

14445 - COS FUV Recovery after Anomalous Shutdown

Cycle: 23, Proposal Category: CAL/COS (Availability Mode: RESTRICTED)

INVESTIGATORS

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VISITS

Visit	Targets used in Visit	Configurations used in Visit	Orbits Used	Last Orbit Planner Run	OP Current with Visit?
01	DARK	S/C	1	07-Oct-2015 02:54:52.0	yes
02	DARK	S/C	1	07-Oct-2015 02:54:53.0	yes
03	DARK	COS/FUV S/C	1	07-Oct-2015 02:54:54.0	yes
04	DARK	S/C	1	07-Oct-2015 02:54:54.0	yes
05	DARK	S/C	1	07-Oct-2015 02:54:55.0	yes
06	DARK	COS/FUV S/C	1	07-Oct-2015 02:54:55.0	yes
07	DARK	S/C	1	07-Oct-2015 02:54:56.0	yes

Visit	Targets used in Visit	Configurations used in Visit	Orbits Used	Last Orbit Planner Run	OP Current with Visit?
08	DARK WAVE	COS/FUV S/C	1	07-Oct-2015 02:54:57.0	yes
09	DARK	S/C	1	07-Oct-2015 02:54:58.0	yes
10	DARK WAVE	COS/FUV S/C	1	07-Oct-2015 02:54:59.0	yes
11	DARK	S/C	1	07-Oct-2015 02:55:00.0	yes
12	DARK WAVE	COS/FUV S/C	1	07-Oct-2015 02:55:00.0	yes
13	DARK	S/C	1	07-Oct-2015 02:55:01.0	yes
14	DARK WAVE	COS/FUV S/C	1	07-Oct-2015 02:55:03.0	yes
15	DARK	S/C	1	07-Oct-2015 02:55:03.0	yes
16	DARK WAVE	COS/FUV S/C	1	07-Oct-2015 02:55:04.0	yes
17	DARK	S/C	1	07-Oct-2015 02:55:05.0	yes

Proposal 14445 (STScI Edit Number: 1, Created: Wednesday, October 7, 2015 1:55:07 AM EST) - Overview

17 Total Orbits Used

ABSTRACT

This proposal consists of the steps for turning on and ramping up the COS FUV high voltage in a safe and conservative manner after a HV anomalous shutdown by executing a "reduced set" of visits from Cycle 19 Proposal 12810. The nature of the shutdown, i.e., over-light, HV current transient ("crackle"), ion feedback (induced by a high energy particle), or field emission (possibly caused by dust or other particulate on the QE grid or other close-by structure or hardware), and the value of the commanded HV at the time of the shutdown will determine what visits are executed. Because of gain sag, commanded HV settings updates may be required.

First, prior to execution of this proposal or selected visits from this proposal, all preliminary steps should be exercised to gather the necessary diagnostic data, e.g., science data evaluation (if a science exposure was in progress and the science data is available), memory dumps (DCE, EXEC RAM, and possibly the CS BUFFER), engineering telemetry, or other information that might provide insight as to the nature of the shutdown and

The complete step-by-step procedure is detailed in the Observing Description, but in summary, the following is done:

Day 01 activities, visits 01-07, contain both QE grid off and on HV ramping to HVLow (100/100) with diagnostics (DCE dumps) and darks to exclude QE grid involvement in the shutdown. Subsequent to day 01, all HV ramping will be with the QE grid on with the same diagnostics and exposures. All days end with the setting of COS event flag 3 to prevent any FUV HV commanding.

Time is allotted for cognizant detector and COS instrument scientist and engineers to examine data dumps, science exposures, and engineering telemetry. If all is well, the go-ahead will be given to clear flag 3 for the next day's visits.

This proposal is modeled after the Cycle 22, Proposal 13977.

OBSERVING DESCRIPTION

This proposal consists of necessary steps for turning on and ramping up the COS FUV high voltage in a conservative manner after an anomalous shutdown. It is intended to be used for the on-orbit turn-on of the detector after such a shutdown.

Prior to execution of this proposal or selected visits from this proposal, all preliminary steps to collect diagnostic data should be exercised.

- 1. Gather the needed data
 - Do DCE dump as soon as possible
- 2. Circular buffer with 10 s of events and histograms of currents and voltages
 - Dump EXEC RAM for CVT (Current Value Table) telemetry and error logs
 - Examine exposure (if any) occurring during the anomaly
- 3. If instrument not suspended, normal readout of exposure in CS BUFFER should occur
 - CS BUFFER memory dump as may be appropriate
 - Examine engineering telemetry (including snapshots)

4. If event is determined to be similar to a previous event that did not damage the detector, and there does not appear to be evidence for more extended damage, we may decide on an accelerated recovery, e.g.,

- Will first go to HVLOW both without and then with the QE grid on

- If HVLOW data look normal, will consider proceeding directly to HVNOM and QE grid on

- Under some circumstances (i.e., a well understood event with essentially no risk of damage), we may consider returning directly to operations without additional testing

5. If event shows new or poorly understood behavior, will consult with appropriate experts prior to deciding which visits in the anomalous recovery proposal are required.

6. Primary criteria for deciding if event is the "same" as the 30 April event will be the temporal and spatial structure of the counts and gain

- Sudden drop in gain followed by extended field emission
- Primary emission localized to regions previously seen to have slightly enhanced dark rate
- May have less information than before if shutdown occurs outside a time-tag exposure
- 7. Event will also be compared to FUSE like "crackles" that produced current transients

8. Shutdowns due to external or internal lamp over-light will be evaluated based on estimated level of violation to decide if damage is a concern

The sequence day, visits numbers, exposures, and rough "after by" times (end to start) are listed. Number listed in parentheses, e.g., (100/100), or 154/151 are the HV command counts for Segment A and B, respectively.

Throughout the proposal, different "after by" times, sequence containers, and new alignments are used to optimize flow, schedulability, telemetry and science data analyses, and the clearing of flag 3. When "after by" times are listed as 0.0 to 1.0 hr., this means that this step should be scheduled and executed as soon as possible after the previous visit. If scheduling determines that a longer time is required for the sequence to schedule properly, then scheduling has the right to adjust this time as they deem appropriate. The proposal is designed such that the selected visits and exposures MUST be executed in order.

Additionally, all visits are compliant with CARD 3.4.12.8 - COS FUV Mandatory Dwell Time at HVLow (1 hour dwell at HVLow before ramping to a more negative voltage) and CARD 3.4.12.9 -- COS FUV High Voltage QE Grid Operation (HV must be less negative or equal to the HVLow to switch grid on or off).

All dark exposures will be 3600 sec. with STIMS set to 30. All wave exposures will be 60 sec. with STIMs set to 2000.

Day 1

V01 Uninhibit the DCE - Flag 3 must be clear to execute.

- 1. FUV Inhibit to Boot
- 2. DCE RAM Dump to capture the cause of the shutdown
- 3. FUV Boot to Operate
- V02 QE off Turn HV on After Visit 01 by 0.0 to 1.0hr
 - 1. QE off Turn HV on (0/0 do not ramp)
 - 2. DCE RAM dump
- V03 QE off Ramp to HVLow After V02 by 0.0 to 1.0hr
 - 1. Ramp to HVLow (100/100)
 - 2. DCE RAM dump
 - 3. Dark exposure
- V04 Return to Operate After V03 by 0.0 to 1.0hr
 - 1. Return to Operate (HV off)
 - 2. DCE RAM dump
- V05 QE on Turn HV on After V04 by 0.0 to 1.0hr
 - 1. QE on Turn HV on (0/0 do not ramp)
 - 2. DCE RAM dump
- V06 QE on Ramp to HVLow (100/100) After V05 by 0.0 to 1.0hr
 - 1. Ramp to HVLow (100/100)
 - 2. DCE RAM Dump
 - 3. Dark exposure
- V07 Return to Operate After V06 by 0.0 to 1.0hr
 - 1. Return to Operate (HV off)
 - 2. DCE RAM dump
 - 3. Set flag 3

Day 2

V08 QE on - Ramp to 154/151 - After V01 by 1D to 2D for analysis. Flag 3 must be clear to execute.

