to convert from ETC20.1.1 today.
(We will use 0.75 for simplicity)

5	G130M - POSTARG + SPECTRUM1 (1,0) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 1.0,null	Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	20 Secs *[==>]*		***[1]***

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))

6	G130M - POSTARG + SPECTRUM2 (1,1)(Corner) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 1.0,1.0	Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	20 Secs *[==>]*		***[1]***

Comments: POSTARG TO SIMULATE ACQ/SEARCH

7	G130M - POSTARG + SPECTRUM3 (0,1) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 0,1.0	Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	20 Secs *[==>]*		***[1]***

Comments: POSTARG TO SIMULATE ACQ/SEARCH

8	G130M - POSTARG + SPECTRUM4 (-1,1) (Corner) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG -1,1	Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	20 Secs *[==>]*		***[1]***

Comments: POSTARG TO SIMULATE ACQ/SEARCH

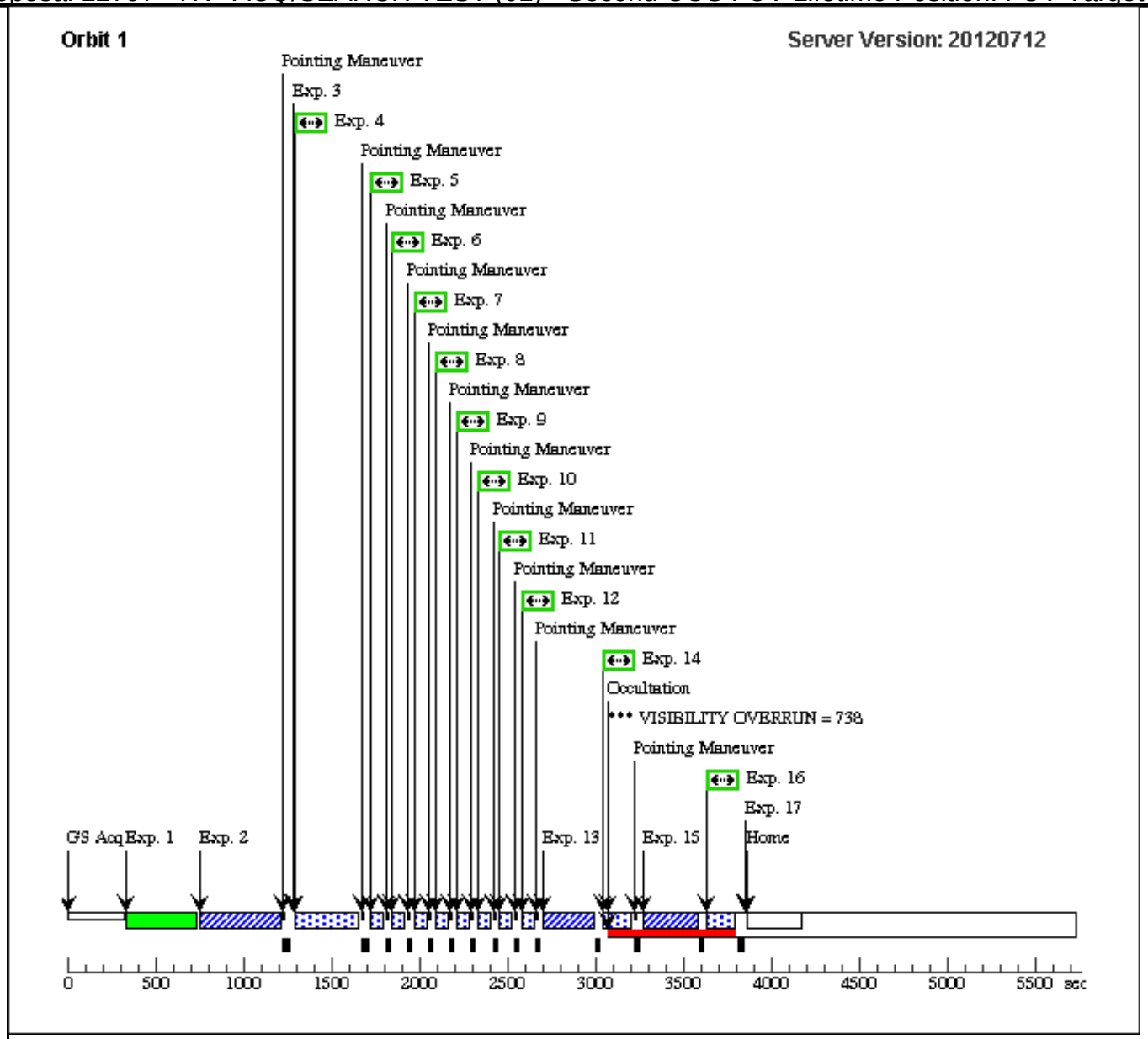
9	G130M - POSTARG + SPECTRUM5 (-1,0) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG -1,null	Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	20 Secs *[==>]*		***[1]***

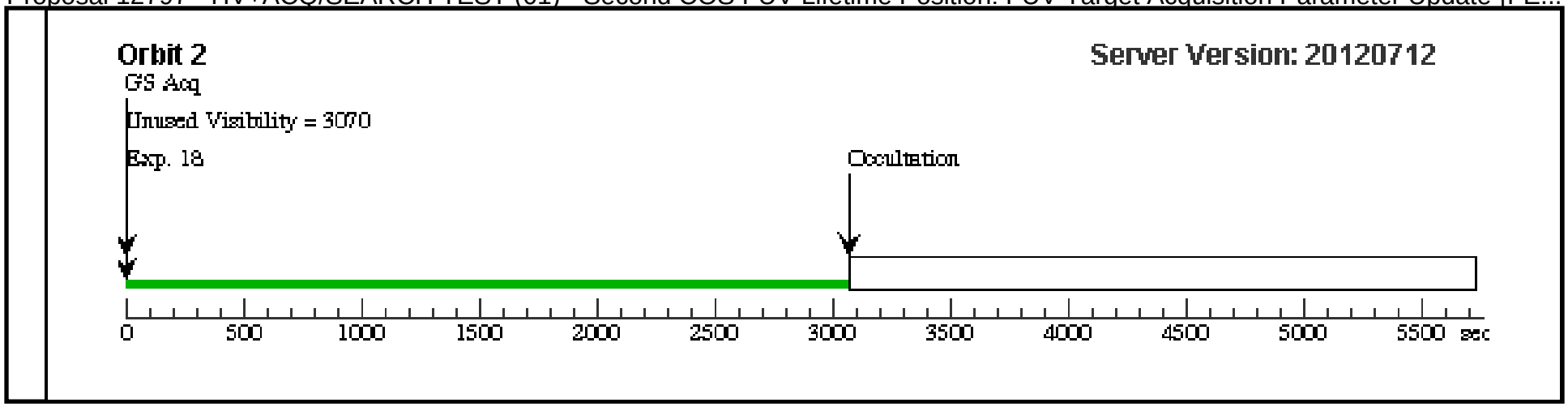
Comments: POSTARG TO SIMULATE ACQ/SEARCH

10	G130M - POSTARG + SPECTRUM6 (-1,-1) (Corner) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG -1,-1	Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	20 Secs *[==>]*	***[1]***
Comments: POSTARG TO SIMULATE ACQ/SEARCH									
11	G130M - POSTARG + SPECTRUM7 (0,-1) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 0,-1	Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	20 Secs *[==>]*	***[1]***
Comments: POSTARG TO SIMULATE ACQ/SEARCH									
12	G130M - POSTARG + SPECTRUM8 (1,-1) (Corner) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 1,-1	Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	20 Secs *[==>]*	***[1]***
Comments: POSTARG TO SIMULATE ACQ/SEARCH									
13	G130M - ACQ/SEARCH (COS.sa.360701)	(1) AZV18	COS/FUV, ACQ/SEARCH, PSA	G130M 1309 A	SCAN-SIZE=3; STEP-SIZE=1.0; LIFETIME-POS=ALTERNATE		Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	2 Secs *[==>]*	***[1]***
Comments: 3x3x1.0" ACQ/SEARCH on the centered target. COS.sa.360701, S/N = 60 is reached in 2 seconds (A+B).									
14	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	115 Secs *[==>]*	***[1]***
Comments: Spectrum of source to verify that the ACQ/SEARCH improved the target centering for 3x3x1". (COS.sp.360698). BT=986(2/3) = ~630. 182s gives S/N/RE=10. 182s*0.64=116s. We use ~115 seconds to get ~S/N/RE=8.*									
15	G130M - ACQ/SEARCH (COS.sa.360701)	(11) AZV18-OFFSET-NE-1.4AS	COS/FUV, ACQ/SEARCH, PSA	G130M 1309 A	SCAN-SIZE=3; STEP-SIZE=1.767; LIFETIME-POS=ALTERNATE		Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	2 Secs *[==>]*	***[1]***
Comments: 3x3x1.767" ACQ/SEARCH. COS.sa.360701, S/N = 60 is reached in 2 (A+B) seconds. This is performed on the fictious target 1" to the NE, so the actual target is actually 1" to the SW.									
16	G130M - BASELINE SPECTRUM (COS.sp.360698)	(11) AZV18-OFFSET-NE-1.4AS	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	115 Secs *[==>]*	***[1]***
Comments: Spectrum of source to verify accurate centering (COS.sp.360698). BT=986(2/3) = ~630. 182s gives S/N/RE=10. BT=182*0.64=116. We use ~115 seconds to get ~S/N/RE=8.*									

	17	S/C to RESET the G130M/1309 focus	DARK	S/C, DATA, NONE	SPEC COM INSTRELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 170	Sequence 1-17 Non-Int in HV+ACQ/SEARCH TEST (01)	8 Secs *[==>]*	***[1]***
	Comments: Special Commanding to reset the G130M/1309 settings with the original focus, the SCR 344 FSW position (170).							
	18	HV_RAMPDOWN_TO_HVLOW	DARK	S/C, DATA, NONE	NEW OBSET; QASISTATES COS FUV HVLOW HVLOW; QASISTATES COS SI OBSERVE OBSERVE		1 Secs *[==>]*	***[2]***
	Comments: SQL required for qexposure to specify the si_used = "COS". *New obset SR necessary to force this exposure to be the very last exposure after Home.*							

Orbit Structure




Orbit 2
Server Version: 20120712
GS Acq
Unused Visibility = 3070
Exp. 18
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit	**Proposal 12797, HV+ACQ/PEAKD TEST (02), completed** Wed Jul 25 01:38:11 GMT 2012 **Diagnostic Status: Warning** Scientific Instruments: COS/NUV, S/C, COS/FUV Special Requirements: SCHED 100%; ORIENT 192.5D TO 197.5 D; AFTER 01 BY 0 D TO 7 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.* *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 195 +/- 2.5 degrees, schedulability = 100%.*
Diagnostics	(HV+ACQ/PEAKD TEST (02)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+ACQ/PEAKD TEST (02)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+ACQ/PEAKD TEST (02)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (HV+ACQ/PEAKD TEST (02)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+ACQ/PEAKD TEST (02)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+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. (HV+ACQ/PEAKD TEST (02)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (HV+ACQ/PEAKD TEST (02)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

Fixed Targets

#	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 supplied 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)*					
(13)	AZV18-OFFSET-AD+0.3	Offset from AZV18 by		V=12.48	Offset Position (AZV18-OFFSET-AD+0.3)
		RA Offset: -4.16667E-5 Degrees		(B-V)=+0.04	Reference Frame: ICRS
		Dec Offset: 0.259808 Arcsec			
Comments: This target WILL BE offset +0.3" in +AD direction. *The roll angle the second week of April is 190+/-2.5d (visit 2)* *[AD,XD] offset = (-0.3",0)=-0.3"@55° N of W* *RA=-0.3"*cos(55°)=-0.172073" =-0.0000477981°* *DEC=+0.3"*sin(55°)= 0.245746"* *3/26/12: Target changed to 195 +/- 2.5 degrees* *AZV18 offset#1 for ACQ/PEAKD (-0.3",0)=-0.3"@60° N of W* *RA=-0.3"*cos(60°)=-0.15"=-0.0000416667°* *DEC=+0.3"*sin(60°)= 0.259808"*					
(14)	AZV18-OFFSET-AD-0.5	Offset from AZV18 by		V=12.48	Offset Position (AZV18-OFFSET-AD-0.5)
		RA Offset: 6.9444E-5 Degrees		(B-V)=+0.04	Reference Frame: ICRS
		Dec Offset: -0.433013 Arcsec			
Comments: This target WILL BE offset -0.5" in the -AD direction. *The roll angle the second week of April is 190+/-2.5d (visit 2)* *(+0.5",0)=0.5"@55° N of W* *RA=0.5"*cos(55°)=0.286788"=0.0000796633°* *DEC=-0.5"*sin(55°)=-0.409576"* *3/26/12: Target changed to 195 +/- 2.5 degrees (+0.5",0)=0.5"@60° N of W* *RA=0.5"*cos(60°)=0.25" =0.000069444°* *DEC=-0.5"*sin(60°)=-0.433013"*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	FUV HVSEGA RAMP UP (167)	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF; GS ACQ SCENARIO BASE1BN3; QASISTATES COS FUV HVLOW HVSEGA; QESIPARM ENDCTSA 167; QESIPARM SEGMENT A	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	418 Secs *[==>]*	***[1]***

Comments: SQL required for qexposure to specify the si_used = "COS".

*The special commanding here sets the SEGMENT A high voltage to 167 (ENDCTSA = 167). 403s is the correct rampup time for 162/159. An allow 3 additional seconds for every positive unit of offset is required. Therefore, the rampup time is 403+(167-162)*3 = 418*

The FUV state of HVSEGA must be maintained until the FUV G140L 1105 exposure (exposure 5).

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
2	2 nuv a/im (COS.ta.360711)	(1) AZV18	COS/NUV, ACQ/IMAGE, BOA	MIRRORA		QASISTATES COS FUV HVSEGA HVSEGA	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	28 Secs *[==>]*	***[1]***

Comments: NUV ACQ/IMAGE with BOA+MIRRORA to refine centering. (COS92525 gives S/N = 60 in 28s)

The FUV qasistates s.r. is specifically for maintaining the FUV in the HVSEGA state.

SQL is required for the dump created by this exposure. The FUV state should be changed to HVSEGA.

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
3	S/C to update the G140L /1105 focus (-370+0)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QASISTATES COS FUV HVSEGA HVSEGA; QESIPARM ACTION REPLACE; QESIPARM GRATING G140L; QESIPARM CENTWAVE 1105; QESIPARM FOCUS -370	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*	***[1]***

Comments: Special Commanding to overwrite the G140L/1280 settings with the SLP focus position. Right now, this is just the current lifetime position (-370), the contingency visit of 12796 will give us the actual updated focus value.

The SCR 344 FSW has the following focus G140L positions;

```
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
        {1, 1105,  1598, -370, 35092, 39716},   /* G140L, OSM1 */
        {1, 1230,  1591,  -30, 35055, 39680},   /* G140L, OSM1 */
        {1, 1280,  1590,   19, 35050, 39675},   /* G140L, OSM1 */
```

4	S/C to update the G140L /1280 focus (19+0)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G140L; QESIPARM CENTWAVE 1280; QESIPARM FOCUS 19	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to overwrite the G140L/1280 settings with the SLP focus position. Right now, this is just the current lifetime position (19), the contingency visit of 12796 will give us the actual updated focus value.

The SCR 344 FSW has the following focus G140L positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{1, 1105, 1598, -370, 35092, 39716}, / G140L, OSM1 */*
{1, 1230, 1591, -30, 35055, 39680}, / G140L, OSM1 */*
{1, 1280, 1590, 19, 35050, 39675}, / G140L, OSM1 */*

5	G140L/1105 - BASELINE SPECTRUM (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=400; FP-POS=3; FLASH=S0200D030; WAVECAL=YES; LIFETIME-POS=ALTERNATE		Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	30 Secs *[==>]*		***[1]***

*Comments: Spectrum of source to define the G140L/1105 XD location of target when it is centered w/ NUV ACQ/IMAGE. COS.sp.389720 gives S/N/RE = 10 at1400.00 Å in 38.5800 seconds. We don't bother to scale this, because the exposure time is so small (equal to our lamp flash). BT=2/3 (838*0.75) = 420 (we use 400)*

6	FUV HV RAMPUP (167/163)	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF; QASISTATES COS FUV HVLOW HVNOM; QESIPARM ENDCTSA 167; QESIPARM ENDCTSB 163	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	418 Secs *[==>]*		***[1]***

Comments: SQL required for qexposure to specify the si_used = "COS".

*The special commanding here sets the the nominal high voltage for this visit (HVNOM) for segments A and B (ENDCTSA and ENDCTS B) to 167 and 163, respectively. 403s is the correct rampup time for 162/159. An allow 3 additional seconds for every positive unit of offset is required. Therefore, the rampup time is 403+(167-162)*3 = 418*

7	G140L/1280 - BASELINE SPECTRUM (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=S0200D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE		Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	36 Secs *[==>]*		***[1]***

*Comments: Spectrum of source to define the G140L/1280 XD location of target when it is centered w/ NUV ACQ/IMAGE. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. We don't bother to scale this, because the exposure time is so small (equal to our lamp flash). BT=2/3 (838*0.75) = 420 (we use 400)*

8	S/C to update the G160M/1577 focus from -384 to -224 (+160)	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1577; QESIPARM FOCUS -224	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to overwrite the G160M/1577 settings with the SLP focus position. FENA3 Results suggest we need a +160 focus step adjustment from these values. So, G160M/1577 goes from -384 to -224.

The SCR 344 FSW has the following focus G160M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{2, 1577, 11203, -384, 18693, 23323}, / G160M, OSM1 */*
{2, 1589, 11199, -214, 18671, 23301}, / G160M, OSM1 */*
{2, 1600, 11195, -44, 18651, 23281}, / G160M, OSM1 */*
{2, 1611, 11191, 126, 18631, 23261}, / G160M, OSM1 */*
{2, 1623, 11187, 296, 18609, 23239}, / G160M, OSM1 */*

9	S/C to update the G160M/1600 focus from -44 to +116 (+160)	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1600; QESIPARM FOCUS 116	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to overwrite the G160M/1600 settings with the SLP focus position. FENA3 Results suggest we need a +160 focus step adjustment from these values. So, G160M/1600 goes from -44 to +116.

The SCR 344 FSW has the following focus G160M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{2, 1577, 11203, -384, 18693, 23323}, / G160M, OSM1 */*
{2, 1589, 11199, -214, 18671, 23301}, / G160M, OSM1 */*
{2, 1600, 11195, -44, 18651, 23281}, / G160M, OSM1 */*
{2, 1611, 11191, 126, 18631, 23261}, / G160M, OSM1 */*
{2, 1623, 11187, 296, 18609, 23239}, / G160M, OSM1 */*

10	S/C to update the G160M/1623 focus from +296 to +456 (+160)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1623; QESIPARM FOCUS 456	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to overwrite the G160M/1623 settings with the SLP focus position. FENA3 Results suggest we need a +160 focus step adjustment from these values. So, G160M/1623 goes from +296 to +456.

The SCR 344 FSW has the following focus G160M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{2, 1577, 11203, -384, 18693, 23323}, / G160M, OSM1 */*
{2, 1589, 11199, -214, 18671, 23301}, / G160M, OSM1 */*
{2, 1600, 11195, -44, 18651, 23281}, / G160M, OSM1 */*
{2, 1611, 11191, 126, 18631, 23261}, / G160M, OSM1 */*
{2, 1623, 11187, 296, 18609, 23239}, / G160M, OSM1 */*

11	G160M/1577 - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=4800; FP-POS=3; FLASH=S0200D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE		Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	36 Secs *[==>]*		***[1]***

Comments: Spectrum of source to define WCA location for G160M/1623, ET = LAMP TIME = 36s.

*COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe).*

12	G160M/1600 - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=4800; FP-POS=3; FLASH=S0200D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE		Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	200 Secs *[==>]*		***[1]***

Comments: Spectrum of source to define G160M/1600 location of a target when it is centered w/ NUV ACQ/IMAGE.
*COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe)*

13	G160M/1623 - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=4800; FP-POS=3; FLASH=S0200D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE		Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	36 Secs *[==>]*		***[1]***

Comments: Spectrum of source to define WCA location for G160M/1623, ET = LAMP TIME = 36s.

14	S/C to update the G130M/1291 focus from -170 to -50 (+120)	DARK	S/C, DATA, NONE		SPEC COM INSTRELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1291; QESIPARM FOCUS -50	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to overwrite the G130M/1291 settings with the SLP focus position. FENA3 Results suggest we need a +120 focus step adjustment from these values. So, G130M/1291 goes from -170 to -50

The SCR 344 FSW has the following focus G130M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{0, 1291, 7999, -170, 2259, 6898}, / G130M, OSM1 */*
{0, 1300, 7995, 0, 2238, 6877}, / G130M, OSM1 */*
{0, 1309, 7991, 170, 2218, 6857}, / G130M, OSM1 */*
{0, 1318, 7987, 340, 2198, 6837}, / G130M, OSM1 */*
{0, 1327, 7983, 511, 2177, 6816}, / G130M, OSM1 */*

15	S/C to update the G130M/1327 focus from 511 to 631 (+120)	DARK	S/C, DATA, NONE		SPEC COM INSTRELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1327; QESIPARM FOCUS 631	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to overwrite the G130M/1327 settings with the SLP focus position. FENA3 Results suggest we need a +120 focus step adjustment from these values. So, G130M/1327 goes from 511 to 631

The SCR 344 FSW has the following focus G130M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{0, 1291, 7999, -170, 2259, 6898}, / G130M, OSM1 */*
{0, 1300, 7995, 0, 2238, 6877}, / G130M, OSM1 */*
{0, 1309, 7991, 170, 2218, 6857}, / G130M, OSM1 */*
{0, 1318, 7987, 340, 2198, 6837}, / G130M, OSM1 */*
{0, 1327, 7983, 511, 2177, 6816}, / G130M, OSM1 */*

16	G130M/1291 - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=600; FP-POS=3; FLASH=S0060D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	36 Secs *[==>]*		***[1]***

Comments: Spectrum of source to define correct location of star when it is centered in NUV (COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE. 36s lamp flash*
NOTE THIS ETC RUN WAS MADE BEFORE THE CYCLE 20 ETC UPDATE TO ETC20.1.1

(This is a good thing since it is probably closer to reality than the sensitivities used in ETC20.1.1) The G140L and G160M ETC simulations were made using 20.1.1 and will be scaled back to match the G130M sensitivities assumed here.

17	G130M/1327 - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=600; FP-POS=3; FLASH=S0060D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE		Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	36 Secs *[==>]*	***[1]***

Comments: Spectrum of source to define correct location of star when it is centered in NUV (COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE. 36s lamp flash.*
NOTE THIS ETC RUN WAS MADE BEFORE THE CYCLE 20 ETC UPDATE TO ETC20.1.1

(This is a good thing since it is probably closer to reality than the sensitivities used in ETC20.1.1) The G140L and G160M ETC simulations were made using 20.1.1 and will be scaled back to match the G130M sensitivities assumed here.

18	S/C to RESET the G140L/1105 focus	DARK	S/C, DATA, NONE		SPEC COM INSTRELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G140L; QESIPARM CENTWAVE 1105; QESIPARM FOCUS -370		Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*	***[1]***

Comments: Special Commanding to RESET the G140L/1105 settings to it's normal value (-370).
The SCR 344 FSW has the following focus G140L positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =

{1, 1105, 1598, -370, 35092, 39716}, / G140L, OSM1 */*
{1, 1230, 1591, -30, 35055, 39680}, / G140L, OSM1 */*
{1, 1280, 1590, 19, 35050, 39675}, / G140L, OSM1 */*

19	S/C to RESET the G140L/1280 focus	DARK	S/C, DATA, NONE		SPEC COM INSTRELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G140L; QESIPARM CENTWAVE 1280; QESIPARM FOCUS 19		Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*	***[1]***

Comments: Special Commanding to RESET the G140L/1280 settings to it's normal value (19).
The SCR 344 FSW has the following focus G140L positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =

{1, 1105, 1598, -370, 35092, 39716}, / G140L, OSM1 */*
{1, 1230, 1591, -30, 35055, 39680}, / G140L, OSM1 */*
{1, 1280, 1590, 19, 35050, 39675}, / G140L, OSM1 */*

20	S/C to RESET the G160M/1577 focus	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1577; QESIPARM FOCUS -384	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to RESET the G160M/1577 settings with it's normal value (-384).

The SCR 344 FSW has the following focus G160M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =

```
{2, 1577, 11203, -384, 18693, 23323},   /* G160M, OSM1 */
{2, 1589, 11199, -214, 18671, 23301},   /* G160M, OSM1 */
{2, 1600, 11195,  -44, 18651, 23281},   /* G160M, OSM1 */
{2, 1611, 11191,  126, 18631, 23261},   /* G160M, OSM1 */
{2, 1623, 11187,  296, 18609, 23239},   /* G160M, OSM1 */
```

21	S/C to RESET the G160M/1600 focus	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1600; QESIPARM FOCUS -44	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to RESET the G160M/1600 settings to it's normal value (-44).

The SCR 344 FSW has the following focus G160M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =

```
{2, 1577, 11203, -384, 18693, 23323},   /* G160M, OSM1 */
{2, 1589, 11199, -214, 18671, 23301},   /* G160M, OSM1 */
{2, 1600, 11195,  -44, 18651, 23281},   /* G160M, OSM1 */
{2, 1611, 11191,  126, 18631, 23261},   /* G160M, OSM1 */
{2, 1623, 11187,  296, 18609, 23239},   /* G160M, OSM1 */
```

22	S/C to RESET the G160M/1623 focus	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1623; QESIPARM FOCUS 296	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to RESET the G160M/1623 settings with the it's normal value(296).
The SCR 344 FSW has the following focus G160M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =

{2, 1577, 11203, -384, 18693, 23323}, / G160M, OSM1 */*
{2, 1589, 11199, -214, 18671, 23301}, / G160M, OSM1 */*
{2, 1600, 11195, -44, 18651, 23281}, / G160M, OSM1 */*
{2, 1611, 11191, 126, 18631, 23261}, / G160M, OSM1 */*
{2, 1623, 11187, 296, 18609, 23239}, / G160M, OSM1 */*

23	S/C to RESET the G130M/1291 focus	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1291; QESIPARM FOCUS -170	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to RESET the G130M/1291 settings with the it's normal value (-170).
The SCR 344 FSW has the following focus G130M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{0, 1291, 7999, -170, 2259, 6898}, / G130M, OSM1 */*
{0, 1300, 7995, 0, 2238, 6877}, / G130M, OSM1 */*
{0, 1309, 7991, 170, 2218, 6857}, / G130M, OSM1 */*
{0, 1318, 7987, 340, 2198, 6837}, / G130M, OSM1 */*
{0, 1327, 7983, 511, 2177, 6816}, / G130M, OSM1 */*

24	S/C to RESET the G130M/1327 focus	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1327; QESIPARM FOCUS 511	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to RESET the G130M/1327 settings to it's normal value (511).
The SCR 344 FSW has the following focus G130M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{0, 1291, 7999, -170, 2259, 6898}, / G130M, OSM1 */*
{0, 1300, 7995, 0, 2238, 6877}, / G130M, OSM1 */*
{0, 1309, 7991, 170, 2218, 6857}, / G130M, OSM1 */*
{0, 1318, 7987, 340, 2198, 6837}, / G130M, OSM1 */*
{0, 1327, 7983, 511, 2177, 6816}, / G130M, OSM1 */*

25	S/C to update the G130M/1309 focus from 170 to 290 (+120)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 290	Sequence 1-25 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to overwrite the G130M/1309 settings with the SLP focus position. FENA3 Results suggest we need a +120 focus step adjustment from these values. So, G130M/1309 goes from 170 to +290

The SCR 344 FSW has the following focus G130M positions;

```
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
        { {0, 1055,  8095, -170,  2750,  7402},   /* G130M, OSM1 */
          {0, 1096,  8078, -170,  2665,  7312},   /* G130M, OSM1 */
          {0, 1291,  7999, -170,  2259,  6898},   /* G130M, OSM1 */
          {0, 1300,  7995,    0,  2238,  6877},   /* G130M, OSM1 */
          {0, 1309,  7991,  170,  2218,  6857},   /* G130M, OSM1 */
          {0, 1318,  7987,  340,  2198,  6837},   /* G130M, OSM1 */
          {0, 1327,  7983,  511,  2177,  6816},   /* G130M, OSM1 */
```

26	G130M/1309 - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=S0200D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE		Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	176 Secs *[==>]*		***[2]***

Comments: Spectrum of source to define correct location of star when it is centered in NUV (COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE in 182s. This exposure and the next 8 should be considered an NON-INT Sequence. 36s lamp flash*

NOTE THIS ETC RUN WAS MADE BEFORE THE CYCLE 20 ETC UPDATE TO ETC20.1.1

(This is a good thing since it is probably closer to reality than the pessimistic sensitivities used in ETC20.1.1) The G140L and G160M ETC simulations were made using 20.1.1 and will be scaled back to match the G130M sensitivities assumed here.

27	G130M - POSTARG + SPECTRUM1 (-1.6) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG -1.6,null	Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	20 Secs *[==>]*		***[2]***

Comments: POSTARG TO SIMULATE 9x0.4" ACQ/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.

28	G130M - POSTARG + SPECTRUM2 (-1.2) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG -1.2,null	Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	20 Secs *[==>]*		***[2]***

Comments: POSTARG TO SIMULATE ACQ/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.

29	G130M - POSTARG + SPECTRUM3 (-0.8) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG -0.8,null	Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	20 Secs *[==>]*	***[2]***
Comments: POSTARG TO SIMULATE ACQ/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.									
30	G130M - POSTARG + SPECTRUM4 (-0.4) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG -0.4,null	Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	20 Secs *[==>]*	***[2]***
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.									
31	G130M - POSTARG + SPECTRUM5 (0.4) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 0.4,null	Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	20 Secs *[==>]*	***[2]***
Comments: POSTARG TO SIMULATE ACQ/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.									
32	G130M - POSTARG + SPECTRUM6 (0.8) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 0.8,null	Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	20 Secs *[==>]*	***[2]***
Comments: POSTARG TO SIMULATE ACQ/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.									
33	G130M - POSTARG + SPECTRUM7 (1.2) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 1.2,null	Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	20 Secs *[==>]*	***[2]***
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.									
34	G130M - POSTARG + SPECTRUM8 (1.6) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 1.6,null	Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	20 Secs *[==>]*	***[2]***
Comments: POSTARG TO SIMULATE ACQ/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 (~16000 total counts (A+B))									
35	G130M - ACQ/PEAKD (COS.sa.360701)	(1) AZV18	COS/FUV, ACQ/PEAKD, PSA	G130M 1309 A	NUM-POS=9; STEP-SIZE=0.4; LIFETIME-POS=ALTERNATE		Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	2 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKD of a centered target on the same 9x0.4" pattern. . S/N = 60 is reached in 2 seconds. This exposure and the next should be considered a NON-INT sequence.									

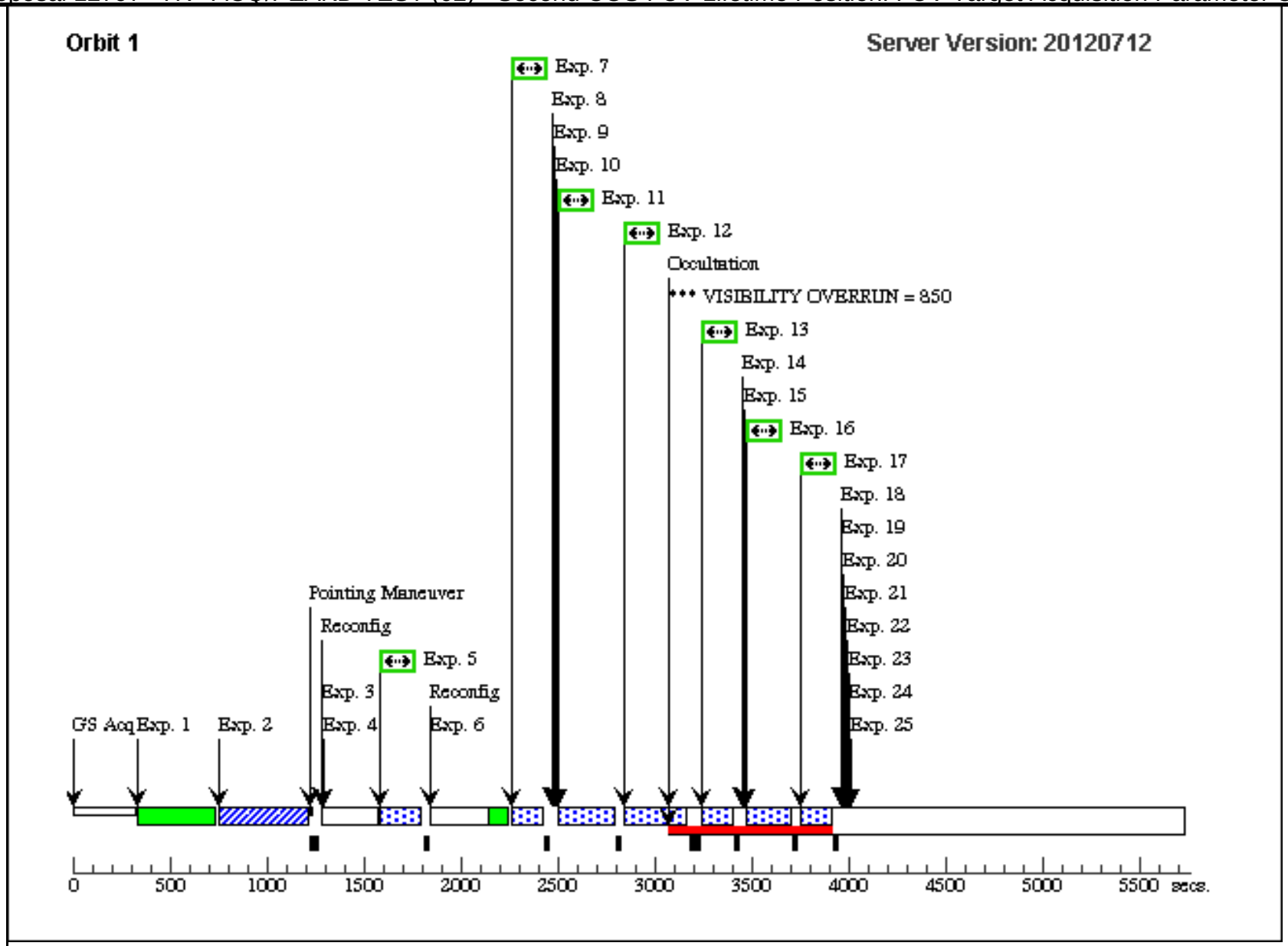
36	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	120 Secs *[==>]*		***[2]***
Comments: Confirmation Spectrum after the PEAKD (COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE in 182s, we are forced to use less due to time constraints.*									
37	G130M - ACQ/PEAKD (COS.sa.360701)	(13) AZV18-OFFSET-AD+0.3	COS/FUV, ACQ/PEAKD, PSA	G130M 1309 A	NUM-POS=9; STEP-SIZE=0.3; LIFETIME-POS=ALTERNATE	Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	2 Secs *[==>]*		***[2]***
Comments: 9x0.3" ACQ/PEAKD on an off centered target. The target is defined 0.3" in the +AD direction from the actual target, so the target will actually now be 0.3" off in the -AD direction. This exposure and the next should be considered a NON-INT sequence.									
38	G130M - BASELINE SPECTRUM (COS.sp.360698)	(13) AZV18-OFFSET-AD+0.3	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	120 Secs *[==>]*		***[2]***
Comments: Confirmation spectrum after the 9x0.3" ACQ/PEAKD. Our coordinate system is now off by -0.3". Our next target is defined to be -0.5" from the original location, which is now -0.8" from the original target, so the target is actually at +0.8" when we start the ACQ/PEAKD pattern. (COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE in 182s, we are forced to use less due to time constraints.*									
39	G130M - ACQ/PEAKD (COS.sa.360701)	(14) AZV18-OFFSET-AD-0.5	COS/FUV, ACQ/PEAKD, PSA	G130M 1309 A	NUM-POS=7; STEP-SIZE=0.55; LIFETIME-POS=ALTERNATE	Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	2 Secs *[==>]*		***[2]***
Comments: 9x0.5 ACQ/PEAKD on an off centered target, this time the target is 0.8" off to the +AD. This exposure and the next should be considered a NON-INT sequence.									
40	G130M - BASELINE SPECTRUM (COS.sp.360698)	(14) AZV18-OFFSET-AD-0.5	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	120 Secs *[==>]*		***[2]***
Comments: Spectrum of source to determine if correctly centered after the 9x0.5" pattern on the target offset by +0.8". (COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE in 182s, we are forced to use less due to time constraints.*									
41	S/C to reset the G130M/1309 focus	DARK	S/C, DATA, NONE		SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 170	Sequence 26-41 Non-Int in HV+ACQ/PEAKD TEST (02)	8 Secs *[==>]*		***[2]***
Comments: Special Commanding to reset the G130M/1309 settings with the original focus, the SCR 344 FSW position (170).									

