

# 16540 - Cycle 29 COS FUV Detector Recovery After Anomalous Shutdown

Cycle: 29, 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-Jun-2021 10:00:31.0	yes
02	DARK	S/C	1	07-Jun-2021 10:00:32.0	yes
03	DARK	COS/FUV S/C	1	07-Jun-2021 10:00:32.0	yes
04	DARK	S/C	1	07-Jun-2021 10:00:32.0	yes
05	DARK	S/C	1	07-Jun-2021 10:00:33.0	yes
06	DARK	COS/FUV S/C	1	07-Jun-2021 10:00:33.0	yes
07	DARK	S/C	1	07-Jun-2021 10:00:33.0	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-Jun-2021 10:00:34.0	yes
09	DARK	S/C	1	07-Jun-2021 10:00:34.0	yes
10	DARK WAVE	COS/FUV S/C	1	07-Jun-2021 10:00:35.0	yes
11	DARK	S/C	1	07-Jun-2021 10:00:35.0	yes
12	DARK WAVE	COS/FUV S/C	1	07-Jun-2021 10:00:36.0	yes
13	DARK	S/C	1	07-Jun-2021 10:00:36.0	yes
14	DARK WAVE	COS/FUV S/C	1	07-Jun-2021 10:00:37.0	yes
15	DARK	S/C	1	07-Jun-2021 10:00:37.0	yes
16	DARK WAVE	COS/FUV S/C	1	07-Jun-2021 10:00:37.0	yes
17	DARK	S/C	1	07-Jun-2021 10:00:38.0	yes

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. 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 and the selected Lifetime Position, 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 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 28, Proposal 16334.

#### **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.

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

- 1. Install memory monitors
- 2. 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

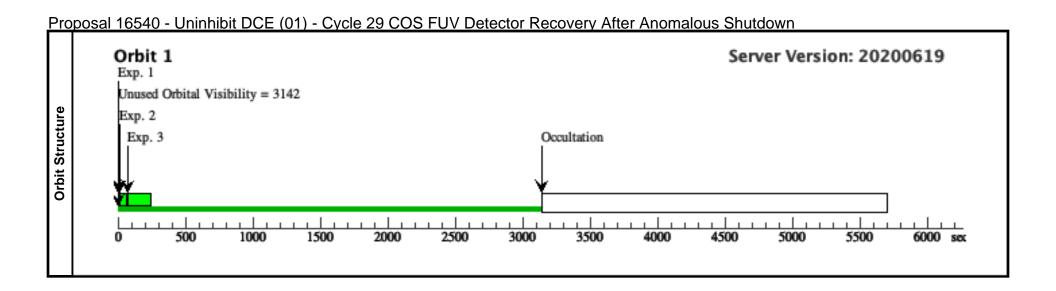
V17 Return to HVOperate -- After V26 by 1.5hr to 2.1

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

Proposal 16540 (STScI Edit Number: 0, Created: Monday, June 7, 2021 at 9:00:38 AM Eastern Standard Time) - Overview Day 07 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.

<u>Prc</u>	<u> posal 16540 - Uninhibit I</u>	<u> DCE (01) - Cycle 29 (</u>	COS FUV Dete	<u>ector Recover</u>	<u>'y After Anomal</u>	<u>ous Shutdown</u>	1	
	Proposal 16540, Uninhibit DCE (01)						Mon Jun 07 14:00:38	GMT 202
	Diagnostic Status: No Diagnostics							
	Scientific Instruments: S/C							
	Special Requirements: ON HOLD; PA	RALLEL						
Visit	Comments: Uninhibit the DCE							
<b>&gt;</b>	This visit uninhibits the DCE (sets dce_detector from Boot to Operate. Special	FUVInhibitMode == FALSE and a commanding is used to uninhibit th	loes other CS cleanup, i e DCE and to dump the	thus ensuring the DCE e DCE RAM. Regular	E is in its nominal Boot storecon commanding is use	nte), takes diagnostics ( d for the Boot to Opera	DCE RAM dump), and transitions the te transition.	FUV
	Prior to the beginning of this visit, Flag recovery.			ng. This can be done a	s soon as the anomalous .	HV shutdown is unders	tood an the go-ahead is given to proce	eed with the
	On Hold Comments: To be used only af			0.48	G . I.D	<u> </u>		0.14
	# Label Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1 FUV Inhibit DARK to Boot	S/C, DATA, NONE			SPEC COM INSTR ELRECOVERF;	Sequence 1-3 Non-In t in Uninhibit DCE (		
					QASISTATES COS SI OBSERVE OBSE RVE;	01)	[==>]	[1]
					QASISTATES COS FUV HVLOW OPE RATE			
	Comments: Unhibit the DCE for commo	anding by setting dce_FUVInhibitM	Node == FALSE in the	CS FSW. Several other	r houskeeping tasks are a	lso cleaned up.		
	It is assumed that this will be the first F	TIV activity on an SMS and that the	CS is in Operate state	Therefore the startin	a FIIV state is set to HVI	OW which is the nomi	inal SMS houndary state	
	·	,	. es is in operate state.	. Therefore, the startin	g i o v situe is sei io ii vi	20 W, Which is the home	nai 5115 boundary state.	
	SQL: tag as COS (si_used and si_intrly						I	Т
	2 DCE RAM DARK dump	S/C, DATA, NONE			SPEC COM INSTR ELCOPYDCE;	Sequence 1-3 Non-In t in Uninhibit DCE (	, ,	
	r				NEW ALIGNMENT;	01)	[==>]	
nres					QASISTATES COS SI OBSERVE OBSE RVE;			[1]
Exposures					QASISTATES COS FUV OPERATE OP ERATE			
Ш	Comments: Copy and dump DCE RAM.							•
	From Jason McPhate (Berkeley FUV de "[I'm after] the procedure to get a men ling (looping through, overwriting the d	iory dump of the FUV HV and AUX	X power current monito	rs (HVIA, HVIB, AUX	I). Each of these has a 10 would be a buffer of 256	000 (possibly 1024) san values for each monito	nple buffer that monitors the current a r)." This information is in a DCE RAM	t 1ms samp I dump.
	SQL: setup readout entry for the DCE a	lump (qalignment, qexposure, qrea	dout), tag as COS (si_u	used and si_intrlv)				
	3 FUV Boot t DARK	S/C, DATA, NONE			SPEC COM INSTR	Sequence 1-3 Non-In	180 Secs (180 Secs)	
	o Operate				RLBTTOPF; NEW ALIGNMENT :	t in Uninhibit DCE ( 01)	[==>]	
					QASISTATES COS SI OBSERVE OBSE RVE;			[1]
					QASISTATES COS FUV OPERATE OP ERATE			
	Comments: Transition the DCE from Bo	oot to Operate. Use standard recon	ı <b>.</b>					
	SQL: tag as COS (si_used and si_intrlv	)						