Qasi_States will auto-schedule the normal Operate to HVLow transition

- Install memory monitors
 Ramp HV to 154/151
- 3. DCE RAM dump
- 4. Dark exposure
- 5. Wave exposure
- V09 Return to Operate After V08 by 0.0 to 1.0hr
 - 1. Return to HVLow (100/100)
 - 2. DCE RAM dump
 - 3. Set flag 3

Day 3

V10 QE on - Ramp to 160/157 - After V08 by 1D to 2D for analysis. Flag 3 must be clear to execute.

Qasi_States will auto-schedule the normal Operate to HVLow transition

- 1. Ramp HV to 160/157
- 2. DCE RAM dump
- 3. Dark exposure
- 4. Wave exposure

V11 Return to Operate - After V10 by 0.0 to 1.0hr

- 1. Return to HVLow
- 2. DCE RAM dump
- 3. Set flag 3

Day 4

V12 QE on - Ramp to 167/163 - After V10 by 1D to 2D for analysis. Flag 3 must be clear to execute.

Qasi_States will auto-schedule the normal Operate to HVLow transition

- 1. Ramp to HV to 167/163
- 2. DCE RAM dump
- 3. Dark exposure
- 4. Wave exposure

V13 Return to Operate - After by V12 by 0.0 to 1.0hr

- 1. Return to HVLow (100/100)
- 2. DCE RAM dump
- 3. Set flag 3

Day 5

V14 QE on - Ramp to 172/169 - After V12 by 1D to 2D for analysis. Flag 3 must be clear to execute.

Qasi_States will auto-schedule the normal Operate to HVLow transition

- 1. Ramp to HV to 172/169
- 2. DCE RAM dump
- 3. Dark exposure
- 4. Wave exposure
- V15 Return to Operate After V14 by 0.0 to 1.0hr
 - 1. Return to HVLow (100/100)
 - 2. DCE RAM dump
 - 3. Set flag 3

Day 06

V16 QE on - Ramp to HVNom (178/175) - After V14 by 1D to 2D for analysis. Flag 3 must be clear to execute.

Qasi_States will auto-schedule the normal Operate to HVLow transition

- 1. Ramp to HV to HVNom (178/175)
- 2. DCE RAM dump
- 3. Dark exposure
- 4. Wave exposure

V17 Return to HVOperate -- After V26 by 1.5hr to 2.1

- 1. Return to HVLow (100/100)
- 2. DCE RAM dump
- 3. Set flag 3

Clear flag 3 (Real-time) - After V16 1D for analysis. Flag 3 must be clear to continue science operations.

----- Realtime Justification ------

Real-time commanding is required to clear NSSC-1 COS event flag 3 prior to visit 01 and to go ahead with the selected visits. Flag 3 must also be cleared to go ahead with science observations after the last selected visit.

----- Additional Comments ------

This is a recovery from a HV anomalous shutdown. No regular or calibration FUV science exposures are allowed during recovery.

This is not a requirement but it is desirable to have real-time engineering telemetry (MA return) during the execution of this proposal.

A contingency Operations Request to place to command the FUV detector into its Inhibit mode must be in place in case a significant anomaly occurs.

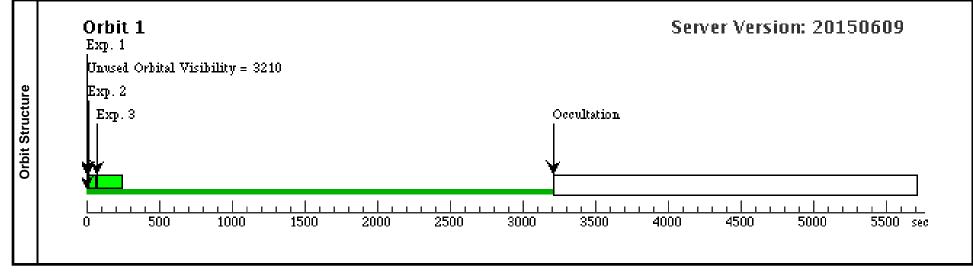
ISQL is required to Id S/C exposures as COS, to set the SI interleave flag properly, to adjust SI states on DUMP and HOME alignments, and to model readouts for the DCE dump exposures . See visits/exposures for detail.

This proposal requires Special Commanding.