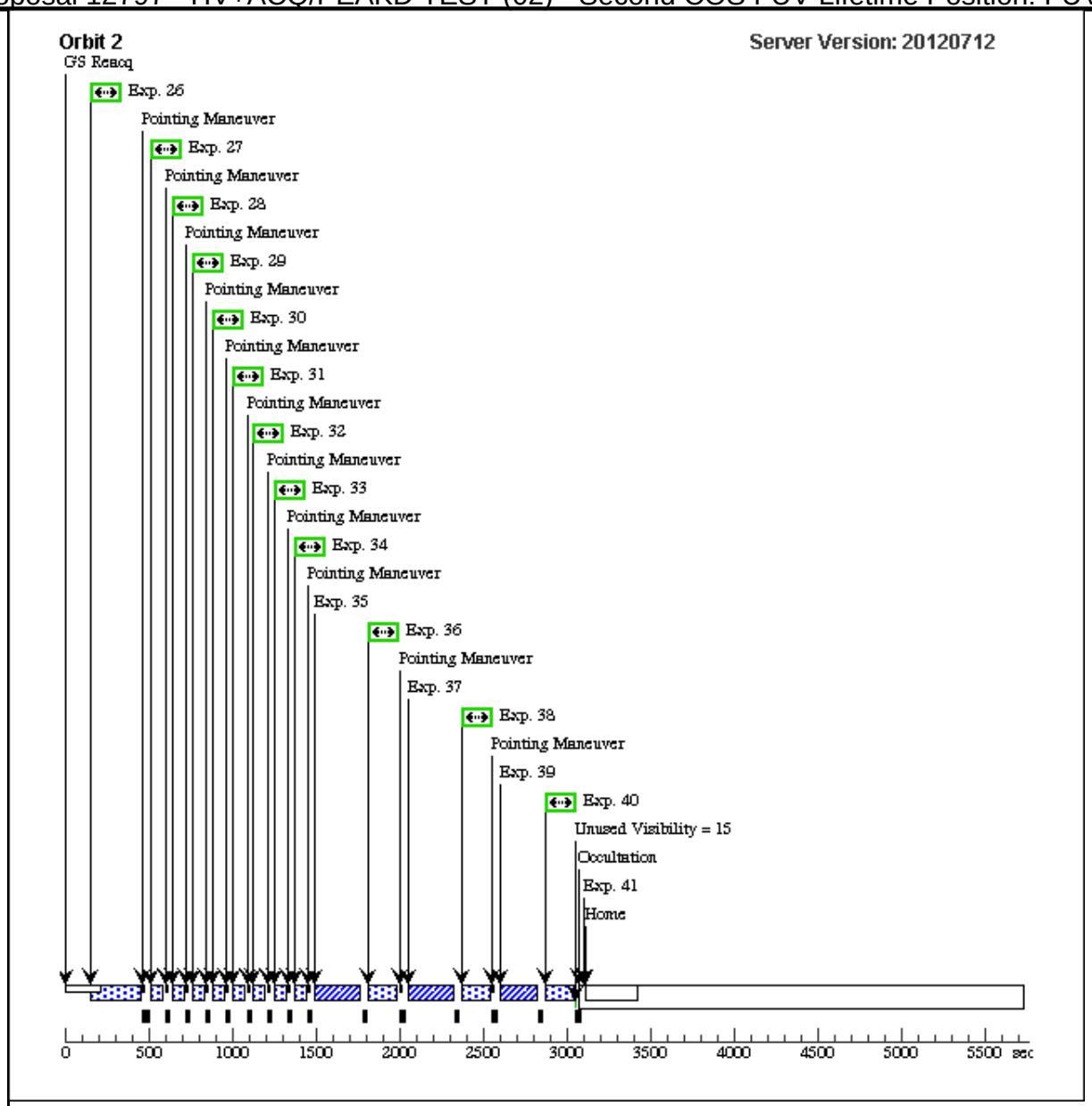
	42	HV_RAMP DOWN_TO _HVLOW	DARK	S/C, DATA, NONE	NEW OBSET; QASISTATES COS FUV HVLOW HVLOW; QASISTATES COS SI OBSERVE OBSERVE	1 Secs *[==>]*	 ***[3]***

Comments: SQL required for qexposure to specify the si_used = "COS".

New obset SR necessary to force this exposure to be the very last exposure after Home.

Orbit Structure

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GS Reacq
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Pointing Maneuver
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Exp. 33
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Exp. 34
Pointing Maneuver
Exp. 35
Exp. 36
Pointing Maneuver
Exp. 37
Exp. 38
Pointing Maneuver
Exp. 39
Exp. 40
Unused Visibility = 15
Occultation
Exp. 41
Home
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5500
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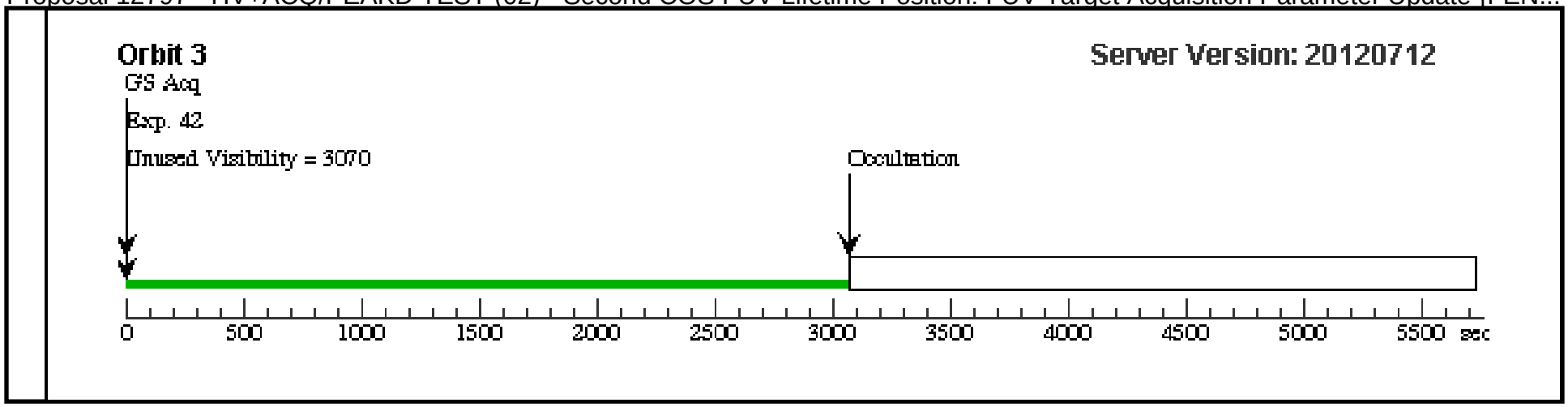
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Server Version: 20120712
GS Acq
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Occultation
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500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit	**Proposal 12797, HV+ACQ/PEAKXD TEST G130M (03), completed** Wed Jul 25 01:38:18 GMT 2012 **Diagnostic Status: Warning** Scientific Instruments: COS/NUV, S/C, COS/FUV Special Requirements: SCHED 100%; ORIENT 247.5D TO 252.5 D; BETWEEN 13-JUN-2012 AND 30-JUN-2012 *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 +/- 1.6" offsets are double the exposure time to compensate for vignetting. We then proceed to test PEAKXD at offsets of +/-0.5, +/-1.0 and +/-1.5".* *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)*
Diagnostics	(HV+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. (HV+ACQ/PEAKXD TEST G130M (03)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE. (HV+ACQ/PEAKXD TEST G130M (03)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (HV+ACQ/PEAKXD TEST G130M (03)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (HV+ACQ/PEAKXD TEST G130M (03)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+ACQ/PEAKXD TEST G130M (03)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/PEAKXD. (HV+ACQ/PEAKXD TEST G130M (03)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+ACQ/PEAKXD TEST G130M (03)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+ACQ/PEAKXD TEST G130M (03)) Warning (Form): COS ACQ/PEAKXD exposure should be followed by an ACQ/PEAKD exposure in the Visit. (HV+ACQ/PEAKXD TEST G130M (03)) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	AZV18	RA: 00 47 12.1700 (11.8007083d) Dec: -73 06 32.68 (-73.10908d) Equinox: J2000	Proper Motion RA: -0.0003 sec of time/yr Proper Motion Dec: -0.0035 arcsec/yr Epoch of Position: 2000	V=12.48 (B-V)=+0.04	Reference Frame: ICRS
Comments: B2Ia, Magellanic Clouds. Nominal ETC exposure times from spectrum supplied 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)*					
(5)	AZV18-OFFSET-XD+0.5	Offset from AZV18 by RA Offset: -1.25876E-4 Degrees Dec Offset: 0.211309 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+0.5) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 offset for ACQ/PEAKXD* *(AD,XD)=(0,-0.5")=-0.5"@25°S of E* *RA=-0.5"*cos(25°)=-0.453154"=-0.000125876°* *DEC=0.5"*sin(25°)=0.211309"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					
(10)	AZV18-OFFSET-XD+1.0	Offset from AZV18 by RA Offset: -2.51752E-4 Degrees Dec Offset: 0.422618 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+1.0) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 1.0" offset for ACQ/PEAKD (0,-1.0")=-1"@25° S of E* *RA=-1.0"*cos(20°)= -0.906308"= -0.000251752°* *DEC=1.0"*sin(20°)=0.422618"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					
(15)	AZV18-OFFSET-XD+1.5	Offset from AZV18 by RA Offset: -3.77628E-4 Degrees Dec Offset: 0.633927 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+1.5) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 1.5" offset for ACQ/PEAKD* *(0,-1.5")=-1.5"@25° S of E* *RA=-1.5"*cos(20°)=-1.35946=-0.000377628°* *DEC=1.5"*sin(20°)= 0.633927"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	FUV HV RAMPUP (167/163)	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF; GS ACQ SCENARIO BASE1BN3; QASISTATES COS FUV HVLOW HVNOM; QESIPARM ENDCTSA 167; QESIPARM ENDCTSB 163	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	418 Secs *[==>]*	***[1]***

Comments: SQL required for qexposure to specify the si_used = "COS".

*The special commanding here sets the the nominal high voltage for this visit (HVNOM) for segments A and B (ENDCTSA and ENDCTS B) to 167 and 163, respectively. 403s is the correct rampup time for 162/159. An allow 3 additional seconds for every positive unit of offset is required. Therefore, the rampup time is 403+(167-162)*3 = 418*

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
2	2 nuv a/im (COS.ta.360711)	(1) AZV18	COS/NUV, ACQ/IMAGE, BOA	MIRRORA			Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	30 Secs *[==>]*	***[1]***

Comments: NUV ACQ/IMAGE with BOA+MIRRORA to refine centering. (COS92525 gives S/N = 40 in 14.5s)

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
3	S/C to update the G130M/1309 focus from 170 to 290 (+120)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 290	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	8 Secs *[==>]*	***[1]***

Comments: Special Commanding to overwrite the G130M/1309 settings with the SLP focus position. FENA3 Results suggest we need a +120 focus step adjustment from these values. So, G130M/1309 goes from 170 to +290

The SCR 344 FSW has the following focus G130M positions;

```
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
        { {0, 1055,  8095, -170,  2750,  7402},    /* G130M, OSM1 */
          {0, 1096,  8078, -170,  2665,  7312},    /* G130M, OSM1 */
          {0, 1291,  7999, -170,  2259,  6898},    /* G130M, OSM1 */
          {0, 1300,  7995,    0,  2238,  6877},    /* G130M, OSM1 */
          {0, 1309,  7991,  170,  2218,  6857},    /* G130M, OSM1 */
          {0, 1318,  7987,  340,  2198,  6837},    /* G130M, OSM1 */
          {0, 1327,  7983,  511,  2177,  6816},    /* G130M, OSM1 */
```

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
4	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=S0200D036; LIFETIME-POS=ALTERNATE		Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	202 Secs *[==>]*	***[1]***

*Comments: Spectrum of source to define correct location of star when it is centered using NUV ACQ/IMAGE. COS.sp.360698 gives S/N/RE = 10 in 182 seconds, BT=2/3*986 or ~630.*

5	G130M - POSTARG + SPECTRUM1 (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-1.6	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	200 Secs *[==>]*	***[1]***

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 seconds, since it is heavily vignetted. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

6	G130M - POSTARG + SPECTRUM2 (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-1.1	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	150 Secs *[==>]*	***[1]***

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.

7	G130M - POSTARG + SPECTRUM3 (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=300; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-0.6	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	100 Secs *[==>]*	***[1]***

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 seconds.

8	G130M - POSTARG + SPECTRUM4 (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-0.3	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	100 Secs *[==>]*	***[1]***

Comments: POSTARG TO Move to Y=-0.3. 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 seconds.

9	G130M - POSTARG + SPECTRUM5 (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,0.3	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	100 Secs *[==>]*	***[1]***

Comments: POSTARG TO Move to Y=0.3. 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 seconds.

10	G130M - POSTARG + SPECTRUM6 (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,0.6	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	100 Secs *[==>]*	***[1]***

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 seconds.

11	G130M - POSTARG + SPECTRUM7 (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,1.1	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	150 Secs	*[==>]*	***[1]***

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.

12	G130M - POSTARG + SPECTRUM8 (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,1.6	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	200 Secs	*[==>]*	***[1]***

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 seconds, since it is heavily vignetted.

13	G130M - PEAKXD- Centered (COS.sa.360701)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE		Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	10 Secs	*[==>]*	***[2]***

Comments: ACQ/PEAKXD on the centered target. COS.sa.360701, S/N = 60 is reached in 2 seconds (A+B), we use 10s sure we get enough counts. This exposure and the next should be considered a NON-INT sequence.

14	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	150 Secs	*[==>]*	***[2]***

*Comments: Spectrum of source to test previous ACQ/PEAKXD centering. COS.sp.360698 gives S/N/RE =10 in 182 seconds, BT=2/3*986 or ~630.*

15	G130M -PEAKXD- XD +1.0 (COS.sa.360701)	(10) AZV18-OFFSET-XD+1.0	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE		Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	10 Secs	*[==>]*	***[2]***

Comments: ACQ/PEAKXD on the target offset by +1.0". COS.sa.360701, S/N = 60 is reached in 2 seconds (A+B), we use 10s sure we get enough counts. This exposure and the next should be considered a NON-INT sequence.

16	G130M - BASELINE SPECTRUM (COS.sp.360698)	(10) AZV18-OFFSET-XD+1.0	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	150 Secs	*[==>]*	***[2]***

*Comments: Spectrum of source to test previous ACQ/PEAKXD centering. COS.sp.360698 gives S/N/RE =10 in 182 seconds, BT=2/3*986 or ~630.*

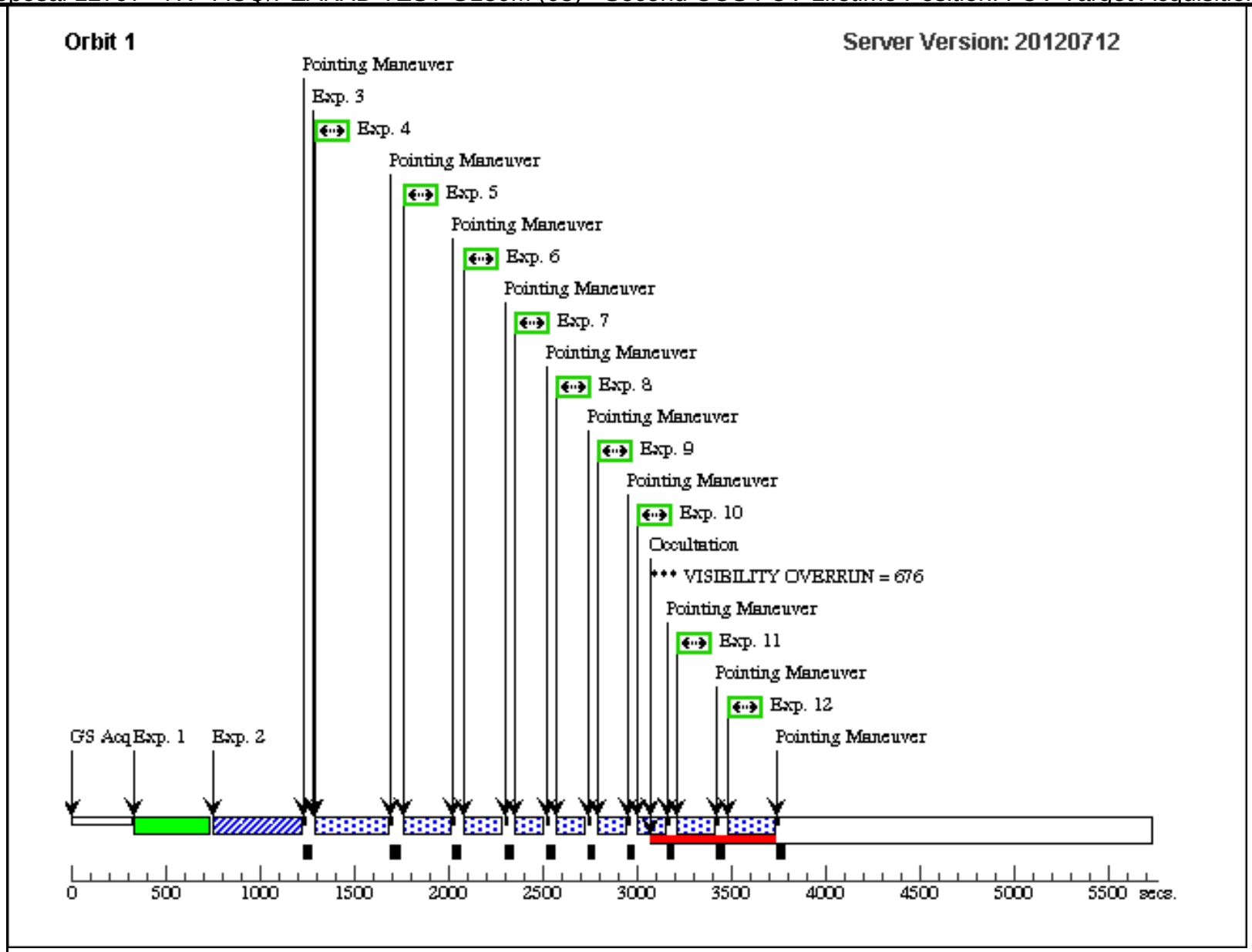
17	G130M - PEAKXD-XD-1.0 (COS.sa.360701)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE		Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	10 Secs	*[==>]*	***[2]***

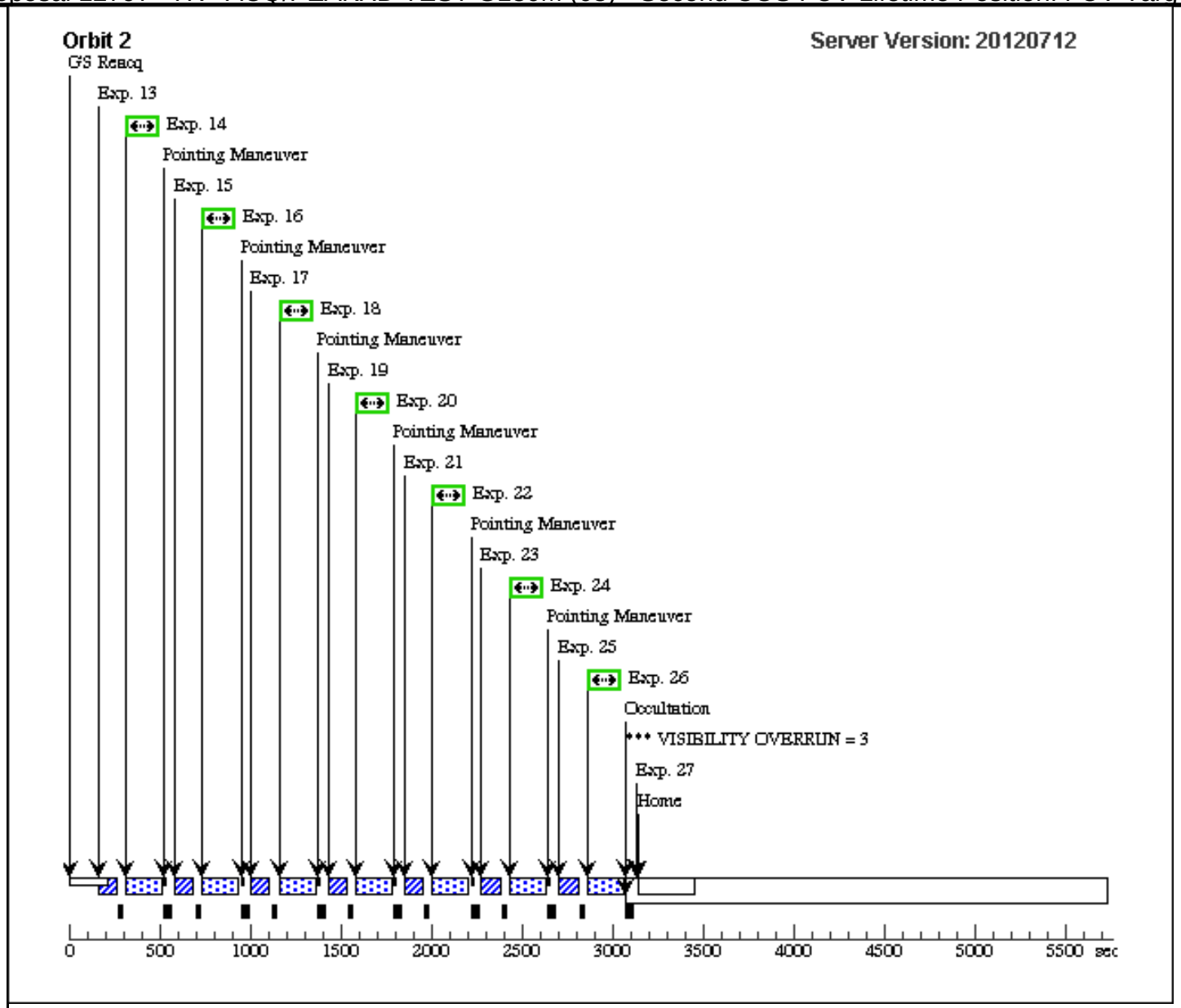
Comments: ACQ/PEAKKD, back on original target, now -1.0" offset. This exposure and the next should be considered a NON-INT sequence.

18	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	150 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKD confirmation spectrum.								
19	G130M - PEAKXD-XD +0.5 (COS.sa.360701)	(5) AZV18-OFFSET-XD+0.5	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	10 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD on the target offset by +0.5". COS.sa.360701, S/N = 60 is reached in 2 seconds (A+B), we use 10s sure we get enough counts. This exposure and the next should be considered a NON-INT sequence.								
20	G130M - BASELINE SPECTRUM (COS.sp.360698)	(5) AZV18-OFFSET-XD+0.5	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	150 Secs *[==>]*	***[2]***
*Comments: Spectrum of source to test previous ACQ/PEAKXD centering. COS.sp.360698 gives S/N/RE =10 in 182 seconds, BT=2/3*986 or ~630.*								
21	G130M - PEAKXD-XD-0.5 (COS.sa.360701)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	10 Secs *[==>]*	***[2]***
Comments: Back on original target, -0.5". COS.sa.360701, S/N = 60 is reached in 2 seconds (A+B), we use 10s sure we get enough counts. This exposure and the next should be considered a NON-INT sequence.								
22	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	150 Secs *[==>]*	***[2]***
*Comments: Spectrum of source to test previous ACQ/PEAKXD centering. COS.sp.360698 gives S/N/RE =10 in 182 seconds, BT=2/3*986 or ~630.*								
23	G130M - PEAKXD-XD +1.5 (COS.sa.360701)	(15) AZV18-OFFSET-XD+1.5	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	15 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD on the target offset by +1.5". COS.sa.360701, S/N = 60 is reached in 2 seconds (A+B), we use 10s sure we get enough counts. This exposure and the next should be considered a NON-INT sequence.								
24	G130M - BASELINE SPECTRUM (COS.sp.360698)	(15) AZV18-OFFSET-XD+1.5	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	150 Secs *[==>]*	***[2]***
*Comments: Spectrum of source to test previous ACQ/PEAKXD centering. COS.sp.360698 gives S/N/RE =10 in 182 seconds, BT=2/3*986 or ~630.*								

25	G130M - PEAKXD-XD-1.5 (COS.sa.360701)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE		Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	15 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD on the target offset by -1.5". COS.sa.360701, S/N = 60 is reached in 2 seconds (A+B), we use 10s sure we get enough counts. This exposure and the next should be considered a NON-INT sequence.									
26	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	150 Secs *[==>]*	***[2]***
*Comments: Spectrum of source to test previous ACQ/PEAKXD centering. COS.sp.360698 gives S/N/RE =10 in 182 seconds, BT=2/3*986 or ~630.*									
27	S/C to RESET the G130M/1309 focus	DARK	S/C, DATA, NONE			SPEC COM INSTRELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 170	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G130M (03)	8 Secs *[==>]*	***[2]***
Comments: Special Commanding to RESET the G130M/1309 settings with the original focus, the SCR 344 FSW position (170).									
28	HV_RAMP DOWN_TO_HVLOW	DARK	S/C, DATA, NONE			NEW OBSET; QASISTATES COS FUV HVLOW HVLOW; QASISTATES COS SI OBSERVE OBSERVE		1 Secs *[==>]*	***[3]***
Comments: SQL required for qexposure to specify the si_used = "COS". *New obset SR necessary to force this exposure to be the very last exposure after Home.*									

Orbit Structure

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GS Reacq
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Exp. 14
Pointing Maneuver
Exp. 15
Exp. 16
Pointing Maneuver
Exp. 17
Exp. 18
Pointing Maneuver
Exp. 19
Exp. 20
Pointing Maneuver
Exp. 21
Exp. 22
Pointing Maneuver
Exp. 23
Exp. 24
Pointing Maneuver
Exp. 25
Exp. 26
Occultation
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Exp. 27
Home
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1500
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3000
3500
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4500
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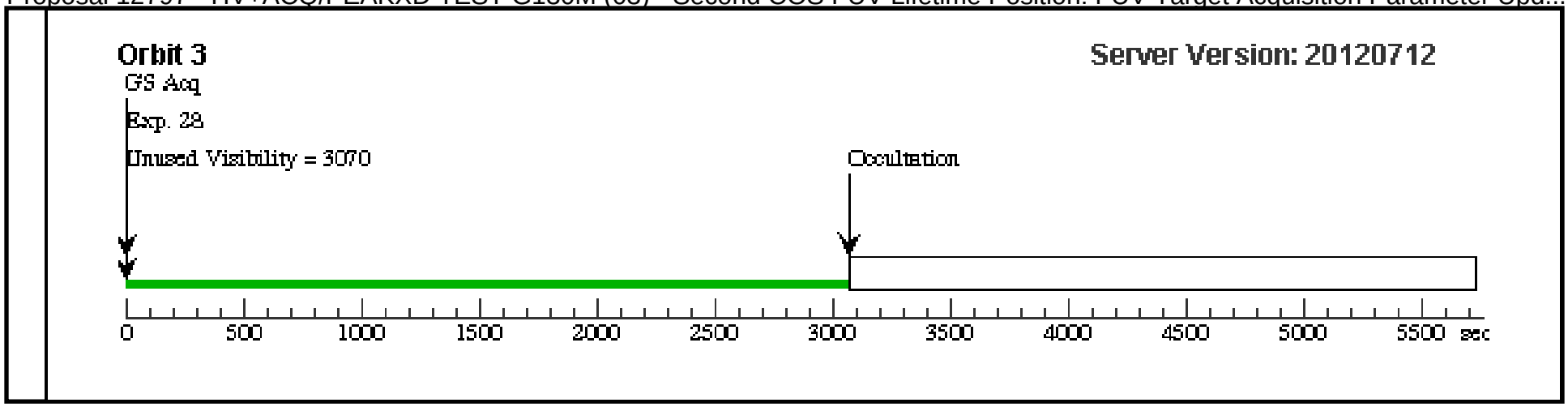
5500
sec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Server Version: 20120712
GS Acq
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Occultation
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1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit	**Proposal 12797, HV+ACQ/PEAKXD TEST G160M (04), completed** Wed Jul 25 01:38:24 GMT 2012 **Diagnostic Status: Warning** Scientific Instruments: COS/NUV, S/C, COS/FUV Special Requirements: SCHED 100%; SAME ORIENT AS 03; BETWEEN 13-JUN-2012 AND 27-JUN-2012 *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,-0.3,0.3,0.6,1.1,1.6) " in the XD direction. This will allow us to measure the plate scale. The +/- 1.6" offsets are double the exposure time to compensate for vignetting. We then proceed to test PEAKXD at offsets of +/- 0.5, +/-1.0 and +/-1.5".* *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)*
Diagnostics	(HV+ACQ/PEAKXD TEST G160M (04)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+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. (HV+ACQ/PEAKXD TEST G160M (04)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (HV+ACQ/PEAKXD TEST G160M (04)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+ACQ/PEAKXD TEST G160M (04)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (HV+ACQ/PEAKXD TEST G160M (04)) Warning (Form): COS ACQ/PEAKXD exposure should be followed by an ACQ/PEAKD exposure in the Visit. (HV+ACQ/PEAKXD TEST G160M (04)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE. (HV+ACQ/PEAKXD TEST G160M (04)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/PEAKXD. (HV+ACQ/PEAKXD TEST G160M (04)) Warning (Orbit Planner): VISIBILITY OVERRUN

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	AZV18	RA: 00 47 12.1700 (11.8007083d) Dec: -73 06 32.68 (-73.10908d) Equinox: J2000	Proper Motion RA: -0.0003 sec of time/yr Proper Motion Dec: -0.0035 arcsec/yr Epoch of Position: 2000	V=12.48 (B-V)=+0.04	Reference Frame: ICRS
Comments: B2Ia, Magellanic Clouds. Nominal ETC exposure times from spectrum supplied 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)*					
(5)	AZV18-OFFSET-XD+0.5	Offset from AZV18 by RA Offset: -1.25876E-4 Degrees Dec Offset: 0.211309 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+0.5) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 offset for ACQ/PEAKXD* *(AD,XD)=(0,-0.5")=-0.5"@25°S of E* *RA=-0.5"*cos(25°)=-0.453154"=-0.000125876°* *DEC=0.5"*sin(25°)=0.211309"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					
(10)	AZV18-OFFSET-XD+1.0	Offset from AZV18 by RA Offset: -2.51752E-4 Degrees Dec Offset: 0.422618 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+1.0) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 1.0" offset for ACQ/PEAKD (0,-1.0")=-1"@25° S of E* *RA=-1.0"*cos(20°)= -0.906308"= -0.000251752°* *DEC=1.0"*sin(20°)=0.422618"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					
(15)	AZV18-OFFSET-XD+1.5	Offset from AZV18 by RA Offset: -3.77628E-4 Degrees Dec Offset: 0.633927 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+1.5) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 1.5" offset for ACQ/PEAKD* *(0,-1.5")=-1.5"@25° S of E* *RA=-1.5"*cos(20°)=-1.35946=-0.000377628°* *DEC=1.5"*sin(20°)= 0.633927"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	FUV HV RAMPUP (167/163)	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF; GS ACQ SCENARIO BASE1BN3; QASISTATES COS FUV HVLOW HVNOM; QESIPARM ENDCTSA 167; QESIPARM ENDCTSB 163	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	418 Secs *[==>]*	 ***[1]***
	Comments: SQL required for qexposure to specify the si_used = "COS".								
	*The special commanding here sets the the nominal high voltage for this visit (HVNOM) for segments A and B (ENDCTSA and ENDCTS B) to 167 and 163, respectively. 403s is the correct rampup time for 162/159. An allow 3 additional seconds for every positive unit of offset is required. Therefore, the rampup time is 403+(167-162)*3 = 418*								
2	2 nuv a/im (COS.ta.360711)	(1) AZV18	COS/NUV, ACQ/IMAGE, BOA	MIRRORA			Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	30 Secs *[==>]*	 ***[1]***
	Comments: NUV ACQ/IMAGE with BOA+MIRRORA to refine centering. (COS.ta.360711gives S/N = 60 in 27s)								
3	S/C to update the G160M/1600 focus from -44 to +116 (+160)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1600; QESIPARM FOCUS 116	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	8 Secs *[==>]*	 ***[1]***
	Comments: Special Commanding to overwrite the G160M/1600 settings with the SLP focus position. FENA3 Results suggest we need a +160 focus step adjustment from these values. So, G160M/1600 goes from -44 to +116.								

