



## 13971 - COS FUV Channel Sensitivity vs. High Voltage

Cycle: 22, Proposal Category: CAL/COS

(Calibration)

(Availability Mode: RESTRICTED)

### INVESTIGATORS

<i>Name</i>	<i>Institution</i>	<i>E-Mail</i>
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### VISITS

<i>Visit</i>	<i>Targets used in Visit</i>	<i>Configurations used in Visit</i>	<i>Orbits Used</i>	<i>Last Orbit Planner Run</i>	<i>OP Current with Visit?</i>
01	(1) WD0308-565 DARK	COS/FUV COS/NUV S/C	2	26-Mar-2015 21:10:54.0	yes
02	(1) WD0308-565 DARK	COS/FUV COS/NUV S/C	2	26-Mar-2015 21:11:00.0	yes
03	(1) WD0308-565 DARK	COS/FUV COS/NUV S/C	2	26-Mar-2015 21:11:05.0	yes

6 Total Orbits Used

### ABSTRACT

Determine the effect of the commanded high voltage on the measured sensitivity. Identify dependencies of this effect on other variables such as detector segment, detector pixel, wavelength, shape of the pulse height distribution.

## **OBSERVING DESCRIPTION**

This program will measure the effect of the commanded high voltage on the sensitivity by collecting spectra of an external target at a variety of HV levels. Other contributing factors will also be identified by taking similar data with all three gratings. The program will consist of three two-orbit visits. Each visit will obtain data for a single grating and cenwave, but at multiple HV levels to cover the range of voltages used on orbit. No mechanisms will be moved after the initial science exposure, and the voltage will be changed in a semi-random manner - including some repeated values - in order to identify drift or hysteresis effects in the instrument.

HV commanding notes:

- \* The commanded HV should not be changed by more than 15 in either direction in a single step.
- \* The final HV values used should be within 15 of the nominal HV so that subsequently executing programs will not have to change the HV by more than the allowed amount.

Extra TAGFLASH exposures have been added to all exposures in order to monitor drift as a function of time.

Visits will be scheduled away from the SAA in order to minimize the possibility of an elevated detector background.

The first visit will be a proof of concept using G130M/1291. The following two visits will be used to disentangle the dependencies (e.g. pixel vs. wavelength effects) in the measurements.

Expected Products:

- \* Curves of sensitivity as a function of detector high voltage and as a function of some or all of the following: segment, detector x pixel, wavelength, pulse height distribution shape, gain, etc.
- \* A new reference file for CalCOS
- \* An ISR

Accuracy goals:

Determine Sensitivity vs. HV to 1%

## Proposal 13971 (STScI Edit Number: 3, Created: Thursday, March 26, 2015 8:11:07 PM EST) - Overview

### Scheduling:

First visit (2 orbits) to be scheduled soon after move to LP3 in order to sample maximum HV range. Remaining visits will follow after analysis of data from first visit shows the effect is measurable and stable. All visits should be within a week of a TDS (Program 13967) visit using the same target.

### Program Layout:

#### Visit 01

Schedule within 1 week of a normal TDS visit

G130M/1291

WD0308-565 (TDS target with flat SED; COS.sp.395841)

235 second exposures (TDS exposure time is 244)

2 orbits / 13 exposures

Segment A HV values used: 178, 175, 173, 171, 169, 167(x3), 163, 159, 155, 151, 147

Segment B HV values used: 175, 173, 171, 169, 167, 165, 163(x3), 159, 155, 151, 148

#### Visit 02

Schedule only after initial examination of Visit 01 data (>6 weeks after execution)

Schedule within 1 week of a normal TDS visit

G160M/1623

WD0308-565 (Lower S/N on Segment B; COS.sp.395848)

340 - 435 second exposures (TDS exposure time is 400 sec)

2 orbits / 10 exposures

Segment A HV values used: 178, 175, 173, 169, 167(x2), 162, 157, 152, 147

Segment B HV values used: 175, 173, 171, 169, 167, 163(x2), 158, 153, 148

#### Visit 03

Schedule only after initial examination of Visit 01 data (>6 weeks after execution)

Proposal 13971 (STScI Edit Number: 3, Created: Thursday, March 26, 2015 8:11:07 PM EST) - Overview

Schedule within 1 week of a normal TDS visit

G140L/1280

WD0308-565 (Full wavelength, but not full pixel coverage; COS.sp.395854)

235 - 326 second exposures (TDS exposure time is 280)

2 orbits / 12 exposures

Segment A HV values used: 178, 175, 173, 171, 169, 167(x2), 163, 159, 155, 151, 147

Segment B HV values used: 175, 173, 171, 169, 167, 165, 163(x2), 159, 155, 151, 148

Note that some of the HV values used in this proposal are low enough to violate the usual ground limits. This is not a cause for concern.

Proposal 13971 - G130M/1291 (01) - COS FUV Channel Sensitivity vs. High Voltage

Fri Mar 27 01:11:07 GMT 2015

<b>Visit</b>	<p><b>Proposal 13971, G130M/1291 (01), completed</b></p> <p><b>Diagnostic Status: Warning</b></p> <p>Scientific Instruments: COS/NUV, S/C, COS/FUV</p> <p>Special Requirements: SCHED 70%; BETWEEN 09-FEB-2015:00:00:00 AND 15-FEB-2015:00:00:00</p> <p><i>Comments: Should be executed within 1 week of visit 04 of Program 13967.</i></p> <p><i>Nominal TAGFLASH time for G130M/1291 is 12 seconds. Optional Parameter FLASH = S0052D024 is used in every exposure to get 5 double length wavecal exposures. This will allow monitoring of the drift during the visit.</i></p> <p><i>Exposures will be executed in SAA-free orbits. This is set via a Special Requirement in exposure 01.</i></p>																	
	<p>(G130M/1291 (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.</p>																	
<b>Fixed Targets</b>	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>WD0308-565</td> <td>RA: 03 09 47.9200 (47.4496667d) Dec: -56 23 49.41 (-56.39706d) Equinox: J2000</td> <td>Proper Motion RA: 0.018141 sec of time/yr Proper Motion Dec: 0.0643 arcsec/yr Epoch of Position: 2000</td> <td>V=14.07+/-0.02</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p><i>Comments: Target information from Program 13967</i></p>						#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	WD0308-565	RA: 03 09 47.9200 (47.4496667d) Dec: -56 23 49.41 (-56.39706d) Equinox: J2000	Proper Motion RA: 0.018141 sec of time/yr Proper Motion Dec: 0.0643 arcsec/yr Epoch of Position: 2000	V=14.07+/-0.02	Reference Frame: ICRS
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous												
(1)	WD0308-565	RA: 03 09 47.9200 (47.4496667d) Dec: -56 23 49.41 (-56.39706d) Equinox: J2000	Proper Motion RA: 0.018141 sec of time/yr Proper Motion Dec: 0.0643 arcsec/yr Epoch of Position: 2000	V=14.07+/-0.02	Reference Frame: ICRS													