Proposal 14445 - Uninhibit DCE (01) - COS FUV Recovery after Anomalous Shutdown

Processor Provide State St		Proposal 14445, Uninhibit DCE	E (01)					Wed Oct 07 06:55:07	GMT 2015
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Solution Final Distribution of the DCE from Boot to Operate. Use standard recon. ELCOPYDCE: tin Uninhibit DCE (NEW ALIGNMENT 0) Image: tin Uninhibit DCE (Image: tin Uninhibit DCE (NEW ALIGNMENT 0) Image: tin Uninhibit DCE (Image: tin Uninhibit DCE (NEW ALIGNMENT 0) Image: tin Uninhibit DCE (Image: tin Uninhibit DCE (Ima						SPEC COM INSTR	Sequence 1-3 Non-In	60.0 Secs. $(60$ Secs.)	
Solution NEW ALIGNMENT 010 11 i: QASISTATES COS SI OBSERVE OBSE RVE: QASISTATES COS SI OBSERVE OBSE RVE: [1] Comments: Copy and dump DCE RAM. EACH Image: Comments of the procedure of get a memory dump of the FUV HV and AUX power current monitors (HVIA, HVIB, AUXI). Each of these has a 1000 (possibly 1024) sample buffer that monitors the current at Ims sampling (looping through, overwriting the data that is 1 second old), and a cumulative histogram of the current values (this would be a buffer of 256 values for each monitor)." This information is in a DCE RAM dump. SQL: setur readout entry for the DCE dump (galignment, gexposure, greadout), tag as COS (si_used and si_intrlv) SPEC COM INSTR Sequence 1-3 Non-In RLBTTOPF; timuninhibit DCE (NEW ALIGNMENT 180 Secs (180 Secs) 3 FUV Boott DARK S/C, DATA, NONE SPEC COM INSTR SI OBSERVE OBSE RVE; QASISTATES COS SI OBSERVE OBSE RVE; Image: Comments of the DCE from Boot to Operate. Use standard recon. [1] Comments: Transition the DCE from Boot to Operate. Use standard recon.			S/C, DATA, RORE				t in Uninhibit DCE (
Si OBSERVE OBSE RVE; QASISTATES COS FUV OPERATE OP ERATE [1] Comments: Copy and dump DCE RAM. [1] From Jason McPhate (Berkeley FUV detector expert, who defined the FUV initial turn-on procedure): "ITm after] the procedure to get a memory dump of the FUV HV and AUX power current monitors (HVIA, HVIB, AUXI). Each of these has a 1000 (possibly 1024) sample buffer that monitors the current at Ims samp ling (looping through, overwriting the data this I second old), and a cumulative histogram of the current values (this would be a buffer of 256 values for other or would be a this I a DCE RAM dump. SQL: setup readout entry for the DCE dump (qalignment, qexposure, qreadout), tag as COS (si_used and si_intriv) SPEC COM INSTR RLBTTOPF; o Operate Sequence 1-3 Non-In RLBTTOPF; OASISTATES COS SI OBSERVE OBSE RVE; QASISTATES COS FUV DOFERATE OP ERATE Iso Secs (180 Secs) [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [2] [1] [1] [1] [1] [1] [2] [1] [1] [3] fully boot to DARK S/C, DATA, NONE [1] [4] [1] [1] [1] [4] [1] [1] [1] [5] [1] [2]						NEW ALIGNMENT	01)		
Si OBSERVE OBSE RVE; QASISTATES COS FUV OPERATE OP ERATE [1] Comments: Copy and dump DCE RAM. [1] From Jason McPhate (Berkeley FUV detector expert, who defined the FUV initial turn-on procedure): "ITm after] the procedure to get a memory dump of the FUV HV and AUX power current monitors (HVIA, HVIB, AUXI). Each of these has a 1000 (possibly 1024) sample buffer that monitors the current at Ims samp ling (looping through, overwriting the data this I second old), and a cumulative histogram of the current values (this would be a buffer of 256 values for other or would be a this I a DCE RAM dump. SQL: setup readout entry for the DCE dump (qalignment, qexposure, qreadout), tag as COS (si_used and si_intriv) SPEC COM INSTR RLBTTOPF; o Operate Sequence 1-3 Non-In RLBTTOPF; OASISTATES COS SI OBSERVE OBSE RVE; QASISTATES COS FUV DOFERATE OP ERATE Iso Secs (180 Secs) [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [1] [2] [1] [1] [1] [1] [1] [2] [1] [1] [3] fully boot to DARK S/C, DATA, NONE [1] [4] [1] [1] [1] [4] [1] [1] [1] [5] [1] [2]						, OASISTATES COS			
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"[I'm after] the procedure to get a memory dump of the FUV HV and AUX power current imonitors (HVIA, HVIB, AUXI). Each of these has a 1000 (possibly 1024) sample buffer that monitors the current at Ims sampling (looping through, overwriting the data that is 1 second old), and a cumulative histogram of the current values (this would be a buffer of 256 values for each monitor)." This information is in a DCE RAM dump. SQL: setup readout entry for the DCE dump (qalignment, qexposure, qreadout), tag as COS (si_used and si_intrly) 3 FUV Boot t DARK S/C, DATA, NONE o Operate SPEC COM INSTR RLBTTOPF; timunhibit DCE (NEW ALIGNMENT : QASISTATES COS SI OBSERVE OBSE RVE; RVE; QASISTATES COS FUV OPERATE OP ERATE Comments: Transition the DCE from Boot to Operate. Use standard recon.	_	Comments: Copy and dump DCE	E RAM.						
ling (looping through, overwriting the data that is 1 second old), and a cumulative histogram of the current values (this would be a buffer of 256 values for each monitor)." This information is in a DCE RAM dump. SQL: setup readout entry for the DCE dump (qalignment, qexposure, qreadout), tag as COS (si_used and si_intrly) FUV Boot t DARK S/C, DATA, NONE o Operate SPEC COM INSTR RLBTTOPF; o Operate SPEC COS SI OBSERVE OBSE RVE; OASERVE OBSE RVE; OASISTATES COS FUV OPERATE OP ERATE Image: Comments: Transition the DCE from Boot to Operate. Use standard recon.								1 1 00 1	
3 FUV Boot t DARK S/C, DATA, NONE SPEC COM INSTR RLBTTOPF; in Uninhibit DCE (01) 180 Secs (180 Secs) 3 FUV Boot t DARK S/C, DATA, NONE SPEC COM INSTR RLBTTOPF; in Uninhibit DCE (01) 180 Secs (180 Secs) 4 GASISTATES COS SI OBSERVE OBSE RVE; OASISTATES COS FUV OPERATE OP ERATE QASISTATES COS FUV OPERATE OP ERATE [1] Comments: Transition the DCE from Boot to Operate. Use standard recon. 100 Secs (180 Secs) [1]									
3 FUV Boot t DARK S/C, DATA, NONE SPEC COM INSTR RLBTTOPF; in Uninhibit DCE (01) 180 Secs (180 Secs) 3 FUV Boot t DARK S/C, DATA, NONE SPEC COM INSTR RLBTTOPF; in Uninhibit DCE (01) 180 Secs (180 Secs) 4 GASISTATES COS SI OBSERVE OBSE RVE; OASISTATES COS FUV OPERATE OP ERATE QASISTATES COS FUV OPERATE OP ERATE [1] Comments: Transition the DCE from Boot to Operate. Use standard recon. 100 Secs (180 Secs) [1]		SOL: setup readout entry for the	DCE dump (aalignment, aexposure, area	udout), tag as COS (si u	used and si intrly)				
NEW ALIGNMENT ⁰¹⁾ ; QASISTATES COS SI OBSERVE OBSE RVE; QASISTATES COS FUV OPERATE OP ERATE Comments: Transition the DCE from Boot to Operate. Use standard recon.		3 FUV Boot t DARK		·// ···· · · · · · · · · · · · · · · ·	······			180 Secs (180 Secs)	
NEW ALIGNMENT ; QASISTATES COS [1] QASISTATES COS SI OBSERVE OBSE [1] RVE; QASISTATES COS [1] QASISTATES COS FUV OPERATE OP ERATE Comments: Transition the DCE from Boot to Operate. Use standard recon. [1]		o Operate						[==>]	
SI OBSERVE OBSE [1] RVE; QASISTATES COS FUV OPERATE OP ERATE Comments: Transition the DCE from Boot to Operate. Use standard recon. [1]						NEW ALIGNMENT	01)		
RVE; QASISTATES COS GASISTATES COS FUV OPERATE OP FUV OPERATE OP ERATE									[]]]
FUV OPERATE OP ERATE Comments: Transition the DCE from Boot to Operate. Use standard recon.						RVE;			[1]
Comments: Transition the DCE from Boot to Operate. Use standard recon.						FUV OPERATE OP			
		Comments: Transition the DCE f	rom Boot to Operate. Use standard record	1.		EKAIE			1
			X						

Proposal 14445 - Uninhibit DCE (01) - COS FUV Recovery after Anomalous Shutdown



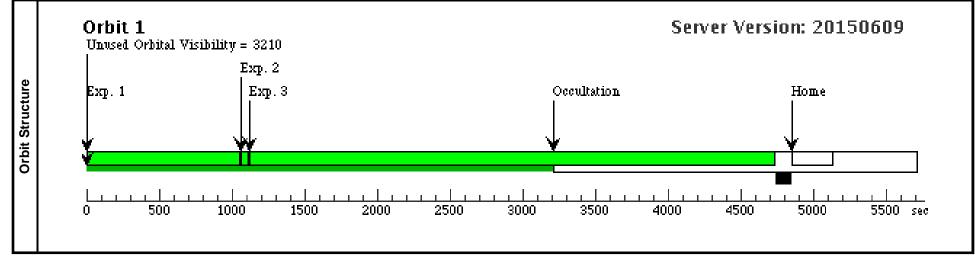
Proposal 14445 - QE off - Turn HV on (02) - COS FUV Recovery after Anomalous Shutdown

Pro	opos	<u>sai 1444</u>	<u>5 - QE OII -</u>	<u>- Turn HV on (02) - COS</u>	S FUV Recove	ery after Anon	naious Snutdow	n		
	Prop	oosal 14445, O	QE off - Turn H	V on (02)					Wed Oct 07 06:55:07	GMT 2015
	Diag	nostic Status	s: No Diagnostic	s						
μ	Scien	ntific Instrum	ents: S/C							
Visit	Spec	ial Requireme	ents: AFTER 01	BY 0.1 H TO 1.5 H; PARALLEL						
 	-	-	id off, Turn-on H							
				o execute the FUV Operate to HV On (0)/0 or approximately ~	-2500V) reconfigurat	ion and will stop there. Di	agnostics are taken (D	CE RAM dumps) after each transition.	
	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	QE off - Tur	DARK	S/C, DATA, NONE	•	•		Sequence 1-2 Non-In	50 Secs (50 Secs)	
		n HV on (0/ 0)					SPEC COM INSTR ELOPTNQF;	t in QE off - Turn H V on (02)	[==>]	
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV OPERATE HV LOW			
Exposures	Com	ments: Turn o	on the FUV HV w	ithout the QE grid. Do not ramp up.						_
sur	2	DCE RAM		S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-2 Non-In	60.0 Secs (60 Secs)	
lä		dump					SPEC COM INSTR	t in QE off - Turn H V on (02)	[==>]	
ΙÄ							ELCOPYDCE;	V 011 (02)		
1							NEW ALIGNMENT			
							, QASISTATES COS			(1)
							SI OBSERVE OBSE			[1]
							RVE;			
							QASISTATES COS FUV HVLOW HVL OW			
	Com	ments: DCE l	RAM copy and du	ump. See Visit 1, Exposure 2 for a comp	lete description of the d	lump.				
	SQL	setup readoi	ut entry for the D	CE dump (qalignment, qexposure, qrea	dout), tag as COS (si_1	used and si_intrlv)				
		Orbi	it 1					Server Ver	rsion: 20150609	
		Unus	ed Orbital V	isibility = 3210						
۵		Exp.	1							
ŭ		Exp	. 2				Occultation			
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Orbit Structure							1			
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			500	1000 1500	2000 250	0 3000	3500 4	000 4500	<u> </u>	- ec
		•	000	2000 2000	2000 200					-~
	1									

Proposal 14445 - QE off - Ramp to HVLow (03) - COS FUV Recovery after Anomalous Shutdown