The SCR 344 FSW has the following focus G160M positions;

```
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
        {2, 1577, 11203, -384, 18693, 23323},    /* G160M, OSM1 */
        {2, 1589, 11199, -214, 18671, 23301},    /* G160M, OSM1 */
        {2, 1600, 11195,  -44, 18651, 23281},    /* G160M, OSM1 */
        {2, 1611, 11191,  126, 18631, 23261},    /* G160M, OSM1 */
        {2, 1623, 11187,  296, 18609, 23239},    /* G160M, OSM1 */
```

4	G160M - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	205 Secs *[==>]*		***[1]***

*Comments: Spectrum of source to define G160M/1600 location of a target when it is centered w/ NUV ACQ/IMAGE. COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe).*

*There are ~2000 RE/detector so the cps = 100*2000./(215) ~ 930 counts/s, to get S/N=3600 we estimate 4s.*

For comparison, COS.sp.389715 estimates :Count rate entire detector=2,467.1
*Count rate Segment A 810.9 *0.75 = 600counts/s -> S/N=60 in 6 seconds.*
Count rate Segment B 1,656.2

5	G160M - POSTARG + SPECTRUM1 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-1.6	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	190 Secs *[==>]*		***[1]***

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 190 seconds, since it is heavily vignetted. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

6	G160M - POSTARG + SPECTRUM2 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-1.1	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	140 Secs *[==>]*		***[1]***

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 140 seconds, since it is 40% vignetted, for centered exposures, we'll use 150 seconds. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

7	G160M - POSTARG + SPECTRUM3 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-0.6	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	95 Secs *[==>]*		***[1]***

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 95 seconds. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

8	G160M - POSTARG + SPECTRUM4 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-0.3	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	95 Secs *[==>]*		***[1]***

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 ~100 seconds. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

9	G160M - POSTARG + SPECTRUM5 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,0.3	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	95 Secs	*[==>]*	***[1]***

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 100 seconds. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

10	G160M - POSTARG + SPECTRUM6 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,0.6	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	95 Secs	*[==>]*	***[1]***

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 ~100 seconds. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

11	G160M - POSTARG + SPECTRUM7 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,1.1	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	140 Secs	*[==>]*	***[1]***

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 140 seconds, since it is 40% vignetted, for centered exposures, we'll use 150 seconds. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

12	G160M - POSTARG + SPECTRUM8 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,1.6	Sequence 1-12 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	200 Secs	*[==>]*	***[1]***

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 190 seconds, since it is heavily vignetted. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

13	G160M - PEAKXD - Centered (COS.sp.389715)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE		Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	10 Secs	*[==>]*	***[2]***

Comments: COS.sp.389715 gives S/N/RE=60 in 4-6 seconds. This is on the centered target, so it shouldn't move. This exposure and the next should be considered a NON-INT sequence

14	G160M - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=420; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	140 Secs	*[==>]*	***[2]***

*Comments: COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe), due to time constraints, the exposure time has been dropped to 140s.*

15	G160M - PEAKXD-XD +1.0 (COS.sp.389715)	(10) AZV18-OFFSET-XD+1.0	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE		Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	10 Secs	*[==>]*	***[2]***

Comments: COS.sp.389715 gives S/N/RE=60 in 4-6 seconds. PEAKXD of a target offset by 1.0". This exposure and the next should be considered a NON-INT sequence

16	G160M - BASELINE SPECTRUM (COS.sp.389715)	(10) AZV18-OFFSET-XD+1.0	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=420; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	140 Secs *[==>]*	**[2]**

*Comments: COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe), due to time constraints, the exposure time has been dropped to 140s.*

17	G160M - PEAKXD TEST-XD-1.0 (COS.sp.389715)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	10 Secs *[==>]*	**[2]**

Comments: COS.sp.389715 gives S/N/RE=60 in 4-6 seconds. Back to the original, so a 1" PEAKDXD from the other direction. This exposure and the next should be considered a NON-INT sequence

18	G160M - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=420; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	140 Secs *[==>]*	**[2]**

*Comments: COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe), due to time constraints, the exposure time has been dropped to 140s.*

19	G160M - PEAKXD- 0.5 (COS.sp.389715)	(5) AZV18-OFFSET-XD+0.5	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	10 Secs *[==>]*	**[2]**

Comments: COS.sp.389715 gives S/N/RE=60 in 4-6 seconds. Now try from 0.5" away. This exposure and the next should be considered a NON-INT sequence

20	G160M - BASELINE SPECTRUM (COS.sp.389715)	(5) AZV18-OFFSET-XD+0.5	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=420; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	140 Secs *[==>]*	**[2]**

*Comments: COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe), due to time constraints, the exposure time has been dropped to 140s.*

21	G160M - PEAKXD-0.5 (COS.sp.389715)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	10 Secs *[==>]*	**[2]**

Comments: COS.sp.389715 gives S/N/RE=60 in 4-6 seconds. Now 0.5" from the other direction. This exposure and the next should be considered a NON-INT sequence

22	G160M - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=420; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	140 Secs *[==>]*	**[2]**

*Comments: COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe), due to time constraints, the exposure time has been dropped to 140s.*

23	G160M - PEAKXD-1.5 (COS.sp.389715)	(15) AZV18-OFFSET-XD+1.5	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	15 Secs *[==>]*	***[2]***

Comments: COS.sp.389715 gives S/N/RE=60 in 4-6 seconds. Ok, one last time from 1.5" away, so increase the exposure time due to the vignetting. This exposure and the next should be considered a NON-INT sequence

24	G160M - BASELINE SPECTRUM (COS.sp.389715)	(15) AZV18-OFFSET-XD+1.5	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=420; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	140 Secs *[==>]*	***[2]***

*Comments: COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe), due to time constraints, the exposure time has been dropped to 140s.*

25	G160M - PEAKXD+1.5 (COS.sp.389715)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	15 Secs *[==>]*	***[2]***

Comments: COS.sp.389715 gives S/N/RE=60 in 4-6 seconds. Ok, one last time from 1.5" away, so increase the exposure time due to the vignetting. This exposure and the next should be considered a NON-INT sequence

26	G160M - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=420; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	140 Secs *[==>]*	***[2]***

*Comments: COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe), due to time constraints, the exposure time has been dropped to 140s.*

27	S/C to reset the G160M/1600 focus	DARK	S/C, DATA, NONE		SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1600; QESIPARM FOCUS -44	Sequence 13-27 Non-Int in HV+ACQ/PEAKXD TEST G160M (04)	8 Secs *[==>]*	***[2]***

Comments: Special Commanding to RESET the G160M/1600 settings to the nominal position (-44).

The SCR 344 FSW has the following focus G160M positions;

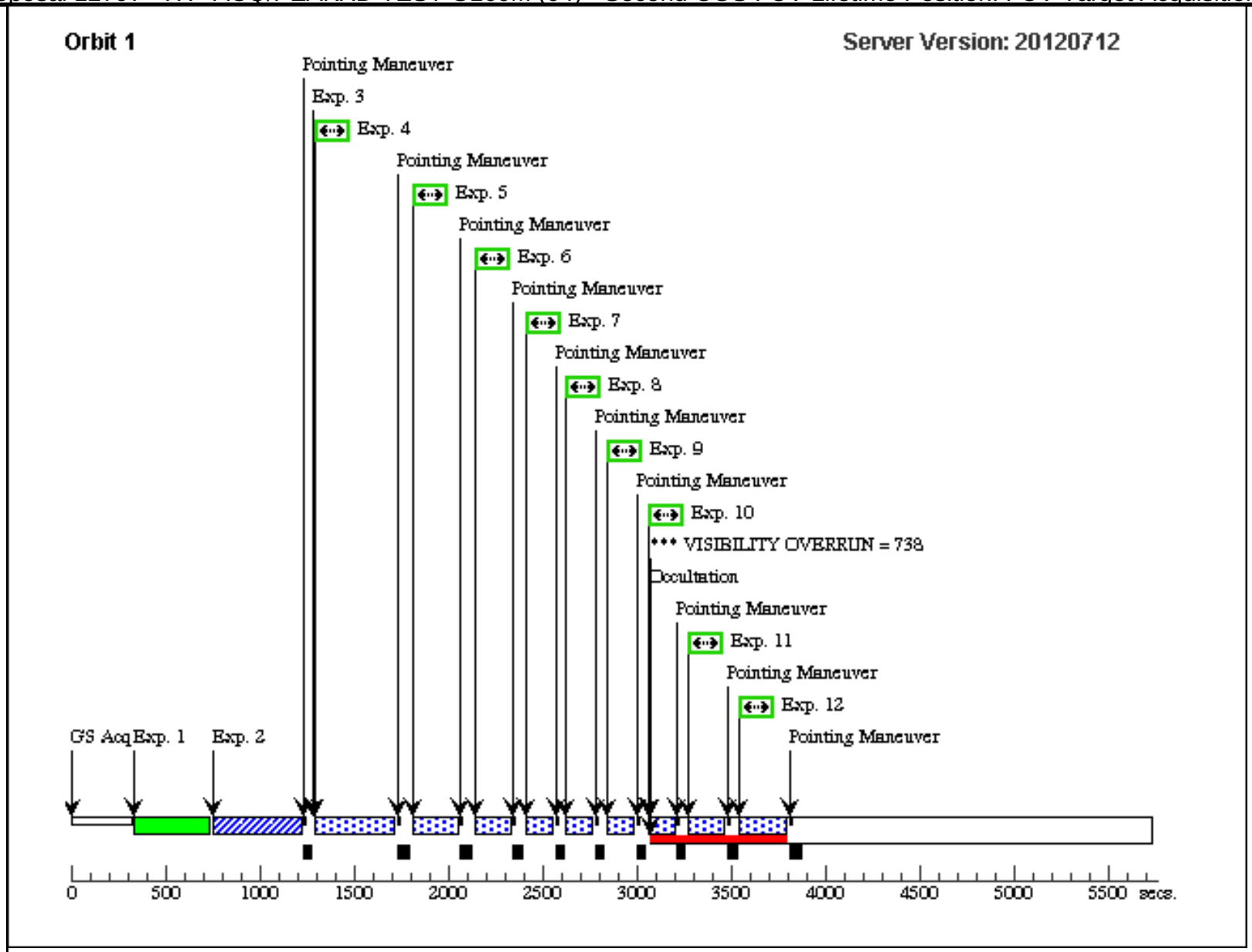
```
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =

    {2, 1577, 11203, -384, 18693, 23323},   /* G160M, OSM1 */
    {2, 1589, 11199, -214, 18671, 23301},   /* G160M, OSM1 */
    {2, 1600, 11195,  -44, 18651, 23281},   /* G160M, OSM1 */
    {2, 1611, 11191,  126, 18631, 23261},   /* G160M, OSM1 */
    {2, 1623, 11187,  296, 18609, 23239},   /* G160M, OSM1 */
```

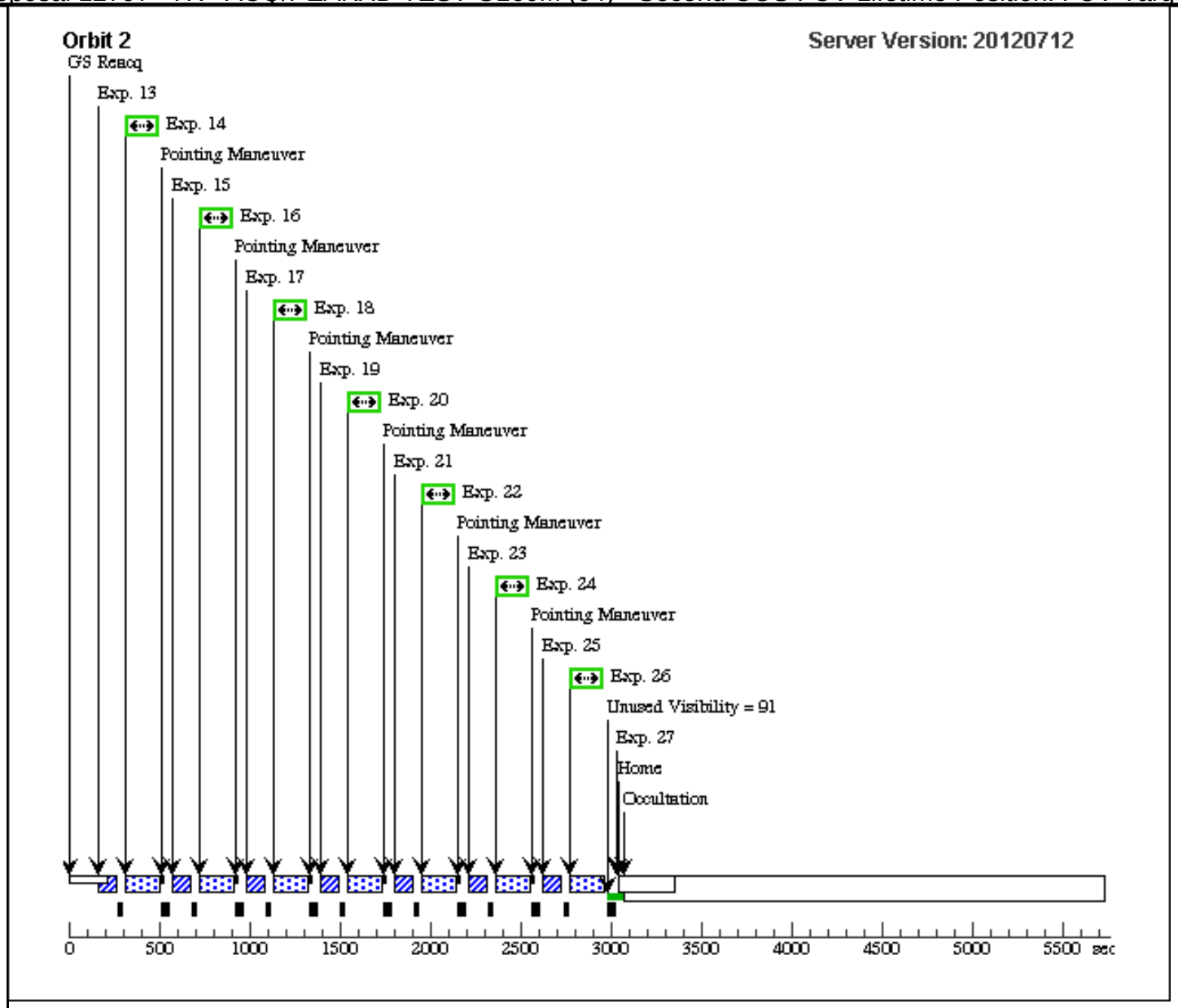
	28	HV_RAMP_DOWN_TO_HVLOW	DARK	S/C, DATA, NONE	NEW OBSET; QASISTATES COS FUV HVLOW HVLOW; QASISTATES COS SI OBSERVE OBSERVE	1 Secs *[==>]*	 ***[3]***

Comments: SQL required for qexposure to specify the si_used = "COS".

New obset SR necessary to force this exposure to be the very last exposure after Home.

Orbit Structure




Orbit 2
Server Version: 20120712
GS Reacq
Exp. 13
Exp. 14
Pointing Maneuver
Exp. 15
Exp. 16
Pointing Maneuver
Exp. 17
Exp. 18
Pointing Maneuver
Exp. 19
Exp. 20
Pointing Maneuver
Exp. 21
Exp. 22
Pointing Maneuver
Exp. 23
Exp. 24
Pointing Maneuver
Exp. 25
Exp. 26
Unused Visibility = 91
Exp. 27
Home
Occultation
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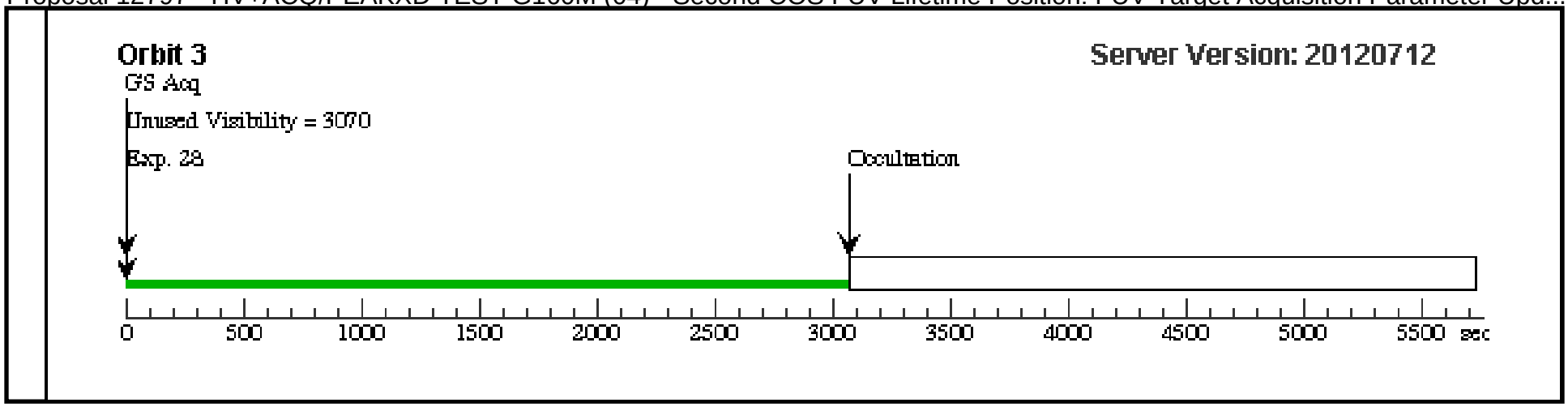
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec


Orbit 3
Server Version: 20120712
GS Acq
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Occultation
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1000
1500
2000
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3000
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4500
5000
5500
sec

Visit	**Proposal 12797, HV+ACQ/PEAKXD TEST G140L (05), completed** Wed Jul 25 01:38:29 GMT 2012 **Diagnostic Status: Warning** Scientific Instruments: COS/NUV, S/C, COS/FUV Special Requirements: SCHED 100%; SAME ORIENT AS 03; BETWEEN 13-JUN-2012 AND 27-JUN-2012 *Comments: ACQ/PEAKXD Test for G140L The target is AVZ18 (the SMOV TA target). After obtaining a good spectrum of the centered target, WE NOW TAKE A G130M PEAKD to test the SIAF UPDATE. 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. The +/- 1.6" offsets are double the exposure time to compensate for vignetting.* *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *Note that this visit should only proceed after the April/May 2012 SIAF file update (AD=AD - 0.1") as the first exposures are designed to test any SIAF changes in the dispersion direction.*
Diagnostics	(HV+ACQ/PEAKXD TEST G140L (05)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+ACQ/PEAKXD TEST G140L (05)) Warning (Form): COS ACQ/PEAKD exposure should be preceded by an ACQ/PEAKXD exposure in the Visit. (HV+ACQ/PEAKXD TEST G140L (05)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE. (HV+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. (HV+ACQ/PEAKXD TEST G140L (05)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+ACQ/PEAKXD TEST G140L (05)) Warning (Form): COS ACQ/PEAKXD exposure should be followed by an ACQ/PEAKD exposure in the Visit. (HV+ACQ/PEAKXD TEST G140L (05)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+ACQ/PEAKXD TEST G140L (05)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+ACQ/PEAKXD TEST G140L (05)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+ACQ/PEAKXD TEST G140L (05)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+ACQ/PEAKXD TEST G140L (05)) Warning (Orbit Planner): VISIBILITY OVERRUN (HV+ACQ/PEAKXD TEST G140L (05)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/PEAKXD. (HV+ACQ/PEAKXD TEST G140L (05)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (HV+ACQ/PEAKXD TEST G140L (05)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	AZV18	RA: 00 47 12.1700 (11.8007083d) Dec: -73 06 32.68 (-73.10908d) Equinox: J2000	Proper Motion RA: -0.0003 sec of time/yr Proper Motion Dec: -0.0035 arcsec/yr Epoch of Position: 2000	V=12.48 (B-V)=+0.04	Reference Frame: ICRS
Comments: B2Ia, Magellanic Clouds. Nominal ETC exposure times from spectrum supplied 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)*					
(5)	AZV18-OFFSET-XD+0.5	Offset from AZV18 by RA Offset: -1.25876E-4 Degrees Dec Offset: 0.211309 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+0.5) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 offset for ACQ/PEAKXD* *(AD,XD)=(0,-0.5")=-0.5"@25°S of E* *RA=-0.5"*cos(25°)=-0.453154"=-0.000125876°* *DEC=0.5"*sin(25°)=0.211309"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					
(10)	AZV18-OFFSET-XD+1.0	Offset from AZV18 by RA Offset: -2.51752E-4 Degrees Dec Offset: 0.422618 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+1.0) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 1.0" offset for ACQ/PEAKD (0,-1.0")=-1"@25° S of E* *RA=-1.0"*cos(20°)= -0.906308"= -0.000251752°* *DEC=1.0"*sin(20°)=0.422618"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					
(15)	AZV18-OFFSET-XD+1.5	Offset from AZV18 by RA Offset: -3.77628E-4 Degrees Dec Offset: 0.633927 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+1.5) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 1.5" offset for ACQ/PEAKD* *(0,-1.5")=-1.5"@25° S of E* *RA=-1.5"*cos(20°)=-1.35946=-0.000377628°* *DEC=1.5"*sin(20°)= 0.633927"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	FUV HV RAMPUP (167/163)	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF; GS ACQ SCENARIO BASE1BN3; QASISTATES COS FUV HVLOW HVNOM; QESIPARM ENDCTSA 167; QESIPARM ENDCTSB 163	Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	418 Secs *[==>]*	***[1]***
	Comments: SQL required for qexposure to specify the si_used = "COS". *The special commanding here sets the the nominal high voltage for this visit (HVNOM) for segments A and B (ENDCTSA and ENDCTS B) to 167 and 163, respectively. 403s is the correct rampup time for 162/159. An allow 3 additional seconds for every positive unit of offset is required. Therefore, the rampup time is 403+(167-162)*3 = 418*								
2	2 nuv a/im (COS.ta.360711)	(1) AZV18	COS/NUV, ACQ/IMAGE, BOA	MIRRORA			Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	30 Secs *[==>]*	***[1]***
	Comments: NUV ACQ/IMAGE with BOA+MIRRORA to refine centering. (COS92525 gives S/N = 40 in 14.5s)								
3	S/C to update the G130M/1309 focus from 170 to 290 (+120)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 290	Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	8 Secs *[==>]*	***[1]***
	Comments: Special Commanding to overwrite the G130M/1309 settings with the SLP focus position. FENA3 Results suggest we need a +120 focus step adjustment from these values. So, G130M/1309 goes from 170 to +290 *The SCR 344 FSW has the following focus G130M positions;* *const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =* *{ {0, 1055, 8095, -170, 2750, 7402}, /* G130M, OSM1 */* *{0, 1096, 8078, -170, 2665, 7312}, /* G130M, OSM1 */* *{0, 1291, 7999, -170, 2259, 6898}, /* G130M, OSM1 */* *{0, 1300, 7995, 0, 2238, 6877}, /* G130M, OSM1 */* *{0, 1309, 7991, 170, 2218, 6857}, /* G130M, OSM1 */* *{0, 1318, 7987, 340, 2198, 6837}, /* G130M, OSM1 */* *{0, 1327, 7983, 511, 2177, 6816}, /* G130M, OSM1 */*								

4	G130M/1309 - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=S0200D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE	Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	212 Secs *[==>]*	***[1]***

Comments: Spectrum of source to define correct location of star when it is centered in NUV (COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE in 182s. This exposure and the next 8 should be considered an NON-INT Sequence. 36s lamp flash*

The actual count rate from Visit 1 was 0.07-0.14 counts/s/column, or a total count rate of ~1-2000 counts/segment/second. In 180s, we obtained 75-150 counts/RE or S/N of 8-12 as expected.

5	G130M - ACQ/PEAKD (COS.sa.360701)	(1) AZV18	COS/FUV, ACQ/PEAKD, PSA	G130M 1309 A	NUM-POS=9; STEP-SIZE=0.4; LIFETIME-POS=ALTERNATE	Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	4 Secs *[==>]*	***[1]***

Comments: ACQ/PEAKD of a centered target on the same 9x0.4" pattern. . S/N = 60 is reached in 2 seconds. This exposure and the next should be considered a NON-INT sequence.

6	G130M/1309 - CONFIRMATION SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=S0200D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE	Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	212 Secs *[==>]*	***[1]***

Comments: Spectrum of source to define correct location of star when it is centered in NUV (COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE in 182s. This exposure and the next 8 should be considered an NON-INT Sequence. 36s lamp flash*

The actual count rate from Visit 1 was 0.07-0.14 counts/s/column, or a total count rate of ~1-2000 counts/segment/second. In 180s, we obtained 75-150 counts/RE or S/N of 8-12 as expected.

7	S/C to update the G140L/1280 focus (19-165)	DARK	S/C, DATA, NONE		SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G140L; QESIPARM CENTWAVE 1280; QESIPARM FOCUS -146	Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	8 Secs *[==>]*	***[1]***

Comments: Special Commanding to overwrite the G140L/1280 settings with the SLP focus position.
Analysis of 12796 data indicate a move of -165 is appropriate for the G140L

The SCR 344 FSW has the following focus G140L positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =

{1, 1105, 1598, -370, 35092, 39716}, / G140L, OSM1 */-> -535*
{1, 1230, 1591, -30, 35055, 39680}, / G140L, OSM1 */ -> -195*
{1, 1280, 1590, 19, 35050, 39675}, / G140L, OSM1 */ -> -146*

8	G140L - BA SELINE SP ECTRUM (COS.sp.389 720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	40 Secs *[==>]*	**[1]**

Comments: Spectrum of source to define the G140L/1280 XD location of target when it is centered w/ NUV ACQ/IMAGE.
*COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. We don't bother to scale this, because the exposure time is so small (equal to our lamp flash). BT=2/3 (838*0.75) = 420 (we use 400)*

*COS.sp.389720 gives Count rate Segment A 2,312.100 *0.75 = 1734. S/N=60 in 2-3s.*

9	G140L- POSTARG + SPECTRUM 1 (COS.sp.389 720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-1.6	Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	45 Secs *[==>]*	**[1]**

*Comments: POSTARG TO Move to Y=-1.6. COS.sp.389720 gives Count rate Segment A 2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 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 20 seconds.*
However, since it is heavily vignetted we double the exposure time to 45s for the +/-1.6".
We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

10	G140L - POSTARG + SPECTRUM 2 (COS.sp.389 720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-1.1	Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	30 Secs *[==>]*	**[1]**

*Comments: POSTARG TO Move to Y=-1.1". COS.sp.389720 gives Count rate Segment A=2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 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 20 seconds.*
However, since it is heavily vignetted we double the exposure time to 30s for the +/-1.1".

11	G140L - POSTARG + SPECTRUM 3 (COS.sp.389 720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-0.6	Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	20 Secs *[==>]*	**[1]**

*Comments: POSTARG TO Move to Y=-0.6". COS.sp.389720 gives Count rate Segment A=2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 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 20 seconds.*

12	G140L - POSTARG + SPECTRUM 4 (COS.sp.389 720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-0.3	Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	20 Secs *[==>]*	**[1]**

*Comments: POSTARG TO Move to Y=-0.3". COS.sp.389720 gives Count rate Segment A=2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 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 20 seconds.*

13	G140L - POSTARG + SPECTRUM 5 (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,0.3	Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	20 Secs *[==>]*	***[1]***

*Comments: POSTARG TO Move to Y=0.3". COS.sp.389720 gives Count rate Segment A=2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 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 20 seconds.*

14	G140L - POSTARG + SPECTRUM 6 (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,0.6	Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	20 Secs *[==>]*	***[1]***

*Comments: POSTARG TO Move to Y=0.6". COS.sp.389720 gives Count rate Segment A=2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 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 20 seconds.*

15	G140L - POSTARG + SPECTRUM 7 (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,1.1	Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	30 Secs *[==>]*	***[1]***

*Comments: POSTARG TO Move to Y=1.1". COS.sp.389720 gives Count rate Segment A=2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 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 20 seconds.*
However, since it is heavily vignetted we double the exposure time to 30s for the +/-1.1".

16	G140L - POSTARG + SPECTRUM 8 (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,1.6	Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	45 Secs *[==>]*	***[1]***

*Comments: POSTARG TO Move to Y=1.6". COS.sp.389720 gives Count rate Segment A 2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 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 20 seconds.*
However, since it is heavily vignetted we double the exposure time to 45s for the +/-1.6".
We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

17	S/C to RESET the G130M/1309 focus	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 170	Sequence 1-17 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	8 Secs *[==>]*	***[1]***

Comments: Special Commanding to RESET the G130M/1309 settings with the original focus, the SCR 344 FSW position (170).

18	G140L - PEAKXD-Centered (COS.sp.389720)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE		Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	10 Secs *[==>]*	***[2]***

*Comments: ACQ/PEAKXD test on a centered target. COS.sp.389720 gives count rate Segment A=2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 10s is plenty. This exposure and the next should be treated just like an NON-INT Sequence.*

19	G140L - BASELINE SPECTRUM (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=4000; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	40 Secs *[==>]*	***[2]***
*Comments: Confirmation Spectrum. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. BT=2/3 (838*0.75) = 420 (we use 400)*								
20	G140L - PEAKXD-XD +1.0 (COS.sp.389720)	(10) AZV18-OFFSET-XD+1.0	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE	Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	10 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD on the target offset by +1.0". This exposure and the next should be treated just like an NON-INT Sequence. (COS.sp.389720)								
21	G140L - BASELINE SPECTRUM (COS.sp.389720)	(10) AZV18-OFFSET-XD+1.0	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=4000; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	40 Secs *[==>]*	***[2]***
*Comments: Confirmation Spectrum. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. BT=2/3 (838*0.75) = 420 (we use 400)*								
22	G140L - PEAKXD-XD-1.0 (COS.sp.389720)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE	Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	10 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD on the target offset by -1.0". This exposure and the next should be treated just like an NON-INT Sequence.								
23	G140L - BASELINE SPECTRUM (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=4000; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	40 Secs *[==>]*	***[2]***
*Comments: Confirmation Spectrum. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. BT=2/3 (838*0.75) = 420 (we use 400)*								
24	G140L - PEAKXD-XD +0.5 (COS.sp.389720)	(5) AZV18-OFFSET-XD+0.5	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE	Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	10 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD on the target offset by +0.5". This exposure and the next should be treated just like an NON-INT Sequence.								
25	G140L- BASELINE SPECTRUM (COS.sp.389720)	(5) AZV18-OFFSET-XD+0.5	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=4000; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	40 Secs *[==>]*	***[2]***
*Comments: Confirmation Spectrum. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. BT=2/3 (838*0.75) = 420 (we use 400)*								
26	G140L - PEAKXD-XD-0.5 (COS.sp.389720)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE	Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	10 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD on the target offset by -0.5". This exposure and the next should be treated just like an NON-INT Sequence.								

27	G140L- BASELINE SPECTRUM (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	40 Secs *[==>]*	***[2]***
*Comments: Confirmation Spectrum. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. BT=2/3 (838*0.75) = 420 (we use 400).*								
28	G140L - PEAKXD-XD-1.5 (COS.sp.389720)	(15) AZV18-OFFSET-XD+1.5	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE	Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	10 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD on the target offset by -1.5". This exposure and the next should be treated just like an NON-INT Sequence.								
29	G140L - BASELINE SPECTRUM (COS.sp.389720)	(15) AZV18-OFFSET-XD+1.5	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	40 Secs *[==>]*	***[2]***
*Comments: Confirmation Spectrum. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. BT=2/3 (838*0.75) = 420 (we use 400)*								
30	G140L - PEAKXD-XD+1.5 (COS.sp.389720)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE	Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	10 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD on the target offset by +1.5". This exposure and the next should be treated just like an NON-INT Sequence.								
31	G140L - BASELINE SPECTRUM (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	40 Secs *[==>]*	***[2]***
*Comments: Confirmation Spectrum. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. BT=2/3 (838*0.75) = 420 (we use 400)*								
32	G140L-BOA (COS.sp.389922)	(1) AZV18	COS/FUV, TIME-TAG, BOA	G140L 1280 A	LIFETIME-POS=ALTERNATE; BUFFER-TIME=4000; FP-POS=3	Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	832 Secs *[==>]*	***[2]***
Comments: COS.sp.389922. Exposure time (seconds) = 2,000.0000 at wavelength 1310.00 Å gives: SNR = 5.5036 (per resolution element)								

33	S/C to RESET the G140L/1280 focus	DARK	S/C, DATA, NONE	SPEC COM INSTRELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G140L; QESIPARM CENTWAVE 1280; QESIPARM FOCUS 19	Sequence 18-33 Non-Int in HV+ACQ/PEAKXD TEST G140L (05)	8 Secs *[==>]*	***[2]***

Comments: Special Commanding to RESET the G140L/1280 settings to the nominal position (19).

The SCR 344 FSW has the following focus G140L positions;

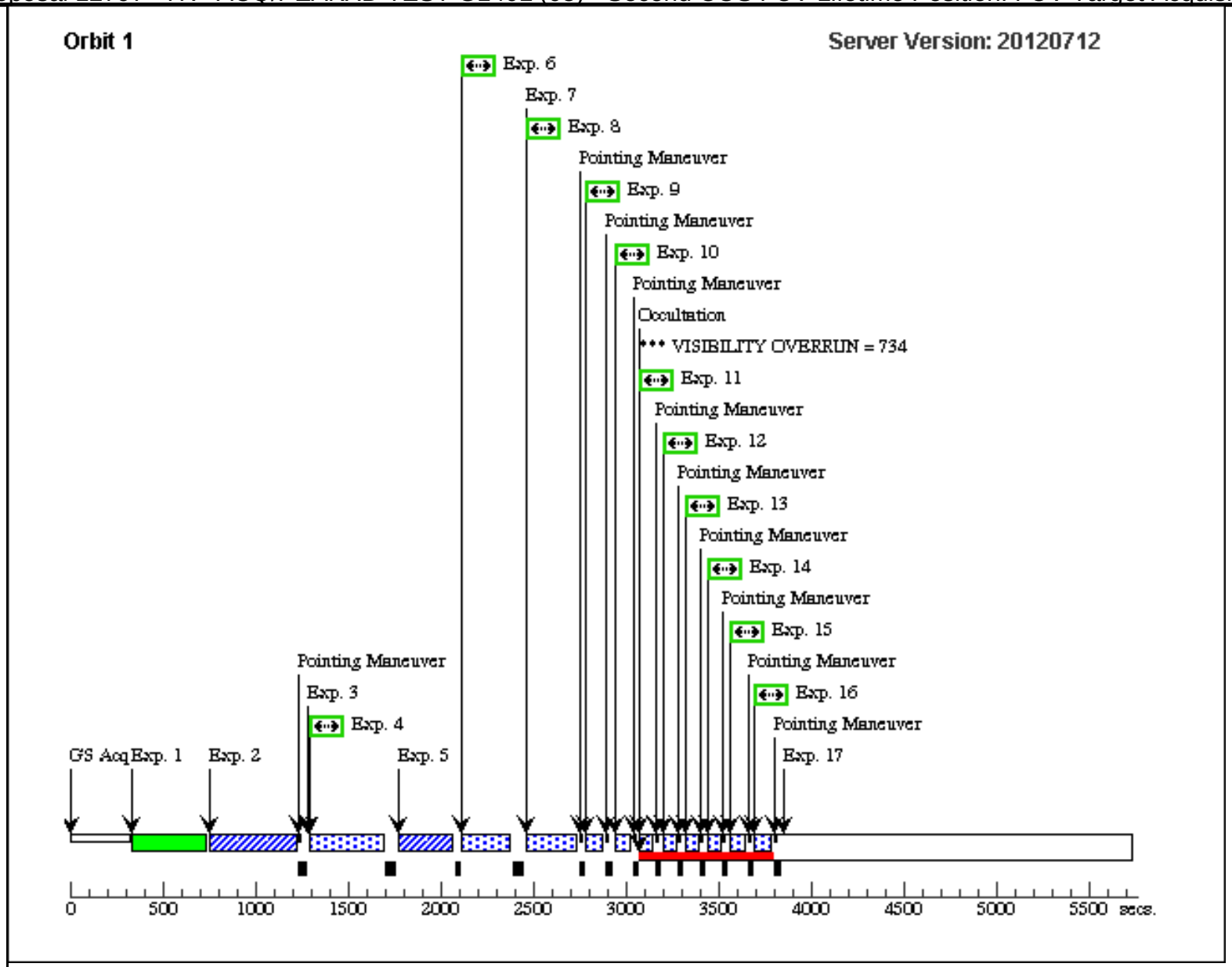
```
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =

        {1, 1105,  1598, -370, 35092, 39716},    /* G140L, OSM1 */
        {1, 1230,  1591,  -30, 35055, 39680},    /* G140L, OSM1 */
        {1, 1280,  1590,   19, 35050, 39675},    /* G140L, OSM1 */
```

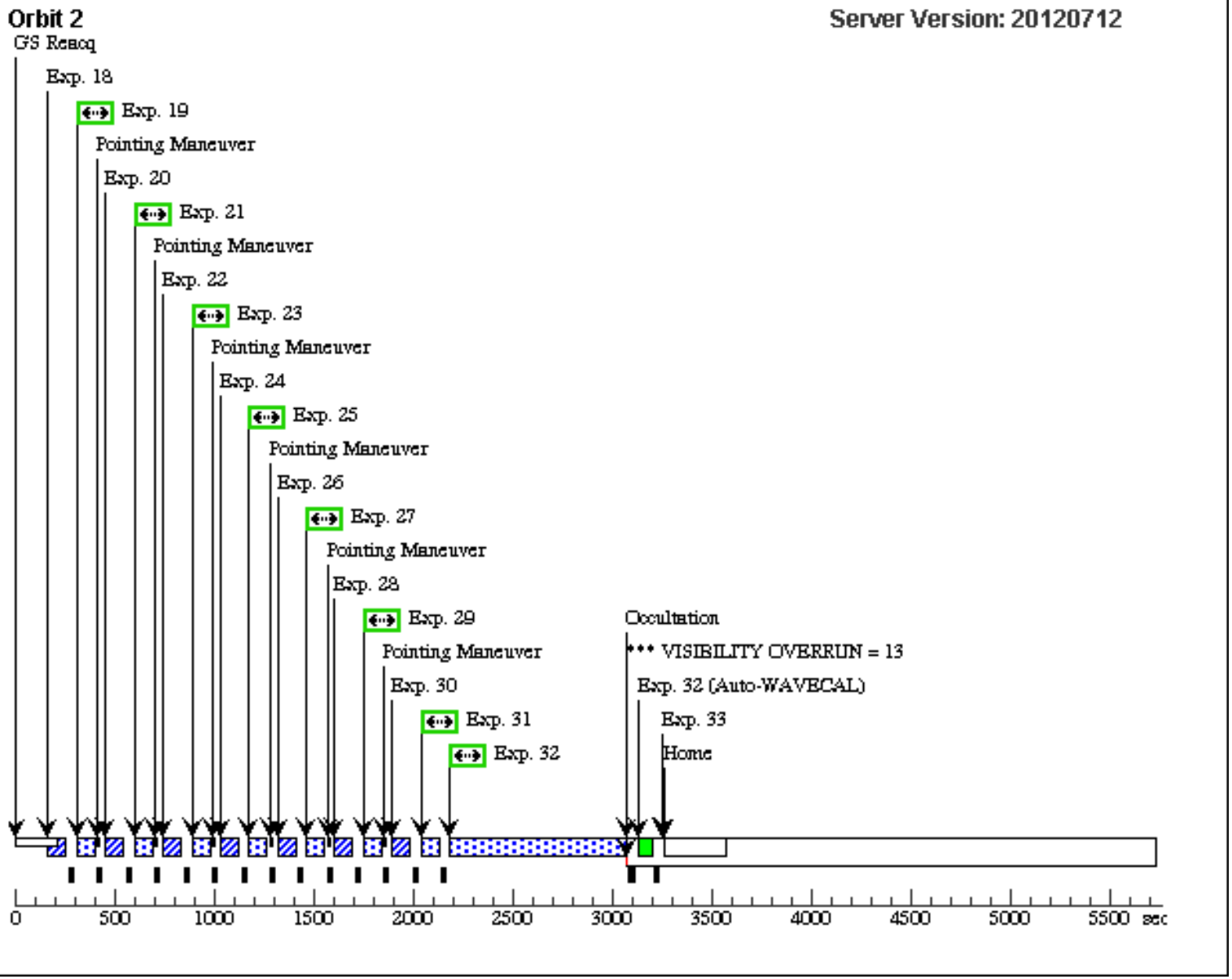
34	HV_RAMP DOWN_TO_HVLOW	DARK	S/C, DATA, NONE	NEW OBSET; QASISTATES COS FUV HVLOW HVLOW; QASISTATES COSI OBSERVE OBSERVE		1 Secs *[==>]*	***[3]***

Comments: SQL required for qexposure to specify the si_used = "COS".