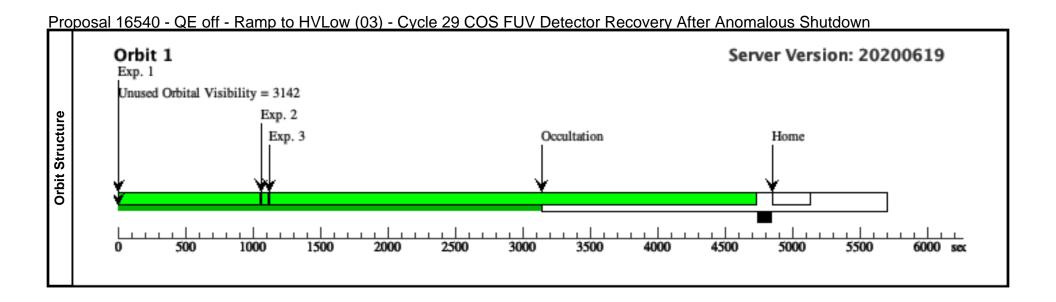


Proposal 16540 - QE off - Turn HV on (02) - Cycle 29 COS FUV Detector Recovery After Anomalous Shutdown Proposal 16540, QE off - Turn HV on (02) Mon Jun 07 14:00:38 GMT 2021 Diagnostic Status: No Diagnostics Scientific Instruments: S/C Special Requirements: AFTER 01 BY 0.1 H TO 1.5 H; PARALLEL Comments: QE grid off, Turn-on HV Special commanding will be used to execute the FUV Operate to HV On (0/0 or approximately ~ -2500V) reconfiguration and will stop there. Diagnostics are taken (DCE RAM dumps) after each transition. Label Target Config, Mode, Aperture Spectral Els. Opt. Params. Special Regs. Exp. Time (Total)/[Actual Dur.] Orbit Groups OE off - Tur DARK S/C, DATA, NONE SAA CONTOUR 31; Sequence 1-2 Non-In 50 Secs (50 Secs) SPEC COM INSTR tin QE off - Turn H n HV on (0/ I==>1 V on (02) ELOPTNOF; **OASISTATES COS** SI OBSERVE OBSE [1] RVE; **OASISTATES COS FUV OPERATE HV** LOW Exposures Comments: Turn on the FUV HV without the QE grid. Do not ramp up. SAA CONTOUR 31; Sequence 1-2 Non-In 60.0 Secs (60 Secs) DCE RAM DARK S/C, DATA, NONE dump t in QE off - Turn H SPEC COM INSTR *[==>1* V on (02) ELCOPYDCE: NEW ALIGNMENT **OASISTATES COS** [1] SI OBSERVE OBSE RVE; **QASISTATES COS FUV HVLOW HVL** OW Comments: DCE RAM copy and dump. See Visit 1, Exposure 2 for a complete description of the dump. SQL: setup readout entry for the DCE dump (qalignment, qexposure, qreadout), tag as COS (si\_used and si\_intrly) Server Version: 20200619 Orbit 1 Exp. 1 Unused Orbital Visibility = 3142 Orbit Structure Exp. 2 Occultation 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec

Visit	Diag Scie Spec	Mon Jun 07 14:00:38 GMT 2021 Diagnostic Status: Warning cientific Instruments: S/C, COS/FUV pecial Requirements: AFTER 02 BY 0.1 H TO 1.5 H; PARALLEL Comments: Following visit 02, continue with the FUV ramp-up with the QE off to HVLow value (100/100). The HOME alignment is not needed and may be deleted via SQL.  QE off - Ramp to HVLow (03)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU								
Diagnostics	_				URATION 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 HV Low (100/10 0)		S/C, DATA, NONE			SPEC COM INSTR ELHOTHLF;	Sequence 1-3 Non-In t in QE off - Ramp to HVLow (03)	1060 Secs (1060 Secs) [==>]	
							QASISTATES COS SI OBSERVE OBSE RVE; QASISTATES COS FUV HVLOW HVL OW			[1]
	Con	ments: Ramp t	the FUV HV to HV	Low. The commanding assumes the I	HV is already on.					
Exposures	2	DCE RAM dump	DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELCOPYDCE; NEW ALIGNMENT	Sequence 1-3 Non-In t in QE off - Ramp to HVLow (03)	60.0 Secs (60 Secs) [==>]	
Expo							; QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV HVLOW HVL			

Dark DARK COS/FUV, TIME-TAG, DEF DEF

[1]

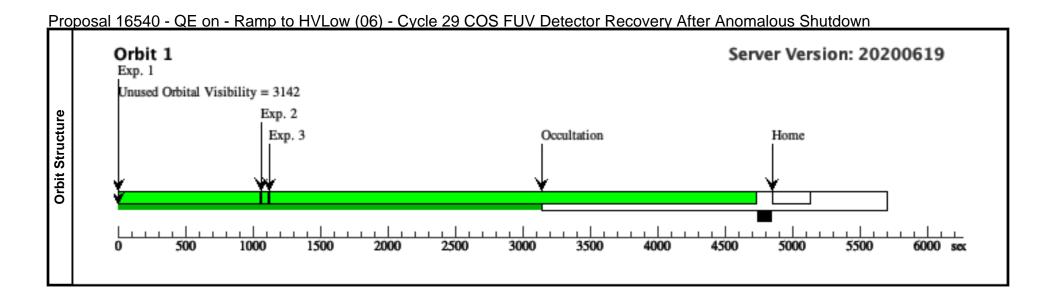


Proposal 16540 - Return to Operate (04) - Cycle 29 COS FUV Detector Recovery After Anomalous Shutdown Proposal 16540, Return to Operate (04) Mon Jun 07 14:00:38 GMT 2021 Diagnostic Status: No Diagnostics Scientific Instruments: S/C Special Requirements: AFTER 03 BY 1.4 H TO 3.5 H; PARALLEL Comments: Return to Operate Return to Operate, and dump DCE memory. Label Target Config, Mode, Aperture Spectral Els. Opt. Params. Special Regs. Groups Exp. Time (Total)/[Actual Dur.] Orbit Return to O DARK S/C, DATA, NONE SAA CONTOUR 31; Sequence 1-2 Non-In 50 Secs (50 Secs) SPEC COM INSTR t in Return to Operat perate (HV I==>1off) e(04)RLHLTOPF; **OASISTATES COS** SI OBSERVE OBSE [1] RVE; **OASISTATES COS FUV HVLOW OPE** RATE Exposures Comments: Turn off the FUV high voltage DCE RAM DARK S/C, DATA, NONE SAA CONTOUR 31; Sequence 1-2 Non-In 60.0 Secs (60 Secs) dump t in Return to Operat SPEC COM INSTR *[==>1* ELCOPYDCE: NEW ALIGNMENT **OASISTATES COS** [1] SI OBSERVE OBSE RVE; **QASISTATES COS FUV OPERATE OP ERATE** Comments: DCE RAM copy and dump. See Visit 1, Exposure 2 for a complete description of the dump. SQL: setup readout entry for the DCE dump (qalignment, qexposure, qreadout), tag as COS (si\_used and si\_intrly) Server Version: 20200619 Orbit 1 Exp. 1 Unused Orbital Visibility = 3142 Orbit Structure Exp. 2 Occultation 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec

Proposal 16540 - QE on - Turn HV on (05) - Cycle 29 COS FUV Detector Recovery After Anomalous Shutdown Proposal 16540, QE on - Turn HV on (05) Mon Jun 07 14:00:39 GMT 2021 Diagnostic Status: No Diagnostics Scientific Instruments: S/C Special Requirements: AFTER 04 BY 0.1 H TO 1.5 H; PARALLEL Comments: QE grid on, HV on Special commanding will be used to execute the FUV Operate to HV On (0/0 or approximately ~ -2500V) reconfiguration and will stop there. Label Target Config, Mode, Aperture Spectral Els. Opt. Params. Special Reqs. Groups Exp. Time (Total)/[Actual Dur.] Orbit OE on - Tur DARK S/C, DATA, NONE SAA CONTOUR 31; Sequence 1-2 Non-In 50 Secs (50 Secs) SPEC COM INSTR t in QE on - Turn HV = -1n HV on (0/ on (05) ELOPTHOF; **OASISTATES COS** SI OBSERVE OBSE [1] RVE; **OASISTATES COS FUV OPERATE HV** LOW Exposures Comments: Turn on the FUV HV, including the QE grid. Do not ramp up. SAA CONTOUR 31; Sequence 1-2 Non-In 60.0 Secs (60 Secs) DCE RAM DARK S/C, DATA, NONE SPEC COM INSTR t in QE on - Turn HV dump I = = > 1ELCOPYDCE: NEW ALIGNMENT **OASISTATES COS** [1] SI OBSERVE OBSE RVE; **QASISTATES COS FUV HVLOW HVL** OW Comments: DCE RAM copy and dump. See Visit 1, Exposure 2 for a complete description of the dump. SQL: setup readout entry for the DCE dump (qalignment, qexposure, qreadout), tag as COS (si\_used and si\_intrly) Server Version: 20200619 Orbit 1 Unused Orbital Visibility = 3142 Exp. 1 Orbit Structure Exp. 2 Occultation 500 1000 1500 2000 2500 3000 3500 4000 4500 5000 5500 6000 sec

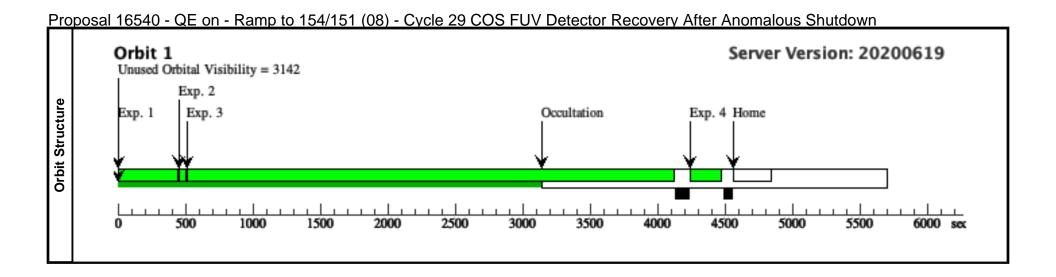
F	ro	posal 165	40 - QE on	n - Ramp to HVLow (06) -	Cycle 29 COS	S FUV Detect	tor Recovery Aft	er Anomalous	Shutdown			
	Visit	Proposal 16540 Diagnostic State Scientific Instru Special Require Comments: Tur The HOME alig	Note on - Ramp nus: Warning ments: S/C, COS, ments: AFTER On the QE on and Ram nument is not need	to HVLow (06)  /FUV  /S BY 0.1 H TO 1.5 H; PARALLEL  ap the FUV high voltage up to HVLow.  led and may be deleted via SQL.					Mon Jun 07 14:00:39	GMT 2021		
	Diagnostics	(QE on - Kamp		Warning (Orbit Planner): MAXIMUM DU	JKATION EXCEEDE		JR EARTH CALIB SU					
ı		# Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit		
		1 QE on - R mp to HV w (100/10		S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR RLOPTHLF; QASISTATES COS SI OBSERVE OBSE RVE; QASISTATES COS FUV OPERATE HV LOW	Sequence 1-3 Non-In t in QE on - Ramp to HVLow (06)	1060 Secs (1060 Secs) [==>]	[1]		
ı		2 DCERAN	1 DARK	S/C, DATA, NONE				Sequence 1-3 Non-In	60.0 Secs. (60 Secs.)			
	Exposures	dump					SPEC COM INSTR ELCOPYDCE; NEW ALIGNMENT; QASISTATES COS SI OBSERVE OBSE RVE; QASISTATES COS FUV HVLOW HVL OW	t in QE on - Ramp to HVLow (06)	[==>]	[1]		
				dump. See Visit 1, Exposure 2 for a compl		•						
ı		SQL: setup readout entry for the DCE dump (qalignment, qexposure, qreadout), tag as COS (si_used and si_intrlv)										

3	Dark	DARK	COS/FUV, TIME-TAG, DEF	DEF	BUFFER-TIME=36			3600.0 Secs (3600 Secs)	
					00;	;	t in QE on - Ramp to	f==>1	
						QASISTATES COS			[1]
						FUV HVLOW HVL			[1]