Proposal 13971 - G130M/1291 (01) - COS FUV Channel Sensitivity vs. High Voltage

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IMAG E (396029)	(1) WD0308-565	COS/NUV, ACQ/IMAGE, BOA	MIRRORA		GS ACQ SCENARI O BASE1BN3		45 Secs (45 Secs) [==>]	[1]
2	Spectrum 1 (COS.sp.395 841)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	FP-POS=3; BUFFER-TIME=13 5; FLASH=S0052D02 4			235 Secs (235 Secs) [==>]	[1]
<p>Comments: First exposure is taken at nominal HV, assumed to be 167/163 (starting values at LP3)</p> <p>ETC buffer time is 330 sec. Target has been observed before and so no need for 2/3 safety margin. Since buffer time larger than exptime use buffer time = exptime -100 sec to maximize time on target.</p>									
3	HV = 178/1 75	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 178; QESIPARM ENDC TSB 175		53 Secs (53 Secs) [==>]	[1]
<p>Comments: HV increase is (178-167) = 11 for Segment A, and (175-163) = 12 for Segment B Therefore, exposure time is 39 seconds + ceiling(12*1.1) = 53 seconds</p>									
4	Spectrum 2 (COS.sp.395 841)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D02 4			235 Secs (235 Secs) [==>]	[1]
<p>Comments: Subsequent exposures at non-standard HV values.</p>									
5	HV = 173/1 73	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 173; QESIPARM ENDC TSB 173		39 Secs (39 Secs) [==>]	[1]
<p>Comments: Exposure Time of 39 seconds since neither segment is increasing</p>									
6	Spectrum 3 (COS.sp.395 841)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D02 4			235 Secs (235 Secs) [==>]	[1]
<p>Comments: Subsequent exposures at non-standard HV values.</p>									
7	HV = 169/1 67	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 169; QESIPARM ENDC TSB 167		39 Secs (39 Secs) [==>]	[1]
<p>Comments: Exposure Time of 39 seconds since neither segment is increasing</p>									

Proposal 13971 - G130M/1291 (01) - COS FUV Channel Sensitivity vs. High Voltage

8	Spectrum 4 (COS.sp.395 841)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D02 4	235 Secs (235 Secs) [==>]	[1]
<i>Comments: Subsequent exposures at non-standard HV values.</i>							
9	HV = 163/1 69	DARK	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 163; QESIPARM ENDC TSB 169	42 Secs (42 Secs) [==>]	[1]
<i>Comments: HV increase is (169-167) = 2 for Segment B Therefore, exposure time is 39 seconds + ceiling(2*1.1) = 42 seconds</i>							
10	Spectrum 5 (COS.sp.395 841)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D02 4	235 Secs (235 Secs) [==>]	[1]
<i>Comments: Subsequent exposures at non-standard HV values.</i>							
11	HV = 151/1 71	DARK	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 151; QESIPARM ENDC TSB 171	42 Secs (42 Secs) [==>]	[1]
<i>Comments: HV increase is (171-169) = 2 for Segment B Therefore, exposure time is 39 seconds + ceiling(2*1.1) = 42 seconds</i>							
12	Spectrum 6 (COS.sp.395 841)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D02 4	235 Secs (235 Secs) [==>]	[1]
<i>Comments: Subsequent exposures at non-standard HV values.</i>							
13	HV = 147/1 65	DARK	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 147; QESIPARM ENDC TSB 165	39 Secs (39 Secs) [==>]	[1]
<i>Comments: Exposure Time of 39 seconds since neither segment is increasing</i>							
14	Spectrum 7 (COS.sp.395 841)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D02 4	235 Secs (235 Secs) [==>]	[2]
<i>Comments: Subsequent exposures at non-standard HV values.</i>							