New obset SR necessary to force this exposure to be the very last exposure after Home.

Orbit Structure

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Exp. 19
Pointing Maneuver
Exp. 20
Exp. 21
Pointing Maneuver
Exp. 22
Exp. 23
Pointing Maneuver
Exp. 24
Exp. 25
Pointing Maneuver
Exp. 26
Exp. 27
Pointing Maneuver
Exp. 28
Exp. 29
Pointing Maneuver
Exp. 30
Exp. 31
Exp. 32
Occultation
*** VISIBILITY OVERRUN = 13
Exp. 32 (Auto-WAVECAL)
Exp. 33
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1000
1500
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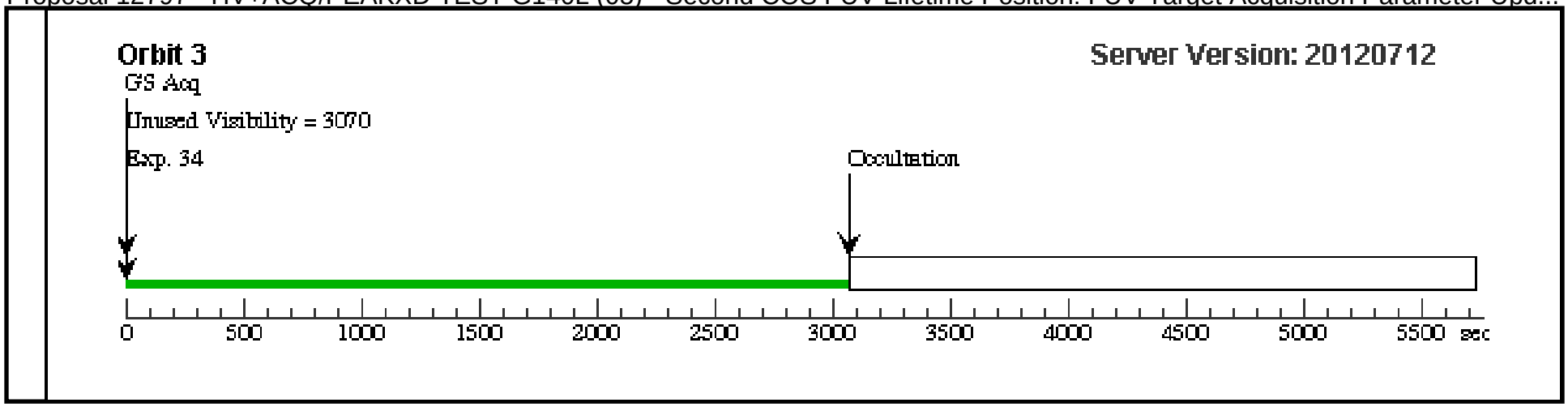
2500
3000
3500
4000
4500
5000
5500
sec


Orbit 3
Server Version: 20120712
GS Acq
Unused Visibility = 3070
Exp. 34
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12797, Verification Visit @ Second Lifetime Position (06), completed Wed Jul 25 01:38:36 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: ORIENT 132.5D TO 137.5 D; BETWEEN 23-JUL-2012 AND 30-JUL-2012

Comments: Test ACQ/PEAKXD for each grating, then perform two full TA sequences, one with G160M, one with G130M. Orientation for Visit 6 is (135 +/- 2.5), which is good from Jul 02, to Aug 07, 2012. After that, we will need to change the roll angle and redefine the targets. We now start with a G130M PEAKXD to see if the SIAF file is off in the XD.

THIS VISIT MUST BE EXECUTED AFTER THE MOVE TO THE NEW (SECOND) LIFETIME POSITON (the POSITION=ALTERNATEs should all have been stripped out along with the focus adjustments).

Diagnostics

(Verification Visit @ Second Lifetime Position (06)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/PEAKXD.

(Verification Visit @ Second Lifetime Position (06)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

(Verification Visit @ Second Lifetime Position (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.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	WD1657+343	RA: 16 58 51.1200 (254.7130000d) Dec: +34 18 53.30 (34.31481d) Equinox: J2000	Proper Motion RA: 12 mas/yr Proper Motion Dec: -32 mas/yr Epoch of Position: 2000 Radial Velocity: 78 km/sec	V=16.4+/-0.1	Reference Frame: ICRS

Comments: This object is visible all year. The roll angle for the offsets is set to 180+/-2.5 (Jun 5-12, 2012)

Proper Motions from 2008ApJS..175..297A and are [12,-32] mas/yr.
The original proposal used [0.0014 sec of time/yr, -0.0342 "/yr].
ICRS coord. (ep=J2000) : 16 58 51.12 +34 18 53.3

The secondary target used is WD1657+343 and the exposure times are based on a spectrum provided by A. Aloisi (extrapolated in wavelength). The nominal exposure time
For BOA/MIRRORB/NUV imaging the time is 98s (COS.ta.389915).
For PSA/G130M/1309, we get S/N=60 in 2.6sec (COS.sa.389905).
For PSA/G140L/1280, we get S/N=60 in 40 sec (COS.sa.389908).
For PSA/G160M/1600, we get S/N=60 (Seg A) in 11 sec (COS.sa.389907).

(21)	WD1657+343-OFFSET-NW-1.4AS	Offset from WD1657+343 by RA Offset: 2.77778E-4 Degrees Dec Offset: -1.0 Arcsec	Radial Velocity: 78 km/sec	V=16.4+/-0.1	Offset Position (WD1657+343-OFFSET-NW-1.4AS) Reference Frame: ICRS

Comments: The new roll angle is set to 135+/-2.5. This target is offset 1" in -X, +Y or delta[AD,XD]=(1,-1)"

WD1657+343 offset for ACQ Sequence for a roll angle of 135 +/- 2.5
(AD,XD)=(0,-1.0")=1"@45° E of N
*RA=+sqrt(2)"*cos(45°)=+1"=0.00027777778°*
*DEC=-sqrt(2)"*sin(45°)=-1"*

(22)	WD1657+343-OFFSET-XD-1.0	Offset from WD1657+343 by RA Offset: 0.0 Degrees Dec Offset: 1.0 Arcsec	Radial Velocity: 78 km/sec	V=16.4+/-0.1	Offset Position (WD1657+343-OFFSET-XD-1.0) Reference Frame: ICRS

Comments: The new roll angle is set to 135+/-2.5. This offset is 1" in -Y (XD).

WD1657+343 offset for ACQ/PEAKXD
(AD,XD)=(0,1.0")=1" to the S
RA=0, DEC=+1.0"

Exposures

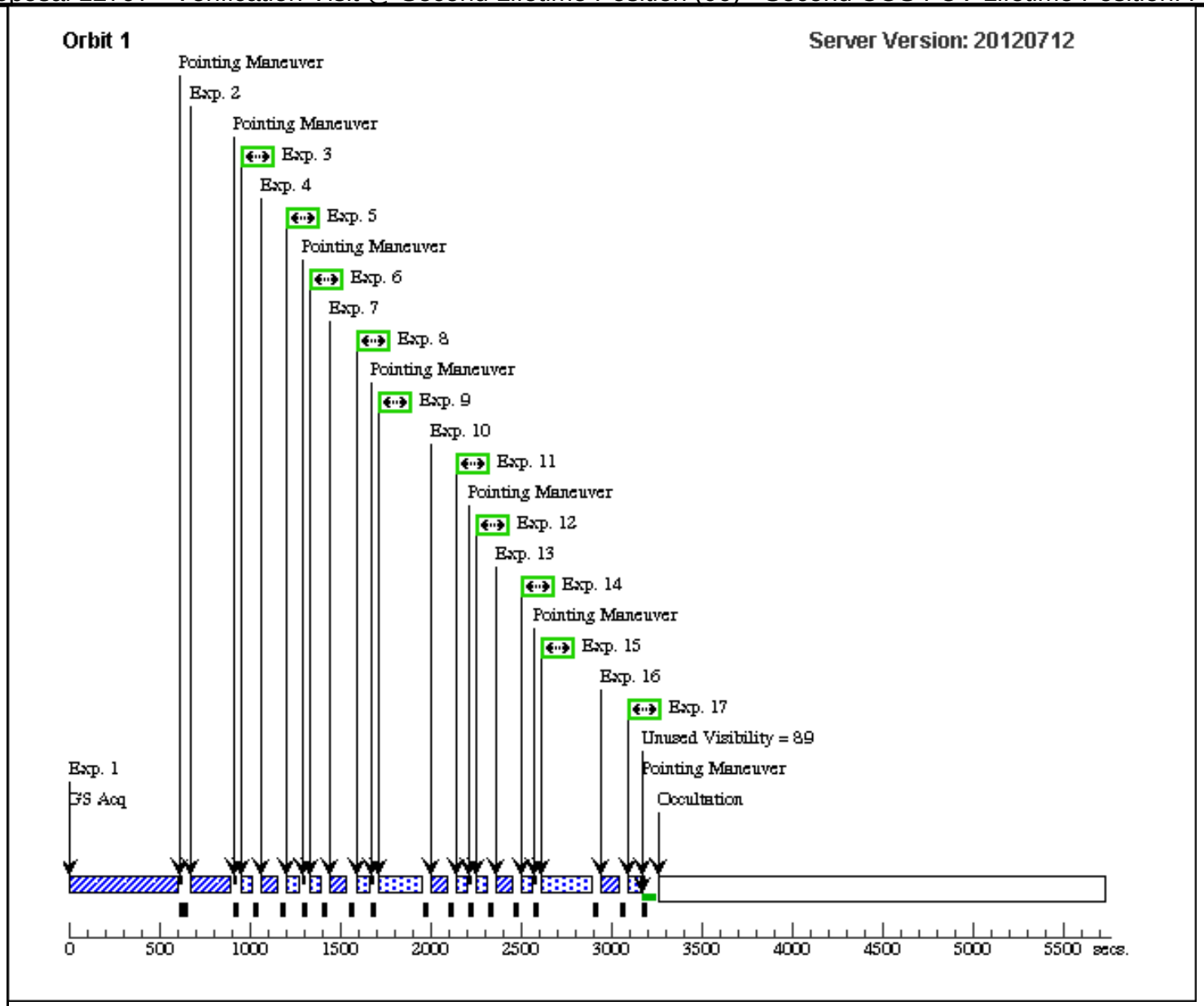
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	2 nuv a/im (COS.ta.389915)	(2) WD1657+343	COS/NUV, ACQ/IMAGE, BOA	MIRRORA		GS ACQ SCENARIO BASE1BN3		98 Secs *[==>]*	***[1]***
	Comments: NUV ACQ/IMAGE with BOA+MIRRORA to define centering. COS.ta.389915 Requested Signal/Noise Ratio = 60.000 gives: Time = 98.1324 seconds								
2	G130M - PEAKXD - Nominal (COS.sa.389905)	(2) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A				3 Secs *[==>]*	***[1]***
	Comments: ACQ/PEAKXD at the nominal position to test any SIAF file issue in the XD. The expected count rate on segment A is 1600 counts in 1.16s, or about 4500 is 3s.								
3	G130M - OFFSET SPECTRUM (COS.sa.389905)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES		Sequence 3-5 Non-Int in Verification Visit @ Second Lifetime Position (06)	12 Secs *[==>]*	***[1]***
	Comments: COS.sa.389910 gives S/N=60 in only in 2.6s, we go for 12 because that is the lamp flash time.								
4	G130M - PEAKXD-XD-1.0 (COS.sa.389905)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A			Sequence 3-5 Non-Int in Verification Visit @ Second Lifetime Position (06)	3 Secs *[==>]*	***[1]***
	Comments: ACQ/PEAKXD, see previous comment								
5	G130M - CONFIRMATION SPECTRUM (COS.sa.389905)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES		Sequence 3-5 Non-Int in Verification Visit @ Second Lifetime Position (06)	20 Secs *[==>]*	***[1]***
	Comments: Confirmation spectrum. COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s, we go for 20s to get a good look. *The actual count rate from Visit 1 was 0.07-0.14 counts/s/column, or a total count rate of ~1-2000 counts/segment/second. In 20s, we obtained 8-17 counts/RE.*								
6	G130M - OFFSET SPECTRUM (COS.sa.389905)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES		Sequence 6-8 Non-Int in Verification Visit @ Second Lifetime Position (06)	12 Secs *[==>]*	***[1]***
	Comments: COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s, we go for 12 because this is the lamp flash time								
7	G130M - PEAKXD-XD+1.0 (COS.sa.389905)	(2) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A			Sequence 6-8 Non-Int in Verification Visit @ Second Lifetime Position (06)	3 Secs *[==>]*	***[1]***
	Comments: ACQ/PEAKXD								
8	G130M - CONFIRMATION SPECTRUM (COS.sa.389905)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES		Sequence 6-8 Non-Int in Verification Visit @ Second Lifetime Position (06)	20 Secs *[==>]*	***[1]***
	Comments: Confirmation spectrum. COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s, we go for 20s to get a good look.								

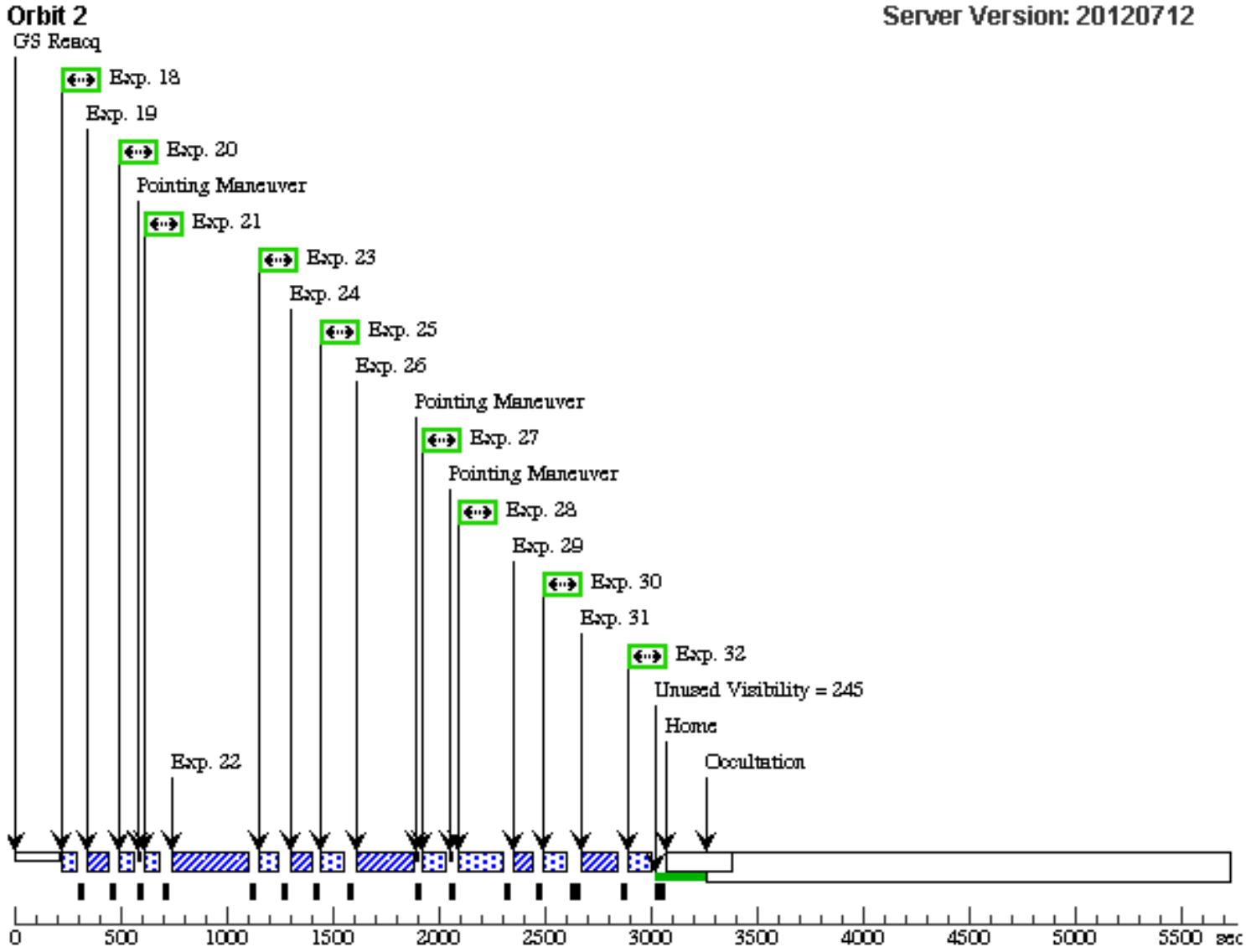
9	G140L - BASELINE SPECTRUM (COS.sa.389908)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=500; FP-POS=3; FLASH=YES	Sequence 9-11 Non-Int in Verification Visit @ Second Lifetime Position (06)	7 Secs *[==>]*	*[1]*
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
10	G140L - PEAKXD-XD-1.0 (COS.sa.389908)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A		Sequence 9-11 Non-Int in Verification Visit @ Second Lifetime Position (06)	4 Secs *[==>]*	*[1]*
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
11	G140L - CONFIRMATION SPECTRUM (COS.sa.389908)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 9-11 Non-Int in Verification Visit @ Second Lifetime Position (06)	10 Secs *[==>]*	*[1]*
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
12	G140L - BASELINE SPECTRUM (COS.sa.389908)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=500; FP-POS=3; FLASH=YES	Sequence 12-14 Non-Int in Verification Visit @ Second Lifetime Position (06)	7 Secs *[==>]*	*[1]*
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
13	G140L - PEAKXD-XD+1.0 (COS.sa.389908)	(2) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A		Sequence 12-14 Non-Int in Verification Visit @ Second Lifetime Position (06)	4 Secs *[==>]*	*[1]*
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
14	G140L - CONFIRMATION SPECTRUM (COS.sa.389908)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=500; FP-POS=3; FLASH=YES	Sequence 12-14 Non-Int in Verification Visit @ Second Lifetime Position (06)	10 Secs *[==>]*	*[1]*
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
15	G160M - BASELINE SPECTRUM (COS.sa.389907)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 15-17 Non-Int in Verification Visit @ Second Lifetime Position (06)	22 Secs *[==>]*	*[1]*
Comments: Spectrum of source to check centering.								
16	G160M - PEAKXD-XD-1.0 (COS.sa.389907)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A		Sequence 15-17 Non-Int in Verification Visit @ Second Lifetime Position (06)	11 Secs *[==>]*	*[1]*
Comments: ACQ/PEAKD on -1.0" offset								
17	G160M - CONFIRMATION SPECTRUM (COS.sa.389907)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 15-17 Non-Int in Verification Visit @ Second Lifetime Position (06)	22 Secs *[==>]*	*[1]*
*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. wo go for 12 secs, the lamp flash time. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*								

18	G160M - OFFSET SPECTRUM (COS.sa.389907)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 18-20 Non-Int in Verification Visit @ Second Lifetime Position (06)	22 Secs *[==>]*	***[2]***
Comments: Check spectrum location.								
19	G160M - PEAKXD-XD +1.0 (COS.sa.389907)	(2) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A		Sequence 18-20 Non-Int in Verification Visit @ Second Lifetime Position (06)	11 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD								
20	G160M - CONFIRMATION SPECTRUM (COS.sa.389907)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 18-20 Non-Int in Verification Visit @ Second Lifetime Position (06)	22 Secs *[==>]*	***[2]***
Comments: confirmation spectrum								
21	G160M - OFFSET SPECTRUM (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 21-27 Non-Int in Verification Visit @ Second Lifetime Position (06)	22 Secs *[==>]*	***[2]***
*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. wo go for 4x that. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*								
22	G160M - ACQ/SEARCH on OFFSET (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, ACQ/SEARCH, PSA	G160M 1600 A	CENTER=FLUX-WT-FLR; SCAN-SIZE=3	Sequence 21-27 Non-Int in Verification Visit @ Second Lifetime Position (06)	8 Secs *[==>]*	***[2]***
Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8.								
23	G160M - CONFIRMATION SPECTRUM (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 21-27 Non-Int in Verification Visit @ Second Lifetime Position (06)	44 Secs *[==>]*	***[2]***
*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. wo go for 4x that. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*								
24	G160M - ACQ/PEAKXD on OFFSET (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A		Sequence 21-27 Non-Int in Verification Visit @ Second Lifetime Position (06)	11 Secs *[==>]*	***[2]***
Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8.								
25	G160M - CONFIRMATION SPECTRUM (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 21-27 Non-Int in Verification Visit @ Second Lifetime Position (06)	60 Secs *[==>]*	***[2]***
*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. wo go for 4x that. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*								

26	G160M - ACQ/PEAKD on OFFSET (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, ACQ/PEAKD, PSA	G160M 1600 A	NUM-POS=7; STEP-SIZE=0.45		Sequence 21-27 Non-Int in Verification Visit @ Second Lifetime Position (06)	10 Secs [==>]	[2]
Comments: ACQ/PEAKD. COS.sa.389907									
27	G160M - CONFIRMATION SPECTRUM (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	POS TARG 0.333,null	Sequence 21-27 Non-Int in Verification Visit @ Second Lifetime Position (06)	60 Secs [==>]	[2]
*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. wo go for 4x that. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*									
28	G130M - OFFSET SPECTRUM (COS.sa.389905)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES		Sequence 28-32 Non-Int in Verification Visit @ Second Lifetime Position (06)	20 Secs [==>]	[2]
*Comments: Baseline spectrum, we last centered 1" off in both XD and AD, so this spectrum should be off center. COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s. BT=2/3*476*									
29	G130M - PEAKXD (COS.sa.389905)	(2) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A			Sequence 28-32 Non-Int in Verification Visit @ Second Lifetime Position (06)	3 Secs [==>]	[2]
Comments: ACQ/PEAKXD. COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s. The target should be offset by 1" in both AD and XD, so this is a challenging TA.									
30	G130M - CONFIRMATION SPECTRUM (COS.sa.389905)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES		Sequence 28-32 Non-Int in Verification Visit @ Second Lifetime Position (06)	60 Secs [==>]	[2]
Comments: Confirmation spectrum, did we center in XD ? This is a longer exposure so that we can get a decent read on the AD position									
31	G130M - PEAKD (COS.sa.389905)	(2) WD1657+343	COS/FUV, ACQ/PEAKD, PSA	G130M 1309 A	NUM-POS=5; STEP-SIZE=0.8		Sequence 28-32 Non-Int in Verification Visit @ Second Lifetime Position (06)	3 Secs [==>]	[2]
Comments: ACQ/PEAKD. COS.sa.389905 Gives S/N=40 for Segment A only in 1.2s, S/N=60 in 3s. The target should be offset by 1" in both AD and XD, so this is a challenging TA.									
32	G130M - CONFIRMATION SPECTRUM (COS.sa.389905)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES		Sequence 28-32 Non-Int in Verification Visit @ Second Lifetime Position (06)	60 Secs [==>]	[2]
Comments: Confirmation Spectrum on Centered Target. 2x the normal exposure time to check AD centering									

Orbit Structure

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Exp. 26
Pointing Maneuver
Exp. 27
Pointing Maneuver
Exp. 28
Exp. 29
Exp. 30
Exp. 31
Exp. 32
Unused Visibility = 245
Home
Occultation
Exp. 22
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12797, Repeat of Verification Visit @ Second Lifetime Position (66) Wed Jul 25 01:38:39 GMT 2012

Diagnostic Status: Warning

Scientific Instruments: COS/NUV, COS/FUV

Special Requirements: ORIENT 129D TO 137.5 D; BETWEEN 23-JUL-2012 AND 20-AUG-2012

Comments: Test ACQ/PEAKXD for each grating, then perform two full TA sequences, one with G160M, one with G130M. Orientation for Visit 6 is (135 + 2.5, -6), which is good from Jul 24, to Aug 20, 2012. After that, we will need to change the roll angle and redefine the targets. We now start with a G130M PEAKXD to see if the SIAF file is off in the XD.

This is a repeat of Visit 6 to verify that all the COS FUV TA algorithms work together, and is our test of the new plate scales values.

Diagnostics

(Repeat of Verification Visit @ Second Lifetime Position (66)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/PEAKXD.

(Repeat of Verification Visit @ Second Lifetime Position (66)) 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.

(Repeat of Verification Visit @ Second Lifetime Position (66)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	WD1657+343	RA: 16 58 51.1200 (254.7130000d) Dec: +34 18 53.30 (34.31481d) Equinox: J2000	Proper Motion RA: 12 mas/yr Proper Motion Dec: -32 mas/yr Epoch of Position: 2000 Radial Velocity: 78 km/sec	V=16.4+/-0.1	Reference Frame: ICRS

Comments: This object is visible all year. The roll angle for the offsets is set to 180+/-2.5 (Jun 5-12, 2012)

Proper Motions from 2008ApJS..175..297A and are [12,-32] mas/yr.
The original proposal used [0.0014 sec of time/yr, -0.0342 "/yr].
ICRS coord. (ep=J2000) : 16 58 51.12 +34 18 53.3

The secondary target used is WD1657+343 and the exposure times are based on a spectrum provided by A. Aloisi (extrapolated in wavelength). The nominal exposure time
For BOA/MIRRORB/NUV imaging the time is 98s (COS.ta.389915).
For PSA/G130M/1309, we get S/N=60 in 2.6sec (COS.sa.389905).
For PSA/G140L/1280, we get S/N=60 in 40 sec (COS.sa.389908).
For PSA/G160M/1600, we get S/N=60 (Seg A) in 11 sec (COS.sa.389907).

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(21)	WD1657+343-OFFSET-NW-1.4AS	Offset from WD1657+343 by RA Offset: 2.77778E-4 Degrees Dec Offset: -1.0 Arcsec	Radial Velocity: 78 km/sec	V=16.4+/-0.1	Offset Position (WD1657+343-OFFSET-NW-1.4AS) Reference Frame: ICRS

Comments: The new roll angle is set to 135+/-2.5. This target is offset 1" in -X, +Y or delta[AD,XD]=(1,-1)"

WD1657+343 offset for ACQ Sequence for a roll angle of 135 +/- 2.5
(AD,XD)=(0,-1.0")=1"@45° E of N
*RA=+sqrt(2)"*cos(45°)=+1"=0.00027777778°*
*DEC=-sqrt(2)"*sin(45°)=-1"*

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(22)	WD1657+343-OFFSET-XD-1.0	Offset from WD1657+343 by RA Offset: 0.0 Degrees Dec Offset: 1.0 Arcsec	Radial Velocity: 78 km/sec	V=16.4+/-0.1	Offset Position (WD1657+343-OFFSET-XD-1.0) Reference Frame: ICRS

Comments: The new roll angle is set to 135+/-2.5. This offset is 1" in -Y (XD).

WD1657+343 offset for ACQ/PEAKXD
(AD,XD)=(0,1.0")=1" to the S
RA=0, DEC=+1.0"

Exposures

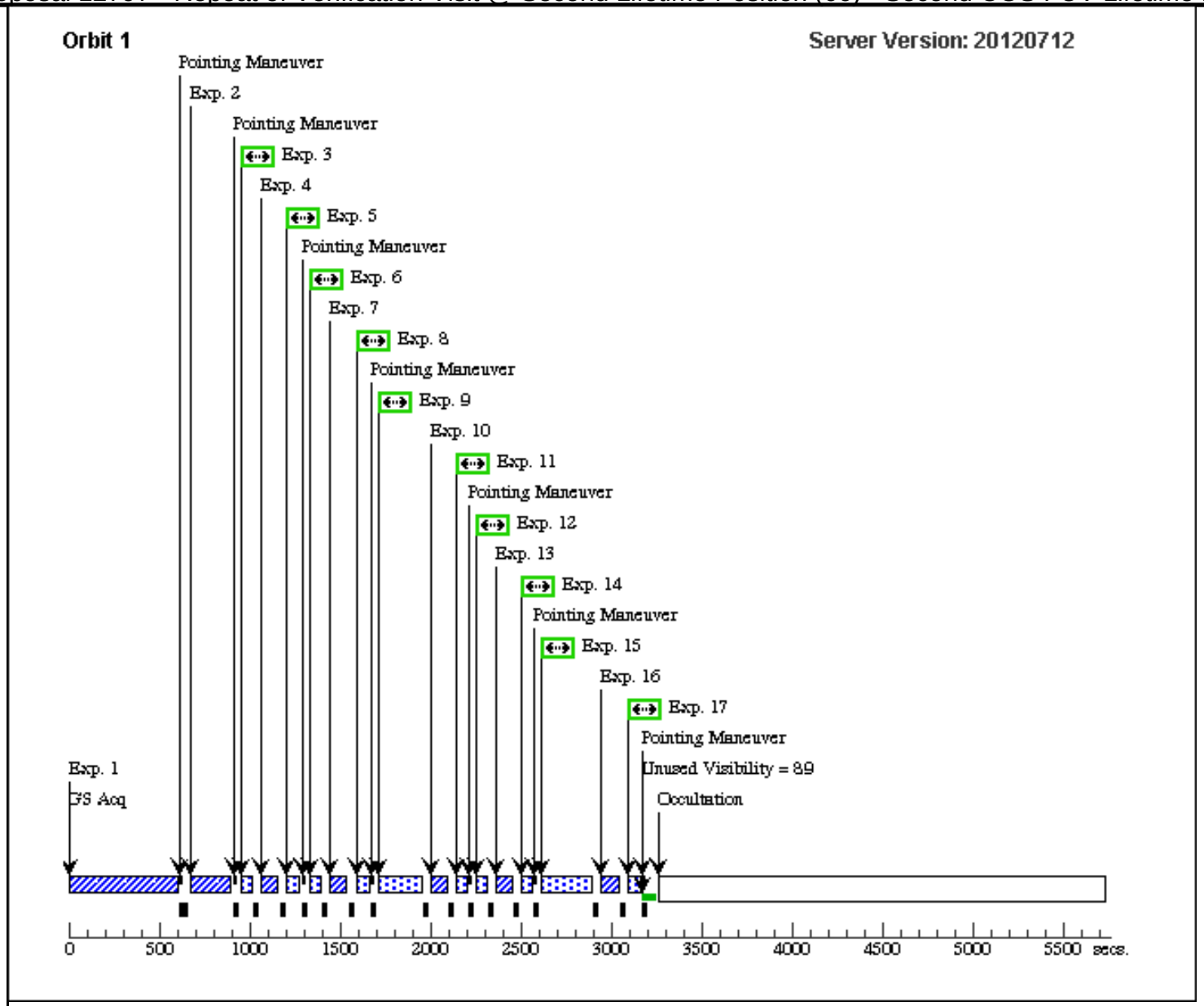
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	2 nuv a/im (COS.ta.389915)	(2) WD1657+343	COS/NUV, ACQ/IMAGE, BOA	MIRRORA		GS ACQ SCENARIO BASE1BN3		98 Secs *[==>]*	***[1]***
	Comments: NUV ACQ/IMAGE with BOA+MIRRORA to define centering. COS.ta.389915 Requested Signal/Noise Ratio = 60.000 gives: Time = 98.1324 seconds								
2	G130M - PEAKXD - Nominal (COS.sa.389905)	(2) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A				3 Secs *[==>]*	***[1]***
	Comments: ACQ/PEAKXD at the nominal position to test any SIAF file issue in the XD. The expected count rate on segment A is 1600 counts in 1.16s, or about 4500 is 3s.								
3	G130M - OFFSET SPECTRUM (COS.sa.389905)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES		Sequence 3-5 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	12 Secs *[==>]*	***[1]***
	Comments: COS.sa.389910 gives S/N=60 in only in 2.6s, we go for 12 because that is the lamp flash time.								
4	G130M - PEAKXD-XD-1.0 (COS.sa.389905)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A			Sequence 3-5 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	3 Secs *[==>]*	***[1]***
	Comments: ACQ/PEAKXD, see previous comment								
5	G130M - CONFIRMATION SPECTRUM (COS.sa.389905)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES		Sequence 3-5 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	20 Secs *[==>]*	***[1]***
	Comments: Confirmation spectrum. COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s, we go for 20s to get a good look. *The actual count rate from Visit 1 was 0.07-0.14 counts/s/column, or a total count rate of ~1-2000 counts/segment/second. In 20s, we obtained 8-17 counts/RE.*								
6	G130M - OFFSET SPECTRUM (COS.sa.389905)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES		Sequence 6-8 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	12 Secs *[==>]*	***[1]***
	Comments: COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s, we go for 12 because this is the lamp flash time								
7	G130M - PEAKXD-XD+1.0 (COS.sa.389905)	(2) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A			Sequence 6-8 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	3 Secs *[==>]*	***[1]***
	Comments: ACQ/PEAKXD								
8	G130M - CONFIRMATION SPECTRUM (COS.sa.389905)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES		Sequence 6-8 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	20 Secs *[==>]*	***[1]***
	Comments: Confirmation spectrum. COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s, we go for 20s to get a good look.								