			E off - Ramp to HV	Low (03)					Wed Oct 07 06:55:07	GMT 2015
		gnostic Status:								
Visit			nts: S/C, COS/FUV							
×ا	Spee	cial Requireme	nts: AFTER 02 BY 0).1 H TO 1.5 H; PARALLEL						
	Con	nments: Follow	ing visit 02, continue	with the FUV ramp-up with the QE o_{j}	ff to HVLow value (1	00/100).				
	The	HOME alignm	ent is not needed and	l may be deleted via SQL.						
Ś				ng (Orbit Planner): MAXIMUM DUR	ATION EXCEEDED	O FOR INTERNAL OR	EARTH CALIB SU			
Diagnostics										
	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	Ramp to HV	DARK	S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-3 Non-In	1060 Secs (1060 Secs)	
		Low (100/10 0)					SPEC COM INSTR ELHOTHLF;	t in QE off - Ramp to HVLow (03)	[==>]	
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV HVLOW HVL OW			
	Con	iments: Ramp t	the FUV HV to HVLo	w. The commanding assumes the HV i	s already on.					
6	2	DCE RAM	DARK	S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-3 Non-In	60.0 Secs (60 Secs)	
Exposures		dump					SPEC COM INSTR ELCOPYDCE;	t in QE off - Ramp to HVLow (03)	[==>]	
l og							NEW ALIGNMENT ;			
Ê							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV HVLOW HVL OW			
1	Con	iments: DCE R	AM copy and dump. S	See Visit 1, Exposure 2 for a complete	description of the du	ump.				
1	SQL	.: setup readou	t entry for the DCE di	ump (qalignment, qexposure, qreadou	t), tag as COS (si_us	ed and si_intrlv)				
	3	Dark	DARK	COS/FUV, TIME-TAG, DEF	DEF	BUFFER-TIME=36 00:	NEW ALIGNMENT	Sequence 1-3 Non-In t in QE off - Ramp to	3600.0 Secs (3600 Secs)	
						STIM-RATE=30	, QASISTATES COS FUV HVLOW HVL OW	HVLow (03)	[==>]	[1]

Proposal 14445 - QE off - Ramp to HVLow (03) - COS FUV Recovery after Anomalous Shutdown



Proposal 14445 - Return to Operate (04) - COS FUV Recovery after Anomalous Shutdown

	pus	ai 1444	J - Netunn t	o Operate (04) - COS I						
	· ·	,	Return to Operate	e (04)					Wed Oct 07 06:55:08	GMT 2015
			: No Diagnostics							
Visit	Scien	ntific Instrume	ents: S/C							
Ë	Spec	ial Requireme	ents: AFTER 03 B	Y 1.4 H TO 3.5 H; PARALLEL						
	Com	ments: Return	to Operate							
	Retu	rn to Operate,	and dump DCE n	nemory.						
	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	Return to O	DARK	S/C, DATA, NONE			SAA CONTOUR 31	Sequence 1-2 Non-In	50 Secs (50 Secs)	
		perate (HV off)					SPEC COM INSTR RLHLTOPF;	t in Return to Operat e (04)	[==>]	
							QASISTATES COS SI OBSERVE OBSE			[1]
							RVE;			[1]
							QASISTATES COS FUV HVLOW OPE RATE			
Exposures	Com	ments: Turn o	ff the FUV high ve	oltage						
ns	2	DCE RAM	DARK	S/C, DATA, NONE				Sequence 1-2 Non-In	60.0 Secs (60 Secs)	
l g		dump					SPEC COM INSTR ELCOPYDCE;	t in Return to Operat e (04)	[==>]	
μÃ							NEW ALIGNMENT			
							;			
							QASISTATES COS SI OBSERVE OBSE			[1]
							SI OBSERVE OBSE RVE;			2-3
							QASISTATES COS			
							FUV OPERATE OP ERATE			
				p. See Visit 1, Exposure 2 for a comp		-				
	SQL	setup readou	t entry for the DC	E dump (qalignment, qexposure, qrea	dout), tag as COS (si_u	sed and si_intrlv)				
		Orbi	+ 1					Sower Ver	rsion: 20150609	
				ibility = 3210				Server ver	ISION. 20130009	
6		Exp.	1							
l ĭ	1	Exp.	.2				Occultation			
Orbit Structure										
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	1	0	500	1000 1500	2000 250	0 3000	3500 4	000 4500	5000 5500 s	- ec

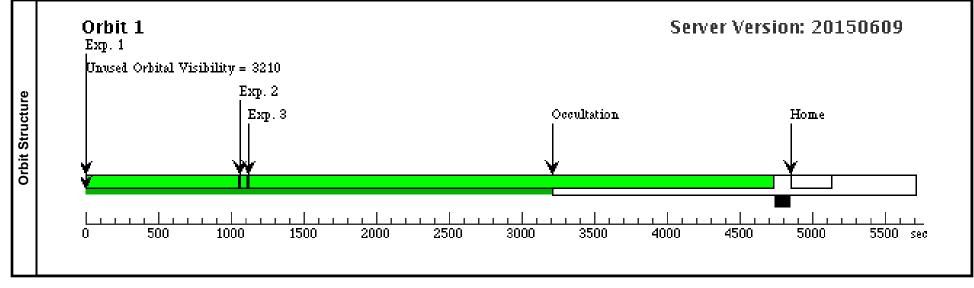
Proposal 14445 - QE on - Turn HV on (05) - COS FUV Recovery after Anomalous Shutdown

PIC	pos	sai 1444:		<u>- Turn HV on (05) - COS</u>	FUV Recove	ry alter Anor	naious Snutuow	[]		
	Prop	oosal 14445, Q)E on - Turn H	V on (05)					Wed Oct 07 06:55:08	GMT 2015
	-	,	: No Diagnostic	s						
Visit		ntific Instrume								
Ë	Spec	ial Requireme	ents: AFTER 04	BY 0.1 H TO 1.5 H; PARALLEL						
	Com	ments: QE gri	d on, HV on							
	Spec	ial commandii	ng will be used t	o execute the FUV Operate to HV On (0	/0 or approximately ~ -	2500V) reconfigurat	tion and will stop there.			
	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	QE on - Tur	DARK	S/C, DATA, NONE			SAA CONTOUR 31	; Sequence 1-2 Non-In		
		n HV on (0/ 0)					SPEC COM INSTR ELOPTHOF;	t in QE on - Turn HV on (05)	[==>]	
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV OPERATE HV LOW			
Exposures	Com	ments: Turn o	n the FUV HV, i	including the QE grid. Do not ramp up.						
su	2	DCE RAM	DARK	S/C, DATA, NONE			SAA CONTOUR 31	Sequence 1-2 Non-In	60.0 Secs (60 Secs)	
8		dump					SPEC COM INSTR	t in QE on - Turn HV on (05)	[==>]	
Ιŭ							ELCOPYDCE;			
							NEW ALIGNMENT			
							OASISTATES COS			[1]
							QASISTATES COS SI OBSERVE OBSE			[1]
							RVE; QASISTATES COS			
							FUV HVLOW HVL OW			
	Com	ments: DCE R	AM copy and di	ump. See Visit 1, Exposure 2 for a compl	lete description of the d	ump.				
	SQL	: setup readou	t entry for the D	OCE dump (qalignment, qexposure, qread	lout), tag as COS (si_u	sed and si_intrlv)				
		A.J. :						C		
		Orbi Unuse		ïsibility = 3210				Server Vei	rsion: 20150609	
		Exp.	1							
Ĭ		Exp.	2				Occultation			
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Orbit Structure		V 1					<u>۲</u>			
10							•			
			<u> </u>	<u>1000 1500 1500 1500 1500 1500 1500 1500</u>	<u> </u> 2000 250	<u> </u>	<u></u> 3500 4	<u> </u>	<u> </u>	_
		U	JUU	1000 1300	2000 2001	5 3000	əJUU 4	4300	JUUU JJUU S(•

Proposal 14445 - QE on - Ramp to HVLow (06) - COS FUV Recovery after Anomalous Shutdown