Proposal 13971 - G130M/1291 (01) - COS FUV Channel Sensitivity vs. High Voltage

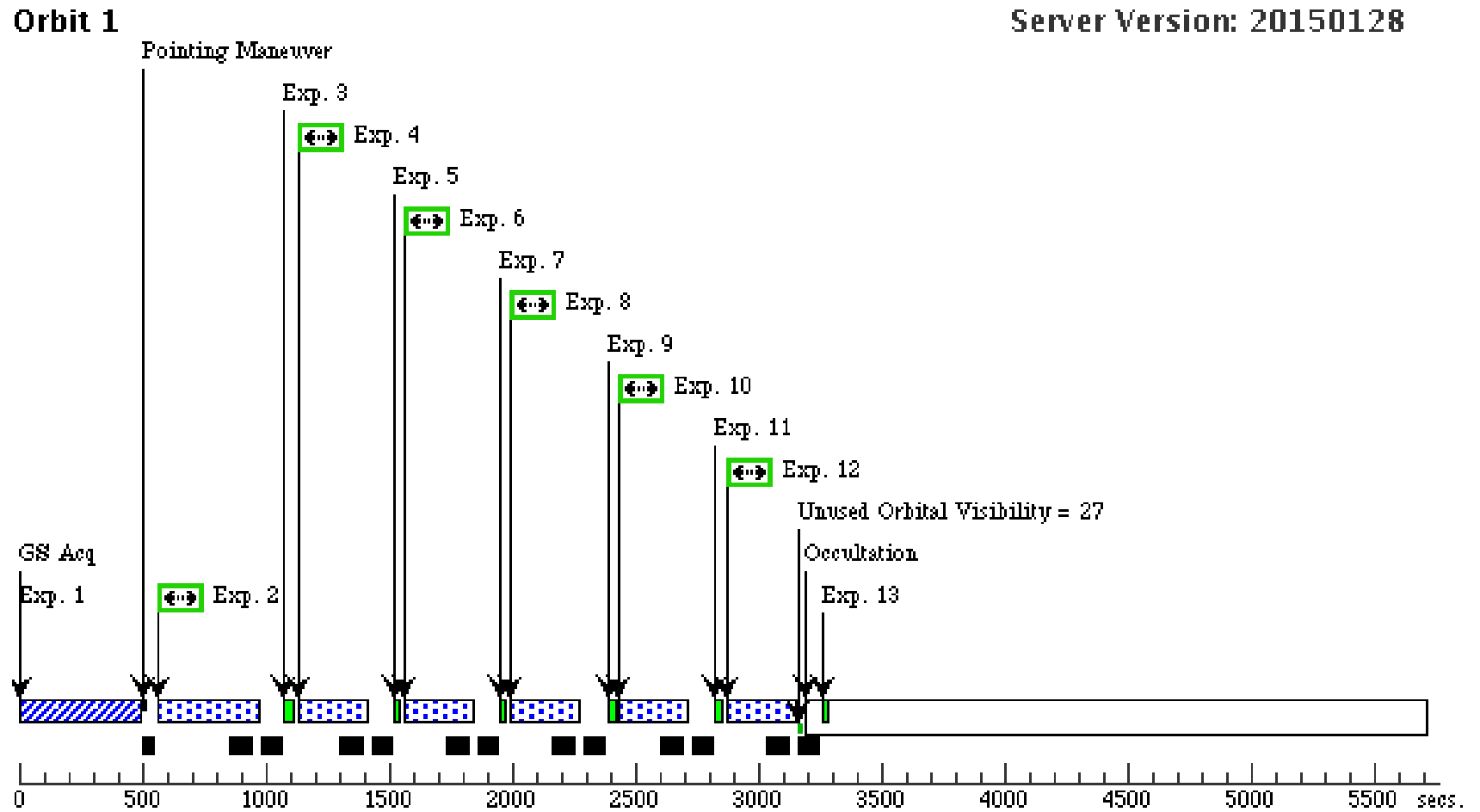
15	HV = 155/1 63	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 155; QESIPARM ENDC TSB 163	48 Secs (48 Secs) [==>]	[2]
<p><i>Comments: HV increase is (155-147) = 8 for Segment A Therefore, exposure time is 39 seconds + ceiling(8*1.1) = 48 seconds</i></p>								
16	Spectrum 8 (COS.sp.395 841)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D02 4		235 Secs (235 Secs) [==>]	[2]
<p><i>Comments: Subsequent exposures at non-standard HV values.</i></p>								
17	HV = 167/1 51	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 167; QESIPARM ENDC TSB 151	53 Secs (53 Secs) [==>]	[2]
<p><i>Comments: HV increase is (167-155) = 12 for Segment A Therefore, exposure time is 39 seconds + ceiling(12*1.1) = 53 seconds</i></p>								
18	Spectrum 9 (COS.sp.395 841)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D02 4		235 Secs (235 Secs) [==>]	[2]
<p><i>Comments: Subsequent exposures at non-standard HV values.</i></p>								
19	HV = 175/1 55	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 175; QESIPARM ENDC TSB 155	48 Secs (48 Secs) [==>]	[2]
<p><i>Comments: HV increase is (175-167) = 8 for Segment A ,and (155-151) = 4 for Segment B. Therefore, exposure time is 39 seconds + ceiling(8*1.1) = 48 seconds</i></p>								
20	Spectrum 10 (COS.sp.395 841)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D02 4		235 Secs (235 Secs) [==>]	[2]
<p><i>Comments: Subsequent exposures at non-standard HV values.</i></p>								
21	HV = 171/1 48	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 171; QESIPARM ENDC TSB 148	39 Secs (39 Secs) [==>]	[2]
<p><i>Comments: Exposure Time of 39 seconds since neither segment is increasing</i></p>								