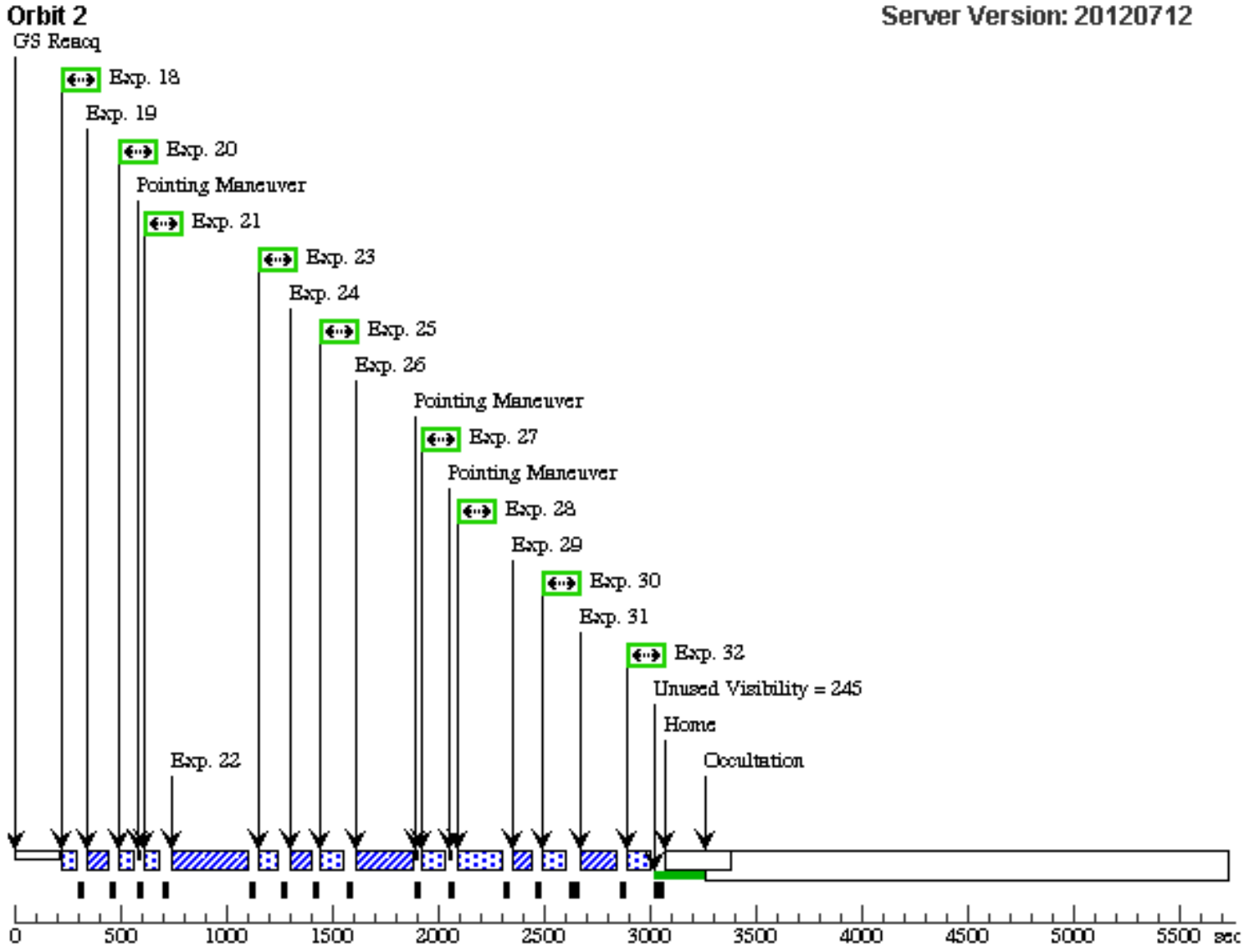
9	G140L - BASELINE SPECTRUM (COS.sa.389908)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=500; FP-POS=3; FLASH=YES	Sequence 9-11 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	7 Secs *[==>]*	*[1]*
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
10	G140L - PEAKXD-XD-1.0 (COS.sa.389908)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A		Sequence 9-11 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	4 Secs *[==>]*	*[1]*
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
11	G140L - CONFIRMATION SPECTRUM (COS.sa.389908)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 9-11 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	10 Secs *[==>]*	*[1]*
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
12	G140L - BASELINE SPECTRUM (COS.sa.389908)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=500; FP-POS=3; FLASH=YES	Sequence 12-14 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	7 Secs *[==>]*	*[1]*
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
13	G140L - PEAKXD-XD+1.0 (COS.sa.389908)	(2) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A		Sequence 12-14 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	4 Secs *[==>]*	*[1]*
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
14	G140L - CONFIRMATION SPECTRUM (COS.sa.389908)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=500; FP-POS=3; FLASH=YES	Sequence 12-14 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	10 Secs *[==>]*	*[1]*
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
15	G160M - BASELINE SPECTRUM (COS.sa.389907)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 15-17 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	22 Secs *[==>]*	*[1]*
Comments: Spectrum of source to check centering.								
16	G160M - PEAKXD-XD-1.0 (COS.sa.389907)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A		Sequence 15-17 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	11 Secs *[==>]*	*[1]*
Comments: ACQ/PEAKD on -1.0" offset								
17	G160M - CONFIRMATION SPECTRUM (COS.sa.389907)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 15-17 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	22 Secs *[==>]*	*[1]*
*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. wo go for 12 secs, the lamp flash time. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*								

18	G160M - OFFSET SPECTRUM (COS.sa.389907)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 18-20 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	22 Secs [==>]	[2]
Comments: Check spectrum location.								
19	G160M - PEAKXD-XD +1.0 (COS.sa.389907)	(2) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A		Sequence 18-20 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	11 Secs [==>]	[2]
Comments: ACQ/PEAKXD								
20	G160M - CONFIRMATION SPECTRUM (COS.sa.389907)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 18-20 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	22 Secs [==>]	[2]
Comments: confirmation spectrum								
21	G160M - OFFSET SPECTRUM (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 21-27 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	22 Secs [==>]	[2]
*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. wo go for 4x that. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*								
22	G160M - ACQ/SEARCH on OFFSET (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, ACQ/SEARCH, PSA	G160M 1600 A	CENTER=FLUX-WT-FLR; SCAN-SIZE=3	Sequence 21-27 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	8 Secs [==>]	[2]
Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8.								
23	G160M - CONFIRMATION SPECTRUM (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 21-27 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	44 Secs [==>]	[2]
*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. wo go for 4x that. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*								
24	G160M - ACQ/PEAKXD on OFFSET (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A		Sequence 21-27 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	11 Secs [==>]	[2]
Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8.								
25	G160M - CONFIRMATION SPECTRUM (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	Sequence 21-27 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	60 Secs [==>]	[2]
*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. wo go for 4x that. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*								

26	G160M - ACQ/PEAKD on OFFSET (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, ACQ/PEAKD, PSA	G160M 1600 A	NUM-POS=7; STEP-SIZE=0.45		Sequence 21-27 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	10 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKD. COS.sa.389907									
27	G160M - CONFIRMATION SPECTRUM (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES	POS TARG 0.333,null	Sequence 21-27 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	60 Secs *[==>]*	***[2]***
*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. wo go for 4x that. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*									
28	G130M - OFFSET SPECTRUM (COS.sa.389905)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES		Sequence 28-32 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	20 Secs *[==>]*	***[2]***
*Comments: Baseline spectrum, we last centered 1" off in both XD and AD, so this spectrum should be off center. COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s. BT=2/3*476*									
29	G130M - PEAKXD (COS.sa.389905)	(2) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A			Sequence 28-32 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	3 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD. COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s. The target should be offset by 1" in both AD and XD, so this is a challenging TA.									
30	G130M - CONFIRMATION SPECTRUM (COS.sa.389905)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES		Sequence 28-32 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	60 Secs *[==>]*	***[2]***
Comments: Confirmation spectrum, did we center in XD ? This is a longer exposure so that we can get a decent read on the AD position									
31	G130M - PEAKD (COS.sa.389905)	(2) WD1657+343	COS/FUV, ACQ/PEAKD, PSA	G130M 1309 A	NUM-POS=5; STEP-SIZE=0.8		Sequence 28-32 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	3 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKD. COS.sa.389905 Gives S/N=40 for Segment A only in 1.2s, S/N=60 in 3s. The target should be offset by 1" in both AD and XD, so this is a challenging TA.									
32	G130M - CONFIRMATION SPECTRUM (COS.sa.389905)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES		Sequence 28-32 Non-Int in Repeat of Verification Visit @ Second Lifetime Position (66)	60 Secs *[==>]*	***[2]***
Comments: Confirmation Spectrum on Centered Target. 2x the normal exposure time to check AD centering									

Orbit Structure




Orbit 2
Server Version: 20120712
GS Reacq
Exp. 18
Exp. 19
Exp. 20
Pointing Maneuver
Exp. 21
Exp. 23
Exp. 24
Exp. 25
Exp. 26
Pointing Maneuver
Exp. 27
Pointing Maneuver
Exp. 28
Exp. 29
Exp. 30
Exp. 31
Exp. 32
Unused Visibility = 245
Home
Occultation
Exp. 22
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12797, ACQ/SEARCH TEST (11), implementation Wed Jul 25 01:38:42 GMT 2012

Diagnostic Status: Warning

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

Special Requirements: SCHED 100%; ORIENT 192.5D TO 197.5 D; ON HOLD

Comments: ACQ/SEARCH Test. The target is AVZ18 (the SMOV TA target).

For a 3x3x1" spiral pattern, the telescope slew is [AD,XD]

0.00	*0.00*
1.00	*0.00*
1.00	*1.00*
0.00	*1.00*
-1.00	*1.00*
-1.00	*0.00*
-1.00	*-1.00*
0.00	*-1.00*
1.00	*-1.00*

The roll angle is constrained to 195 +/- 2.5 degrees, 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" ACQ/SEARCH on the target.

On Hold Comments: ACQ/SEARCH TEST w/o HV reset to simulate actual timing

Diagnostics

(ACQ/SEARCH TEST (11)) 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 (11)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

(ACQ/SEARCH TEST (11)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(ACQ/SEARCH TEST (11)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(ACQ/SEARCH TEST (11)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(ACQ/SEARCH TEST (11)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	AZV18	RA: 00 47 12.1700 (11.8007083d) Dec: -73 06 32.68 (-73.10908d) Equinox: J2000	Proper Motion RA: -0.0003 sec of time/yr Proper Motion Dec: -0.0035 arcsec/yr Epoch of Position: 2000	V=12.48 (B-V)=+0.04	Reference Frame: ICRS

Comments: B2Ia, Magellanic Clouds. Nominal ETC exposure times from spectrum supplied 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)

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(11)	AZV18-OFFSET-NE-1.4AS	Offset from AZV18 by RA Offset: -3.7945E-4 Degrees Dec Offset: 0.366025 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-NE-1.4AS) Reference Frame: ICRS

Comments: This target is offset by 1" in both AD (X) and XD (Y), so sqrt(2)=1.414" total offset.
The U3 roll angle has been constrained to 190 +/- 2.5 degree.

AZV18 offset for ACQ/SEARCH (AD,XD)=(-1",-1")=-sqrt(2")@10°N of W
*RA=-sqrt(2)"*cos(10°)=-1.3927"=-0.000386869°*
*DEC=+sqrt(2)"*sin(10°)= 0.24558"*

3/26/12: Target changed to 195 +/- 2.5 degrees
AZV18 offset for ACQ/SEARCH (AD,XD)=(-1",-1")=-sqrt(2")@15°N of W
*RA=-sqrt(2)"*cos(15°)=-1.36603" =-0.00037945°*
*DEC=+sqrt(2)"*sin(15°)= 0.366025"*

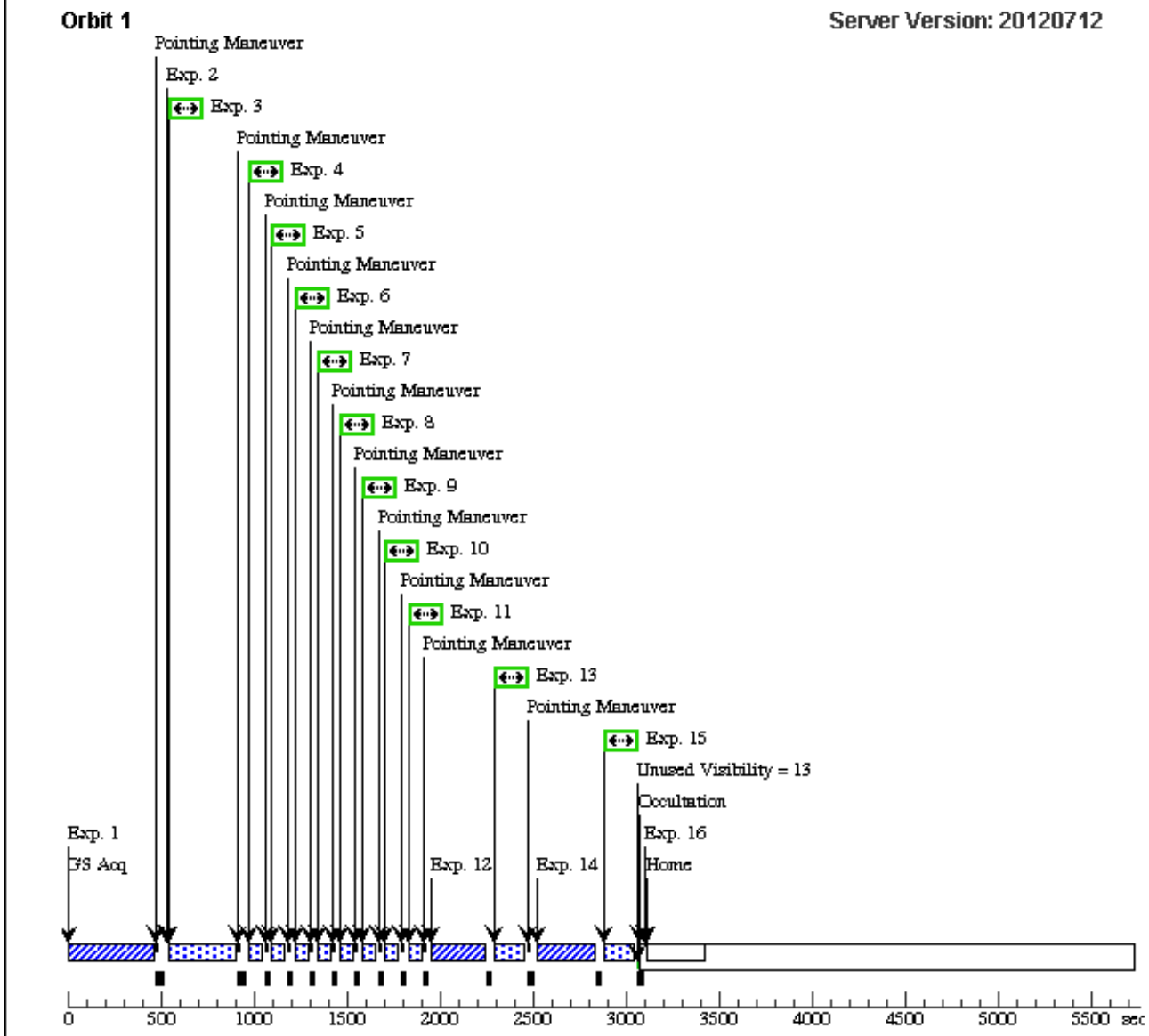
Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	2 nuv a/im (COS.ta.360711)	(1) AZV18	COS/NUV, ACQ/IMAGE, BOA	MIRRORA				27 Secs *[==>]*	*[1]*
	Comments: NUV ACQ/IMAGE with BOA+MIRRORA to refine centering. *COS.ta.360711 , gives S/N=60.000 in 27.4 seconds*								
2	S/C to update the G130M/1309 focus from 170 to 290 (+120)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 290		8 Secs *[==>]*	*[1]*
	Comments: Special Commanding to overwrite the G130M/1309 settings with the SLP focus position. FENA3 Results suggest we need a +120 focus step adjustment from these values. So, G130M/1309 goes from 170 to +290 *The SCR 344 FSW has the following focus G130M positions;* *const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =* *{ {0, 1055, 8095, -170, 2750, 7402}, /* G130M, OSM1 */* *{0, 1096, 8078, -170, 2665, 7312}, /* G130M, OSM1 */* *{0, 1291, 7999, -170, 2259, 6898}, /* G130M, OSM1 */* *{0, 1300, 7995, 0, 2238, 6877}, /* G130M, OSM1 */* *{0, 1309, 7991, 170, 2218, 6857}, /* G130M, OSM1 */* *{0, 1318, 7987, 340, 2198, 6837}, /* G130M, OSM1 */* *{0, 1327, 7983, 511, 2177, 6816}, /* G130M, OSM1 */*								
3	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=S0090D036; LIFETIME-POS=ALTERNATE			180 Secs *[==>]*	*[1]*
	Comments: Spectrum of source to define correct location of star when it is centered in NUV. (COS.sp.360698, simulates S/N=10 per RE in 182s) BT=986(2/3) = 629. This spectrum will be used to define the WCA-to-PSA offset for the G130M. 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 BEFORE THE CYCLE 20 ETC UPDATE TO ETC20.1.1*** *(This is a good thing since it is probably closer to reality than the pessimistic sensitivities used in ETC20.1.1) The G140L and G160M ETC simulations were made using 20.1.1 and will be scaled back to match the G130M sensitivities assumed here.* *The ETC20.1.1 Simulation of the G130M/1309 (COS.sp.389705) gives S/N/RE=10 in 258s.* *Our scaling factor is therefore >=182/258=0.71 to convert from ETC20.1.1 today.* *(We will use 0.75 for simplicity)*								
4	G130M - POSTARG + SPECTRUM1 (1,0) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 1.0,null		20 Secs *[==>]*	*[1]*
	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))								

5	G130M - POSTARG + SPECTRUM2 (1,1)(Corner) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 1.0,1.0	20 Secs *[==>]*		***[1]***
Comments: POSTARG TO SIMULATE ACQ/SEARCH									
6	G130M - POSTARG + SPECTRUM3 (0,1) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 0,1.0	20 Secs *[==>]*		***[1]***
Comments: POSTARG TO SIMULATE ACQ/SEARCH									
7	G130M - POSTARG + SPECTRUM4 (-1,1) (Corner) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG -1,1	20 Secs *[==>]*		***[1]***
Comments: POSTARG TO SIMULATE ACQ/SEARCH									
8	G130M - POSTARG + SPECTRUM5 (-1,0) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG -1,null	20 Secs *[==>]*		***[1]***
Comments: POSTARG TO SIMULATE ACQ/SEARCH									
9	G130M - POSTARG + SPECTRUM6 (-1,-1) (Corner) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG -1,-1	20 Secs *[==>]*		***[1]***
Comments: POSTARG TO SIMULATE ACQ/SEARCH									
10	G130M - POSTARG + SPECTRUM7 (0,-1) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 0,-1	20 Secs *[==>]*		***[1]***
Comments: POSTARG TO SIMULATE ACQ/SEARCH									
11	G130M - POSTARG + SPECTRUM8 (1,-1) (Corner) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 1,-1	20 Secs *[==>]*		***[1]***
Comments: POSTARG TO SIMULATE ACQ/SEARCH									

12	G130M - ACQ/SEARCH (COS.sa.360701)	(1) AZV18	COS/FUV, ACQ/SEARCH, PSA	G130M 1309 A	SCAN-SIZE=3; STEP-SIZE=1.0; LIFETIME-POS=ALTERNATE		2 Secs [==>]	[1]
Comments: 3x3x1.0" ACQ/SEARCH on the centered target. COS.sa.360701, S/N = 60 is reached in 2 seconds (A+B).								
13	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		115 Secs [==>]	[1]
Comments: Spectrum of source to verify that the ACQ/SEARCH improved the target centering for 3x3x1". (COS.sp.360698). BT=986(2/3) = ~630. 182s gives S/N/RE=10. 182s*0.64=116s. We use ~116 seconds to get ~S/N/RE=8.*								
14	G130M - ACQ/SEARCH (COS.sa.360701)	(11) AZV18-OFFSET-NE-1.4AS	COS/FUV, ACQ/SEARCH, PSA	G130M 1309 A	SCAN-SIZE=3; STEP-SIZE=1.767; LIFETIME-POS=ALTERNATE		2 Secs [==>]	[1]
Comments: 3x3x1.767" ACQ/SEARCH. COS.sa.360701, S/N = 60 is reached in 2 (A+B) seconds. This is performed on the fictious target 1" to the NE, so the actual target is actually 1" to the SW.								
15	G130M - BASELINE SPECTRUM (COS.sp.360698)	(11) AZV18-OFFSET-NE-1.4AS	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		115 Secs [==>]	[1]
Comments: Spectrum of source to verify accurate centering (COS.sp.360698). BT=986(2/3) = ~630. 182s gives S/N/RE=10. BT=182*0.64=116. We use ~115 seconds to get ~S/N/RE=8.*								
16	S/C to RESET the G130M/1309 focus	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 170	8 Secs [==>]	[1]
Comments: Special Commanding to reset the G130M/1309 settings with the original focus, the SCR 344 FSW position (170).								

Orbit Structure



Visit

Proposal 12797, ACQ/PEAKD TEST (12), implementation Wed Jul 25 01:38:45 GMT 2012

Diagnostic Status: Warning

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

Special Requirements: SCHED 100%; ORIENT 192.5D TO 197.5 D; AFTER 11 BY 0 D TO 7 D; ON HOLD

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.

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 195 +/- 2.5 degrees, schedulability = 100%.

On Hold Comments: ACQ/PEAKD TEST w/o HV reset to simulate actual timing

Diagnostics

(ACQ/PEAKD TEST (12)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

(ACQ/PEAKD TEST (12)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

(ACQ/PEAKD TEST (12)) 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 (12)) Warning (Orbit Planner): VISIBILITY OVERRUN

(ACQ/PEAKD TEST (12)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE

Fixed Targets

#	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 supplied 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)

(13)	AZV18-OFFSET-AD+0.3	Offset from AZV18 by		V=12.48	Offset Position (AZV18-OFFSET-AD+0.3)
		RA Offset: -4.16667E-5 Degrees		(B-V)=+0.04	Reference Frame: ICRS
		Dec Offset: 0.259808 Arcsec			

Comments: This target WILL BE offset +0.3" in +AD direction.
The roll angle the second week of April is 190+/-2.5d (visit 2)

[AD,XD] offset = (-0.3",0)=-0.3"@55° N of W
*RA=-0.3"*cos(55°)=-0.172073" =-0.0000477981°*
*DEC=+0.3"*sin(55°)= 0.245746"*

3/26/12: Target changed to 195 +/- 2.5 degrees
AZV18 offset#1 for ACQ/PEAKD (-0.3",0)=-0.3"@60° N of W
*RA=-0.3"*cos(60°)=-0.15"=-0.0000416667°*
*DEC=+0.3"*sin(60°)= 0.259808"*

(14)	AZV18-OFFSET-AD-0.5	Offset from AZV18 by		V=12.48	Offset Position (AZV18-OFFSET-AD-0.5)
		RA Offset: 6.9444E-5 Degrees		(B-V)=+0.04	Reference Frame: ICRS
		Dec Offset: -0.433013 Arcsec			

Comments: This target WILL BE offset -0.5" in the -AD direction.
The roll angle the second week of April is 190+/-2.5d (visit 2)

(+0.5",0)=0.5"@55° N of W
*RA=0.5"*cos(55°)=0.286788"=0.0000796633°*
*DEC=-0.5"*sin(55°)=-0.409576"*

3/26/12: Target changed to 195 +/- 2.5 degrees (+0.5",0)=0.5"@60° N of W
*RA=0.5"*cos(60°)=0.25" =0.000069444°*
*DEC=-0.5"*sin(60°)=-0.433013"*

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	2 nuv a/im (COS.ta.360711)	(1) AZV18	COS/NUV, ACQ/IMAGE, BOA	MIRRORA		GS ACQ SCENARIO BASE1BN3; QASISTATES COS FUV HVSEGA HVSEGA		28 Secs *[==>]*	***[1]***
	Comments: NUV ACQ/IMAGE with BOA+MIRRORA to refine centering. (COS92525 gives S/N = 60 in 28s) *The FUV qasistates s.r. is specifically for maintaining the FUV in the HVSEGA state.* *SQL is required for the dump created by this exposure. The FUV state should be changed to HVSEGA.*								
2	S/C to update the G140L /1105 focus (-370+0)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QASISTATES COS FUV HVSEGA HVSEGA; QESIPARM ACTION REPLACE; QESIPARM GRATING G140L; QESIPARM CENTWAVE 1105; QESIPARM FOCUS -370		8 Secs *[==>]*	***[1]***
	Comments: Special Commanding to overwrite the G140L/1105 settings with the SLP focus position. Right now, this is just the current lifetime position (-370), the contingency visit of 12796 will give us the actual updated focus value. *The SCR 344 FSW has the following focus G140L positions;* *const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =* *{1, 1105, 1598, -370, 35092, 39716}, /* G140L, OSM1 */* *{1, 1230, 1591, -30, 35055, 39680}, /* G140L, OSM1 */* *{1, 1280, 1590, 19, 35050, 39675}, /* G140L, OSM1 */*								
3	S/C to update the G140L /1280 focus (19+0)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G140L; QESIPARM CENTWAVE 1280; QESIPARM FOCUS 19		8 Secs *[==>]*	***[1]***
	Comments: Special Commanding to overwrite the G140L/1280 settings with the SLP focus position. Right now, this is just the current lifetime position (19), the contingency visit of 12796 will give us the actual updated focus value. *The SCR 344 FSW has the following focus G140L positions;* *const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =* *{1, 1105, 1598, -370, 35092, 39716}, /* G140L, OSM1 */* *{1, 1230, 1591, -30, 35055, 39680}, /* G140L, OSM1 */* *{1, 1280, 1590, 19, 35050, 39675}, /* G140L, OSM1 */*								

4	G140L/1105 - BASELINE SPECTRUM (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1105 A	BUFFER-TIME=400; FP-POS=3; FLASH=S0200D030; WAVECAL=YES; LIFETIME-POS=ALTERNATE		30 Secs *[==>]*	***[1]***

*Comments: Spectrum of source to define the G140L/1105 XD location of target when it is centered w/ NUV ACQ/IMAGE. COS.sp.389720 gives S/N/RE = 10 at1400.00 Å in 38.5800 seconds. We don't bother to scale this, because the exposure time is so small (equal to our lamp flash). BT=2/3 (838*0.75) = 420 (we use 400)*

5	FUV HV RAMPUP (167/163)	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF; QASISTATES COS FUV HVLOW HVNOM; QESIPARM ENDCTSA 167; QESIPARM ENDCTSB 163	418 Secs *[==>]*	***[1]***

Comments: SQL required for qexposure to specify the si_used = "COS".

*The special commanding here sets the the nominal high voltage for this visit (HVNOM) for segments A and B (ENDCTSA and ENDCTS B) to 167 and 163, respectively. 403s is the correct rampup time for 162/159. An allow 3 additional seconds for every positive unit of offset is required. Therefore, the rampup time is 403+(167-162)*3 = 418*

6	G140L/1280 - BASELINE SPECTRUM (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=S0200D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE		36 Secs *[==>]*	***[1]***

*Comments: Spectrum of source to define the G140L/1280 XD location of target when it is centered w/ NUV ACQ/IMAGE. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. We don't bother to scale this, because the exposure time is so small (equal to our lamp flash). BT=2/3 (838*0.75) = 420 (we use 400)*

7	S/C to update the G160M/1577 focus from -384 to -224 (+160)	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1577; QESIPARM FOCUS -224	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to overwrite the G160M/1577 settings with the SLP focus position. FENA3 Results suggest we need a +160 focus step adjustment from these values. So, G160M/1577 goes from -384 to -224.

The SCR 344 FSW has the following focus G160M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{2, 1577, 11203, -384, 18693, 23323}, / G160M, OSM1 */*
{2, 1589, 11199, -214, 18671, 23301}, / G160M, OSM1 */*
{2, 1600, 11195, -44, 18651, 23281}, / G160M, OSM1 */*
{2, 1611, 11191, 126, 18631, 23261}, / G160M, OSM1 */*
{2, 1623, 11187, 296, 18609, 23239}, / G160M, OSM1 */*

8	S/C to update the G160M/1600 focus from -44 to +116 (+160)	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1600; QESIPARM FOCUS 116	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to overwrite the G160M/1600 settings with the SLP focus position. FENA3 Results suggest we need a +160 focus step adjustment from these values. So, G160M/1600 goes from -44 to +116.

The SCR 344 FSW has the following focus G160M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{2, 1577, 11203, -384, 18693, 23323}, / G160M, OSM1 */*
{2, 1589, 11199, -214, 18671, 23301}, / G160M, OSM1 */*
{2, 1600, 11195, -44, 18651, 23281}, / G160M, OSM1 */*
{2, 1611, 11191, 126, 18631, 23261}, / G160M, OSM1 */*
{2, 1623, 11187, 296, 18609, 23239}, / G160M, OSM1 */*

9	S/C to update the G160M/1623 focus from +296 to +456 (+160)	DARK	S/C, DATA, NONE		SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1623; QESIPARM FOCUS 456	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to overwrite the G160M/1623 settings with the SLP focus position. FENA3 Results suggest we need a +160 focus step adjustment from these values. So, G160M/1623 goes from +296 to +456.

The SCR 344 FSW has the following focus G160M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{2, 1577, 11203, -384, 18693, 23323}, / G160M, OSM1 */*
{2, 1589, 11199, -214, 18671, 23301}, / G160M, OSM1 */*
{2, 1600, 11195, -44, 18651, 23281}, / G160M, OSM1 */*
{2, 1611, 11191, 126, 18631, 23261}, / G160M, OSM1 */*
{2, 1623, 11187, 296, 18609, 23239}, / G160M, OSM1 */*

10	G160M/1577 - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1577 A	BUFFER-TIME=4800; FP-POS=3; FLASH=S0200D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE	36 Secs *[==>]*		***[1]***

Comments: Spectrum of source to define WCA location for G160M/1623, ET = LAMP TIME = 36s.

*COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe).*

11	G160M/1600 - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=4800; FP-POS=3; FLASH=S0200D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE	200 Secs *[==>]*		***[1]***

Comments: Spectrum of source to define G160M/1600 location of a target when it is centered w/ NUV ACQ/IMAGE.
*COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe)*

12	G160M/1623 - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=4800; FP-POS=3; FLASH=S0200D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE	36 Secs *[==>]*		***[1]***

Comments: Spectrum of source to define WCA location for G160M/1623, ET = LAMP TIME = 36s.

13	S/C to update the G130M/1291 focus from -170 to -50 (+120)	DARK	S/C, DATA, NONE		SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1291; QESIPARM FOCUS -50	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to overwrite the G130M/1291 settings with the SLP focus position. FENA3 Results suggest we need a +120 focus step adjustment from these values. So, G130M/1291 goes from -170 to -50

The SCR 344 FSW has the following focus G130M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{0, 1291, 7999, -170, 2259, 6898}, / G130M, OSM1 */*
{0, 1300, 7995, 0, 2238, 6877}, / G130M, OSM1 */*
{0, 1309, 7991, 170, 2218, 6857}, / G130M, OSM1 */*
{0, 1318, 7987, 340, 2198, 6837}, / G130M, OSM1 */*
{0, 1327, 7983, 511, 2177, 6816}, / G130M, OSM1 */*

14	S/C to update the G130M/1327 focus from 511 to 631 (+120)	DARK	S/C, DATA, NONE		SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1327; QESIPARM FOCUS 631	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to overwrite the G130M/1327 settings with the SLP focus position. FENA3 Results suggest we need a +120 focus step adjustment from these values. So, G130M/1327 goes from 511 to 631

The SCR 344 FSW has the following focus G130M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{0, 1291, 7999, -170, 2259, 6898}, / G130M, OSM1 */*
{0, 1300, 7995, 0, 2238, 6877}, / G130M, OSM1 */*
{0, 1309, 7991, 170, 2218, 6857}, / G130M, OSM1 */*
{0, 1318, 7987, 340, 2198, 6837}, / G130M, OSM1 */*
{0, 1327, 7983, 511, 2177, 6816}, / G130M, OSM1 */*

15	G130M/1291 - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=600; FP-POS=3; FLASH=S0060D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE	36 Secs *[==>]*		***[1]***

Comments: Spectrum of source to define correct location of star when it is centered in NUV (COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE. 36s lamp flash.*
NOTE THIS ETC RUN WAS MADE BEFORE THE CYCLE 20 ETC UPDATE TO ETC20.1.1

(This is a good thing since it is probably closer to reality than the sensitivities used in ETC20.1.1) The G140L and G160M ETC simulations were made using 20.1.1 and will be scaled back to match the G130M sensitivities assumed here.

16	G130M/1327 - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1327 A	BUFFER-TIME=600; FP-POS=3; FLASH=S0060D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE	36 Secs *[==>]*		***[1]***

Comments: Spectrum of source to define correct location of star when it is centered in NUV (COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE. 36s lamp flash.*

NOTE THIS ETC RUN WAS MADE BEFORE THE CYCLE 20 ETC UPDATE TO ETC20.1.1

(This is a good thing since it is probably closer to reality than the sensitivities used in ETC20.1.1) The G140L and G160M ETC simulations were made using 20.1.1 and will be scaled back to match the G130M sensitivities assumed here.

17	S/C to RESET the G140L/1105 focus	DARK	S/C, DATA, NONE		SPEC COM INSTRELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G140L; QESIPARM CENTWAVE 1105; QESIPARM FOCUS -370	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to RESET the G140L/1105 settings with its nominal value (-370).
The SCR 344 FSW has the following focus G140L positions;

```
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
        {1, 1105,  1598, -370, 35092, 39716},    /* G140L, OSM1 */
        {1, 1230,  1591,  -30, 35055, 39680},    /* G140L, OSM1 */
        {1, 1280,  1590,   19, 35050, 39675},    /* G140L, OSM1 */
```

18	S/C to RESET the G140L/1280 focus	DARK	S/C, DATA, NONE		SPEC COM INSTRELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G140L; QESIPARM CENTWAVE 1280; QESIPARM FOCUS 19	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to RESET the G140L/1280 settings with with its nominal value(19).
The SCR 344 FSW has the following focus G140L positions;

```
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
        {1, 1105,  1598, -370, 35092, 39716},    /* G140L, OSM1 */
        {1, 1230,  1591,  -30, 35055, 39680},    /* G140L, OSM1 */
        {1, 1280,  1590,   19, 35050, 39675},    /* G140L, OSM1 */
```

19	S/C to RESET the G160M/1577 focus	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1577; QESIPARM FOCUS -384	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to RESET the G160M/1577 settings with its nominal value (-384).