<u> </u>	T									
			E on - Ramp to	HVLow (06)					Wed Oct 07 06:55:08	GMT 2015
I		gnostic Status:	8							
Visit			nts: S/C, COS/FU							
Ĭ	-	-		BY 0.1 H TO 1.5 H; PARALLEL						
	Con	nments: Turn Q	E on and Ramp t	he FUV high voltage up to HVLow.						
	The	HOME alignm	ent is not needed	and may be deleted via SQL.						
Diagnostics		on - Ramp to I	HVLow (06)) Wa	rning (Orbit Planner): MAXIMUM DU	RATION EXCEEDE	D FOR INTERNAL OR	EARTH CALIB SU			
	#		Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	QE on - Ra mp to HVLo	DARK	S/C, DATA, NONE				A DE LA DEMARKA	1060 Secs (1060 Secs)	
		w (100/100)					SPEC COM INSTR RLOPTHLF;	HVLow (06)	[==>]	
							QASISTATES COS SI OBSERVE OBSE			[1]
							RVE;			[1]
							QASISTATES COS FUV OPERATE HV LOW			
	2	DCE RAM	DARK	S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-3 Non-In	60.0 Secs (60 Secs)	
res		dump					SPEC COM INSTR ELCOPYDCE;	t in QE on - Ramp to HVLow (06)	[==>]	
Exposures							NEW ALIGNMENT			
Exp							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV HVLOW HVL OW			
	Con	nments: DCE R	AM copy and dur	np. See Visit 1, Exposure 2 for a comple	te description of the a	lump.				
	SOL	.: setup readou	t entry for the DC	E dump (qalignment, qexposure, qreado	out), tag as COS (si u	used and si intrlv)				
	3	Dark	DARK	COS/FUV, TIME-TAG, DEF	DEF		NEW ALIGNMENT	Sequence 1-3 Non-In	3600.0 Secs (3600 Secs)	
				· · · ·		00;	;	t in QE on - Ramp to	[==>]	
						STIM-RATE=30	QASISTATES COS FUV HVLOW HVL OW	HVLow (06)		[1]

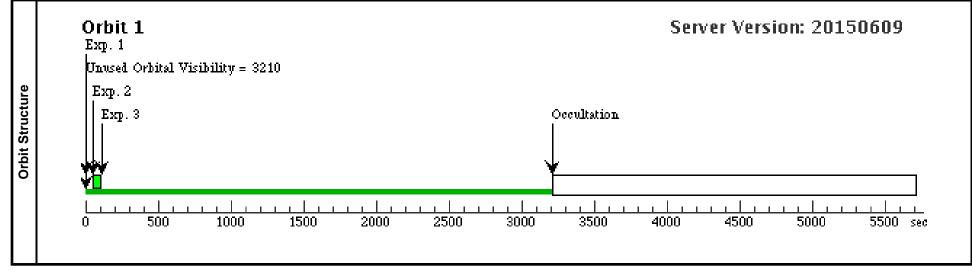
Proposal 14445 - QE on - Ramp to HVLow (06) - COS FUV Recovery after Anomalous Shutdown



Proposal 14445 - Return to Operate (07) - COS FUV Recovery after Anomalous Shutdown

<u> </u>	000			<u> Jperale (07) - COS FC</u>			Sus Onataown			
	Prop	osal 14445, R	eturn to Operate (07	()					Wed Oct 07 06:55:08	GMT 2015
	Diag	nostic Status:	No Diagnostics							
Visit	Scier	ntific Instrume	ents: S/C							
1	Spec	ial Requireme	nts: AFTER 06 BY 1	.4 H TO 3.5 H; PARALLEL						
	Com	ments: Return	to Operate, dump DC	E memory, and set flag 3.						
	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	Return to O	DARK	S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-3 Non-In	50 Secs (50 Secs)	
		perate (HV off)					SPEC COM INSTR RLHLTOPF;	t in Return to Operat e (07)	[==>]	
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV HVLOW OPE RATE			
	Com	ments: Turn oj	ff the FUV high voltag	e e						
ر س	2	DCE RAM	DARK	S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-3 Non-In	60.0 Secs (60 Secs)	
Exposures		dump					SPEC COM INSTR ELCOPYDCE;	t in Return to Operat e (07)	[==>]	
ődx							NEW ALIGNMENT			
Ш							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV OPERATE OP ERATE			
	Com	ments: DCE R	AM copy and dump. S	See Visit 1, Exposure 2 for a complete	e description of the di	ump.				
	SOL	setup readou	t entry for the DCE du	ump (qalignment, qexposure, qreadou	ut), tag as COS (si us	sed and si intrlv)				
		Set flag 3	DARK	S/C, DATA, NONE			SPEC COM INSTR	Sequence 1-3 Non-In	1.0 Secs (1 Secs)	
				· · · · ·			ELFLAG3;	t in Return to Operat	[==>]	
							NEW ALIGNMENT	e (07)	L	[1]
	Com	ments: Set NS	SC-1 COS event flag 3	3. This will prevent subsequent FUV	commanding unless it	t is cleared first.				

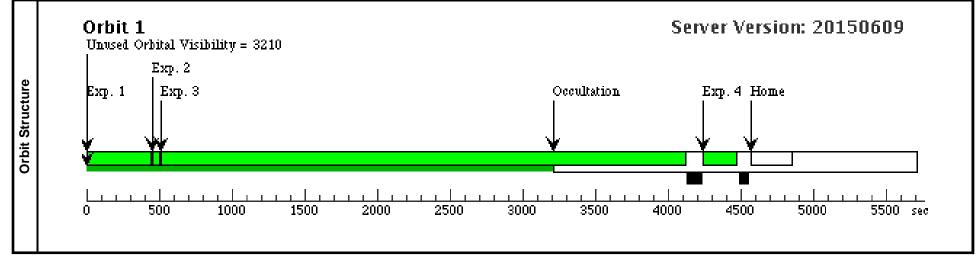
Proposal 14445 - Return to Operate (07) - COS FUV Recovery after Anomalous Shutdown



Proposal 14445 - QE on - Ramp to 154/151 (08) - COS FUV Recovery after Anomalous Shutdown

			D - QE OII - QE on - Ramp to 1	<u>Ramp to 154/151 (08) - 154/151 (08)</u>		ecovery aller A	nomaious Sm		Wed Oct 07 06:55:08	GMT 2015
	-	sal 14445, 0 ostic Status		134/131 (00)					wed Oct 07 00:55:08	01011 2015
			ents: S/C, COS/FU	N .						
"				Y 1.0 D TO 2.0 D; PARALLEL						
	-	-		age up to a specified value (well below	HVNom).					
	No SA	A Passage b	etween Visits 08 an	nd 09.						
nagiiosiics	(QE of	1 - Ramp to	154/151 (08)) War	rning (Orbit Planner): MAXIMUM DU	RATION EXCEEDE	D FOR INTERNAL OR :	EARTH CALIB SU			
	# 1	abel	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
ſ		Ramp to 154	DARK	S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-4 Non-In	451 Secs (451 Secs)	
	/	151					SPEC COM INSTR ELHLTHVF;	t in QE on - Ramp to 154/151 (08)	[==>]	
							QASISTATES COS SI OBSERVE OBSE RVE;			
							QASISTATES COS FUV HVLOW HVN OM;			[1]
							QESIPARM ENDC TSA 154;			
							QESIPARM SECPE RCT 3;			
	G		1				QESIPARM ENDC TSB 151			
20		OCE RAM		4/151 counts (A/B). S/C, DATA, NONE			SAA CONTOUR 21.	Sequence 1-4 Non-In	60.0 Saga (60 Saga)	
ea incody a		ump	DAKK	5/C, DATA, NONE			SPEC COM INSTR ELCOPYDCE;	t in QE on - Ramp to 154/151 (08)	[==>]	
Ì							NEW ALIGNMENT			
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV HVNOM HVN OM			
	Comm	ents: DCE I	RAM copy and dum	np. See Visit 1, Exposure 2 for a comple	ete description of the d	lump.				
	SOL: 9	etup readou	ut entry for the DCI	E dump (qalignment, qexposure, qread	out), tag as COS (si u	sed and si intrlv)				
- 1		Dark	DARK	COS/FUV, TIME-TAG, DEF	DEF		NEW ALIGNMENT	Sequence 1-4 Non-In	3600.0 Secs (3600 Secs)	
						00; STIM-RATE=30		t in QE on - Ramp to 154/151 (08)	[==>]	[1]
ľ	4 V	Vave	WAVE	COS/FUV, TIME-TAG, WCA	G160M	CURRENT=MEDIU		Sequence 1-4 Non-In	60 Secs (60 Secs)	
					1600 A	М;		t in QE on - Ramp to 154/151 (08)	[==>]	
						FP-POS=3;		134/131 (00)		[1]