Proposal 13971 - G130M/1291 (01) - COS FUV Channel Sensitivity vs. High Voltage

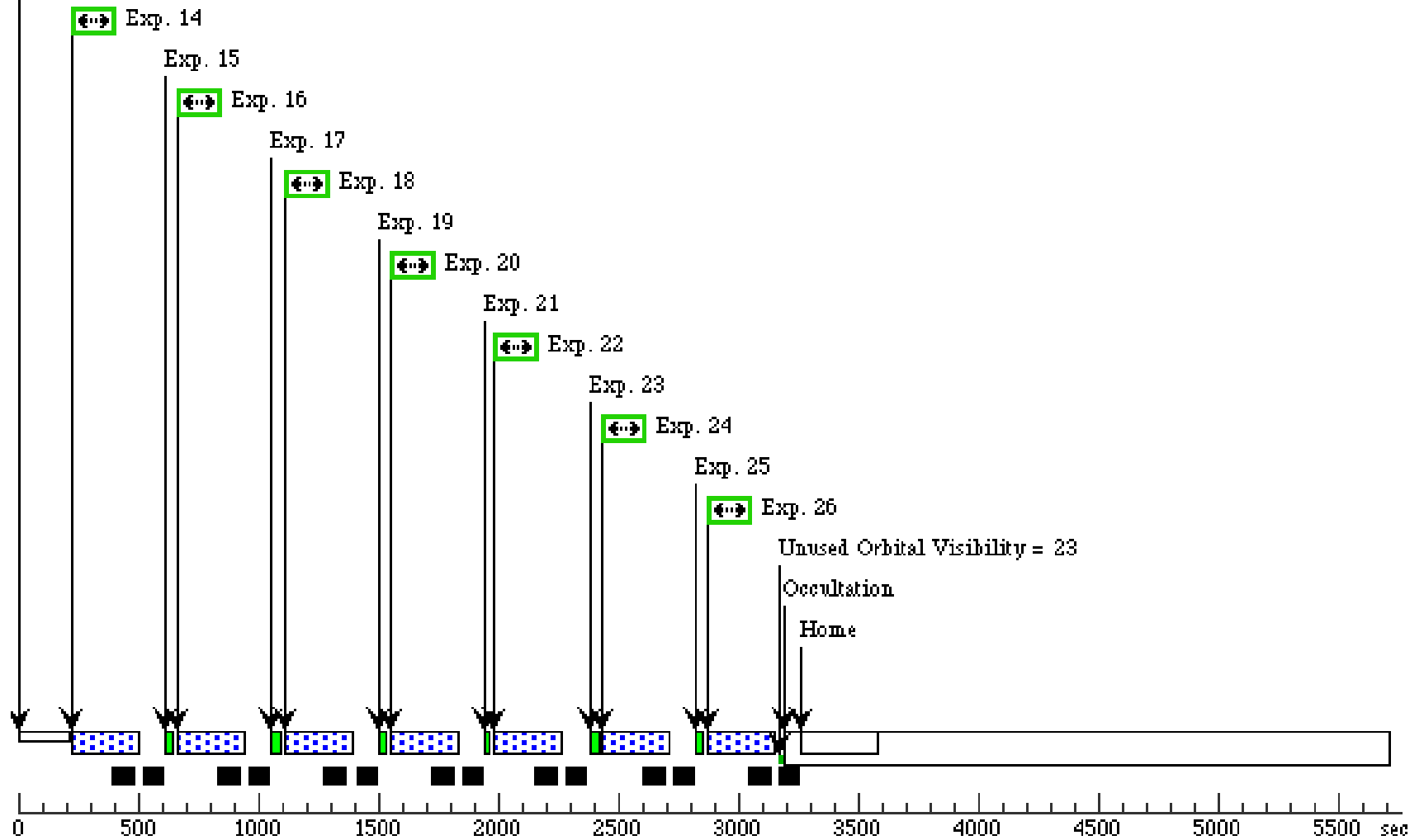
22	Spectrum 11 (1) WD0308-565 (COS.sp.395 841)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D02 4	235 Secs (235 Secs) [==>]	[2]
<i>Comments: Subsequent exposures at non-standard HV values.</i>						
23	HV = 159/1 DARK 59	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 159; QESIPARM ENDC TSB 159	52 Secs (52 Secs) [==>]	[2]
<i>Comments: HV increase is (159-148) = 11 for Segment B. Therefore, exposure time is 39 seconds + ceiling(11*1.1) = 52 seconds</i>						
24	Spectrum 12 (1) WD0308-565 (COS.sp.395 841)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D02 4	235 Secs (235 Secs) [==>]	[2]
<i>Comments: Subsequent exposures at non-standard HV values.</i>						
25	HV = 167/1 DARK 63	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 167; QESIPARM ENDC TSB 163	48 Secs (48 Secs) [==>]	[2]
<i>Comments: Return to nominal HV values. HV increase is (167-159) = 8 for Segment A and (163-159) = 4 for Segment B. Therefore, exposure time is 39 seconds + ceiling(8*1.1) = 48 seconds</i>						
26	Spectrum 13 (1) WD0308-565 (COS.sp.395 841)	COS/FUV, TIME-TAG, PSA	G130M 1291 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D02 4	235 Secs (235 Secs) [==>]	[2]
<i>Comments: Subsequent exposures at non-standard HV values.</i>						

Orbit Structure



**Orbit 2**

GS Reacq



Proposal 13971 - G160M/1623 (02) - COS FUV Channel Sensitivity vs. High Voltage

Fri Mar 27 01:11:08 GMT 2015

<b>Visit</b>	<p><b>Proposal 13971, G160M/1623 (02), implementation</b></p> <p><b>Diagnostic Status: Warning</b></p> <p>Scientific Instruments: COS/NUV, S/C, COS/FUV</p> <p>Special Requirements: SCHED 70%; BETWEEN 13-APR-2015:00:00:00 AND 20-APR-2015:00:00:00</p> <p><i>Comments: Should be executed within 1 week of Visit 06 of Program 13967.</i></p> <p><i>Nominal TAGFLASH time for G160M/1623 is 12 seconds. Optional Parameter FLASH = S0075D024 is used in every exposure to get at least 5 double-length wavecal exposures. This will allow monitoring of the drift during the visit.</i></p> <p><i>Exposures will be executed in SAA-free orbits. This is set via a Special Requirement in exposure 01.</i></p>																	
	<p>(G160M/1623 (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.</p>																	
<b>Fixed Targets</b>	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>WD0308-565</td> <td>RA: 03 09 47.9200 (47.4496667d) Dec: -56 23 49.41 (-56.39706d) Equinox: J2000</td> <td>Proper Motion RA: 0.018141 sec of time/yr Proper Motion Dec: 0.0643 arcsec/yr Epoch of Position: 2000</td> <td>V=14.07+/-0.02</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p><i>Comments: Target information from Program 13967</i></p>						#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	WD0308-565	RA: 03 09 47.9200 (47.4496667d) Dec: -56 23 49.41 (-56.39706d) Equinox: J2000	Proper Motion RA: 0.018141 sec of time/yr Proper Motion Dec: 0.0643 arcsec/yr Epoch of Position: 2000	V=14.07+/-0.02	Reference Frame: ICRS
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous												
(1)	WD0308-565	RA: 03 09 47.9200 (47.4496667d) Dec: -56 23 49.41 (-56.39706d) Equinox: J2000	Proper Motion RA: 0.018141 sec of time/yr Proper Motion Dec: 0.0643 arcsec/yr Epoch of Position: 2000	V=14.07+/-0.02	Reference Frame: ICRS													