The SCR 344 FSW has the following focus G160M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{2, 1577, 11203, -384, 18693, 23323}, / G160M, OSM1 */*
{2, 1589, 11199, -214, 18671, 23301}, / G160M, OSM1 */*
{2, 1600, 11195, -44, 18651, 23281}, / G160M, OSM1 */*
{2, 1611, 11191, 126, 18631, 23261}, / G160M, OSM1 */*
{2, 1623, 11187, 296, 18609, 23239}, / G160M, OSM1 */*

20	S/C to RESET the G160M/1600 focus	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1600; QESIPARM FOCUS -44	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to RESET the G160M/1600 settings with its nominal value(-44).
The SCR 344 FSW has the following focus G160M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{2, 1577, 11203, -384, 18693, 23323}, / G160M, OSM1 */*
{2, 1589, 11199, -214, 18671, 23301}, / G160M, OSM1 */*
{2, 1600, 11195, -44, 18651, 23281}, / G160M, OSM1 */*
{2, 1611, 11191, 126, 18631, 23261}, / G160M, OSM1 */*
{2, 1623, 11187, 296, 18609, 23239}, / G160M, OSM1 */*

21	S/C to RESET the G160M/1623 focus	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1623; QESIPARM FOCUS 296	8 Secs *[==>]*		***[1]***

Comments: Special Commanding to RESET the G160M/1623 settings with its nominal value (296).
The SCR 344 FSW has the following focus G160M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{2, 1577, 11203, -384, 18693, 23323}, / G160M, OSM1 */*
{2, 1589, 11199, -214, 18671, 23301}, / G160M, OSM1 */*
{2, 1600, 11195, -44, 18651, 23281}, / G160M, OSM1 */*
{2, 1611, 11191, 126, 18631, 23261}, / G160M, OSM1 */*
{2, 1623, 11187, 296, 18609, 23239}, / G160M, OSM1 */*

22	S/C to RESET the G130M/1291 focus	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1291; QESIPARM FOCUS -170	8 Secs *[==>]*	***[1]***

Comments: Special Commanding to RESET the G130M/1291 settings with its nominal value (-170).
The SCR 344 FSW has the following focus G130M positions;

```
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
        {0, 1291,  7999, -170,  2259,  6898},   /* G130M, OSM1 */
        {0, 1300,  7995,    0,  2238,  6877},   /* G130M, OSM1 */
        {0, 1309,  7991,  170,  2218,  6857},   /* G130M, OSM1 */
        {0, 1318,  7987,  340,  2198,  6837},   /* G130M, OSM1 */
        {0, 1327,  7983,  511,  2177,  6816},   /* G130M, OSM1 */
```

23	S/C to RESET the G130M/1327 focus	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1327; QESIPARM FOCUS 511	8 Secs *[==>]*	***[1]***

Comments: Special Commanding to RESET the G130M/1327 settings with its nominal value (511).
The SCR 344 FSW has the following focus G130M positions;

```
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
        {0, 1291,  7999, -170,  2259,  6898},   /* G130M, OSM1 */
        {0, 1300,  7995,    0,  2238,  6877},   /* G130M, OSM1 */
        {0, 1309,  7991,  170,  2218,  6857},   /* G130M, OSM1 */
        {0, 1318,  7987,  340,  2198,  6837},   /* G130M, OSM1 */
        {0, 1327,  7983,  511,  2177,  6816},   /* G130M, OSM1 */
```

24	S/C to update the G130M/1309 focus from 170 to 290 (+120)	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 290	8 Secs *[==>]*	***[1]***

Comments: Special Commanding to overwrite the G130M/1309 settings with the SLP focus position. FENA3 Results suggest we need a +120 focus step adjustment from these values. So, G130M/1309 goes from 170 to +290

The SCR 344 FSW has the following focus G130M positions;

```
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
      { {0, 1055,  8095, -170,  2750,  7402},   /* G130M, OSM1 */
        {0, 1096,  8078, -170,  2665,  7312},   /* G130M, OSM1 */
        {0, 1291,  7999, -170,  2259,  6898},   /* G130M, OSM1 */
        {0, 1300,  7995,    0,  2238,  6877},   /* G130M, OSM1 */
        {0, 1309,  7991,  170,  2218,  6857},   /* G130M, OSM1 */
        {0, 1318,  7987,  340,  2198,  6837},   /* G130M, OSM1 */
        {0, 1327,  7983,  511,  2177,  6816},   /* G130M, OSM1 */
```

25	G130M/1309 - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=S0200D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE		Sequence 25-33 Non-Int in ACQ/PEAKD TEST (12)	176 Secs *[==>]*	***[2]***

Comments: Spectrum of source to define correct location of star when it is centered in NUV (COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE. 36s lamp flash*

NOTE THIS ETC RUN WAS MADE BEFORE THE CYCLE 20 ETC UPDATE TO ETC20.1.1

(This is a good thing since it is probably closer to reality than the pessimistic sensitivitys used in ETC20.1.1) The G140L and G160M ETC simulations were made using 20.1.1 and will be scaled back to match the G130M sensitivities assumed here.

26	G130M - POSTARG + SPECTRUM1 (-1.6) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG -1.6,null	Sequence 25-33 Non-Int in ACQ/PEAKD TEST (12)	20 Secs *[==>]*	***[2]***

Comments: POSTARG TO SIMULATE 9x0.4" ACQ/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.

27	G130M - POSTARG + SPECTRUM2 (-1.2) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG -1.2,null	Sequence 25-33 Non-Int in ACQ/PEAKD TEST (12)	20 Secs *[==>]*	***[2]***

Comments: POSTARG TO SIMULATE ACQ/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.

28	G130M - POSTARG + SPECTRUM3 (-0.8) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG -0.8,null	Sequence 25-33 Non-Int in ACQ/PEAKD TEST (12)	20 Secs *[==>]*	***[2]***

Comments: POSTARG TO SIMULATE ACQ/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.

29	G130M - POSTARG + SPECTRUM4 (-0.4) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG -0.4,null	Sequence 25-33 Non-Int in ACQ/PEAKD TEST (12)	20 Secs *[==>]*	***[2]***

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.

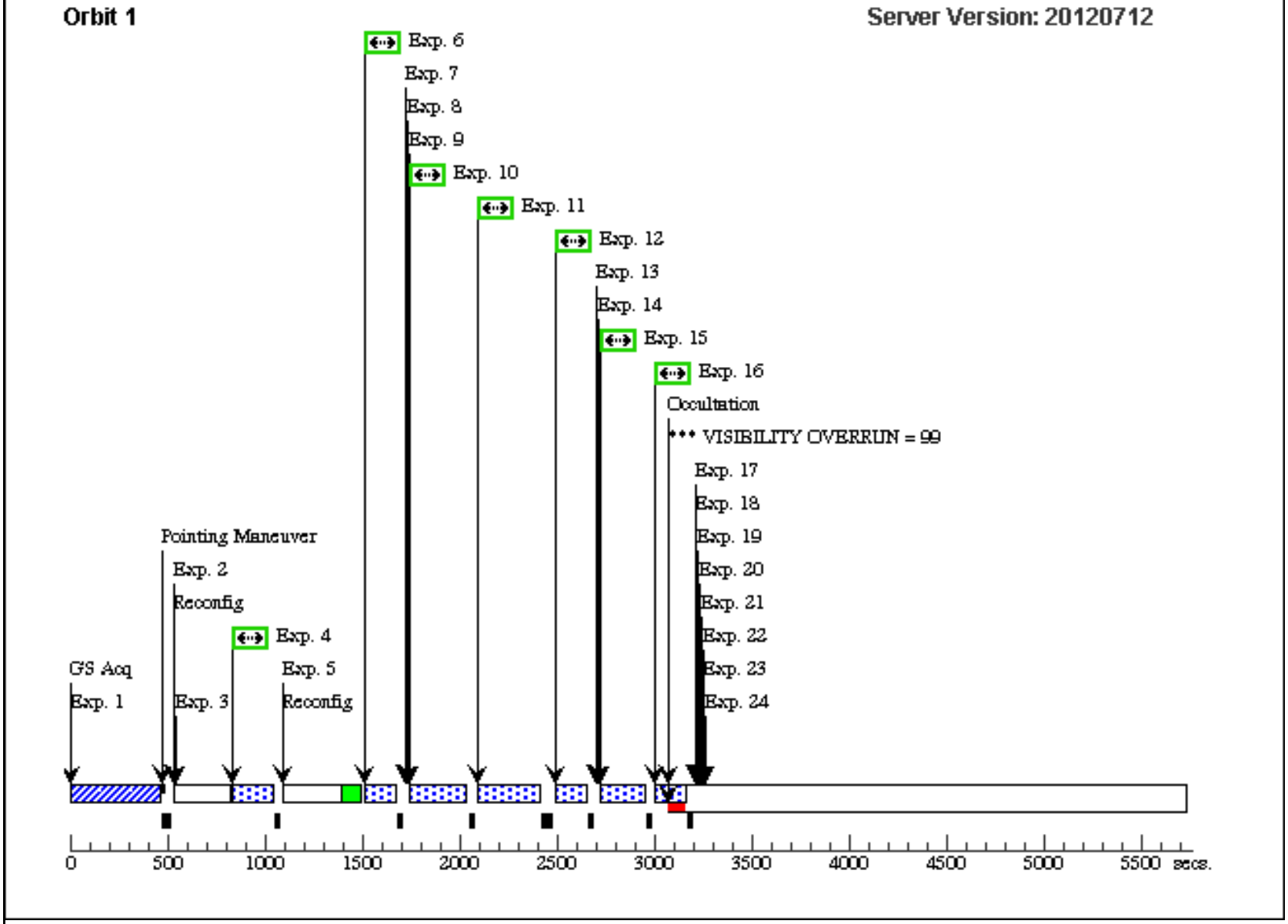
30	G130M - POSTARG + SPECTRUM5 (0.4) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 0.4,null	Sequence 25-33 Non-Int in ACQ/PEAKD TEST (12)	20 Secs *[==>]*	***[2]***

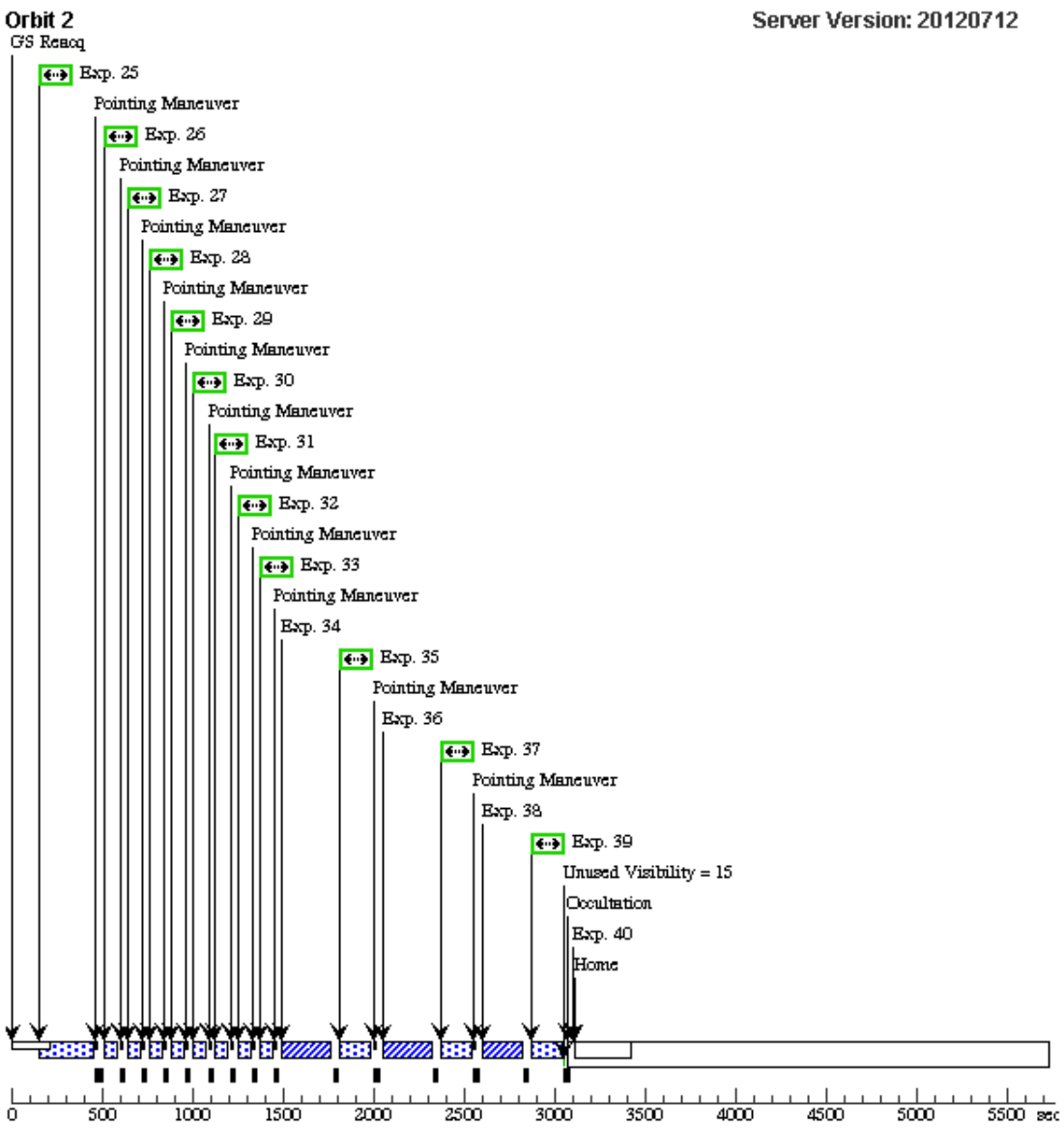
Comments: POSTARG TO SIMULATE ACQ/PEAKD. This is the x= +0.4" position. S/N = 60 is reached in 2 seconds. We want to get a decent look at the spectrum, so we'll observe for 20 seconds.

31	G130M - POSTARG + SPECTRUM6 (0.8) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 0.8,null	Sequence 25-33 Non-Int in ACQ/PEAKD TEST (12)	20 Secs *[==>]*		***[2]***
Comments: POSTARG TO SIMULATE ACQ/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.										
32	G130M - POSTARG + SPECTRUM7 (1.2) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 1.2,null	Sequence 25-33 Non-Int in ACQ/PEAKD TEST (12)	20 Secs *[==>]*		***[2]***
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.										
33	G130M - POSTARG + SPECTRUM8 (1.6) (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 1.6,null	Sequence 25-33 Non-Int in ACQ/PEAKD TEST (12)	20 Secs *[==>]*		***[2]***
Comments: POSTARG TO SIMULATE ACQ/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 (~16000 total counts (A+B))										
34	G130M - ACQ/PEAKD (COS.sa.360701)	(1) AZV18	COS/FUV, ACQ/PEAKD, PSA	G130M 1309 A	NUM-POS=9; STEP-SIZE=0.4; LIFETIME-POS=ALTERNATE		Sequence 34-35 Non-Int in ACQ/PEAKD TEST (12)	2 Secs *[==>]*		***[2]***
Comments: ACQ/PEAKD of a centered target on the same 9x0.4" pattern. . S/N = 60 is reached in 2 seconds.										
35	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 34-35 Non-Int in ACQ/PEAKD TEST (12)	120 Secs *[==>]*		***[2]***
Comments: Confirmation Spectrum after the PEAKD (COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE in 182s, we are forced to use less due to time constraints.*										
36	G130M - ACQ/PEAKD (COS.sa.360701)	(13) AZV18-OFFSET-AD+0.3	COS/FUV, ACQ/PEAKD, PSA	G130M 1309 A	NUM-POS=9; STEP-SIZE=0.3; LIFETIME-POS=ALTERNATE		Sequence 36-37 Non-Int in ACQ/PEAKD TEST (12)	2 Secs *[==>]*		***[2]***
Comments: 9x0.3" ACQ/PEAKD on an off centered target. The target is defined 0.3" in the +AD direction from the actual target, so the target will actually now be 0.3" off in the -AD direction.										
37	G130M - BASELINE SPECTRUM (COS.sp.360698)	(13) AZV18-OFFSET-AD+0.3	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 36-37 Non-Int in ACQ/PEAKD TEST (12)	120 Secs *[==>]*		***[2]***
Comments: Confirmation spectrum after the 9x0.3" ACQ/PEAKD. Our coordinate system is now off by -0.3". Our next target is defined to be -0.5" from the original location, which is now -0.8" from the original target , so the target is actually at +0.8" when we start the ACQ/PEAKD pattern. COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE in 182s, we are forced to use less due to time constraints.*										

	38	G130M - ACQ/PEAKD (COS.sa.360701)	(14) AZV18-OFFSET-AD-0.5	COS/FUV, ACQ/PEAKD, PSA	G130M 1309 A	NUM-POS=7; STEP-SIZE=0.55; LIFETIME-POS=ALTERNATE	Sequence 38-39 Non-Int in ACQ/PEAKD TEST (12)	2 Secs *[==>]*	 ***[2]***
		Comments: 9x0.5 ACQ/PEAKD on an off centered target, this time the target is 0.8" off to the +AD.							
	39	G130M - BASELINE SPECTRUM (COS.sp.360698)	(14) AZV18-OFFSET-AD-0.5	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 38-39 Non-Int in ACQ/PEAKD TEST (12)	120 Secs *[==>]*	 ***[2]***
		Comments: Spectrum of source to determine if correctly centered after the 9x0.5" pattern on the target offset by +0.8". (COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE in 182s, we are forced to use less due to time constraints.*							
	40	S/C to RESET the G130M/1309 focus	DARK	S/C, DATA, NONE		SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 170		8 Secs *[==>]*	 ***[2]***
		Comments: Special Commanding to reset the G130M/1309 settings with the original focus, the SCR 344 FSW position (170).							

Orbit Structure




Orbit 2
Server Version: 20120712
GS Reacq
Exp. 25
Pointing Maneuver
Exp. 26
Pointing Maneuver
Exp. 27
Pointing Maneuver
Exp. 28
Pointing Maneuver
Exp. 29
Pointing Maneuver
Exp. 30
Pointing Maneuver
Exp. 31
Pointing Maneuver
Exp. 32
Pointing Maneuver
Exp. 33
Pointing Maneuver
Exp. 34
Exp. 35
Pointing Maneuver
Exp. 36
Exp. 37
Pointing Maneuver
Exp. 38
Exp. 39
Unused Visibility = 15
Occultation
Exp. 40
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit	**Proposal 12797, ACQ/PEAKXD TEST G130M (13), implementation** Wed Jul 25 01:38:49 GMT 2012 **Diagnostic Status: Warning** Scientific Instruments: COS/NUV, S/C, COS/FUV Special Requirements: SCHED 100%; ORIENT 247.5D TO 252.5 D; BETWEEN 13-JUN-2012 AND 30-JUN-2012; ON HOLD *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 +/- 1.6" offsets are double the exposure time to compensate for vignetting. We then proceed to test PEAKXD at offsets of +/-0.5, +/-1.0 and +/-1.5".* *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *On Hold Comments: ACQ/PEAKXD TEST w/o HV reset to simulate actual timing*
Diagnostics	(ACQ/PEAKXD TEST G130M (13)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/PEAKXD. (ACQ/PEAKXD TEST G130M (13)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (ACQ/PEAKXD TEST G130M (13)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (ACQ/PEAKXD TEST G130M (13)) 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 (13)) Warning (Orbit Planner): VISIBILITY OVERRUN (ACQ/PEAKXD TEST G130M (13)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE. (ACQ/PEAKXD TEST G130M (13)) Warning (Form): COS ACQ/PEAKXD exposure should be followed by an ACQ/PEAKD exposure in the Visit.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	AZV18	RA: 00 47 12.1700 (11.8007083d) Dec: -73 06 32.68 (-73.10908d) Equinox: J2000	Proper Motion RA: -0.0003 sec of time/yr Proper Motion Dec: -0.0035 arcsec/yr Epoch of Position: 2000	V=12.48 (B-V)=+0.04	Reference Frame: ICRS
Comments: B2Ia, Magellanic Clouds. Nominal ETC exposure times from spectrum supplied 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)*					
(5)	AZV18-OFFSET-XD+0.5	Offset from AZV18 by RA Offset: -1.25876E-4 Degrees Dec Offset: 0.211309 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+0.5) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 offset for ACQ/PEAKXD* *(AD,XD)=(0,-0.5")=-0.5"@25°S of E* *RA=-0.5"*cos(25°)=-0.453154"=-0.000125876°* *DEC=0.5"*sin(25°)=0.211309"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					
(10)	AZV18-OFFSET-XD+1.0	Offset from AZV18 by RA Offset: -2.51752E-4 Degrees Dec Offset: 0.422618 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+1.0) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 1.0" offset for ACQ/PEAKD (0,-1.0")=-1"@25° S of E* *RA=-1.0"*cos(20°)= -0.906308"= -0.000251752°* *DEC=1.0"*sin(20°)=0.422618"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					
(15)	AZV18-OFFSET-XD+1.5	Offset from AZV18 by RA Offset: -3.77628E-4 Degrees Dec Offset: 0.633927 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+1.5) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 1.5" offset for ACQ/PEAKD* *(0,-1.5")=-1.5"@25° S of E* *RA=-1.5"*cos(20°)=-1.35946=-0.000377628°* *DEC=1.5"*sin(20°)= 0.633927"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	2 nuv a/im (COS.ta.360711)	(1) AZV18	COS/NUV, ACQ/IMAGE, BOA	MIRRORA		GS ACQ SCENARIO BASE1BN3		30 Secs *[==>]*	***[1]***
Comments: NUV ACQ/IMAGE with BOA+MIRRORA to refine centering. (COS92525 gives S/N = 40 in 14.5s)									
2	S/C to update the G130M/1309 focus from 170 to 290 (+120)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 290		8 Secs *[==>]*	***[1]***
Comments: Special Commanding to overwrite the G130M/1309 settings with the SLP focus position. FENA3 Results suggest we need a +120 focus step adjustment from these values. So, G130M/1309 goes from 170 to +290 *The SCR 344 FSW has the following focus G130M positions;* *const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =* *{ {0, 1055, 8095, -170, 2750, 7402}, /* G130M, OSM1 */* *{0, 1096, 8078, -170, 2665, 7312}, /* G130M, OSM1 */* *{0, 1291, 7999, -170, 2259, 6898}, /* G130M, OSM1 */* *{0, 1300, 7995, 0, 2238, 6877}, /* G130M, OSM1 */* *{0, 1309, 7991, 170, 2218, 6857}, /* G130M, OSM1 */* *{0, 1318, 7987, 340, 2198, 6837}, /* G130M, OSM1 */* *{0, 1327, 7983, 511, 2177, 6816}, /* G130M, OSM1 */*								
3	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=S0200D036; LIFETIME-POS=ALTERNATE		Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G130M (13)	202 Secs *[==>]*	***[1]***
*Comments: Spectrum of source to define correct location of star when it is centered using NUV ACQ/IMAGE. COS.sp.360698 gives S/N/RE = 10 in 182 seconds, BT=2/3*986 or ~630.*									
4	G130M - POSTARG + SPECTRUM1 (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-1.6	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G130M (13)	200 Secs *[==>]*	***[1]***
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 seconds, since it is heavily vignetted. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.									
5	G130M - POSTARG + SPECTRUM2 (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-1.1	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G130M (13)	150 Secs *[==>]*	***[1]***
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.									

6	G130M - POSTARG + SPECTRUM (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=300; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-0.6	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G130M (13)	100 Secs *[==>]*	***[1]***

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 seconds.

7	G130M - POSTARG + SPECTRUM (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-0.3	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G130M (13)	100 Secs *[==>]*	***[1]***

Comments: POSTARG TO Move to Y=-0.3. 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 seconds.

8	G130M - POSTARG + SPECTRUM (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,0.3	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G130M (13)	100 Secs *[==>]*	***[1]***

Comments: POSTARG TO Move to Y=0.3. 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 seconds.

9	G130M - POSTARG + SPECTRUM (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,0.6	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G130M (13)	100 Secs *[==>]*	***[1]***

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 seconds.

10	G130M - POSTARG + SPECTRUM (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,1.1	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G130M (13)	150 Secs *[==>]*	***[1]***

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.

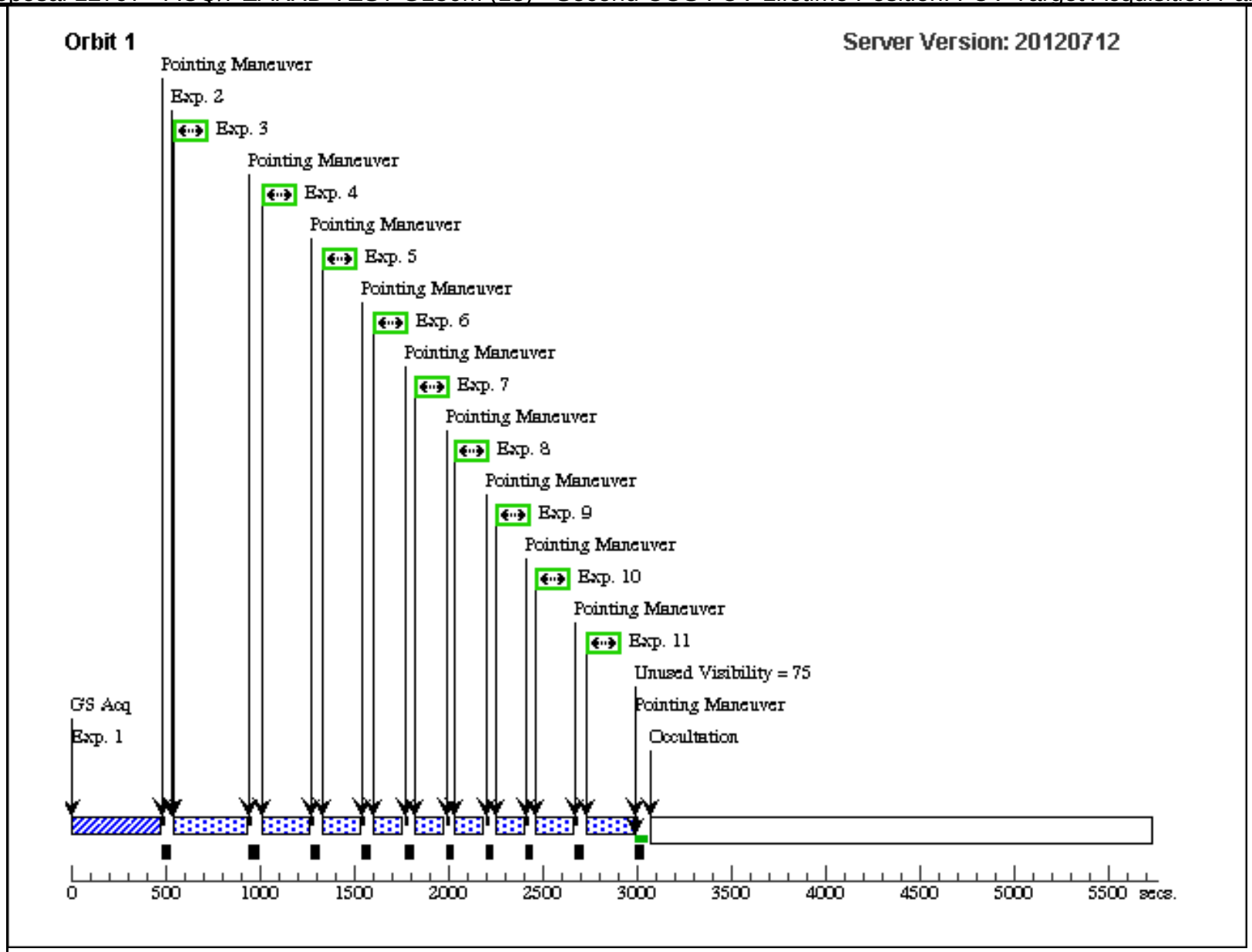
11	G130M - POSTARG + SPECTRUM (COS.sa.360701)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,1.6	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G130M (13)	200 Secs *[==>]*	***[1]***

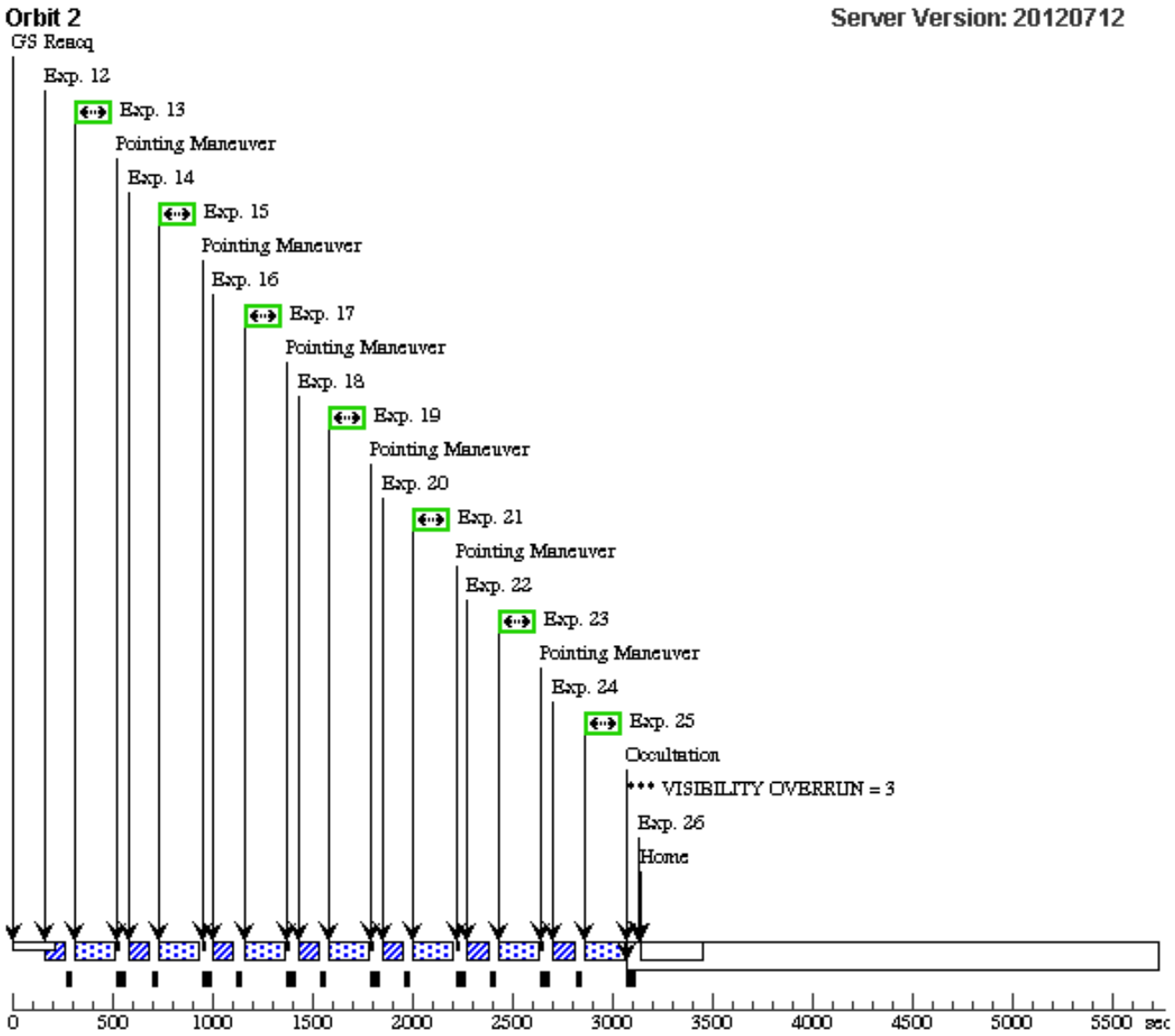
Comments: POSTARG TO Move to Y=1.6". S/N = 60 is reached in 2 seconds. But, we are trying to determine the local plate scale of the detector, so want to get a decent look at the spectrum, so we'll observe for 200 seconds, since it is heavily vignetted.

12	G130M - PEAKXD- Centered (COS.sa.360701)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE	Sequence 12-13 Non-Int in ACQ/PEAKXD TEST G130M (13)	10 Secs *[==>]*	*[2]*
Comments: ACQ/PEAKXD on the centered target. COS.sa.360701, S/N = 60 is reached in 2 seconds (A+B), we use 10s sure we get enough counts.								
13	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 12-13 Non-Int in ACQ/PEAKXD TEST G130M (13)	150 Secs *[==>]*	*[2]*
*Comments: Spectrum of source to test previous ACQ/PEAKXD centering. COS.sp.360698 gives S/N/RE =10 in 182 seconds, BT=2/3*986 or ~630.*								
14	G130M -PEAKXD- XD+1.0 (COS.sa.360701)	(10) AZV18-OFFSET-XD+1.0	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE	Sequence 14-15 Non-Int in ACQ/PEAKXD TEST G130M (13)	10 Secs *[==>]*	*[2]*
Comments: ACQ/PEAKXD on the target offset by +1.0". COS.sa.360701, S/N = 60 is reached in 2 seconds (A+B), we use 10s sure we get enough counts.								
15	G130M - BASELINE SPECTRUM (COS.sp.360698)	(10) AZV18-OFFSET-XD+1.0	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 14-15 Non-Int in ACQ/PEAKXD TEST G130M (13)	150 Secs *[==>]*	*[2]*
*Comments: Spectrum of source to test previous ACQ/PEAKXD centering. COS.sp.360698 gives S/N/RE =10 in 182 seconds, BT=2/3*986 or ~630.*								
16	G130M - PEAKXD-XD-1.0 (COS.sa.360701)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE	Sequence 16-17 Non-Int in ACQ/PEAKXD TEST G130M (13)	10 Secs *[==>]*	*[2]*
Comments: ACQ/PEAKKD, back on original target, now -1.0" offset.								
17	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 16-17 Non-Int in ACQ/PEAKXD TEST G130M (13)	150 Secs *[==>]*	*[2]*
Comments: ACQ/PEAKD confirmation spectrum.								
18	G130M - PEAKXD-XD+0.5 (COS.sa.360701)	(5) AZV18-OFFSET-XD+0.5	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE	Sequence 18-19 Non-Int in ACQ/PEAKXD TEST G130M (13)	10 Secs *[==>]*	*[2]*
Comments: ACQ/PEAKXD on the target offset by +0.5". COS.sa.360701, S/N = 60 is reached in 2 seconds (A+B), we use 10s sure we get enough counts.								
19	G130M - BASELINE SPECTRUM (COS.sp.360698)	(5) AZV18-OFFSET-XD+0.5	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 18-19 Non-Int in ACQ/PEAKXD TEST G130M (13)	150 Secs *[==>]*	*[2]*
*Comments: Spectrum of source to test previous ACQ/PEAKXD centering. COS.sp.360698 gives S/N/RE =10 in 182 seconds, BT=2/3*986 or ~630.*								

20	G130M - PEAKXD-XD-0.5 (COS.sa.360701)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE	Sequence 20-21 Non-Int in ACQ/PEAKXD TEST G130M (13)	10 Secs *[==>]*	***[2]***
Comments: Back on original target, -0.5". COS.sa.360701, S/N = 60 is reached in 2 seconds (A+B), we use 10s sure we get enough counts.								
21	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 20-21 Non-Int in ACQ/PEAKXD TEST G130M (13)	150 Secs *[==>]*	***[2]***
*Comments: Spectrum of source to test previous ACQ/PEAKXD centering. COS.sp.360698 gives S/N/RE =10 in 182 seconds, BT=2/3*986 or ~630.*								
22	G130M - PEAKXD-XD+1.5 (COS.sa.360701)	(15) AZV18-OFFSET-XD+1.5	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE	Sequence 22-23 Non-Int in ACQ/PEAKXD TEST G130M (13)	15 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD on the target offset by +1.5". COS.sa.360701, S/N = 60 is reached in 2 seconds (A+B), we use 10s sure we get enough counts.								
23	G130M - BASELINE SPECTRUM (COS.sp.360698)	(15) AZV18-OFFSET-XD+1.5	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 22-23 Non-Int in ACQ/PEAKXD TEST G130M (13)	150 Secs *[==>]*	***[2]***
*Comments: Spectrum of source to test previous ACQ/PEAKXD centering. COS.sp.360698 gives S/N/RE =10 in 182 seconds, BT=2/3*986 or ~630.*								
24	G130M - PEAKXD-XD-1.5 (COS.sa.360701)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE	Sequence 24-25 Non-Int in ACQ/PEAKXD TEST G130M (13)	15 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD on the target offset by -1.5". COS.sa.360701, S/N = 60 is reached in 2 seconds (A+B), we use 10s sure we get enough counts.								
25	G130M - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 24-25 Non-Int in ACQ/PEAKXD TEST G130M (13)	150 Secs *[==>]*	***[2]***
*Comments: Spectrum of source to test previous ACQ/PEAKXD centering. COS.sp.360698 gives S/N/RE =10 in 182 seconds, BT=2/3*986 or ~630.*								
26	S/C to RESET the G130M/1309 focus	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 170	8 Secs *[==>]*	***[2]***
Comments: Special Commanding to reset the G130M/1309 settings with the original focus, the SCR 344 FSW position (170).								