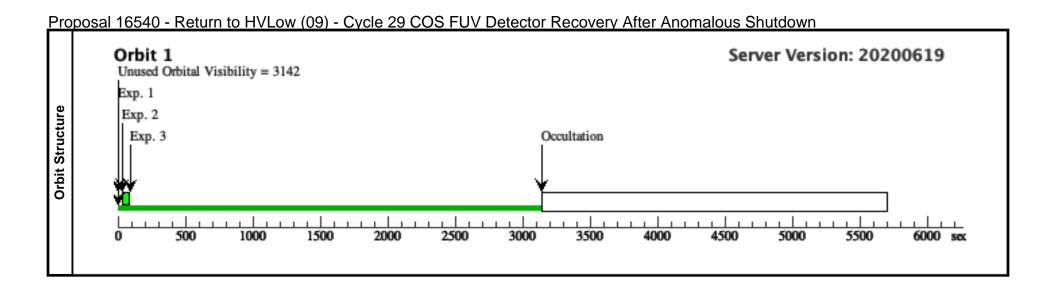
<u>Prc</u>	posal 1654	<u>0 - Return</u>	to Operate (07) - Cycle	<u> 29 COS FUV</u>	Detector Rec	<u>overy After Ano</u>	malous Shutd	own	
	Proposal 16540, l	Return to Opera	ite (07)					Mon Jun 07 14:00:39	GMT 2021
<u>.</u> =	Diagnostic Status	s: No Diagnostic	s						
Visit	Scientific Instrum	ents: S/C							
_	Special Requireme	ents: AFTER 06	BY 1.4 H TO 3.5 H; PARALLEL						
	Comments: Return	n to Operate, dun	np 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 O perate (HV	DARK	S/C, DATA, NONE				Sequence 1-3 Non-In t in Return to Operat		
	off)					SPEC COM INSTR RLHLTOPF;	e (07)	[==>]	
						QASISTATES COS SI OBSERVE OBSE RVE;			[1]
						QASISTATES COS FUV HVLOW OPE RATE			
	Comments: Turn o	off the FUV high	voltage						
<u>س</u> ا	2 DCE RAM	DARK	S/C, DATA, NONE			SAA CONTOUR 31;		60.0 Secs (60 Secs)	
Exposures	dump					SPEC COM INSTR ELCOPYDCE;	t in Return to Operat e (07)	[==>]	
l õ						NEW ALIGNMENT			
ΙÄ						;			
						QASISTATES COS SI OBSERVE OBSE			[1]
						RVE;			
						QASISTATES COS FUV OPERATE OP ERATE			
			ump. See Visit 1, Exposure 2 for a comp		_				
	3 Set flag 3		CE dump (qalignment, qexposure, qread S/C, DATA, NONE	tout), tag as COS (si_u	sea ana si_intriv)	SPEC COM INSTR	Sequence 1-3 Non-In	1 () Secs. (1 Secs.)	
	5 Set Hag 5	Dritte	S/C, DATA, NOILE			ELFLAG3;	t in Return to Operat	[==>]	
						NEW ALIGNMENT	e (07)	[>]	[1]
	Comments: Set NS	SSC-1 COS event	flag 3. This will prevent subsequent FU	V commanding unless	it is cleared first.				
	Orbit Exp. 1						Server V	/ersion: 20200619	
	1 1 -		ibility = 3142						
ē	Exp.								
cture	Exp				Occultat	ion			
12		p7			I	1011			
t S									
Orbit Stru	<b>₩</b>				₩				
I٥	₩								
						Linita			
	0	500	1000 1500 200	0 2500	3000 3	500 4000	4500 50	00 5500 6000 s	ec .
ı	I								

o	oosal 165	40 - QE on	- Ramp to 154/151 (08) -	Cycle 29 CC	OS FUV Detecto	r Recovery At	ter Anomalou	s Shutdown	
֓֞֞֜֜֞֜֜֞֜֜֓֓֓֓֓֓֓֜֟֜֓֓֓֓֓֓֓֓֓֓֓֜֜֟֜֓֓֓֓֓֓֓֜֜֜֓֓֓֓֓֜֜֜֓֓֡֓֜֜֝֓֡֓֜֜֜֡֓֜֝֜֓֡֓֜֜֝֡֓֡֡֡֡֓֜֝֜֜֝֡֜֜֝֜֜֝֜֜֝֜֜֝֜֜֜֝֜	<b>Diagnostic Sta</b> Scientific Instru	uments: S/C, COS/F	UV					Mon Jun 07 14:00:39	GMT 202
			BY 1.0 D TO 2.0 D; PARALLEL ltage up to a specified value (well below	HVNom)					
		np ine FOV nign vol e between Visits 08		11 v (vom).					
			arning (Orbit Planner): MAXIMUM DU	RATION EXCEEDE	ED FOR INTERNAL OR	EARTH CALIB SU			
,	# Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1 Ramp to 1 /151	154 DARK	S/C, DATA, NONE	•	•		Sequence 1-4 Non-In t in QE on - Ramp to 154/151 (08)		
						QASISTATES COS SI OBSERVE OBSE RVE;			
						QASISTATES COS FUV HVLOW HVN OM; QESIPARM ENDC			[1]
						TSA 154; QESIPARM SECPE RCT 3;			
	G	J. Elwann.	151 (151 · · · · · · · · · · · · · · · · · ·			QESIPARM ENDC TSB 151			
3		<u>np the FUV HV to 1</u> M DARK	54/151 counts (A/B). S/C, DATA, NONE			SAA CONTOUR 31:	Sequence 1-4 Non-In	60.0 Secs. (60 Secs.)	
sa insody-	dump	, Dini	5,5,5111,101.			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			
		• •	ump. See Visit 1, Exposure 2 for a comple CE dump (qalignment, qexposure, qread	• •	•				
	3 Dark	DARK	COS/FUV, TIME-TAG, DEF	DEF	BUFFER-TIME=36	NEW ALIGNMENT		3600.0 Secs (3600 Secs)	
					00; STIM-RATE=30		t in QE on - Ramp to 154/151 (08)	[==>]	[1]
4	4 Wave	WAVE	COS/FUV, TIME-TAG, WCA	G160M	CURRENT=MEDIU		Sequence 1-4 Non-In		
				1600 A	M; FP-POS=3; STIM-RATE=2000		t in QE on - Ramp to 154/151 (08)	[==>]	[1]

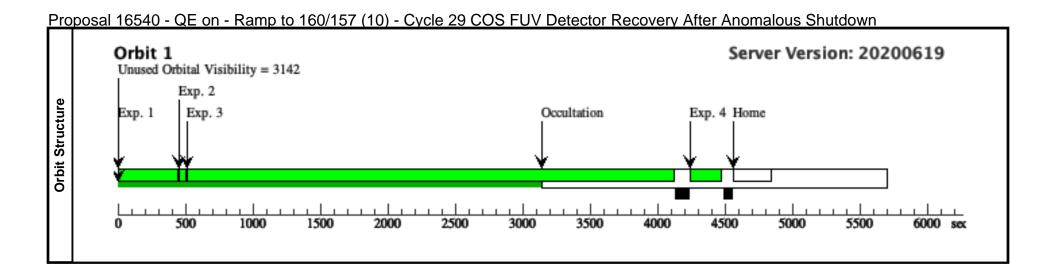


Proposal 16540 - Return to HVLow (09) - Cycle 29 COS FUV Detector Recovery After Anomalous Shutdown