Proposal 13971 - G160M/1623 (02) - COS FUV Channel Sensitivity vs. High Voltage

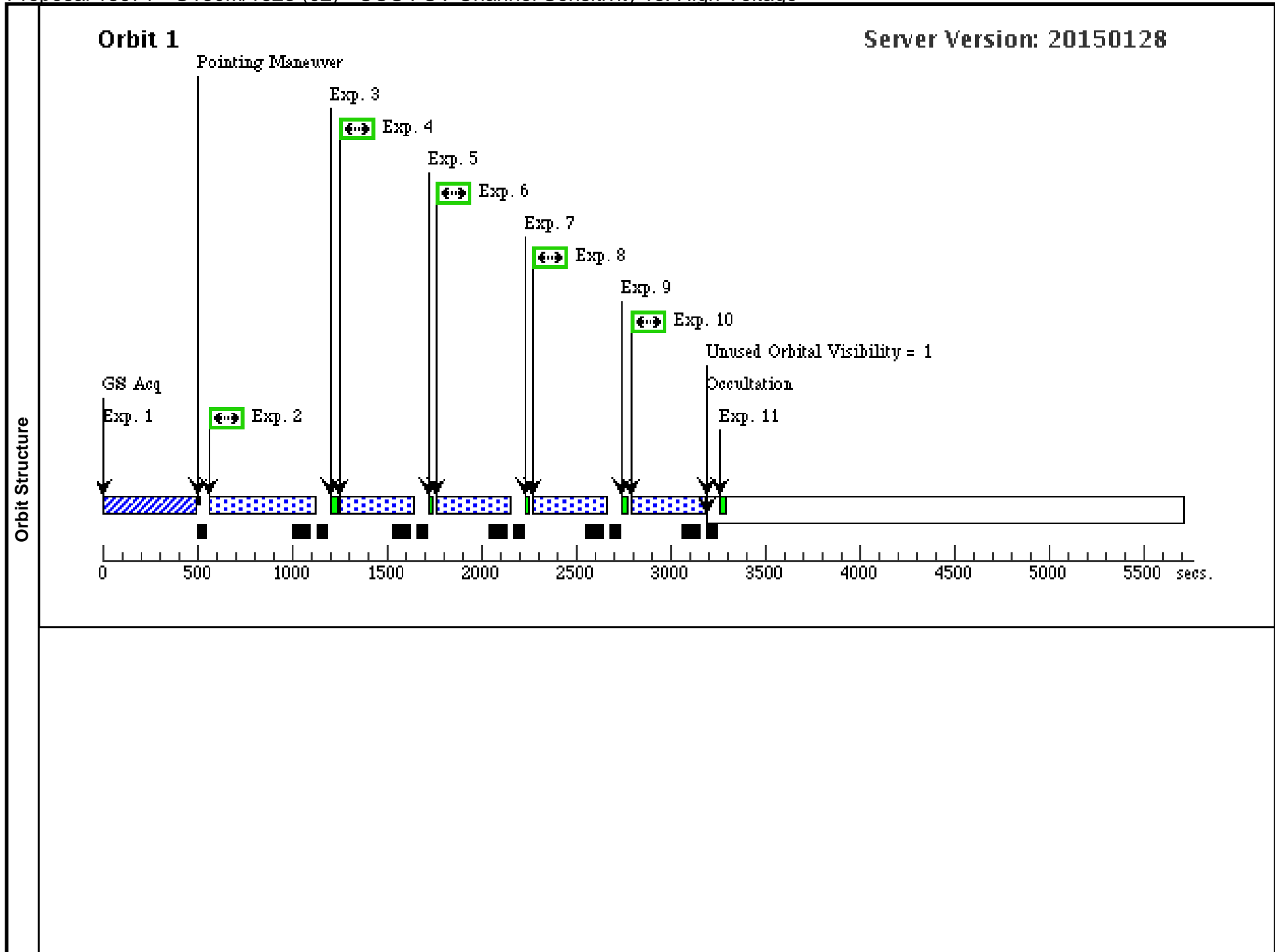
#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IMAG E (396029)	(1) WD0308-565	COS/NUV, ACQ/IMAGE, BOA	MIRRORA		GS ACQ SCENARI O BASE1BN3		45 Secs (45 Secs) [==>]	[1]
2	Spectrum 1 (COS.sp.395 848)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G160M 1623 A	FP-POS=3; BUFFER-TIME=24 0; FLASH=S0075D02 4			340 Secs (340 Secs) [==>]	[1]
<p>Comments: First exposure is taken at nominal HV: 167/163</p> <p>ETC buffer time is 794 sec. Target has been observed before and so no need for 2/3 safety margin. Since buffer time larger than exptime use buffer time = exptime -100 sec to maximize time on target.</p>									
3	HV = 178/1 75	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 178; QESIPARM ENDC TSB 175		53 Secs (53 Secs) [==>]	[1]
<p>Comments: Delta HV is (178-167) = 11 for Segment A, and (175-163) = 12 for Segment B Therefore, exposure time is 39 seconds + ceiling(12*1.1) = 53 seconds</p>									
4	Spectrum 2 (COS.sp.395 848)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=24 0; FP-POS=3; FLASH=S0075D02 4			340 Secs (340 Secs) [==>]	[1]
<p>Comments: Subsequent exposures at non-standard HV values.</p>									
5	HV = 173/1 73	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 173; QESIPARM ENDC TSB 173		39 Secs (39 Secs) [==>]	[1]
<p>Comments: Exposure Time of 39 seconds since neither segment is increasing</p>									
6	Spectrum 3 (COS.sp.395 848)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=24 0; FP-POS=3; FLASH=S0075D02 4			340 Secs (340 Secs) [==>]	[1]
<p>Comments: Subsequent exposures at non-standard HV values.</p>									
7	HV = 169/1 67	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 169; QESIPARM ENDC TSB 167		39 Secs (39 Secs) [==>]	[1]
<p>Comments: Exposure Time of 39 seconds since neither segment is increasing</p>									