Orbit Structure




Orbit 2
Server Version: 20120712
GS Reacq
Exp. 12
Exp. 13
Pointing Maneuver
Exp. 14
Exp. 15
Pointing Maneuver
Exp. 16
Exp. 17
Pointing Maneuver
Exp. 18
Exp. 19
Pointing Maneuver
Exp. 20
Exp. 21
Pointing Maneuver
Exp. 22
Exp. 23
Pointing Maneuver
Exp. 24
Exp. 25
Occultation
*** VISIBILITY OVERRUN = 3
Exp. 26
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit	**Proposal 12797, ACQ/PEAKXD TEST G160M (14), implementation** Wed Jul 25 01:38:52 GMT 2012 **Diagnostic Status: Warning** Scientific Instruments: COS/NUV, S/C, COS/FUV Special Requirements: SCHED 100%; SAME ORIENT AS 13; BETWEEN 13-JUN-2012 AND 27-JUN-2012; ON HOLD *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,-0.3,0.3,0.6,1.1,1.6) " in the XD direction. This will allow us to measure the plate scale. The +/- 1.6" offsets are double the exposure time to compensate for vignetting. We then proceed to test PEAKXD at offsets of +/- 0.5, +/-1.0 and +/-1.5".* *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *On Hold Comments: ACQ/PEAKXD TEST w/o HV reset to simulate actual timing*
Diagnostics	(ACQ/PEAKXD TEST G160M (14)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE. (ACQ/PEAKXD TEST G160M (14)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/PEAKXD. (ACQ/PEAKXD TEST G160M (14)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (ACQ/PEAKXD TEST G160M (14)) Warning (Form): COS ACQ/PEAKXD exposure should be followed by an ACQ/PEAKD exposure in the Visit. (ACQ/PEAKXD TEST G160M (14)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (ACQ/PEAKXD TEST G160M (14)) Warning (Form): For the best data quality, it is strongly recommended that all four FP-POS positions be used when observing at a given COS CENWAVE setting.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	AZV18	RA: 00 47 12.1700 (11.8007083d) Dec: -73 06 32.68 (-73.10908d) Equinox: J2000	Proper Motion RA: -0.0003 sec of time/yr Proper Motion Dec: -0.0035 arcsec/yr Epoch of Position: 2000	V=12.48 (B-V)=+0.04	Reference Frame: ICRS
Comments: B2Ia, Magellanic Clouds. Nominal ETC exposure times from spectrum supplied 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)*					
(5)	AZV18-OFFSET-XD+0.5	Offset from AZV18 by RA Offset: -1.25876E-4 Degrees Dec Offset: 0.211309 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+0.5) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 offset for ACQ/PEAKXD* *(AD,XD)=(0,-0.5")=-0.5"@25°S of E* *RA=-0.5"*cos(25°)=-0.453154"=-0.000125876°* *DEC=0.5"*sin(25°)=0.211309"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					
(10)	AZV18-OFFSET-XD+1.0	Offset from AZV18 by RA Offset: -2.51752E-4 Degrees Dec Offset: 0.422618 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+1.0) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 1.0" offset for ACQ/PEAKD (0,-1.0")=-1"@25° S of E* *RA=-1.0"*cos(20°)= -0.906308"= -0.000251752°* *DEC=1.0"*sin(20°)=0.422618"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					
(15)	AZV18-OFFSET-XD+1.5	Offset from AZV18 by RA Offset: -3.77628E-4 Degrees Dec Offset: 0.633927 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+1.5) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 1.5" offset for ACQ/PEAKD* *(0,-1.5")=-1.5"@25° S of E* *RA=-1.5"*cos(20°)=-1.35946=-0.000377628°* *DEC=1.5"*sin(20°)= 0.633927"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	2 nuv a/im (COS.ta.360711)	(1) AZV18	COS/NUV, ACQ/IMAGE, BOA	MIRRORA		GS ACQ SCENARIO BASE1BN3		30 Secs *[==>]*	***[1]***
Comments: NUV ACQ/IMAGE with BOA+MIRRORA to refine centering. (COS.ta.360711gives S/N = 60 in 27s)									
2	S/C to update the G160M/1600 focus from -44 to +116 (+160)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1600; QESIPARM FOCUS 116		8 Secs *[==>]*	***[1]***
Comments: Special Commanding to overwrite the G160M/1600 settings with the SLP focus position. FENA3 Results suggest we need a +160 focus step adjustment from these values. So, G160M/1600 goes from -44 to +116. *The SCR 344 FSW has the following focus G160M positions;* *const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =* *{2, 1577, 11203, -384, 18693, 23323}, /* G160M, OSM1 */* *{2, 1589, 11199, -214, 18671, 23301}, /* G160M, OSM1 */* *{2, 1600, 11195, -44, 18651, 23281}, /* G160M, OSM1 */* *{2, 1611, 11191, 126, 18631, 23261}, /* G160M, OSM1 */* *{2, 1623, 11187, 296, 18609, 23239}, /* G160M, OSM1 */*								
3	G160M - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G160M (14)	205 Secs *[==>]*	***[1]***
*Comments: Spectrum of source to define G160M/1600 location of a target when it is centered w/ NUV ACQ/IMAGE. COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe).* *There are ~2000 RE/detector so the cps = 100*2000./(215) ~ 930 counts/s, to get S/N=3600 we estimate 4s.* *For comparison, COS.sp.389715 estimates :Count rate entire detector=2,467.1* *Count rate Segment A 810.9 *0.75 = 600counts/s -> S/N=60 in 6 seconds.* *Count rate Segment B 1,656.2*								
4	G160M - POSTARG + SPECTRUM1 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-1.6	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G160M (14)	190 Secs *[==>]*	***[1]***
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 190 seconds, since it is heavily vignetted. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.									

5	G160M - POSTARG + SPECTRUM2 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-1.1	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G160M (14)	140 Secs [==>]	[1]

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 140 seconds, since it is 40% vignetted, for centered exposures, we'll use 150 seconds. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

6	G160M - POSTARG + SPECTRUM3 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-0.6	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G160M (14)	95 Secs [==>]	[1]

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 95 seconds. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

7	G160M - POSTARG + SPECTRUM4 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-0.3	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G160M (14)	95 Secs [==>]	[1]

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 ~100 seconds. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

8	G160M - POSTARG + SPECTRUM5 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,0.3	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G160M (14)	95 Secs [==>]	[1]

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 100 seconds. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

9	G160M - POSTARG + SPECTRUM6 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,0.6	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G160M (14)	95 Secs [==>]	[1]

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 ~100 seconds. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

10	G160M - POSTARG + SPECTRUM7 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,1.1	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G160M (14)	140 Secs [==>]	[1]

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 140 seconds, since it is 40% vignetted, for centered exposures, we'll use 150 seconds. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

11	G160M - POSTARG + SPECTRUM8 (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,1.6	Sequence 3-11 Non-Int in ACQ/PEAKXD TEST G160M (14)	200 Secs *[==>]*	***[1]***
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 190 seconds, since it is heavily vignetted. We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.									
12	G160M - PEAKXD - Centered (COS.sp.389715)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE		Sequence 12-13 Non-Int in ACQ/PEAKXD TEST G160M (14)	10 Secs *[==>]*	***[2]***
Comments: COS.sp.389715 gives S/N/RE=60 in 4-6 seconds. This is on the centered target, so it shouldn't move.									
13	G160M - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=420; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 12-13 Non-Int in ACQ/PEAKXD TEST G160M (14)	140 Secs *[==>]*	***[2]***
*Comments: COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe), due to time constraints, the exposure time has been dropped to 140s.*									
14	G160M - PEAKXD-XD +1.0 (COS.sp.389715)	(10) AZV18-OFFSET-XD+1.0	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE		Sequence 14-15 Non-Int in ACQ/PEAKXD TEST G160M (14)	10 Secs *[==>]*	***[2]***
Comments: COS.sp.389715 gives S/N/RE=60 in 4-6 seconds. PEAKXD of a target offset by 1.0"									
15	G160M - BASELINE SPECTRUM (COS.sp.389715)	(10) AZV18-OFFSET-XD+1.0	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=420; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 14-15 Non-Int in ACQ/PEAKXD TEST G160M (14)	140 Secs *[==>]*	***[2]***
*Comments: COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe), due to time constraints, the exposure time has been dropped to 140s.*									
16	G160M - PEAKXD TEST-XD-1.0 (COS.sp.389715)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE		Sequence 16-17 Non-Int in ACQ/PEAKXD TEST G160M (14)	10 Secs *[==>]*	***[2]***
Comments: COS.sp.389715 gives S/N/RE=60 in 4-6 seconds. Back to the original, so a 1" PEAKDXD from the other direction.									
17	G160M - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=420; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 16-17 Non-Int in ACQ/PEAKXD TEST G160M (14)	140 Secs *[==>]*	***[2]***
*Comments: COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe), due to time constraints, the exposure time has been dropped to 140s.*									

18	G160M - PEAKXD- 0.5 (COS.sp.389715)	(5) AZV18-OFFSET-XD+0.5	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE	Sequence 18-19 Non-Int in ACQ/PEAKXD TEST G160M (14)	10 Secs *[==>]*	***[2]***
Comments: COS.sp.389715 gives S/N/RE=60 in 4-6 seconds. Now try from 0.5" away.								
19	G160M - BASELINE SPECTRUM (COS.sp.389715)	(5) AZV18-OFFSET-XD+0.5	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=420; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 18-19 Non-Int in ACQ/PEAKXD TEST G160M (14)	140 Secs *[==>]*	***[2]***
*Comments: COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe), due to time constraints, the exposure time has been dropped to 140s.*								
20	G160M - PEAKXD-0.5 (COS.sp.389715)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE	Sequence 20-21 Non-Int in ACQ/PEAKXD TEST G160M (14)	10 Secs *[==>]*	***[2]***
Comments: COS.sp.389715 gives S/N/RE=60 in 4-6 seconds. Now 0.5" from the other direction.								
21	G160M - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=420; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 20-21 Non-Int in ACQ/PEAKXD TEST G160M (14)	140 Secs *[==>]*	***[2]***
*Comments: COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe), due to time constraints, the exposure time has been dropped to 140s.*								
22	G160M - PEAKXD-1.5 (COS.sp.389715)	(15) AZV18-OFFSET-XD+1.5	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE	Sequence 22-23 Non-Int in ACQ/PEAKXD TEST G160M (14)	15 Secs *[==>]*	***[2]***
Comments: COS.sp.389715 gives S/N/RE=60 in 4-6 seconds. Ok, one last time from 1.5" away, so increase the exposure time due to the vignetting.								
23	G160M - BASELINE SPECTRUM (COS.sp.389715)	(15) AZV18-OFFSET-XD+1.5	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=420; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 22-23 Non-Int in ACQ/PEAKXD TEST G160M (14)	140 Secs *[==>]*	***[2]***
*Comments: COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe), due to time constraints, the exposure time has been dropped to 140s.*								
24	G160M - PEAKXD+1.5 (COS.sp.389715)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE	Sequence 24-25 Non-Int in ACQ/PEAKXD TEST G160M (14)	15 Secs *[==>]*	***[2]***
Comments: COS.sp.389715 gives S/N/RE=60 in 4-6 seconds. Ok, one last time from 1.5" away, so increase the exposure time due to the vignetting.								
25	G160M - BASELINE SPECTRUM (COS.sp.389715)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=420; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 24-25 Non-Int in ACQ/PEAKXD TEST G160M (14)	140 Secs *[==>]*	***[2]***
*Comments: COS.sp.389715 (ETC20.1.1) gives S/N/RE=10 @ 1610A in 287s. (BT=2/3*956=640). We attempt to scale this to April 2012 by multiplying by 0.75 => ET= 215s, BT =(2/3*956*0.75) = 480s (we use 420 to be safe), due to time constraints, the exposure time has been dropped to 140s.*								

	26	S/C to RESET the G160M/1600 focus	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1600; QESIPARM FOCUS -44	8 Secs *[==>]*	 ***[2]***

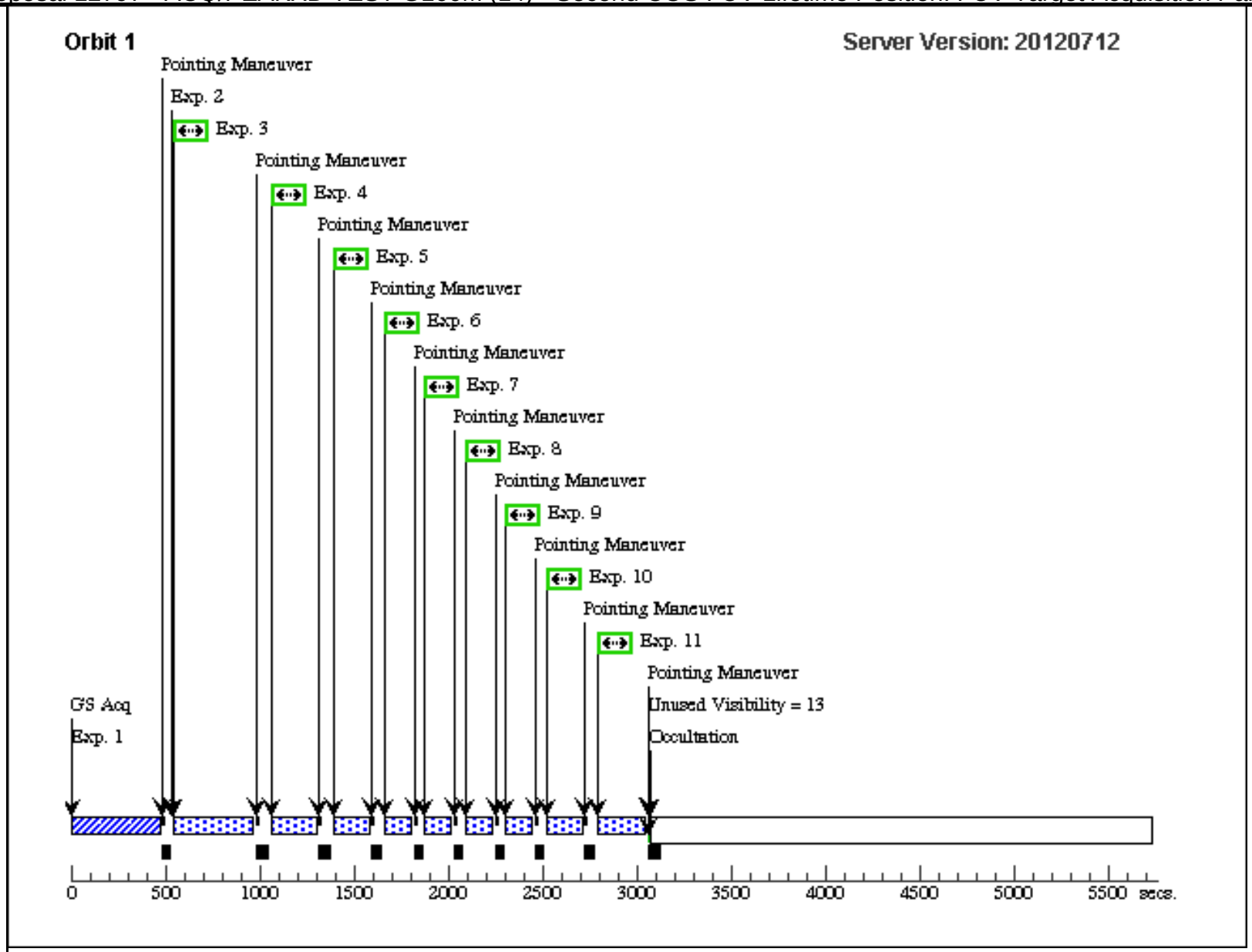
Comments: Special Commanding to RESET the G160M/1600 settings to the nominal value (-44).

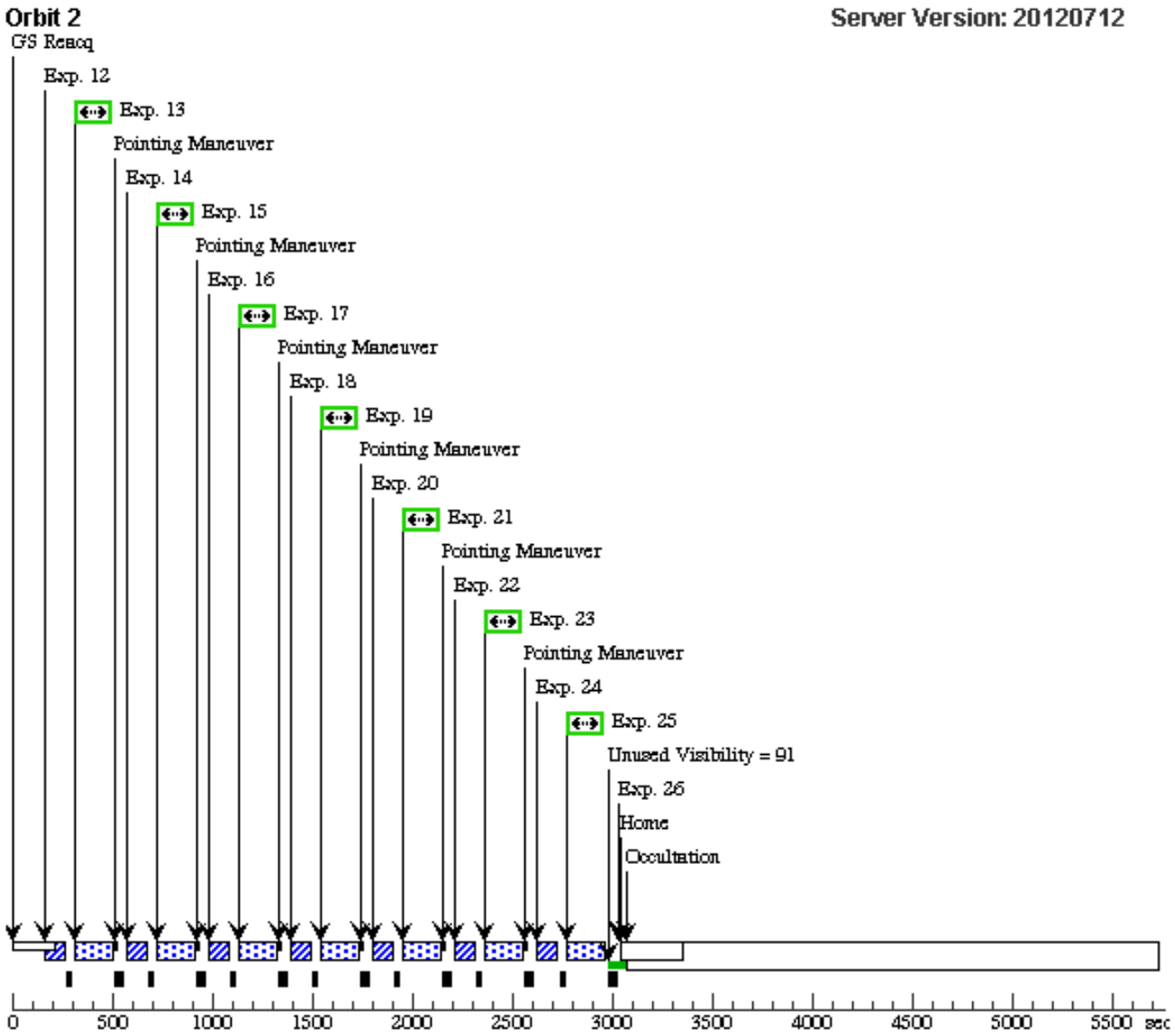
The SCR 344 FSW has the following focus G160M positions;

```
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =

        {2, 1577, 11203, -384, 18693, 23323},    /* G160M, OSM1 */
        {2, 1589, 11199, -214, 18671, 23301},    /* G160M, OSM1 */
        {2, 1600, 11195,  -44, 18651, 23281},    /* G160M, OSM1 */
        {2, 1611, 11191,  126, 18631, 23261},    /* G160M, OSM1 */
        {2, 1623, 11187,  296, 18609, 23239},    /* G160M, OSM1 */
```

Orbit Structure




Orbit 2
Server Version: 20120712
GS Reacq
Exp. 12
Exp. 13
Pointing Maneuver
Exp. 14
Exp. 15
Pointing Maneuver
Exp. 16
Exp. 17
Pointing Maneuver
Exp. 18
Exp. 19
Pointing Maneuver
Exp. 20
Exp. 21
Pointing Maneuver
Exp. 22
Exp. 23
Pointing Maneuver
Exp. 24
Exp. 25
Unused Visibility = 91
Exp. 26
Home
Occultation
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit	**Proposal 12797, ACQ/PEAKXD TEST G140L (15), implementation** Wed Jul 25 01:38:55 GMT 2012 **Diagnostic Status: Warning** Scientific Instruments: COS/NUV, S/C, COS/FUV Special Requirements: SCHED 100%; SAME ORIENT AS 13; BETWEEN 13-JUN-2012 AND 27-JUN-2012; ON HOLD *Comments: ACQ/PEAKXD Test for G140L The target is AVZ18 (the SMOV TA target). After obtaining a good spectrum of the centered target, , WE NOW TAKE A G130M PEAKD to test the SIAF UPDATE. 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. The +/- 1.6" offsets are double the exposure time to compensate for vignetting. We then proceed to test PEAKXD at offsets of +/-0.5, +/-1.0 and +/-1.5".* *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *Note that this visit should only proceed after the April/May 2012 SIAF file update (AD=AD - 0.1") as the first exposures are designed to test any SIAF changes in the dispersion direction.* *On Hold Comments: ACQ/PEAKD TEST w/o HV reset to simulate actual timing. Note that this visit should only proceed after the April/May 2012 SIAF file update (AD=AD - 0.1")*
Diagnostics	(ACQ/PEAKXD TEST G140L (15)) Warning (Form): COS ACQ/PEAKXD exposure should be followed by an ACQ/PEAKD exposure in the Visit. (ACQ/PEAKXD TEST G140L (15)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/PEAKXD. (ACQ/PEAKXD TEST G140L (15)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (ACQ/PEAKXD TEST G140L (15)) Warning (Orbit Planner): POS TARG OUTSIDE OF APERTURE (ACQ/PEAKXD TEST G140L (15)) 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 (15)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE. (ACQ/PEAKXD TEST G140L (15)) Warning (Orbit Planner): VISIBILITY OVERRUN (ACQ/PEAKXD TEST G140L (15)) Warning (Form): COS ACQ/PEAKD exposure should be preceded by an ACQ/PEAKXD exposure in the Visit.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(1)	AZV18	RA: 00 47 12.1700 (11.8007083d) Dec: -73 06 32.68 (-73.10908d) Equinox: J2000	Proper Motion RA: -0.0003 sec of time/yr Proper Motion Dec: -0.0035 arcsec/yr Epoch of Position: 2000	V=12.48 (B-V)=+0.04	Reference Frame: ICRS
Comments: B2Ia, Magellanic Clouds. Nominal ETC exposure times from spectrum supplied 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)*					
(5)	AZV18-OFFSET-XD+0.5	Offset from AZV18 by RA Offset: -1.25876E-4 Degrees Dec Offset: 0.211309 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+0.5) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 offset for ACQ/PEAKXD* *(AD,XD)=(0,-0.5")=-0.5"@25°S of E* *RA=-0.5"*cos(25°)=-0.453154"=-0.000125876°* *DEC=0.5"*sin(25°)=0.211309"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					
(10)	AZV18-OFFSET-XD+1.0	Offset from AZV18 by RA Offset: -2.51752E-4 Degrees Dec Offset: 0.422618 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+1.0) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 1.0" offset for ACQ/PEAKD (0,-1.0")=-1"@25° S of E* *RA=-1.0"*cos(20°)= -0.906308"= -0.000251752°* *DEC=1.0"*sin(20°)=0.422618"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					
(15)	AZV18-OFFSET-XD+1.5	Offset from AZV18 by RA Offset: -3.77628E-4 Degrees Dec Offset: 0.633927 Arcsec		V=12.48 (B-V)=+0.04	Offset Position (AZV18-OFFSET-XD+1.5) Reference Frame: ICRS
Comments: This target is offset 1.0" in the XD direction, and is valid for visits 3-5 only. *The roll angle for 13-Jun-2012 till 30-Jun-2012 is 250 +/-2.5d (visits 3-5)* *AZV18 1.5" offset for ACQ/PEAKD* *(0,-1.5")=-1.5"@25° S of E* *RA=-1.5"*cos(20°)=-1.35946=-0.000377628°* *DEC=1.5"*sin(20°)= 0.633927"* *Olivia's confirmation spreadsheet gives the following for the -0.5, -1.0, & -1.5 offsets* *RA(") DEC(") RA(°)* *-0.453 0.211 -1.25876E-04* *-0.906 0.423 -2.51752E-04* *-1.359 0.634 -3.77628E-04*					

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	2 nuv a/im (COS.ta.360711)	(1) AZV18	COS/NUV, ACQ/IMAGE, BOA	MIRRORA		GS ACQ SCENARIO BASE1BN3		30 Secs *[==>]*	*[1]*
	Comments: NUV ACQ/IMAGE with BOA+MIRRORA to refine centering. (COS92525 gives S/N = 40 in 14.5s)								
2	S/C to update the G130M/1309 focus from 170 to 290 (+120)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 290	Sequence 2-5 Non-Int in ACQ/PEAKXD TEST G140L (15)	8 Secs *[==>]*	*[1]*
	Comments: Special Commanding to overwrite the G130M/1309 settings with the SLP focus position. FENA3 Results suggest we need a +120 focus step adjustment from these values. So, G130M/1309 goes from 170 to +290 *The SCR 344 FSW has the following focus G130M positions;* *const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =* *{ {0, 1055, 8095, -170, 2750, 7402}, /* G130M, OSM1 */* *{0, 1096, 8078, -170, 2665, 7312}, /* G130M, OSM1 */* *{0, 1291, 7999, -170, 2259, 6898}, /* G130M, OSM1 */* *{0, 1300, 7995, 0, 2238, 6877}, /* G130M, OSM1 */* *{0, 1309, 7991, 170, 2218, 6857}, /* G130M, OSM1 */* *{0, 1318, 7987, 340, 2198, 6837}, /* G130M, OSM1 */* *{0, 1327, 7983, 511, 2177, 6816}, /* G130M, OSM1 */*								
3	G130M/1309 - BASELINE SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=S0200D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE		Sequence 2-5 Non-Int in ACQ/PEAKXD TEST G140L (15)	212 Secs *[==>]*	*[1]*
	Comments: Spectrum of source to define correct location of star when it is centered in NUV (COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE in 182s. This exposure and the next 8 should be considered an NON-INT Sequence. 36s lamp flash* *The actual count rate from Visit 1 was 0.07-0.14 counts/s/column, or a total count rate of ~1-2000 counts/segment/second. In 180s, we obtained 75-150 counts/RE or S/N of 8-12 as expected.*								
4	G130M - ACQ/PEAKD (COS.sa.360701)	(1) AZV18	COS/FUV, ACQ/PEAKD, PSA	G130M 1309 A	NUM-POS=9; STEP-SIZE=0.4; LIFETIME-POS=ALTERNATE		Sequence 2-5 Non-Int in ACQ/PEAKXD TEST G140L (15)	4 Secs *[==>]*	*[1]*
	Comments: ACQ/PEAKD of a centered target on the same 9x0.4" pattern. . S/N = 60 is reached in 2 seconds. This exposure and the next should be considered a NON-INT sequence.								

5	G130M/1309 - CONFIRMATION SPECTRUM (COS.sp.360698)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=600; FP-POS=3; FLASH=S0200D036; WAVECAL=YES; LIFETIME-POS=ALTERNATE		Sequence 2-5 Non-Int in ACQ/PEAKXD TEST G140L (15)	212 Secs *[==>]*	***[1]***

Comments: Spectrum of source to define correct location of star when it is centered in NUV (COS.sp.360698). BT=986(2/3) = ~630. This will get us S/N~10 per RE in 182s. This exposure and the next 8 should be considered an NON-INT Sequence. 36s lamp flash*

The actual count rate from Visit 1 was 0.07-0.14 counts/s/column, or a total count rate of ~1-2000 counts/segment/second. In 180s, we obtained 75-150 counts/RE or S/N of 8-12 as expected.

6	S/C to update the G140L/1280 focus (19-165)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G140L; QESIPARM CENTWAVE 1280; QESIPARM FOCUS -146	Sequence 6-16 Non-Int in ACQ/PEAKXD TEST G140L (15)	8 Secs *[==>]*	***[1]***

Comments: Special Commanding to overwrite the G140L/1280 settings with the SLP focus position.
Analysis of 12796 data indicate a move of -165 is appropriate for the G140L

The SCR 344 FSW has the following focus G140L positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =

{1, 1105, 1598, -370, 35092, 39716}, / G140L, OSM1 */-> -535*
{1, 1230, 1591, -30, 35055, 39680}, / G140L, OSM1 */ -> -195*
{1, 1280, 1590, 19, 35050, 39675}, / G140L, OSM1 */ -> -146*

7	G140L - BASELINE SPECTRUM (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 6-16 Non-Int in ACQ/PEAKXD TEST G140L (15)	40 Secs *[==>]*	***[1]***

Comments: Spectrum of source to define the G140L/1280 XD location of target when it is centered w/ NUV ACQ/IMAGE.
*COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. We don't bother to scale this, because the exposure time is so small (equal to our lamp flash). BT=2/3 (838*0.75) = 420 (we use 400)*

*COS.sp.389720 gives Count rate Segment A 2,312.100 *0.75 = 1734. S/N=60 in 2-3s.*

8	G140L- POSTARG + SPECTRUM 1 (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-1.6	Sequence 6-16 Non-Int in ACQ/PEAKXD TEST G140L (15)	45 Secs *[==>]*	***[1]***

*Comments: POSTARG TO Move to Y=-1.6. COS.sp.389720 gives Count rate Segment A 2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 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 20 seconds.*
However, since it is heavily vignetted we double the exposure time to 45s for the +/-1.6".
We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.

9	G140L - POSTARG + SPECTRUM 2 (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-1.1	Sequence 6-16 Non-Int in ACQ/PEAKXD TEST G140L (15)	30 Secs *[==>]*	***[1]***

*Comments: POSTARG TO Move to Y=-1.1". COS.sp.389720 gives Count rate Segment A=2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 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 20 seconds.*
However, since it is heavily vignetted we double the exposure time to 30s for the +/-1.1".

10	G140L - POSTARG + SPECTRUM 3 (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-0.6	Sequence 6-16 Non-Int in ACQ/PEAKXD TEST G140L (15)	20 Secs *[==>]*	***[1]***

*Comments: POSTARG TO Move to Y=-0.6". COS.sp.389720 gives Count rate Segment A=2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 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 20 seconds.*

11	G140L - POSTARG + SPECTRUM 4 (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,-0.3	Sequence 6-16 Non-Int in ACQ/PEAKXD TEST G140L (15)	20 Secs *[==>]*	***[1]***

*Comments: POSTARG TO Move to Y=-0.3". COS.sp.389720 gives Count rate Segment A=2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 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 20 seconds.*

12	G140L - POSTARG + SPECTRUM 5 (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,0.3	Sequence 6-16 Non-Int in ACQ/PEAKXD TEST G140L (15)	20 Secs *[==>]*	***[1]***

*Comments: POSTARG TO Move to Y=0.3". COS.sp.389720 gives Count rate Segment A=2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 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 20 seconds.*

13	G140L - POSTARG + SPECTRUM 6 (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,0.6	Sequence 6-16 Non-Int in ACQ/PEAKXD TEST G140L (15)	20 Secs *[==>]*	***[1]***

*Comments: POSTARG TO Move to Y=0.6". COS.sp.389720 gives Count rate Segment A=2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 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 20 seconds.*

14	G140L - POSTARG + SPECTRUM 7 (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,1.1	Sequence 6-16 Non-Int in ACQ/PEAKXD TEST G140L (15)	30 Secs *[==>]*	***[1]***

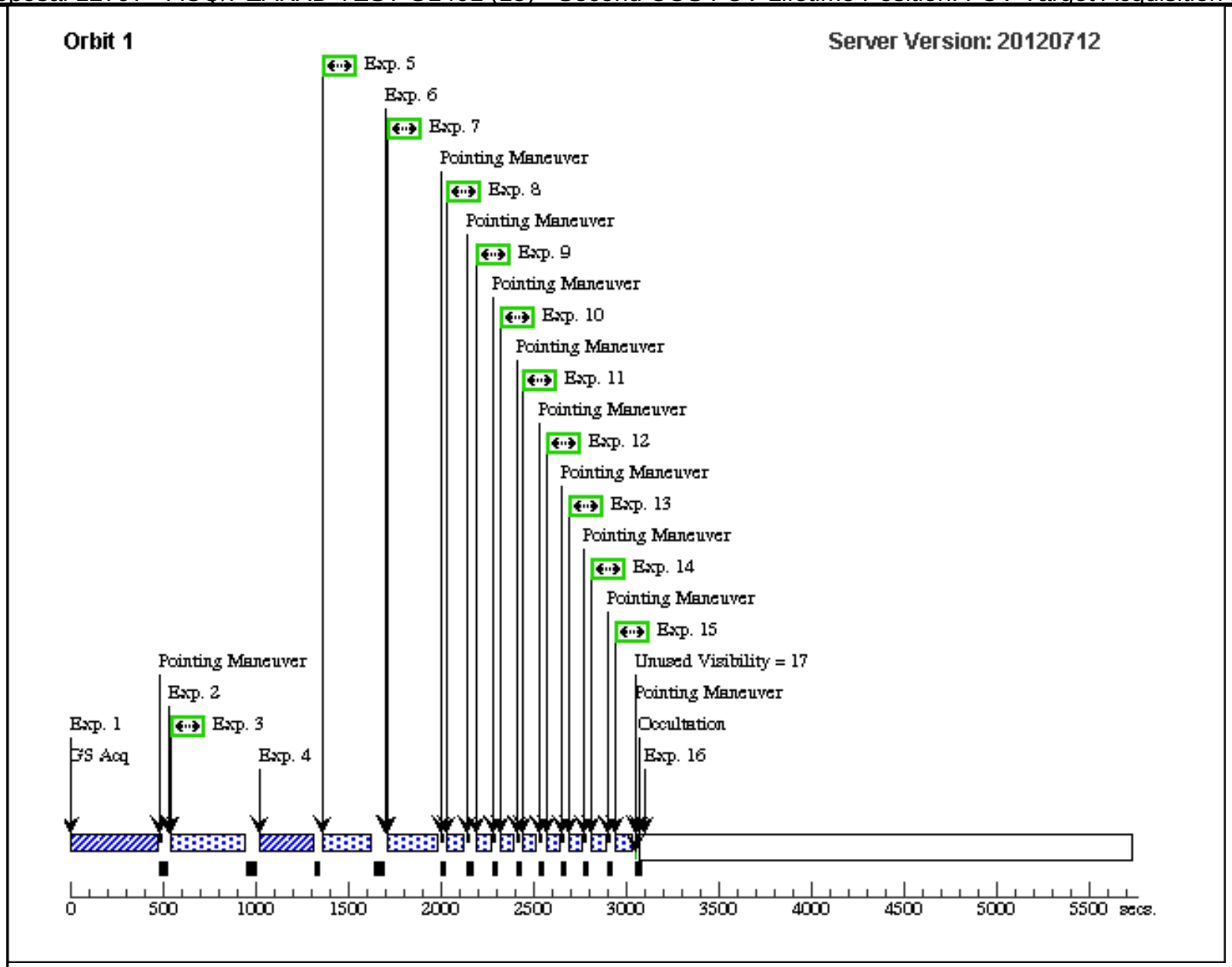
*Comments: POSTARG TO Move to Y=1.1". COS.sp.389720 gives Count rate Segment A=2,312.100 *0.75 = 1734. S/N=60 in 2-3s. But, we are trying to determine the local plate scale of the detector, so want to get a decent look at the spectrum, so we'll observe for 20 seconds.*
However, since it is heavily vignetted we double the exposure time to 30s for the +/-1.1".