<u> </u>	μU	<u>sai 10540</u>	<del>) - Netain to i</del>	1VLOW (09) - Cycle 29	COSTOVD	elector Necov	Tery Arter Arion	naious Siluiuo	VVII	
	Proj	posal 16540, R	eturn to HVLow (09)	)					Mon Jun 07 14:00:39	GMT 2021
.±	Diag	gnostic Status:	No Diagnostics							
Visit	Scie	ntific Instrume	nts: S/C							
_	Spec	cial Requireme	nts: AFTER 08 BY 1.	.2 H TO 3.5 H; PARALLEL						
	Con	ments: Return	to HVLow, dump DCI	E 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	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 HVL OW			
	Con	ments: SQL: E	inforce the seq non-int	t across the obsets						
Se	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 HVLo w (09)	[==>]	
ă							NEW ALIGNMENT ;			
Ī							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV HVLOW HVL OW			
	Con	ments: DCE R	AM copy and dump. S	ee Visit 1, Exposure 2 for a complete	description of the di	итр.				
	SOI	: setup readous	t entry for the DCF du	ımp (qalignment, qexposure, qreadou	t) tag as COS (si us	sed and si_intrly)				
	3	Set flag 3	DARK	S/C, DATA, NONE	.,,,	ou and bi_nin iv;	SPEC COM INSTR	Sequence 1-3 Non-In	1.0 Secs (1 Secs)	
				,, - · · · · ·			ELFLAG3;	t in Return to HVLo	[==>]	
							NEW ALIGNMENT	w (09)		[1]
	Con	nments: Set NSS	SC-1 COS event flag 3	. This will prevent subsequent FUV c	commanding unless it	t is cleared first.				

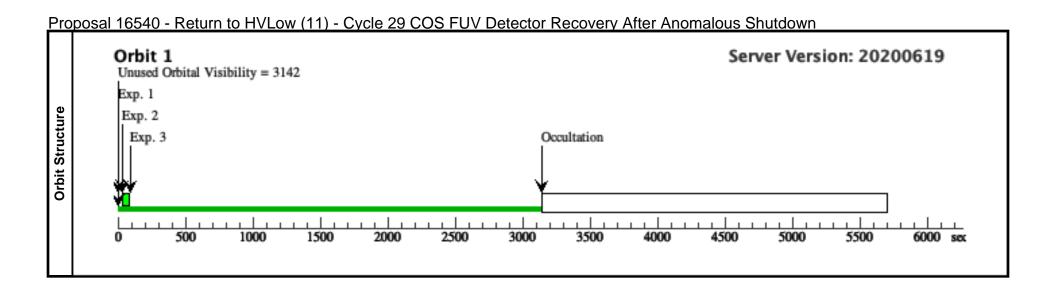


Pro	posa	l 1654	40 - QE on -	- Ramp to 160/157 (10)	- Cycle 29 CC	OS FUV Detecto	r Recovery At	ter Anomalou	s Shutdown	
sit	Proposa Diagnos Scientif Special	al 16540, stic Statu ic Instrur Requiren	, QE on - Ramp to us: Warning ments: S/C, COS/F ments: AFTER 08	0 160/157 (10)					Mon Jun 07 14:00:39	GMT 2021
stics			between Visits 10 o 160/157 (10)) W	and 11. arning (Orbit Planner): MAXIMUM DU	JRATION EXCEEDE	ED FOR INTERNAL OR	EARTH CALIB SU			
Diagnostics										
	# La	abel	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Reqs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit
	1 Ra /1:		50 DARK	S/C, DATA, NONE			SAA CONTOUR 31; SPEC COM INSTR ELHLTHVF;	Sequence 1-4 Non-In t in QE on - Ramp to 160/157 (10)	451 Secs (451 Secs) [==>]	
							QASISTATES COS SI OBSERVE OBSE RVE; QASISTATES COS			
							FUV HVLOW HVN OM; QESIPARM ENDC			[1]
							TSA 160; QESIPARM SECPE RCT 3;			
S	Comme	nts: Ram	n the FUV HV to 1	60/157 counts (A/B).			QESIPARM ENDC TSB 157			
ĕ			DARK	S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-4 Non-In	60.0 Secs (60 Secs)	
Exposure	du	ımp					SPEC COM INSTR ELCOPYDCE;	t in QE on - Ramp to 160/157 (10)	[==>]	
Ш							NEW ALIGNMENT ;			
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV HVNOM HVN OM			
			• •	mp. See Visit 1, Exposure 2 for a compl CE dump (qalignment, qexposure, qreac	· · ·	•				•
	_	ark	DARK	COS/FUV, TIME-TAG, DEF	DEF	<del>-</del>	NEW ALIGNMENT		3600.0 Secs (3600 Secs)	
				. ,		00; STIM-RATE=30		t in QE on - Ramp to 160/157 (10)	[==>]	[1]
	4 W	ave	WAVE	COS/FUV, TIME-TAG, WCA	G160M	CURRENT=MEDIU		Sequence 1-4 Non-In t in QE on - Ramp to		
					1600 A	M; FP-POS=3;		160/157 (10)	[==>]	[1]
						STIM-RATE=2000				1

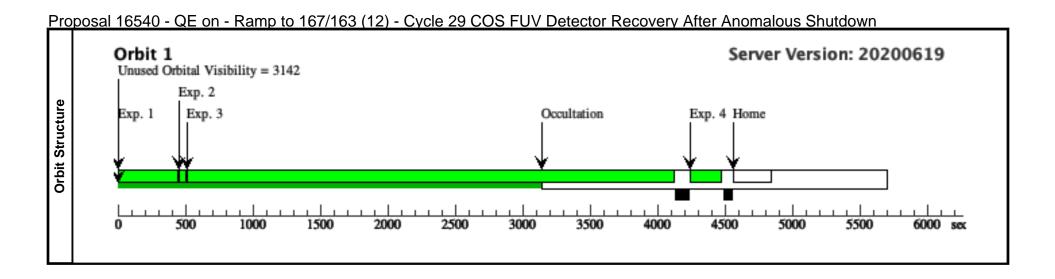


Proposal 16540 - Return to HVLow (11) - Cycle 29 COS FUV Detector Recovery After Anomalous Shutdown