Proposal 13971 - G160M/1623 (02) - COS FUV Channel Sensitivity vs. High Voltage

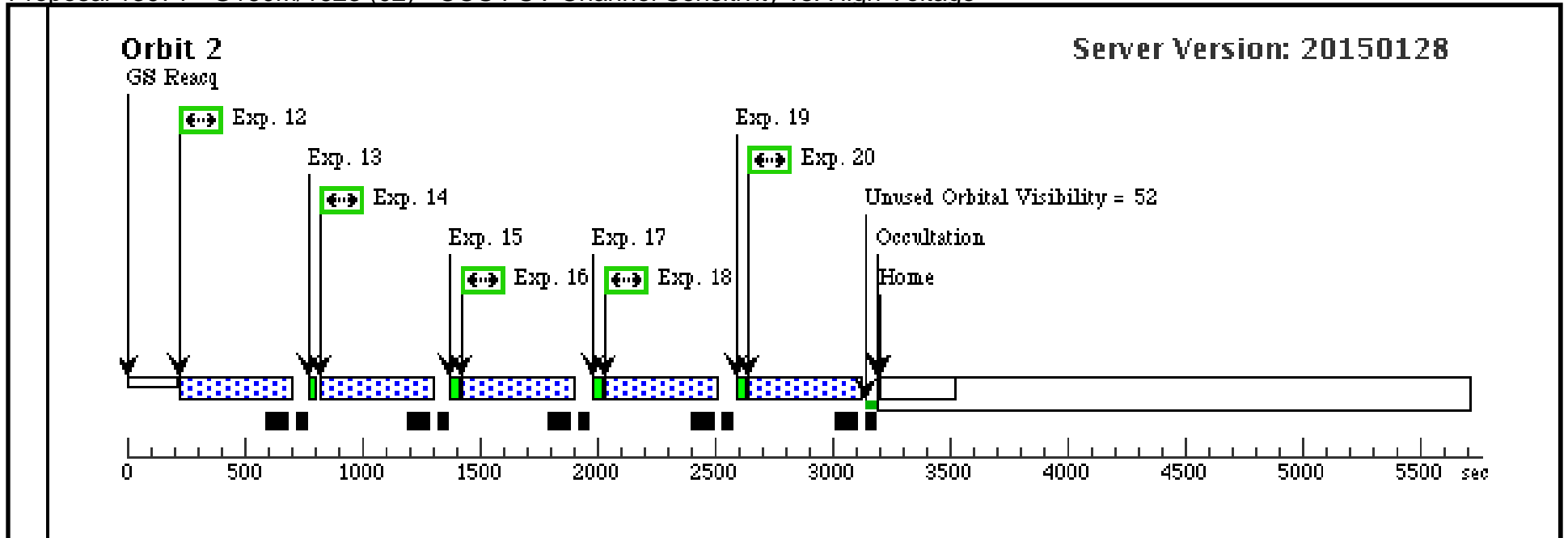
8	Spectrum 4 (COS.sp.395 848)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=24 0; FP-POS=3; FLASH=S0075D02 4	340 Secs (340 Secs) [==>]	[1]
<i>Comments: Subsequent exposures at non-standard HV values.</i>							
9	HV = 157/1 69	DARK	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 157; QESIPARM ENDC TSB 169	42 Secs (42 Secs) [==>]	[1]
<i>Comments: Delta HV is (169-167) = 2 for Segment B Therefore, exposure time is 39 seconds + ceiling(2*1.1) = 42 seconds</i>							
10	Spectrum 5 (COS.sp.395 848)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=24 0; FP-POS=3; FLASH=S0075D02 4	340 Secs (340 Secs) [==>]	[1]
<i>Comments: Subsequent exposures at non-standard HV values.</i>							
11	HV = 147/1 71	DARK	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 147; QESIPARM ENDC TSB 171	42 Secs (42 Secs) [==>]	[1]
<i>Comments: Delta HV is (171-169) = 2 for Segment B Therefore, exposure time is 39 seconds + ceiling(2*1.1) = 42 seconds</i>							
12	Spectrum 6 (COS.sp.395 848)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=33 5; FP-POS=3; FLASH=S0075D02 4	435 Secs (435 Secs) [==>]	[2]
<i>Comments: Subsequent exposures at non-standard HV values.</i>							
13	HV = 152/1 58	DARK	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 152; QESIPARM ENDC TSB 158	45 Secs (45 Secs) [==>]	[2]
<i>Comments: Delta HV is (152-147) = 5 for Segment A Therefore, exposure time is 39 seconds + ceiling(5*1.1) = 45 seconds</i>							
14	Spectrum 7 (COS.sp.395 848)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=33 5; FP-POS=3; FLASH=S0075D02 4	435 Secs (435 Secs) [==>]	[2]
<i>Comments: Subsequent exposures at non-standard HV values.</i>							

Proposal 13971 - G160M/1623 (02) - COS FUV Channel Sensitivity vs. High Voltage

15	HV = 162/1 48	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 162; QESIPARM ENDC TSB 148	50 Secs (50 Secs) [==>]	[2]
<p><i>Comments: Delta HV is (162-152) = 10 for Segment A Therefore, exposure time is 39 seconds + ceiling(10*1.1) = 50 seconds</i></p>								
16	Spectrum 8 (COS.sp.395 848)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=33 5; FP-POS=3; FLASH=S0075D02 4		435 Secs (435 Secs) [==>]	[2]
<p><i>Comments: Subsequent exposures at non-standard HV values.</i></p>								
17	HV = 175/1 53	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 175; QESIPARM ENDC TSB 153	54 Secs (54 Secs) [==>]	[2]
<p><i>Comments: Delta HV is (175-162) = 13 for Segment A and (153-148) = 5 for Segment B. Therefore, exposure time is 39 seconds + ceiling(13*1.1) = 54 seconds</i></p>								
18	Spectrum 9 (COS.sp.395 848)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=33 5; FP-POS=3; FLASH=S0075D02 4		435 Secs (435 Secs) [==>]	[2]
<p><i>Comments: Subsequent exposures at non-standard HV values.</i></p>								
19	HV = 167/1 63	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 167; QESIPARM ENDC TSB 163	50 Secs (50 Secs) [==>]	[2]
<p><i>Comments: Delta HV is (163-153) = 10 for Segment B Therefore, exposure time is 39 seconds + ceiling(10*1.1) = 50 seconds</i></p>								
20	Spectrum 10 (COS.sp.395 848)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G160M 1623 A	BUFFER-TIME=33 5; FP-POS=3; FLASH=S0075D02 4		435 Secs (435 Secs) [==>]	[2]
<p><i>Comments: Subsequent exposures at non-standard HV values.</i></p>								