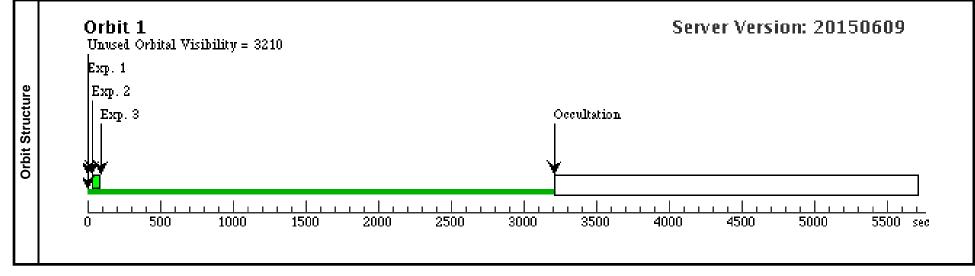
Proposal 14445 - QE on - Ramp to 154/151 (08) - COS FUV Recovery after Anomalous Shutdown



	Prop	osal 14445, l	Return to HVLow	(09)					Wed Oct 07 06:55:08	GMT 2013
	Diag	nostic Status	s: No Diagnostics							
	Scier	tific Instrum	ents: S/C							
	Speci	al Requirem	ents: AFTER 08 B	Y 1.2 H TO 3.5 H; PARALLEL						
	Com	nents: Returi	n to HVLow, dump l	DCE memory, and set flag 3.						
	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	Return to H	DARK	S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-3 Non-In	35 Secs (35 Secs)	
		VLow					SPEC COM INSTR RLHNTHLF;	t in Return to HVLo w (09)	[==>]	
							NEW OBSET;			
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV HVNOM OPE RATE			
	Com	nents: SQL:	Enforce the seq non	-int across the obsets						•
2	2	DCE RAM	DARK	S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-3 Non-In	60.0 Secs (60 Secs)	
		dump					SPEC COM INSTR ELCOPYDCE;	t in Return to HVLo w (09)	[==>]	
							NEW ALIGNMENT			
i							;			
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV OPERATE OP ERATE			
		nents: DCE l	RAM copy and dum	p. See Visit 1, Exposure 2 for a comp	lete description of the a	lump.				
	Com					-				
		setun reado	ut entry for the DCF	Edump (aalionment aexposure area	dout) tag as COS (si 1	sed and si intrly)				
	SQL:	setup reador Set flag 3	ut entry for the DCE DARK	E dump (qalignment, qexposure, qrea S/C, DATA, NONE	dout), tag as COS (si_u	sed and si_intrlv)	SPEC COM INSTR ELFLAG3;	Sequence 1-3 Non-In	1.0 Secs (1 Secs)	

Shutd 4 4 4 4 7 цул (00)oftor A - 1 -. .

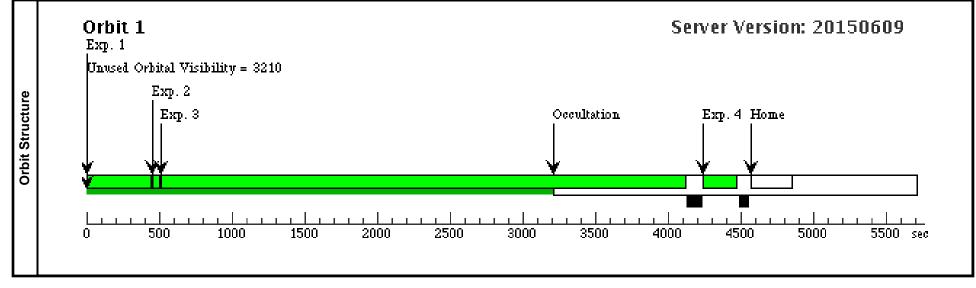
Proposal 14445 - Return to HVLow (09) - COS FUV Recovery after Anomalous Shutdown



Proposal 14445 - QE on - Ramp to 160/157 (10) - COS FUV Recovery after Anomalous Shutdown

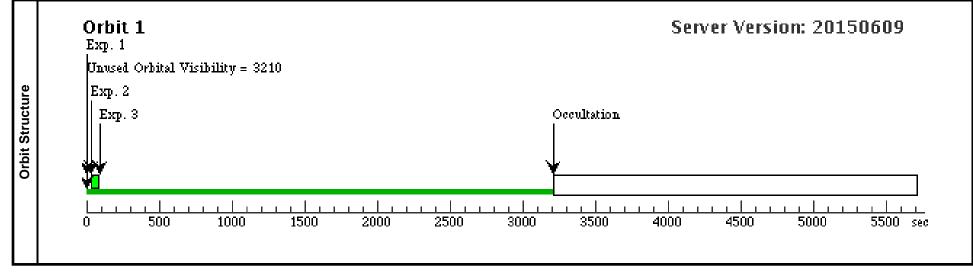
5:08 GM	MT 1
J.00 UM	1111 2
:] (Orb
	[1]
	[1]
I	
	[1]
	[1]
_	

Proposal 14445 - QE on - Ramp to 160/157 (10) - COS FUV Recovery after Anomalous Shutdown



	•		Return to HVLov	· · /					Wed Oct 07 06:55:08	GMT 20
	0		: No Diagnostics							
>		tific Instrum								
				BY 1.2 H TO 3.5 H; PARALLEL						
				DCE memory, and set flag 3.						
		Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
		Return to H	DARK	S/C, DATA, NONE			,	Sequence 1-3 Non-In t in Return to HVLo		
		VLOW					SPEC COM INSTR RLHNTHLF;	w (11)	[==>]	
							NEW OBSET;			
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV HVNOM OPE RATE			
	Comm	ients: SQL:	Enforce the seq n	on-int across the obsets						
ŝ	2 1	DCE RAM	DARK	S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-3 Non-In	60.0 Secs (60 Secs)	
rapusui es	(dump					SPEC COM INSTR ELCOPYDCE;	t in Return to HVLo w (11)	[==>]	
24							NEW ALIGNMENT ;			
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV OPERATE OP ERATE			
	Comm	nents: DCE I	RAM copy and du	np. See Visit 1, Exposure 2 for a comp	olete description of the d	lump.				
	SQL:	setup readoi	it entry for the DC	E dump (qalignment, qexposure, qrea	dout), tag as COS (si 1	used and si_intrlv)				
1	~	Set flag 3	DARK	S/C, DATA, NONE		/	SPEC COM INSTR		1.0 Secs (1 Secs)	
		0					ELFLAG3;	t in Return to HVLo	[==>]	

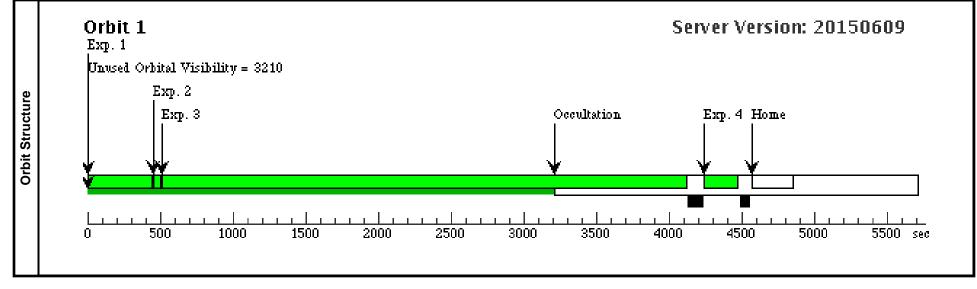
Proposal 14445 - Return to HVLow (11) - COS FUV Recovery after Anomalous Shutdown



Proposal 14445 - QE on - Ramp to 167/163 (12) - COS FUV Recovery after Anomalous Shutdown