<u> </u>	pu;	<u>sai 1054</u> 0	) - Netain to i	1VLOW (11) - Cycle 29	COSTOVD	elector (Vecov	ery Arter Arion	naious Siluiuo	VVII	
	Proj	posal 16540, R	eturn to HVLow (11)	)					Mon Jun 07 14:00:39	GMT 2021
.±	Diag	gnostic Status:	No Diagnostics							
Visit	Scie	entific Instrume	nts: S/C							
_	Spec	cial Requireme	nts: AFTER 10 BY 1.	.2 H TO 3.5 H; PARALLEL						
	Con	nments: Return	to HVLow, dump DCI	E 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	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 (11)	[==>]	
							NEW OBSET;			
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV HVNOM HVL OW			
	Con	nments: SQL: 1	Enforce the seq non-in	t across the obsets						
န္	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 HVLo w (11)	[==>]	
Ĭ Š							NEW ALIGNMENT :			
ľ							QASISTATES COS SI OBSERVE OBSE RVE;			[1]
							QASISTATES COS FUV HVLOW HVL OW			
	Con	nments: DCE R	AM copy and dump. S	ee Visit 1, Exposure 2 for a complete	description of the di	итр.				
	SOI	: setun readou	t entry for the DCF du	mp (qalignment, qexposure, qreadou	t) tag as COS (si us	red and si_intrly)				
	3	Set flag 3	DARK	S/C, DATA, NONE	,, <sub>0</sub> as cos (st_as	ca and bi_mininj	SPEC COM INSTR	Sequence 1-3 Non-In	1.0 Secs (1 Secs)	
		- 31 11118 5		-, -,, -, -, -, -, -, -, -, -, -, -			ELFLAG3;	t in Return to HVLo	[==>]	
							NEW ALIGNMENT	w (11)		[1]
	Con	nments: Set NSS	SC-1 COS event flag 3	. This will prevent subsequent FUV c	ommanding unless it	is cleared first.				

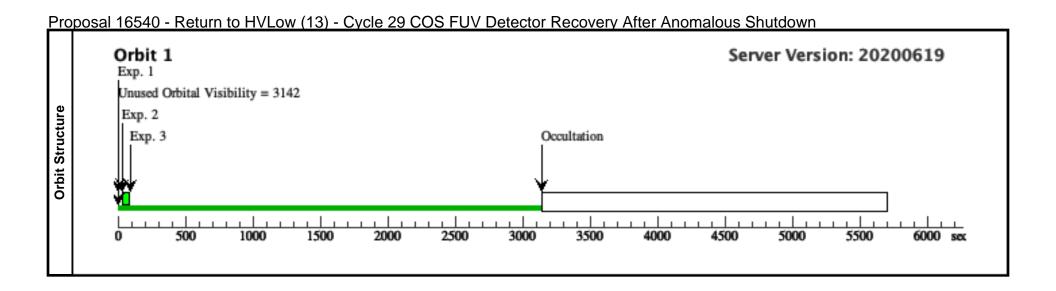


1 Ramp to 167 DARK S/C, DATA, NONE SAA CONTOUR 31; Sequence 1-4 Non-In 451 Sec. SPEC COM INSTR ELHLTHVF; QASISTATES COS   451 Sec.	
QE on - Ramp to 167/163 (12)) Warning (Orbit Planner): MAXIMUM DURATION EXCEEDED FOR INTERNAL OR EARTH CALIB SU  # Label Target Config,Mode,Aperture Spectral Els. Opt. Params. Special Regs. Groups Exp. Till Ramp to 167 DARK S/C, DATA, NONE  1 Ramp to 167 DARK S/C, DATA, NONE  SAA CONTOUR 31; Sequence 1-4 Non-In tin QE on - Ramp to 167/163 (12)    SPEC COM INSTR ELHLTHVF; QASISTATES COS	ecs (451 Secs)
# Label Target Config,Mode,Aperture Spectral Els. Opt. Params. Special Regs. Groups Exp. Tile 1 Ramp to 167 DARK S/C, DATA, NONE SAA CONTOUR 31; Sequence 1-4 Non-In SPEC COM INSTR ELHLTHVF; QASISTATES COS   In Structure   In QE on - Ramp to 167/163 (12)   In Structure   In QE on - Ramp to 167/163 (12)   In Structure   In QE on - Ramp to 167/163 (12)   In Structure   In QE on - Ramp to 167/163 (12)   In Structure   In QE on - Ramp to 167/163 (12)   In Structure   In QE on - Ramp to 167/163 (12)   In Structure   In QE on - Ramp to 167/163 (12)   In Structure   In Structur	ecs (451 Secs)
1 Ramp to 167 DARK S/C, DATA, NONE SAA CONTOUR 31; Sequence 1-4 Non-In 451 Sec.   451 Sec.   57   163   167/163 (12)   58   167/163 (12)   59   16	ecs (451 Secs)
SPEC COM INSTR t in QE on - Ramp to ELHLTHVF; QASISTATES COS  SPEC COM INSTR 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	
Comments: Ramp the FUV HV to 167/163 counts (A/B).   2 DCE RAM DARK S/C, DATA, NONE SAA CONTOUR 31; Sequence 1-4 Non-In 60.0 Sec	ecs (60 Secs)
DCE RAM DARK S/C, DATA, NONE  SAA CONTOUR 31; Sequence 1-4 Non-In do 0.0 Second in Structure of the second in Second	` '
NEW ALIGNMENT	
QASISTATES COS SI OPERATE OPER ATE;	[1]
QASISTATES COS FUV HVNOM HVN OM	
Comments: DCE RAM copy and dump. See Visit 1, Exposure 2 for a complete description of the dump.  SQL: setup readout entry for the DCE dump (qalignment, qexposure, greadout), tag as COS (si_used and si_intrly)	
3 Dark DARK COS/FUV, TIME-TAG, DEF DEF BUFFER-TIME=36 NEW ALIGNMENT Sequence 1-4 Non-In 3600.0 S	Secs (3600 Secs)
$ \begin{array}{ccc} 00; & \text{t in QE on - Ramp to} \\ \text{STIM-RATE=30} & & & & & & \\ \hline   & & & & & & & \\ \hline   & & & & & \\ \hline   & & & & & \\ \hline   & & & & & \\ \hline   & & & & & \\ \hline   & & & & & & \\ \hline   & & & & & & \\ \hline   $	` '
4 Wave WAVE COS/FUV, TIME-TAG, WCA G160M CURRENT=MEDIU Sequence 1-4 Non-In t in QE on - Ramp to	` '
1600 A  M;  FP-POS=3;  STIM-RATE=2000  M; t in QE on - Ramp to 167/163 (12)  [==>]	[1]