Proposal 13971 - G140L/1280 (03) - COS FUV Channel Sensitivity vs. High Voltage

Fri Mar 27 01:11:09 GMT 2015

<b>Visit</b>	<p><b>Proposal 13971, G140L/1280 (03), implementation</b></p> <p><b>Diagnostic Status: Warning</b></p> <p>Scientific Instruments: COS/NUV, S/C, COS/FUV</p> <p>Special Requirements: SCHED 70%; BETWEEN 13-APR-2015:00:00:00 AND 20-APR-2015:00:00:00</p> <p><i>Comments: Should be executed within 1 week of Visit 06 of Program 13967.</i></p> <p><i>Nominal TAGFLASH time for G140L/1280 is 7 seconds. Optional Parameter FLASH = S0052D014 is used in every exposure to get 5 double-length wavecal exposures. This will allow monitoring of the drift during the visit.</i></p> <p><i>Exposures will be executed in SAA-free orbits. This is set via a Special Requirement in exposure 01.</i></p>																	
	<p>(G140L/1280 (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.</p>																	
<b>Fixed Targets</b>	<table border="1"> <thead> <tr> <th>#</th> <th>Name</th> <th>Target Coordinates</th> <th>Targ. Coord. Corrections</th> <th>Fluxes</th> <th>Miscellaneous</th> </tr> </thead> <tbody> <tr> <td>(1)</td> <td>WD0308-565</td> <td>RA: 03 09 47.9200 (47.4496667d) Dec: -56 23 49.41 (-56.39706d) Equinox: J2000</td> <td>Proper Motion RA: 0.018141 sec of time/yr Proper Motion Dec: 0.0643 arcsec/yr Epoch of Position: 2000</td> <td>V=14.07+/-0.02</td> <td>Reference Frame: ICRS</td> </tr> </tbody> </table> <p><i>Comments: Target information from Program 13967</i></p>						#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous	(1)	WD0308-565	RA: 03 09 47.9200 (47.4496667d) Dec: -56 23 49.41 (-56.39706d) Equinox: J2000	Proper Motion RA: 0.018141 sec of time/yr Proper Motion Dec: 0.0643 arcsec/yr Epoch of Position: 2000	V=14.07+/-0.02	Reference Frame: ICRS
	#	Name	Target Coordinates	Targ. Coord. Corrections	Fluxes	Miscellaneous												
(1)	WD0308-565	RA: 03 09 47.9200 (47.4496667d) Dec: -56 23 49.41 (-56.39706d) Equinox: J2000	Proper Motion RA: 0.018141 sec of time/yr Proper Motion Dec: 0.0643 arcsec/yr Epoch of Position: 2000	V=14.07+/-0.02	Reference Frame: ICRS													

Proposal 13971 - G140L/1280 (03) - COS FUV Channel Sensitivity vs. High Voltage

#	Label (ETC Run)	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	ACQ/IMAG E (396029)	(1) WD0308-565	COS/NUV, ACQ/IMAGE, BOA	MIRRORA		GS ACQ SCENARI O BASE1BN3		45 Secs (45 Secs) [==>]	[1]
2	Spectrum 1 (COS.sp.395 854)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 1280 A	FP-POS=3; 5; FLASH=S0052D01 4			235 Secs (235 Secs) [==>]	[1]
<p>Comments: First exposure is taken at nominal HV: 167/163</p> <p>ETC buffer time is 479 sec. Target has been observed before and so no need for 2/3 safety margin. Since buffer time larger than exptime use buffer time = exptime -100 sec to maximize time on target.</p>									
3	HV = 178/1 75	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 178; QESIPARM ENDC TSB 175		53 Secs (53 Secs) [==>]	[1]
<p>Comments: HV increase is (178-167) = 11 for Segment A, and (175-163) = 12 for Segment B Therefore, exposure time is 39 seconds + ceiling(12*1.1) = 53 seconds</p>									
4	Spectrum 2 (COS.sp.395 854)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D01 4			235 Secs (235 Secs) [==>]	[1]
<p>Comments: Subsequent exposures at non-standard HV values.</p>									
5	HV = 173/1 73	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 173; QESIPARM ENDC TSB 173		39 Secs (39 Secs) [==>]	[1]
<p>Comments: Exposure Time of 39 seconds since neither segment is increasing</p>									
6	Spectrum 3 (COS.sp.395 854)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D01 4			235 Secs (235 Secs) [==>]	[1]
<p>Comments: Subsequent exposures at non-standard HV values.</p>									
7	HV = 169/1 67	DARK	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 169; QESIPARM ENDC TSB 167		39 Secs (39 Secs) [==>]	[1]
<p>Comments: Exposure Time of 39 seconds since neither segment is increasing</p>									

Proposal 13971 - G140L/1280 (03) - COS FUV Channel Sensitivity vs. High Voltage

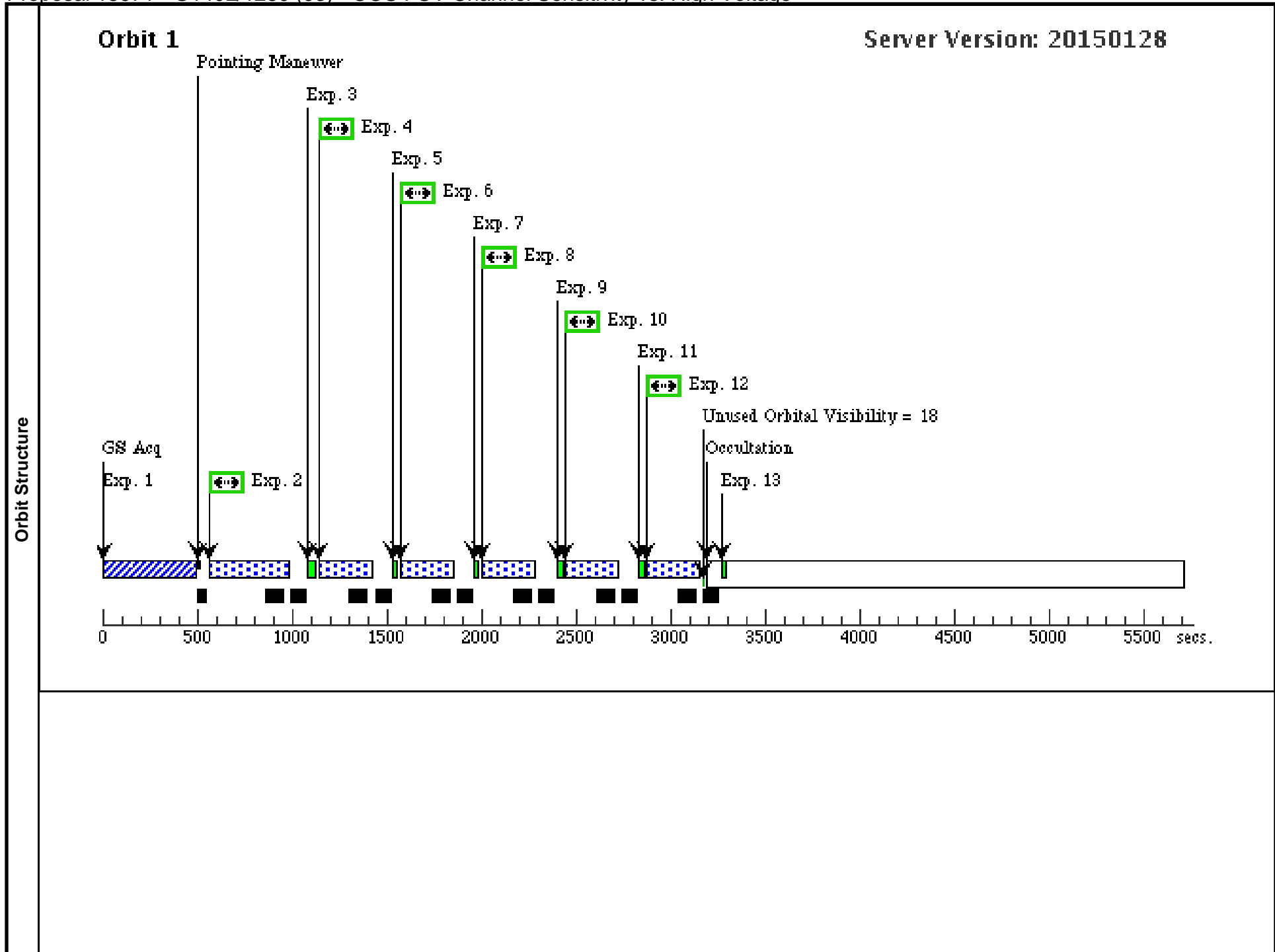
8	Spectrum 4 (COS.sp.395 854)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D01 4	235 Secs (235 Secs) [==>]	[1]
<i>Comments: Subsequent exposures at non-standard HV values.</i>							
9	HV = 163/1 69	DARK	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 163; QESIPARM ENDC TSB 169	42 Secs (42 Secs) [==>]	[1]
<i>Comments: HV increase is (169-167) = 2 for Segment B Therefore, exposure time is 39 seconds + ceiling(2*1.1) = 42 seconds</i>							
10	Spectrum 5 (COS.sp.395 854)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D01 4	235 Secs (235 Secs) [==>]	[1]
<i>Comments: Subsequent exposures at non-standard HV values.</i>							
11	HV = 151/1 71	DARK	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 151; QESIPARM ENDC TSB 171	42 Secs (42 Secs) [==>]	[1]
<i>Comments: HV increase is (171-169) = 2 for Segment B Therefore, exposure time is 39 seconds + ceiling(2*1.1) = 42 seconds</i>							
12	Spectrum 6 (COS.sp.395 854)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=13 5; FP-POS=3; FLASH=S0052D01 4	235 Secs (235 Secs) [==>]	[1]
<i>Comments: Subsequent exposures at non-standard HV values.</i>							
13	HV = 147/1 65	DARK	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 147; QESIPARM ENDC TSB 165	39 Secs (39 Secs) [==>]	[1]
<i>Comments: Exposure Time of 39 seconds since neither segment is increasing</i>							
14	Spectrum 7 (COS.sp.395 854)	(1) WD0308-565	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=22 6; FP-POS=3; FLASH=S0052D01 4	326 Secs (326 Secs) [==>]	[2]
<i>Comments: Subsequent exposures at non-standard HV values.</i>							