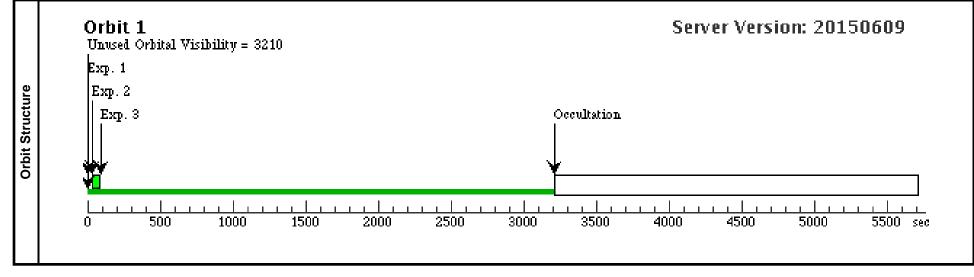
			QE on - Ramp to	- Ramp to 167/163 (12) -					Wed Oct 07 06:55:08	GMT 2015
	-	nostic Status		(12)					wed Oct 07 00.55.08	00011 2015
2			ents: S/C, COS/F	UV						
VISII				BY 1.0 D TO 2.0 D; PARALLEL						
	-	-		ltage up to a specified value (higher than	V10).					
	No S	AA Passage l	between Visits 12	and 13.						
ulagnostics	(QE	on - Ramp to	167/163 (12)) Wa	arning (Orbit Planner): MAXIMUM DU	RATION EXCEEDE	D FOR INTERNAL OR	EARTH CALIB SU			
	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1	Ramp to 167		S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-4 Non-In	451 Secs (451 Secs)	
		/163					SPEC COM INSTR ELHLTHVF;	t in QE on - Ramp to 167/163 (12)	[==>]	
							QASISTATES COS SI OBSERVE OBSE RVE;			
							QASISTATES COS FUV HVLOW HVN OM;			[1]
							QESIPARM ENDC TSA 167;			
							QESIPARM SECPE RCT 3;			
							QESIPARM ENDC TSB 163			
0	Com	1		67/163 counts (A/B).				G 1 4 M T		
5	2	DCE RAM dump	DARK	S/C, DATA, NONE				Sequence 1-4 Non-In t in QE on - Ramp to	, , , , , , , , , , , , , , , , , , ,	
rapusui es		I					SPEC COM INSTR ELCOPYDCE;	16//163 (12)	[==>]	
ì							NEW ALIGNMENT			
							, QASISTATES COS SI OPERATE OPER ATE;			[1]
							QASISTATES COS FUV HVNOM HVN OM			
	Com	ments: DCE	RAM copy and du	ump. See Visit 1, Exposure 2 for a comple	te description of the a	lump.				
				CE dump (qalignment, qexposure, qreado		-				
	3 <u>0</u> 2.	Dark	DARK	COS/FUV, TIME-TAG, DEF	DEF		NEW ALIGNMENT	Sequence 1-4 Non-In	3600.0 Secs (3600 Secs)	
				· · · · · ·		00; STIM-RATE=30		t in QE on - Ramp to 167/163 (12)	[==>]	[1]
	4	Wave	WAVE	COS/FUV, TIME-TAG, WCA	G160M	CURRENT=MEDIU		Sequence 1-4 Non-In	60 Secs (60 Secs)	
	Ľ				1600 A	M;		t in QE on - Ramp to	[==>]	
						FP-POS=3;		167/163 (12)		[1]
						STIM-RATE=2000				

Proposal 14445 - QE on - Ramp to 167/163 (12) - COS FUV Recovery after Anomalous Shutdown



	• /	Return to HVLo s: No Diagnostic						Wed Oct 07 06:55:08	GMT 201
-	entific Instrum	8	8						
			BY 1.2 H TO 3.5 H; PARALLEL						
-	1		p DCE memory, and set flag 3.						
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
1	Return to H		S/C, DATA, NONE		•		; Sequence 1-3 Non-In		
	VLow					SPEC COM INSTR RLHNTHLF;	t in Return to HVLo w (13)	[==>]	
						NEW OBSET;			
						QASISTATES COS SI OBSERVE OBSE RVE;	:		[1]
						QASISTATES COS FUV HVNOM OPE RATE			
Co	mments: SQL:	Enforce the seq n	on-int across the obsets					L	
g 2	DCE RAM	DARK	S/C, DATA, NONE			SAA CONTOUR 31	; Sequence 1-3 Non-In	60.0 Secs (60 Secs)	
	dump					SPEC COM INSTR ELCOPYDCE;	t in Return to HVLo w (13)	[==>]	
						NEW ALIGNMENT ;			
						QASISTATES COS SI OBSERVE OBSE RVE;	:		[1]
						QASISTATES COS FUV OPERATE OP ERATE			
Co	mments: DCE	RAM copy and du	ump. See Visit 1, Exposure 2 for a comp	lete description of the	dump.				
SQ	L: setup reado	ut entry for the D	CE dump (qalignment, qexposure, qrea	dout), tag as COS (si_i	used and si_intrlv)				
3	Set flag 3	DARK	S/C, DATA, NONE			SPEC COM INSTR	Sequence 1-3 Non-In	1.0 Secs (1 Secs)	
						ELFLAG3; NEW ALIGNMENT	t in Return to HVLo w (13)	[==>]	[1]
Co	mments: Set NS	SSC-1 COS event	flag 3. This will prevent subsequent FU	JV commanding unless	it is cleared first.				

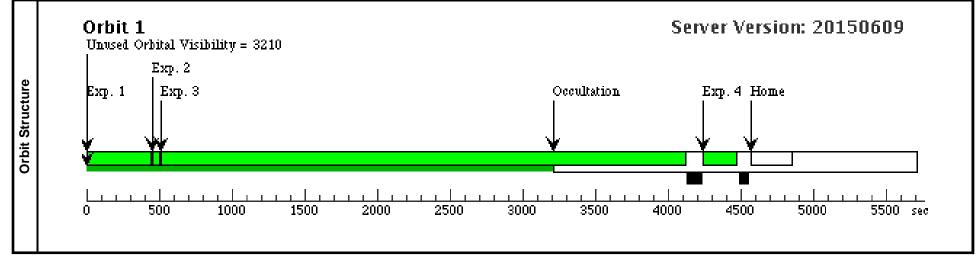
Proposal 14445 - Return to HVLow (13) - COS FUV Recovery after Anomalous Shutdown



Proposal 14445 - QE on - Ramp to 172/169 (14) - COS FUV Recovery after Anomalous Shutdown

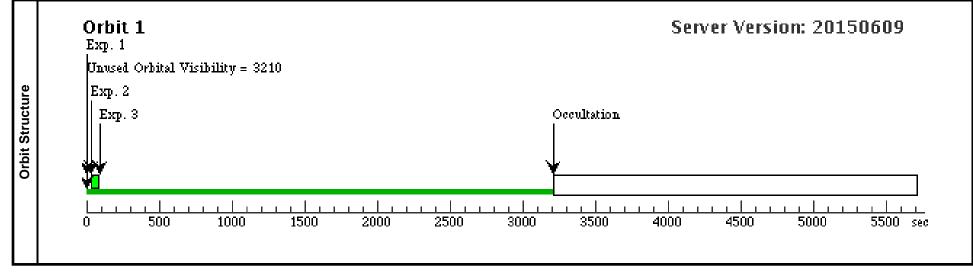
			QE on - Ramp to :	<u>Ramp to 172/169 (14) -</u>		ecovery aller A			Wed Oct 07 06:55:08	GMT 2015
	-	nostic Status								0.011 201.
			ents: S/C, COS/FU	IV						
				BY 1.0 D TO 2.0 D; PARALLEL						
	-	-		age up to a specified value (higher than	n V12).					
	No SA	AA Passage b	between Visits 14 a	und 15.						
ပျဖပ္ပူပဲခ်ပြင္ရ	(QE d	on - Ramp to	172/169 (14)) War	rning (Orbit Planner): MAXIMUM DU	RATION EXCEEDEI	D FOR INTERNAL OR	EARTH CALIB SU			
	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
		Ramp to 172	2 DARK	S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-4 Non-In	451 Secs (451 Secs)	
		/169					SPEC COM INSTR ELHLTHVF;	t in QE on - Ramp to 172/169 (14)	[==>]	
							QASISTATES COS SI OBSERVE OBSE RVE;			
							QASISTATES COS FUV HVLOW HVN OM;			[1]
							QESIPARM ENDC TSA 172;			
							QESIPARM SECPE RCT 3;			
							QESIPARM ENDC TSB 169			
20		<i>nents: Ramp</i> DCE RAM		2/169 counts (A/B).			SAA CONTOUR 21.	Sequence 1-4 Non-In	60 0 Saga (60 Saga)	
ea incody a		dump	DAKK	S/C, DATA, NONE			SPEC COM INSTR	t in QE on - Ramp to 172/169 (14)	[==>]	
v pr							ELCOPYDCE;	172/109 (14)		
1							NEW ALIGNMENT ;			
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV HVNOM HVN OM			
	Com	nents: DCE l	RAM copy and dun	np. See Visit 1, Exposure 2 for a comple	ete description of the d	lump.				
	SOL:	setup reador	ut entry for the DC	E dump (qalignment, qexposure, qread	out), tag as COS (si u	sed and si intrly)				
		Dark	DARK	COS/FUV, TIME-TAG, DEF	DEF	BUFFER-TIME=36	NEW ALIGNMENT	Sequence 1-4 Non-In	3600.0 Secs (3600 Secs)	
						00; STIM-RATE=30		t in QE on - Ramp to 172/169 (14)	[==>]	[1]
	4	Wave	WAVE	COS/FUV, TIME-TAG, WCA	G160M	CURRENT=MEDIU		Sequence 1-4 Non-In	60 Secs (60 Secs)	
					1600 A	M; FP-POS=3;	0	t in QE on - Ramp to 172/169 (14)	[==>]	
										[1]