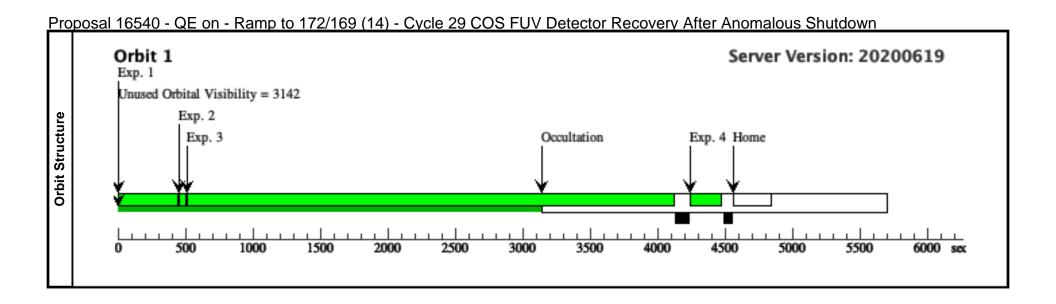


Proposal 16540 - Return to HVLow (13) - Cycle 29 COS FUV Detector Recovery After Anomalous Shutdown

<u> </u>	pυ	<u>sai 10540</u>	<del>) - Netain to i</del>	1VLOW (13) - Cycle 29	COSTOVD	elector (Vecov	ery Aiter Anon	iaious Silutuo	7 VV I I			
	Proj	posal 16540, R	eturn to HVLow (13)	)					Mon Jun 07 14:00:39	GMT 2021		
.±	Diag	Diagnostic Status: No Diagnostics										
Visit	Scie	ntific Instrume	nts: S/C									
_	Spec	cial Requireme	nts: AFTER 12 BY 1.	2 H TO 3.5 H; PARALLEL								
	Con	ments: Return	to HVLow, dump DCI	E 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	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 (13)	[==>]			
							NEW OBSET;					
							QASISTATES COS SI OBSERVE OBSE RVE;			[1]		
							QASISTATES COS FUV HVNOM HVL OW					
	Con	ments: SQL: E	inforce the seq non-int	across the obsets								
Se	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 HVLo w (13)	[==>]			
ă							NEW ALIGNMENT ;					
_							QASISTATES COS SI OBSERVE OBSE RVE;			[1]		
							QASISTATES COS FUV HVLOW HVL OW					
	Con	ments: DCE R	AM copy and dump. S	ee Visit 1, Exposure 2 for a complete	description of the di	итр.						
	SQL: setup readout entry for the DCE dump (qalignment, qexposure, qreadout), tag as COS (si_used and si_intrlv)											
	3	Set flag 3	DARK	S/C, DATA, NONE	.,,, 45 005 (51_45	ca and bi_nintry	SPEC COM INSTR	Sequence 1-3 Non-In	1.0 Secs (1 Secs)			
	_			2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2			ELFLAG3; t in Return to HVL	t in Return to HVLo	[==>]			
							NEW ALIGNMENT	w (13)		[1]		
	Con	nments: Set NSS	SC-1 COS event flag 3	. This will prevent subsequent FUV c	ommanding unless it	t is cleared first.						

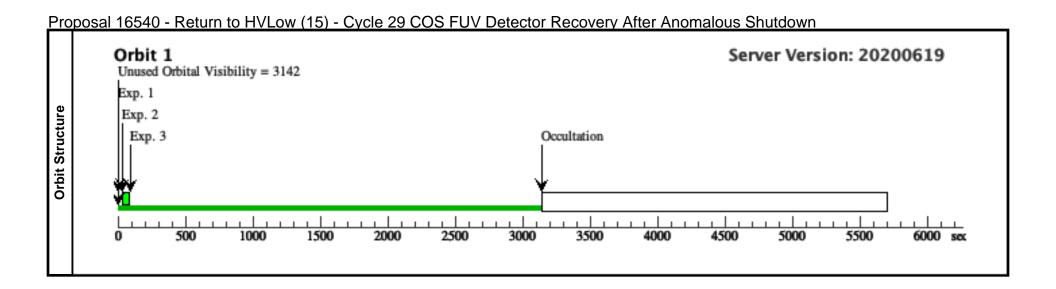


op	osal 165	<u>40 - QE on</u>	- Ramp to 172/169 (14) -	· Cycle 29 CC	OS FUV Detector	or Recovery At	<u>fter Anomalou</u>	s Shutdown				
P	Proposal 16540	), QE on - Ramp to	0 172/169 (14)					Mon Jun 07 14:00:39	GMT 202			
	Diagnostic Stat	_										
	cientific Instruments: S/C, COS/FUV											
	-		BY 1.0 D TO 2.0 D; PARALLEL									
10	Comments: Ran	np the FUV high vo	oltage up to a specified value (higher than	ı VI2).								
		e between Visits 14										
)	QE on - Ramp	to 172/169 (14)) W	Varning (Orbit Planner): MAXIMUM DU	IRATION EXCEEDE	ED FOR INTERNAL OR	EARTH CALIB SU						
1												
#	‡ Label	Target	Config,Mode,Aperture	Spectral Els.	Opt. Params.	Special Regs.	Groups	Exp. Time (Total)/[Actual Dur.]	Orbit			
1		72 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;			1-7			
						QESIPARM SECPE RCT 3;						
						QESIPARM ENDC TSB 169						
C	Comments: Ran	np the FUV HV to 1	172/169 counts (A/B).									
2		M DARK	S/C, DATA, NONE				Sequence 1-4 Non-In t in QE on - Ramp to	` '				
2	dump					SPEC COM INSTR ELCOPYDCE;	172/169 (14)	[==>]				
						NEW ALIGNMENT ;						
						QASISTATES COS SI OBSERVE OBSE RVE;			[1]			
						QASISTATES COS FUV HVNOM HVN OM						
c	Comments: DC	E RAM copy and di	ump. See Visit 1, Exposure 2 for a complo	ete description of the	dump.	OW						
s	SOL: setup read	dout entry for the D	CE dump (galignment, gexposure, gread	lout), tag as COS (si	used and si_intrly)							
3		DARK	COS/FUV, TIME-TAG, DEF	DEF	<del>-</del> /	NEW ALIGNMENT		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;		t in QE on - Ramp to 172/169 (14)	[==>]	[1]			
					STIM-RATE=2000				'-'			