Proposal 13971 - G140L/1280 (03) - COS FUV Channel Sensitivity vs. High Voltage

15	HV = 155/1 DARK 51	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 155; QESIPARM ENDC TSB 151	48 Secs (48 Secs) [==>]	[2]
<p><i>Comments: HV increase is (155-147) = 8 for Segment A Therefore, exposure time is 39 seconds + ceiling(8*1.1) = 48 seconds</i></p>							
16	Spectrum 8 (1) WD0308-565 (COS.sp.395 854)	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=22 6; FP-POS=3; FLASH=S0052D01 4		326 Secs (326 Secs) [==>]	[2]
<p><i>Comments: Subsequent exposures at non-standard HV values.</i></p>							
17	HV = 159/1 DARK 55	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 159; QESIPARM ENDC TSB 155	44 Secs (44 Secs) [==>]	[2]
<p><i>Comments: HV increase is (159-155) = 4 for Segment A and (155-151) = 4 for Segment B. Therefore, exposure time is 39 seconds + ceiling(4*1.1) = 44 seconds</i></p>							
18	Spectrum 9 (1) WD0308-565 (COS.sp.395 854)	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=22 6; FP-POS=3; FLASH=S0052D01 4		326 Secs (326 Secs) [==>]	[2]
<p><i>Comments: Subsequent exposures at non-standard HV values.</i></p>							
19	HV = 171/1 DARK 48	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 171; QESIPARM ENDC TSB 148	53 Secs (53 Secs) [==>]	[2]
<p><i>Comments: HV increase is (171-159) = 12 for Segment A. Therefore, exposure time is 39 seconds + ceiling(12*1.1) = 53 seconds</i></p>							
20	Spectrum 10 (1) WD0308-565 (COS.sp.395 854)	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=22 6; FP-POS=3; FLASH=S0052D01 4		326 Secs (326 Secs) [==>]	[2]
<p><i>Comments: Subsequent exposures at non-standard HV values.</i></p>							
21	HV = 175/1 DARK 59	S/C, DATA, NONE			SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 175; QESIPARM ENDC TSB 159	52 Secs (52 Secs) [==>]	[2]
<p><i>Comments: HV increase is (175-171) = 4 for Segment A and (159-148) = 11 for Segment B. Therefore, exposure time is 39 seconds + ceiling(11*1.1) = 52 seconds</i></p>							

Proposal 13971 - G140L/1280 (03) - COS FUV Channel Sensitivity vs. High Voltage

22	Spectrum 11 (1) WD0308-565 (COS.sp.395 854)	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=22 6; FP-POS=3; FLASH=S0052D01 4	326 Secs (326 Secs)	[==>]	[2]
<i>Comments: Subsequent exposures at non-standard HV values.</i>							
23	HV = 167/1 DARK 63	S/C, DATA, NONE		SPEC COM INSTR ELHVADJPROP; QESIPARM ENDC TSA 167; QESIPARM ENDC TSB 163	44 Secs (44 Secs)	[==>]	[2]
<i>Comments: Return to nominal HV values.</i>							
<i>HV increase is (163-159) = 4 for Segment B. Therefore, exposure time is 39 seconds + ceiling(4*1.1) = 44 seconds</i>							
24	Spectrum 12 (1) WD0308-565 (COS.sp.395 854)	COS/FUV, TIME-TAG, PSA	G140L 1280 A	BUFFER-TIME=22 6; FP-POS=3; FLASH=S0052D01 4	326 Secs (326 Secs)	[==>]	[2]
<i>Comments: Subsequent exposures at non-standard HV values.</i>							



**Orbit 2**

GS Reacq