Proposal 14445 - QE on - Ramp to 172/169 (14) - COS FUV Recovery after Anomalous Shutdown



	-		Return to HVLov						Wed Oct 07 06:55:08	GMT 20
	0		s: No Diagnostics							
>		tific Instrum								
				BY 1.2 H TO 3.5 H; PARALLEL						
			1 to HVLow, dump	DCE memory, and set flag 3.						
		Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
		Return to H	DARK	S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-3 Non-In	35 Secs (35 Secs)	
		VLow					SPEC COM INSTR RLHNTHLF;	t in Return to HVLo w (15)	[==>]	
							NEW OBSET;			
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV HVNOM OPE RATE			
	Com	nents: SQL:	Enforce the seq n	on-int across the obsets						1
ς I	2	DCE RAM	DARK	S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-3 Non-In	60.0 Secs (60 Secs)	
bine		dump					SPEC COM INSTR ELCOPYDCE;	t in Return to HVLo w (15)	[==>]	
rapusui es							NEW ALIGNMENT ;			
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV OPERATE OP ERATE			
	Com	nents: DCE l	RAM copy and du	mp. See Visit 1, Exposure 2 for a comp	lete description of the d	dump.				
	SQL:	setup readoi	ut entry for the DO	CE dump (qalignment, qexposure, qrea	dout), tag as COS (si 1	used and si_intrlv)				
1	~	Set flag 3	DARK	S/C, DATA, NONE		/	SPEC COM INSTR		1.0 Secs (1 Secs)	
		0					ELFLAG3;	t in Return to HVLo	[==>]	

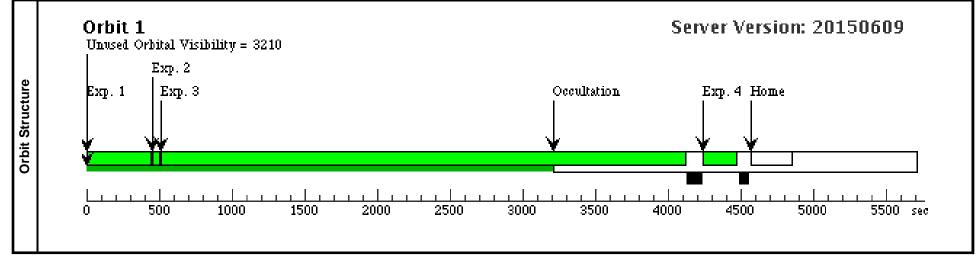
Proposal 14445 - Return to HVLow (15) - COS FUV Recovery after Anomalous Shutdown



Proposal 14445 - QE on - Ramp to 178/175 (16) - COS FUV Recovery after Anomalous Shutdown

FIO	pus	bai 1444.		Ramp to 178/175 (16) -		ecovery after A	nomaious Sn						
	Prop	oosal 14445, (QE on - Ramp to 17	78/175 (16)					Wed Oct 07 06:55:08	GMT 2015			
		gnostic Status	0										
Visit	Scie	Scientific Instruments: S/C, COS/FUV											
<u> </u>	Spec	Special Requirements: AFTER 14 BY 1.0 D TO 2.0 D; PARALLEL											
	Com	ments: Ramp	the FUV high voltag	ge up to 178/175.									
	Nos	AA Passage h	etween Visits 16 and	d 17									
s				ing (Orbit Planner): MAXIMUM DUI	ATION EXCEEDE	D FOR INTERNAL OR	FARTH CALIB SU						
Diagnostics	(QL	on rump to	170,170 (10)) // un										
Diagr													
	#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit			
	1	Ramp to 178	DARK	S/C, DATA, NONE					451 Secs (451 Secs)				
		/175					SPEC COM INSTR RLHLTHNF;	t in QE on - Ramp to 178/175 (16)	[==>]				
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]			
							QASISTATES COS						
							FUV HVLOW HVN OM						
	Com	ments: Ramp	the FUV HV to 178/	/175 counts (A/B, the nominal HVNom	values).								
	2	DCE RAM	DARK	S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-4 Non-In	60.0 Secs (60 Secs)				
SS		dump					SPEC COM INSTR ELCOPYDCE;	t in QE on - Ramp to 178/175 (16)	[==>]				
nre							NEW ALIGNMENT						
os							;						
Exposures							QASISTATES COS SI OBSERVE OBSE RVE;			[1]			
							QASISTATES COS FUV HVNOM HVN						
	Com	ments: DCE F	RAM copy and dump	o. See Visit 1, Exposure 2 for a complet	e description of the a	lump.	OM						
	SOL	· setup readou	it entry for the DCF	dump (galignment, gexposure, greado	ut) tag as COS (si u	(sed and si intrly)							
	3	Dark	DARK	COS/FUV, TIME-TAG, DEF	DEF	_ /	NEW AI IGNMENT	Sequence 1-4 Non-In	3600.0 Secs (3600 Secs)				
	5	Daix	DAKK	CO3/10 V, 11/12-1AO, DEF	DEF	00;	NEW ALIONWENT	t in OE on - Ramp to	[==>]				
						STIM-RATE=30		178/175 (16)	[>]	[1]			
	4	Wave	WAVE	COS/FUV, TIME-TAG, WCA	G160M	CURRENT=MEDIU		Sequence 1-4 Non-In	60 Secs (60 Secs)				
				. ,	1600 A	М;		t in QE on - Ramp to	[==>]				
						FP-POS=3;		178/175 (16)		[1]			
						STIM-RATE=2000							

Proposal 14445 - QE on - Ramp to 178/175 (16) - COS FUV Recovery after Anomalous Shutdown



	• /	Return to HVLo	()					Wed Oct 07 06:55:09	GMT 201		
	Diagnostic Status: No Diagnostics										
>	cientific Instrum										
Sp			BY 1.2 H TO 3.5 H; PARALLEL								
			p DCE memory, and set flag 3.								
#	Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit		
1	Return to H	DARK	S/C, DATA, NONE			SAA CONTOUR 31	Sequence 1-3 Non-In	35 Secs (35 Secs)			
	VLow					SPEC COM INSTR RLHNTHLF;	t in Return to HVLo w (17)	[==>]			
						NEW OBSET;					
						QASISTATES COS SI OBSERVE OBSE RVE;			[1]		
						QASISTATES COS FUV HVNOM OPE RATE					
Ce	omments: SOL:	Enforce sea non-	-int across the obsets								
	DCE RAM	× 1	S/C, DATA, NONE			SAA CONTOUR 31:	Sequence 1-3 Non-In	60.0 Secs (60 Secs)			
	dump					SPEC COM INSTR ELCOPYDCE;	t in Return to HVLo w (17)	[==>]			
2014						NEW ALIGNMENT					
						QASISTATES COS SI OBSERVE OBSE RVE;			[1]		
						QASISTATES COS FUV OPERATE OP ERATE					
Ca	omments: DCE	RAM copy and di	ump. See Visit 1, Exposure 2 for a comp	olete description of the	lump.						
se	OL: setup reado	ut entry for the D	CE dump (qalignment, qexposure, qrea	dout), tag as COS (si 1	used and si intrlv)						
3	Set flag 3	DARK	S/C, DATA, NONE	// ···· · · · · · · · · · · · · · · · ·		SPEC COM INSTR	Sequence 1-3 Non-In	1.0 Secs (1 Secs)			
			-, ,			ELFLAG3; NEW ALIGNMENT	t in Return to HVLo w (17)	[==>]	[1]		
C	omments: Set N	SSC-1 COS event	flag 3. This will prevent subsequent FU	IV commanding unless	it is cleared first						

Proposal 14445 - Return to HVLow (17) - COS FUV Recovery after Anomalous Shutdown