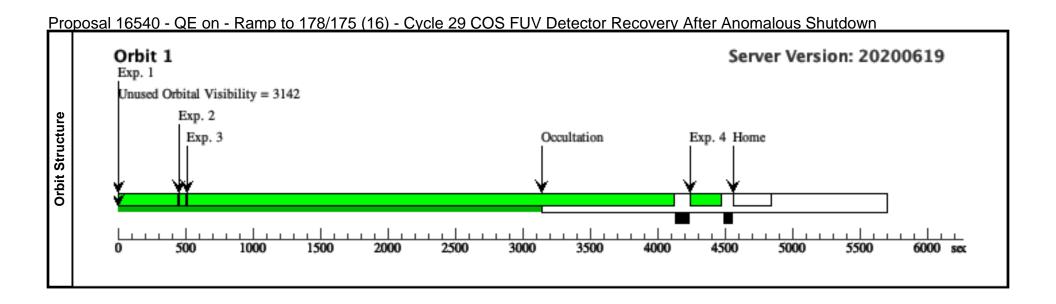
Proposal 16540 - Return to HVLow (15) - Cycle 29 COS FUV Detector Recovery After Anomalous Shutdown

<u> </u>	pυ	<u>sai 10540</u>	) - Netaili to i	1VLOW (15) - Cycle 29	COSTOVD	elector (Vecov	ery Arter Arion	naious Siluiuo	VVII			
	Proj	posal 16540, R	eturn to HVLow (15)	)					Mon Jun 07 14:00:39	GMT 2021		
.±	Diag	Diagnostic Status: No Diagnostics										
Visit	Scie	ntific Instrume	nts: S/C									
_	Spec	cial Requireme	nts: AFTER 14 BY 1.	2 H TO 3.5 H; PARALLEL								
	Con	ments: Return	to HVLow, dump DCE	E 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	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 HVL OW					
	Con	ments: SQL: 1	Enforce the seq non-in	t across the obsets								
Se	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 HVLo w (15)	[==>]			
ă							NEW ALIGNMENT ;					
_							QASISTATES COS SI OBSERVE OBSE RVE;			[1]		
							QASISTATES COS FUV HVLOW HVL OW					
Comments: DCE RAM copy and dump. See Visit 1, Exposure 2 for a complete description of the dump.												
	SQL: setup readout entry for the DCE dump (qalignment, qexposure, qreadout), tag as COS (si_used and si_intrlv)											
	3	Set flag 3	DARK	S/C, DATA, NONE	n, ing us cos (si_useu unu si_miriv)	ca and bi_mininj	SPEC COM INSTR	Sequence 1-3 Non-In	1.0 Secs (1 Secs)			
	_			2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2			ELFLAG3; t in Return to HVL	t in Return to HVLo	[==>]			
							NEW ALIGNMENT	w (15)		[1]		
	Con	nments: Set NSS	SC-1 COS event flag 3.	. This will prevent subsequent FUV co	ommanding unless it	is cleared first.						



Pro	ро	sal 1654	0 - QE on	- Ramp to 178/175 (16) -	Cycle 29 CC	OS FUV Detecto	r Recovery A	ter Anomalou	s Shutdown					
	Pro	posal 16540,	QE on - Ramp to	o 178/175 (16)					Mon Jun 07 14:00:39	GMT 2021				
	Dia	Diagnostic Status: Warning												
sit	Sci	Scientific Instruments: S/C, COS/FUV												
Ϊ	Spe	pecial Requirements: AFTER 14 BY 1.0 D TO 2.0 D; PARALLEL												
	Coi	mments: Ramp	the FUV high vo	oltage up to 178/175.										
	No	SAA Passage	between Visits 16	and 17.										
Diagnostics	(QI	E on - Ramp to	o 178/175 (16)) W	arning (Orbit Planner): MAXIMUM DU	RATION EXCEEDE	ED 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	1	Ramp to 17	8 DARK	S/C, DATA, NONE			SAA CONTOUR 31;	Sequence 1-4 Non-In	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							
	Coi			178/175 counts (A/B, the nominal HVNom	values).				T	T				
	2	DCE RAM dump	DARK	S/C, DATA, NONE			· · · · · · · · · · · · · · · · · · ·	Sequence 1-4 Non-In t in QE on - Ramp to	,					
es		dump					SPEC COM INSTR ELCOPYDCE;	178/175 (16)	[==>]					
sur							NEW ALIGNMENT;							
Exposure							QASISTATES COS SI OBSERVE OBSE RVE:			[1]				
							QASISTATES COS FUV HVNOM HVN OM							
	Coi	mments: DCE	RAM copy and di	ump. See Visit 1, Exposure 2 for a comple	te description of the	dump.	0111			1				
			• •	CE dump (galignment, gexposure, greade	• •	•								
	3	Dark	DARK	COS/FUV, TIME-TAG, DEF	DEF		NEW ALIGNMENT	Sequence 1-4 Non-In	3600.0 Secs (3600 Secs)					
		<del>-</del>	-	COST C 1, TIME ING, DEI	DLI	00; STIM-RATE=30		t in QE on - Ramp to 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	M; FP-POS=3;		t in QE on - Ramp to 178/175 (16)	[==>]	[1]				

STIM-RATE=2000



Proposal 16540 - Return to HVLow (17) - Cycle 29 COS FUV Detector Recovery After Anomalous Shutdown

<u> </u>	pυ	<u>sai 10540</u>	<del>) - Netain to i</del>	1VLOW (17) - Cycle 29	COSTOVD	elector (Vecov	ery Arter Arion	naious Siluiuo	VVVII			
	Proj	posal 16540, R	eturn to HVLow (17)	)					Mon Jun 07 14:00:39	GMT 2021		
.±	Diag	Diagnostic Status: No Diagnostics										
Visit	Scie	ntific Instrume	nts: S/C									
_	Spec	cial Requireme	nts: AFTER 16 BY 1.	2 H TO 3.5 H; PARALLEL								
	Con	ments: Return	to HVLow, dump DCI	E 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	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 HVL OW					
	Con	ments: SQL: 1	Enforce seq non-int ac	ross the obsets								
Se	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 HVLo w (17)	[==>]			
ă							NEW ALIGNMENT ;					
_							QASISTATES COS SI OBSERVE OBSE RVE;			[1]		
							QASISTATES COS FUV HVLOW HVL OW					
	Con	ments: DCE R	AM copy and dump. S	ee Visit 1, Exposure 2 for a complete	description of the di	итр.						
	SQL: setup readout entry for the DCE dump (qalignment, qexposure, qreadout), tag as COS (si_used and si_intrlv)											
	3	Set flag 3	DARK	S/C, DATA, NONE	adout), tag as COS (st_usea ana st_miriv)		SPEC COM INSTR	Sequence 1-3 Non-In	1.0 Secs (1 Secs)			
	_			2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2			ELFLAG3; t in Return to HV	t in Return to HVLo	[==>]			
							NEW ALIGNMENT	w (17)		[1]		
	Con	nments: Set NSS	SC-1 COS event flag 3	. This will prevent subsequent FUV c	ommanding unless i	is cleared first.						