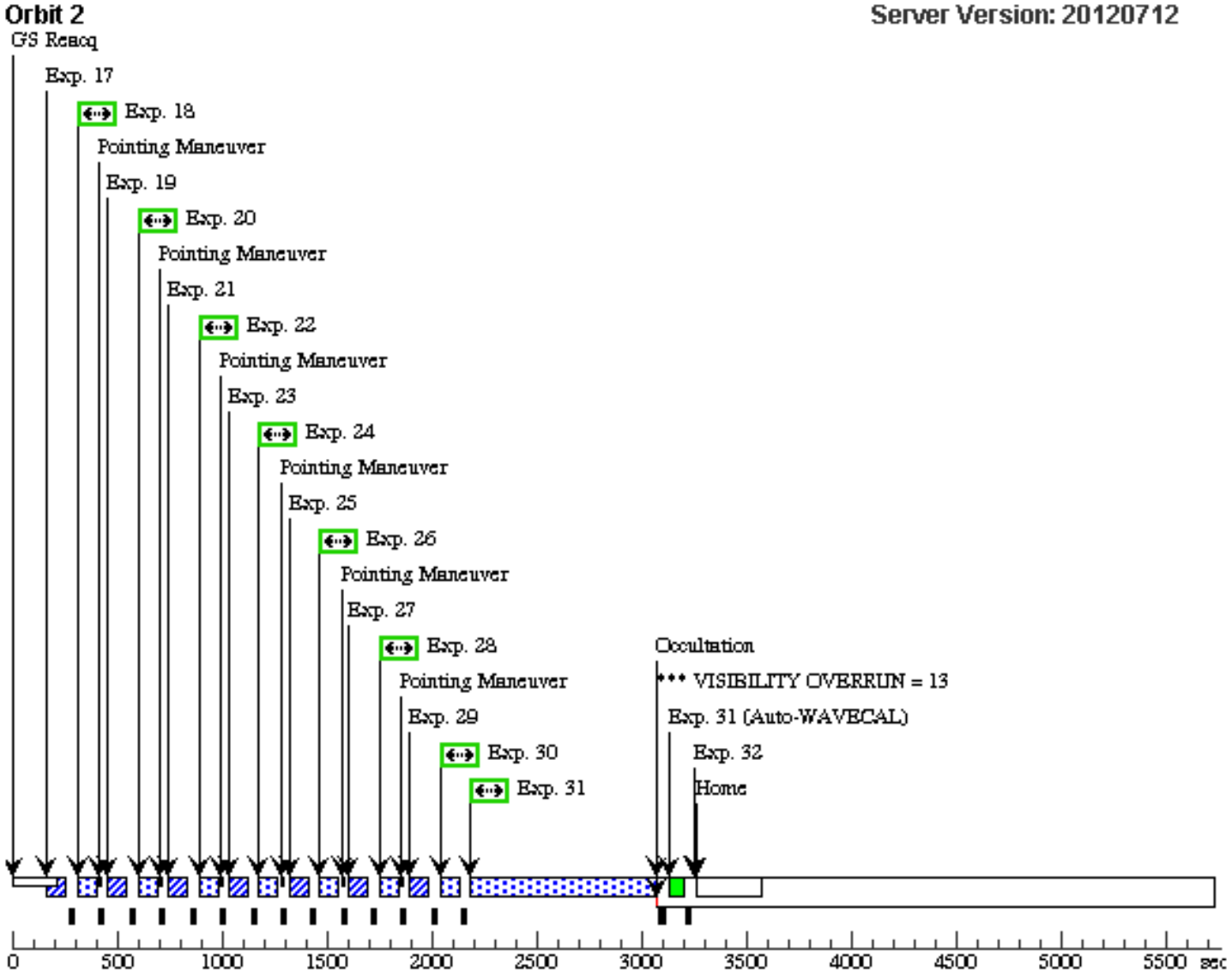
15	G140L - POSTARG + SPECTRUM 8 (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG null,1.6	Sequence 6-16 Non-Int in ACQ/PEAKXD TEST G140L (15)	45 Secs		
								[==>]		***[1]***
*Comments: POSTARG TO Move to Y=1.6". COS.sp.389720 gives Count rate Segment A 2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 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 20 seconds. However, since it is heavily vignetted we double the exposure time to 45s for the +/-1.6". We FLASH just to make sure the target is not drifting in raw coordinates due to thermal variations.*										
16	S/C to reset the G130M/1309 focus	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 170	Sequence 6-16 Non-Int in ACQ/PEAKXD TEST G140L (15)	8 Secs		
								[==>]		***[1]***
Comments: Special Commanding to reset the G130M/1309 settings with the original focus, the SCR 344 FSW position (170).										
17	G140L - PEAKXD-Centered (COS.sp.389720)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE		Sequence 17-18 Non-Int in ACQ/PEAKXD TEST G140L (15)	10 Secs		
								[==>]		***[2]***
*Comments: ACQ/PEAKXD test on a centered target. COS.sp.389720 gives count rate Segment A=2,312.100 *0.75 = 1734. S/N=60 in 2-3s. 10s is plenty.*										
18	G140L - BASELINE SPECTRUM (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 17-18 Non-Int in ACQ/PEAKXD TEST G140L (15)	40 Secs		
								[==>]		***[2]***
*Comments: Confirmation Spectrum. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. BT=2/3 (838*0.75) = 420 (we use 400)*										
19	G140L - PEAKXD-XD +1.0 (COS.sp.389720)	(10) AZV18-OFFSET-XD+1.0	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE		Sequence 19-20 Non-Int in ACQ/PEAKXD TEST G140L (15)	10 Secs		
								[==>]		***[2]***
Comments: ACQ/PEAKXD on the target offset by +1.0". (COS.sp.389720)										
20	G140L - BASELINE SPECTRUM (COS.sp.389720)	(10) AZV18-OFFSET-XD+1.0	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 19-20 Non-Int in ACQ/PEAKXD TEST G140L (15)	40 Secs		
								[==>]		***[2]***
*Comments: Confirmation Spectrum. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. BT=2/3 (838*0.75) = 420 (we use 400)*										
21	G140L - PEAKXD-XD-1.0 (COS.sp.389720)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE		Sequence 21-22 Non-Int in ACQ/PEAKXD TEST G140L (15)	10 Secs		
								[==>]		***[2]***
Comments: ACQ/PEAKXD on the target offset by -1.0".										

22	G140L - BASELINE SPECTRUM (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=4000; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 21-22 Non-Int in ACQ/PEAKXD TEST G140L (15)	40 Secs *[==>]*	***[2]***
*Comments: Confirmation Spectrum. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. BT=2/3 (838*0.75) = 420 (we use 400)*								
23	G140L - PEAKXD-XD+0.5 (COS.sp.389720)	(5) AZV18-OFFSET-XD+0.5	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE	Sequence 23-24 Non-Int in ACQ/PEAKXD TEST G140L (15)	10 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD on the target offset by +0.5".								
24	G140L- BASELINE SPECTRUM (COS.sp.389720)	(5) AZV18-OFFSET-XD+0.5	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=4000; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 23-24 Non-Int in ACQ/PEAKXD TEST G140L (15)	40 Secs *[==>]*	***[2]***
*Comments: Confirmation Spectrum. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. BT=2/3 (838*0.75) = 420 (we use 400)*								
25	G140L - PEAKXD-XD-0.5 (COS.sp.389720)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE	Sequence 25-26 Non-Int in ACQ/PEAKXD TEST G140L (15)	10 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD on the target offset by -0.5".								
26	G140L- BASELINE SPECTRUM (COS.sp.389720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=4000; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 25-26 Non-Int in ACQ/PEAKXD TEST G140L (15)	40 Secs *[==>]*	***[2]***
*Comments: Confirmation Spectrum. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. BT=2/3 (838*0.75) = 420 (we use 400)*								
27	G140L - PEAKXD-XD-1.5 (COS.sp.389720)	(15) AZV18-OFFSET-XD+1.5	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE	Sequence 27-28 Non-Int in ACQ/PEAKXD TEST G140L (15)	10 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD on the target offset by -1.5".								
28	G140L - BASELINE SPECTRUM (COS.sp.389720)	(15) AZV18-OFFSET-XD+1.5	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=4000; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 27-28 Non-Int in ACQ/PEAKXD TEST G140L (15)	40 Secs *[==>]*	***[2]***
*Comments: Confirmation Spectrum. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. BT=2/3 (838*0.75) = 420 (we use 400)*								
29	G140L - PEAKXD-XD+1.5 (COS.sp.389720)	(1) AZV18	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE	Sequence 29-30 Non-Int in ACQ/PEAKXD TEST G140L (15)	10 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD on the target offset by -1.5".								

30	G140L - BA SELINE SP ECTRUM (COS.sp.389 720)	(1) AZV18	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=400; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 29-30 Non-Int in ACQ/PEAKXD TEST G140L (15)	40 Secs *[==>]*	 ***[2]***
*Comments: Confirmation Spectrum. COS.sp.389720 gives S/N/RE = 10 at 1400.00 Å in 38.5800 seconds. BT=2/3 (838*0.75) = 420 (we use 400)*								
31	BOA-G140L (COS.sp.389 922)	(1) AZV18	COS/FUV, TIME-TAG, BOA	G140L 1280 A	LIFETIME-POS=ALTERNATE; BUFFER-TIME=4000; FP-POS=3		832 Secs *[==>]*	 ***[2]***
Comments: COS.sp.389922 *Exposure time (seconds) = 2,000.0000 at wavelength 1310.00 Å gives: SNR = 5.5036 (per resolution element) Time shorted because we added in the PEAKD at the beginning of the visit.*								
32	S/C to RESET the G140L/1280 focus	DARK	S/C, DATA, NONE		SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G140L; QESIPARM CENTWAVE 1280; QESIPARM FOCUS 19		8 Secs *[==>]*	 ***[2]***
Comments: Special Commanding to RESET the G140L/1280 settings to the nominal value (19). *The SCR 344 FSW has the following focus G140L positions;* *const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =* *{1, 1105, 1598, -370, 35092, 39716}, /* G140L, OSM1 */* *{1, 1230, 1591, -30, 35055, 39680}, /* G140L, OSM1 */* *{1, 1280, 1590, 19, 35050, 39675}, /* G140L, OSM1 */*								

Orbit Structure




Orbit 2
Server Version: 20120712
GS Reacq
Exp. 17
Exp. 18
Pointing Maneuver
Exp. 19
Exp. 20
Pointing Maneuver
Exp. 21
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Exp. 23
Exp. 24
Pointing Maneuver
Exp. 25
Exp. 26
Pointing Maneuver
Exp. 27
Exp. 28
Pointing Maneuver
Exp. 29
Exp. 30
Exp. 31
Occultation
*** VISIBILITY OVERRUN = 13
Exp. 31 (Auto-WAVECAL)
Exp. 32
Home
0
500
1000
1500
2000
2500
3000
3500
4000
4500
5000
5500
sec

Visit

Proposal 12797, Verification Visit (16), implementation Wed Jul 25 01:38:59 GMT 2012

Diagnostic Status: Warning

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

Special Requirements: ORIENT 132.5D TO 137.5 D; BETWEEN 23-JUL-2012 AND 30-JUL-2012; ON HOLD

Comments: Test ACQ/PEAKXD for each grating, then perform two full TA sequences, one with G160M, one with G130M. Orientation for Visit 6 is (135 +/- 2.5), which is good from Jul 02, to Aug 07, 2012. After that, we will need to change the roll angle and redefine the targets. We now start with a G130M PEAKXD to see if the SIAF file is off in the XD. This visit retains the focus adjustments, but not the HV ramp up/down.

On Hold Comments: This visit shows the actual Verification visit without the HV rampup overheads.

Diagnostics

(Verification Visit (16)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/PEAKXD.

(Verification Visit (16)) 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.

(Verification Visit (16)) Warning (Form): If the target coordinates are not known to 0.4" (or better) an ACQ/SEARCH should precede the ACQ/IMAGE.

Fixed Targets

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(2)	WD1657+343	RA: 16 58 51.1200 (254.7130000d) Dec: +34 18 53.30 (34.31481d) Equinox: J2000	Proper Motion RA: 12 mas/yr Proper Motion Dec: -32 mas/yr Epoch of Position: 2000 Radial Velocity: 78 km/sec	V=16.4+/-0.1	Reference Frame: ICRS

Comments: This object is visible all year. The roll angle for the offsets is set to 180+/-2.5 (Jun 5-12, 2012)

Proper Motions from 2008ApJS..175..297A and are [12,-32] mas/yr.
The original proposal used [0.0014 sec of time/yr, -0.0342 "/yr].
ICRS coord. (ep=J2000) : 16 58 51.12 +34 18 53.3

The secondary target used is WD1657+343 and the exposure times are based on a spectrum provided by A. Aloisi (extrapolated in wavelength). The nominal exposure time
For BOA/MIRRORB/NUV imaging the time is 98s (COS.ta.389915).
For PSA/G130M/1309, we get S/N=60 in 2.6sec (COS.sa.389905).
For PSA/G140L/1280, we get S/N=60 in 40 sec (COS.sa.389908).
For PSA/G160M/1600, we get S/N=60 (Seg A) in 11 sec (COS.sa.389907).

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(21)	WD1657+343-OFFSET-NW-1.4AS	Offset from WD1657+343 by RA Offset: 2.77778E-4 Degrees Dec Offset: -1.0 Arcsec	Radial Velocity: 78 km/sec	V=16.4+/-0.1	Offset Position (WD1657+343-OFFSET-NW-1.4AS) Reference Frame: ICRS

Comments: The new roll angle is set to 135+/-2.5. This target is offset 1" in -X, +Y or delta[AD,XD]=(1,-1)"

WD1657+343 offset for ACQ Sequence for a roll angle of 135 +/- 2.5
(AD,XD)=(0,-1.0")=1"@45° E of N
*RA=+sqrt(2)"*cos(45°)=+1"=0.00027777778°*
*DEC=-sqrt(2)"*sin(45°)=-1"*

#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous
(22)	WD1657+343-OFFSET-XD-1.0	Offset from WD1657+343 by RA Offset: 0.0 Degrees Dec Offset: 1.0 Arcsec	Radial Velocity: 78 km/sec	V=16.4+/-0.1	Offset Position (WD1657+343-OFFSET-XD-1.0) Reference Frame: ICRS

Comments: The new roll angle is set to 135+/-2.5. This offset is 1" in -Y (XD).

WD1657+343 offset for ACQ/PEAKXD
(AD,XD)=(0,1.0")=1" to the S
RA=0, DEC=+1.0"

Exposures

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time/[Actual Dur.]	Orbit
1	2 nuv a/im (COS.ta.389915)	(2) WD1657+343	COS/NUV, ACQ/IMAGE, BOA	MIRRORA		GS ACQ SCENARIO BASE1BN3		100 Secs *[==>]*	***[1]***
	Comments: NUV ACQ/IMAGE with BOA+MIRRORA to define centering. COS.ta.389915 Requested Signal/Noise Ratio = 60.000 gives: Time = 98.1324 seconds								
2	S/C to update the G130M/1309 focus from 170 to 290 (+120)	DARK	S/C, DATA, NONE			SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 290		8 Secs *[==>]*	***[1]***
	Comments: Special Commanding to overwrite the G130M/1309 settings with the SLP focus position. FENA3 Results suggest we need a +120 focus step adjustment from these values. So, G130M/1309 goes from 170 to +290 *The SCR 344 FSW has the following focus G130M positions;* *const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =* *{ {0, 1055, 8095, -170, 2750, 7402}, /* G130M, OSM1 */* *{0, 1096, 8078, -170, 2665, 7312}, /* G130M, OSM1 */* *{0, 1291, 7999, -170, 2259, 6898}, /* G130M, OSM1 */* *{0, 1300, 7995, 0, 2238, 6877}, /* G130M, OSM1 */* *{0, 1309, 7991, 170, 2218, 6857}, /* G130M, OSM1 */* *{0, 1318, 7987, 340, 2198, 6837}, /* G130M, OSM1 */* *{0, 1327, 7983, 511, 2177, 6816}, /* G130M, OSM1 */*								
3	G130M - PEAKXD - Nominal (COS.sa.389905)	(2) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE			3 Secs *[==>]*	***[1]***
	Comments: ACQ/PEAKXD at the nominal position to test any SIAF file issue in the XD. *The actual count rate from a previous COS exposure was 0.07-0.14 counts/s/column, or a total count rate of ~1-2000 counts/segment/second. In 3s, we obtained > 3600 counts/RE.*								
4	G130M - OFFSET SPECTRUM (COS.sa.389905)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 4-6 Non-Int in Verification Visit (16)	12 Secs *[==>]*	***[1]***
	Comments: COS.sa.389910 gives S/N=60 in only in 2.6s, we go for 12 because that is the lamp flash time.								
5	G130M - PEAKXD-XD-1.0 (COS.sa.389905)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE		Sequence 4-6 Non-Int in Verification Visit (16)	3 Secs *[==>]*	***[1]***
	Comments: ACQ/PEAKKD, see previous comment								

6	G130M - CONFIRMATION SPECTRUM (COS.sa.389905)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 4-6 Non-Int in Verification Visit (16)	20 Secs *[==>]*		***[1]***

Comments: Confirmation spectrum. COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s, we go for 20s to get a good look.

The actual count rate from Visit 1 was 0.07-0.14 counts/s/column, or a total count rate of ~1-2000 counts/segment/second. In 20s, we obtained 8-17 counts/RE.

7	G130M - OFFSET SPECTRUM (COS.sa.389905)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 7-9 Non-Int in Verification Visit (16)	12 Secs *[==>]*		***[1]***

Comments: COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s, we go for 12 because this is the lamp flash time

8	G130M - PEAKXD-XD +1.0 (COS.sa.389905)	(2) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE	Sequence 7-9 Non-Int in Verification Visit (16)	3 Secs *[==>]*		***[1]***

Comments: ACQ/PEAKKD

9	G130M - CONFIRMATION SPECTRUM (COS.sa.389905)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 7-9 Non-Int in Verification Visit (16)	20 Secs *[==>]*		***[1]***

Comments: Confirmation spectrum. COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s, we go for 20s to get a good look.

10	S/C to update the G140L/1280 focus (19-165)	DARK	S/C, DATA, NONE		SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G140L; QESIPARM CENTWAVE 1280; QESIPARM FOCUS -146		8 Secs *[==>]*		***[1]***

Comments: Special Commanding to overwrite the G140L/1280 settings with the SLP focus position.
Analysis of 12796 data indicate a move of -165 is appropriate for the G140L

The SCR 344 FSW has the following focus G140L positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =

```
{1, 1105,  1598, -370, 35092, 39716},    /* G140L, OSM1 */-> -535
{1, 1230,  1591,  -30, 35055, 39680},    /* G140L, OSM1 */ -> -195
{1, 1280,  1590,   19, 35050, 39675},    /* G140L, OSM1 */ -> -146
```

11	G140L - BASELINE SPECTRUM (COS.sa.389908)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=500; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 11-13 Non-Int in Verification Visit (16)	7 Secs *[==>]*	***[1]***
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
12	G140L - PEAKXD-XD-1.0 (COS.sa.389908)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE	Sequence 11-13 Non-Int in Verification Visit (16)	4 Secs *[==>]*	***[1]***
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
13	G140L - CONFIRMATION SPECTRUM (COS.sa.389908)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 11-13 Non-Int in Verification Visit (16)	10 Secs *[==>]*	***[1]***
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
14	G140L - BASELINE SPECTRUM (COS.sa.389908)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=500; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 14-16 Non-Int in Verification Visit (16)	7 Secs *[==>]*	***[1]***
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
15	G140L - PEAKXD-XD+1.0 (COS.sa.389908)	(2) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G140L 1280 A	LIFETIME-POS=ALTERNATE	Sequence 14-16 Non-Int in Verification Visit (16)	4 Secs *[==>]*	***[1]***
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								
16	G140L - CONFIRMATION SPECTRUM (COS.sa.389908)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=500; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 14-16 Non-Int in Verification Visit (16)	10 Secs *[==>]*	***[1]***
*Comments: COS.sa.389908 Gives S/N=60 for Seg A only in 4s. (BT=2/3*790)=527s*								

17	S/C to update the G160M/1600 focus from -44 to +116 (+160)	DARK	S/C, DATA, NONE		SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1600; QESIPARM FOCUS 116		8 Secs *[==>]*		***[1]***

Comments: Special Commanding to overwrite the G160M/1600 settings with the SLP focus position. FENA3 Results suggest we need a +160 focus step adjustment from these values. So, G160M/1600 goes from -44 to +116.

The SCR 344 FSW has the following focus G160M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{2, 1577, 11203, -384, 18693, 23323}, / G160M, OSM1 */*
{2, 1589, 11199, -214, 18671, 23301}, / G160M, OSM1 */*
{2, 1600, 11195, -44, 18651, 23281}, / G160M, OSM1 */*
{2, 1611, 11191, 126, 18631, 23261}, / G160M, OSM1 */*
{2, 1623, 11187, 296, 18609, 23239}, / G160M, OSM1 */*

18	G160M - BASELINE SPECTRUM (COS.sa.389907)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 18-20 Non-Int in Verification Visit (16)	22 Secs *[==>]*		***[1]***

Comments: Spectrum of source to check centering.

19	G160M - PEAKXD-XD-1.0 (COS.sa.389907)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE	Sequence 18-20 Non-Int in Verification Visit (16)	11 Secs *[==>]*		***[1]***

Comments: ACQ/PEAKD on -1.0" offset

20	G160M - CONFIRMATION SPECTRUM (COS.sa.389907)	(22) WD1657+343-OFFSET-XD-1.0	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 18-20 Non-Int in Verification Visit (16)	12 Secs *[==>]*		***[1]***

*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. wo go for 12 secs, the lamp flash time. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*

21	G160M - OFFSET SPECTRUM (COS.sa.389907)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 21-23 Non-Int in Verification Visit (16)	12 Secs *[==>]*		***[2]***

Comments: Check spectrum location.

22	G160M - PEAKXD-XD +1.0 (COS.sa.389907)	(2) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE	Sequence 21-23 Non-Int in Verification Visit (16)	11 Secs *[==>]*		***[2]***

Comments: ACQ/PEAKXD

23	G160M - CONFIRMATION SPECTRUM (COS.sa.389907)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 21-23 Non-Int in Verification Visit (16)	22 Secs *[==>]*	***[2]***
Comments: confirmation spectrum								
24	G160M - OFFSET SPECTRUM (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 24-30 Non-Int in Verification Visit (16)	20 Secs *[==>]*	***[2]***
*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. wo go for 4x that. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*								
25	G160M - ACQ/SEARCH on OFFSET (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, ACQ/SEARCH, PSA	G160M 1600 A	CENTER=FLUX-WT-FLR; SCAN-SIZE=3; LIFETIME-POS=ALTERNATE	Sequence 24-30 Non-Int in Verification Visit (16)	8 Secs *[==>]*	***[2]***
*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*								
26	G160M - CONFIRMATION SPECTRUM (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 24-30 Non-Int in Verification Visit (16)	40 Secs *[==>]*	***[2]***
*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. wo go for 4x that. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*								
27	G160M - ACQ/PEAKXD on OFFSET (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, ACQ/PEAKXD, PSA	G160M 1600 A	LIFETIME-POS=ALTERNATE	Sequence 24-30 Non-Int in Verification Visit (16)	11 Secs *[==>]*	***[2]***
Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8.								
28	G160M - CONFIRMATION SPECTRUM (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	Sequence 24-30 Non-Int in Verification Visit (16)	40 Secs *[==>]*	***[2]***
*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. wo go for 4x that. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*								
29	G160M - ACQ/PEAKD on OFFSET (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, ACQ/PEAKD, PSA	G160M 1600 A	NUM-POS=7; STEP-SIZE=0.45; LIFETIME-POS=ALTERNATE	Sequence 24-30 Non-Int in Verification Visit (16)	10 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKD. COS.sa.389907								

30	G160M - CONFIRMATION SPECTRUM (COS.sa.389907)	(21) WD1657+343-OFFSET-NW-1.4AS	COS/FUV, TIME-TAG, PSA	G160M 1600 A	BUFFER-TIME=700; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE	POS TARG 0.333,null	Sequence 24-30 Non-Int in Verification Visit (16)	40 Secs *[==>]*	***[2]***
*Comments: COS.sa.389907. Gives S/N=60 for Segment A only in 10.8. wo go for 4x that. BT=2/3*1,412 or ~1,000. We use 700 to be safe.*									
31	G130M - OFFSET SPECTRUM (COS.sa.389905)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 31-35 Non-Int in Verification Visit (16)	20 Secs *[==>]*	***[2]***
*Comments: ACQ/PEAKXD. COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s. BT=2/3*476*									
32	G130M - PEAKXD (COS.sa.389905)	(2) WD1657+343	COS/FUV, ACQ/PEAKXD, PSA	G130M 1309 A	LIFETIME-POS=ALTERNATE		Sequence 31-35 Non-Int in Verification Visit (16)	3 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD. COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s. The target should be offset by 1" in both AD and XD, so this is a challenging TA.									
33	G130M - CONFIRMATION SPECTRUM (COS.sa.389905)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 31-35 Non-Int in Verification Visit (16)	60 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKXD. COS.sa.389905 Gives = 40.000 for Segment A only in 1.16 S/N=60 in 3s									
34	G130M - PEAKD (COS.sa.389905)	(2) WD1657+343	COS/FUV, ACQ/PEAKD, PSA	G130M 1309 A	NUM-POS=5; STEP-SIZE=0.8; LIFETIME-POS=ALTERNATE		Sequence 31-35 Non-Int in Verification Visit (16)	3 Secs *[==>]*	***[2]***
Comments: ACQ/PEAKD. COS.sa.389905 Gives S/N=40 for Segment A only in 1.2s, S/N=60 in 3s. The target should be offset by 1" in both AD and XD, so this is a challenging TA.									
35	G130M - CONFIRMATION SPECTRUM (COS.sa.389905)	(2) WD1657+343	COS/FUV, TIME-TAG, PSA	G130M 1309 A	BUFFER-TIME=200; FP-POS=3; FLASH=YES; LIFETIME-POS=ALTERNATE		Sequence 31-35 Non-Int in Verification Visit (16)	60 Secs *[==>]*	***[2]***
Comments: Confirmation Spectrum on Centered Target. ACQ/PEAKXD. COS.sa.389905 Gives S/N= 40 for Segment A only in 1.16 S/N=60 in 3s									

36	S/C to RES ET the G140 L/1280 focus	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G140L; QESIPARM CENTWAVE 1280; QESIPARM FOCUS 19	8 Secs *[==>]*	***[2]***

Comments: Special Commanding to RESET the G140L/1280 settings with the it's nominal value (19).

The SCR 344 FSW has the following focus G140L positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =
{1, 1105, 1598, -370, 35092, 39716}, / G140L, OSM1 */*
{1, 1230, 1591, -30, 35055, 39680}, / G140L, OSM1 */*
{1, 1280, 1590, 19, 35050, 39675}, / G140L, OSM1 */*

37	S/C to RES ET the G130 M/1309 focus	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G130M; QESIPARM CENTWAVE 1309; QESIPARM FOCUS 170	8 Secs *[==>]*	***[2]***

Comments: Special Commanding to RESET the G130M/1309 settings with the original focus, the SCR 344 FSW position (170).

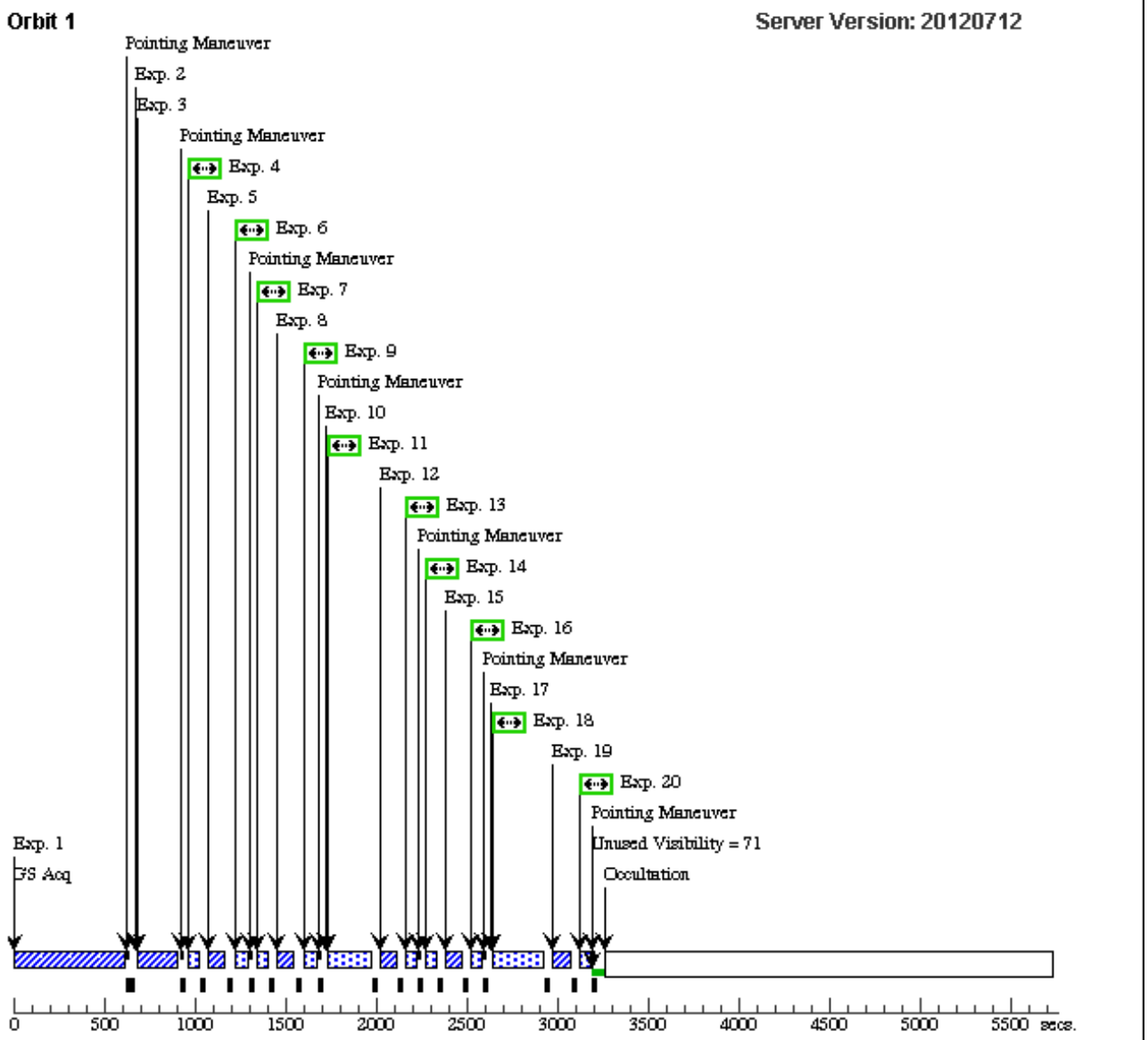
38	S/C to RES ET the G160 M/1600 focus	DARK	S/C, DATA, NONE	SPEC COM INSTR ELOSMPATCH; QESIPARM ACTION REPLACE; QESIPARM GRATING G160M; QESIPARM CENTWAVE 1600; QESIPARM FOCUS -44	8 Secs *[==>]*	***[2]***

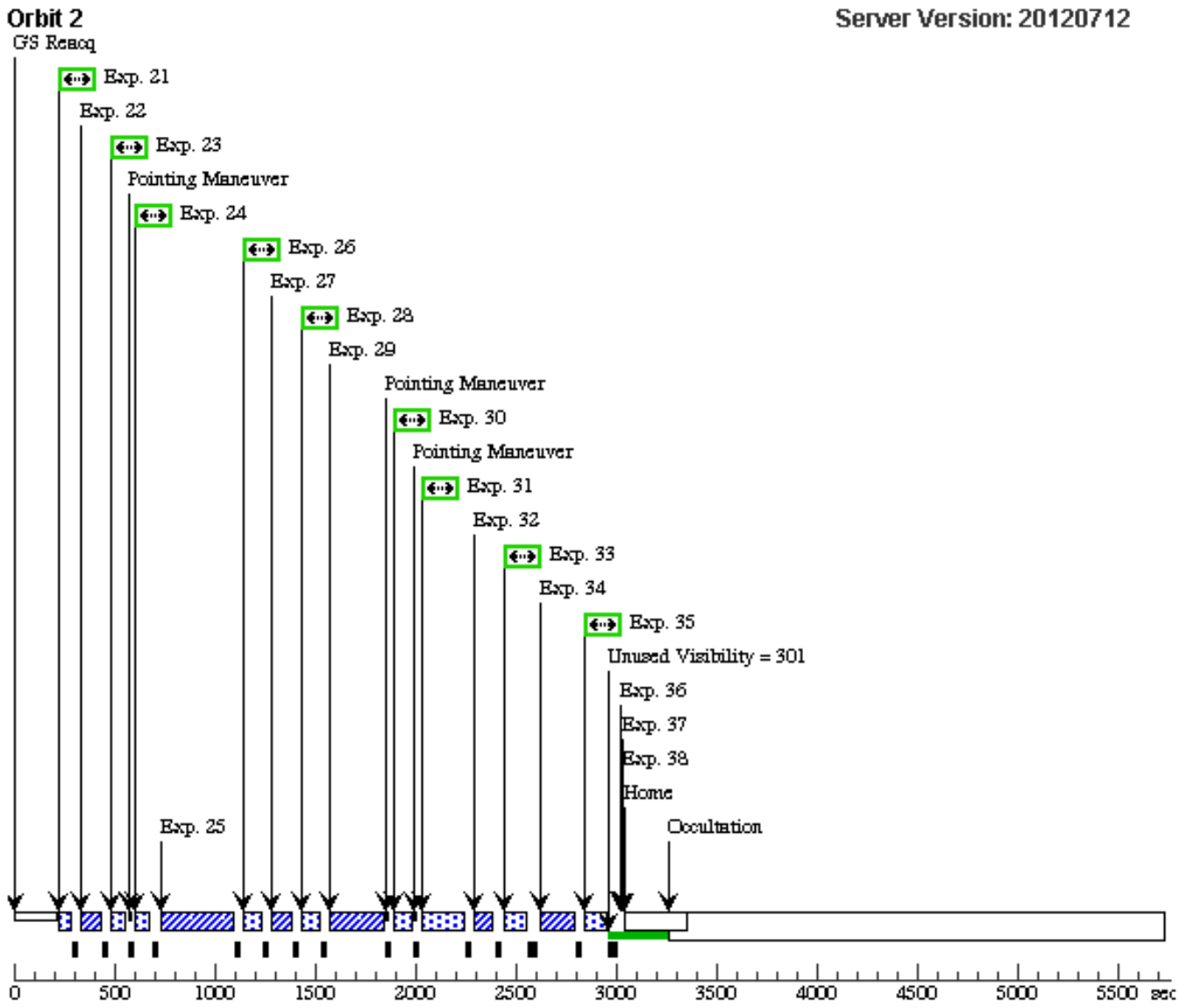
Comments: Special Commanding to RESET the G160M/1600 settings with it's nominal position (-44).

The SCR 344 FSW has the following focus G160M positions;
const pcmech_OSM_position_table_struct pcmech_OSMTbl[MECH_OSM_TABLE_SIZE] =

{2, 1577, 11203, -384, 18693, 23323}, / G160M, OSM1 */*
{2, 1589, 11199, -214, 18671, 23301}, / G160M, OSM1 */*
{2, 1600, 11195, -44, 18651, 23281}, / G160M, OSM1 */*
{2, 1611, 11191, 126, 18631, 23261}, / G160M, OSM1 */*
{2, 1623, 11187, 296, 18609, 23239}, / G160M, OSM1 */*

Orbit Structure

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Exp. 30
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Exp. 31
Exp. 32
Exp. 33
Exp. 34
Exp. 35
Unused Visibility = 301
Exp. 36
Exp. 37
Exp. 38
Home
Occultation
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sec