IBEX Command Approval Checklist Rev 16e removes the Moon in Lo FOV section.

	Rev 16e removes	the Moon in	Lo FOV section.
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Orbit	424	Special Ops	None	None			
14 R _E asc. Date/Time	10/17/2018 03	1:45:34	15 R _E asc. Date/Time				
Apogee	10/21/2018 01:30:53	Maneuver Window Start	10/21/2018 01:32:23	Maneuver Window End	10/21/2018 02:02:25		
Apogee Target	targetX:-0.88 targetZ:-0.182		0 targetY:-0.4198 27	35818902796157]			
15 R _E desc. Date/Time	10/24/2018 23	3:50:03	14 R _E desc. Date/Time	10/25/2018 01	:35:55		
Perigee	10/25/2018 11:18:36	Maneuver Window Start	10/25/2018 02:07:41	Maneuver Window Stop	10/25/2018 02:37:43		
Perigee Target	<pre>targetX:-0.853 targetZ:-0.20</pre>		targetY:-0.4776()8	006074163102	-		
Eclipse	No	Eclipse Start		Eclipse End			
Sun Mnvr	Yes	Apogee/Perigee	Both	Sun Angle at DESCENDING	4.007 deg 4.748 deg		
Approved Version	IBEX_2018_289_00424a_v001.scr						

Activity		Command Checks	Date Done	Done By
Supporting Materials	1. 2. 3. 4. 5. 6.	IBEX_CrossingTimes_ <date>_v00x.txt on SFTP at /Archive- Incoming/IBEXIncoming/FDG/PredictedEphemeris/Orbit Events/. Orbit Events File on SFTP at /IBEXOutgoing/MOC/Moc-Soc/oef/. Command Constraint Violations Report on SFTP at /IBEXOutgoing/MOC/Moc-Soc/cvr/. Contacts this orbit Orbit_oXXX.txt included in the ATS approval email. Science Tasking File at /Archive-Incoming/IBEXIncoming/MOC/Soc-Moc/stf/. Merged ATS at http://ibex.unh.edu/cgi-bin/ats.cgi.</date>	10/06/18	NGA
Sun Maneuvers	•	Additional contacts <i>should not</i> be planned to support IBEX Sun Precession Maneuvers due to star tracker outages. The standard apogee and perigee contacts should be used to verify that a maneuver has occurred. If it is not possible to plan one of the standard contacts after the star tracker outage is down to 50% and a valid quaternion reading can be made to verify the maneuver, the coarse Sun sensor angle and the thruster pulse count will be used to determine a) whether a maneuver took place, and b) whether the pointing after the maneuver is as expected +/- 2 degrees.	10/06/18	NGA
	•	The nominal off-Sun pointing constraint is 7.25 degrees. Based on the missed maneuver in orbit 114, the payload team has determined that there is no hardware risk associated with off-Sun pointing up to angles of at least 13 degrees. There is a higher background noted in the data starting at around 9.5 degrees off Sun pointing.		
File Input Check	1. 2. 3.	Current OEF inputs are Forecast STF, last orbit's OEF & latest predictive ephemeris. ATS inputs are this orbit's OEF & STF. (And ABS if present.) ATS filename is of the format IBEX_yyyy_doy_o0xxxa_v0zz.scr. where IBEX is capitalized, yyyy is the year, doy is the day of year, xxx is the 3-digit orbit number and zz is the 2-digit version number. Any special operations ATSs will have another designation between the orbit number and version number (i.e. *o0186a_hgc_v001 for the Hi gain curve).	10/06/18	NGA

Eclipses 1. Check OEF for eclipses during the orbit. N/A 2. Varify long collapse flag starts shop times reflect Ryan Tyler's recommendations based on his obligate diagnostic tool. Suggestions made by Ryan dater the use of this tool trung the general guidelines below. (Please node. specific furing may shift the recommendations are relative to the eclipse timing. For example, it may say set LE flag to false X hours after the end of the eclipse timing. For example, it may say set LE flag to false X hours after the end of the eclipse timing. For example, it may say set LE flag to false X hours after the end of the eclipse more refined, this command time may shift.) Verify no contacts planned during an eclipse. Note: If in conflict, the eclipse diagnostic recommendations will trump the general guidelines below. To an eclipse where the long eclipse flag is set, schedule a SOH contact directly following the end of the eclipse. Note: If in conflict, the eclipse diagnostic recommendations will trump the general guidelines below.					
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b. Verify P/L is in HVSTANDBY or HVENG. c. Verify no charging cycle within 2 hours of ASCENDING or DESCENDING macro execution. This applies to all eclipses, not just moderate or long eclipses. 1. Verify STX on/off times, downlink rate against Orbit_oXXX.txt file. 2. Verify all currently planned contacts in Orbit_xxx.txt are in the ATS. 3. Verify all currently planned contacts in Orbit_xxx.txt are in the ATS. 4. Verify each contact contains the following 5 commands. • SetRelay stx,on • SetRelay stx,on • SetBilevelOutputControlReg STXMODE_Strobe,ON • SetBilevelOutputControlReg COHERENT,ON • SetRelay stx,off 5. 6. If and PL contact is being used for an SSR Dump, the data rate should be at least 160 ksps & the SSR DUMP_NEW commands should be included in the contact commands. Inorange should only be sent if the SSR pointers need to be reset this perigee. These commands should be separated by 2s and occur 2s after the SSR_DUMP_NEW command. • SetBilevelOutputControlReg STXMODE_Strobe,ON • SetBilevelOutputControlReg STMODE_Strobe,ON • SetBilevelOutputControlReg COHERENT,ON • SetBilevelOutputControlReg STMODE_Strobe,ON • SetBilevelOutputControlReg STMODE_Strobe,ON • SetBilevelOutputControlReg COHERENT,ON • SetBilevelOutputControlReg COHER					
c. Verify no charging cycle within 2 hours of ASCENDING or DESCENDING macro execution. This applies to all eclipses, not just moderate or long eclipses. 10/06/18 Contact 1. Verify STX on/off times, downlink rate against Orbit_oXXX.txt file. 2. Verify contacts in the previous ATS have not been duplicated. 10/06/18 NGA 3. Verify all currently planned contacts in Orbit_xxx.txt are in the ATS. 10/06/18 NGA 4. Verify each contact contains the following 5 commands. • SetRelay stx,on • SetBilevelOutputControlReg STXMODE_Strobe,ON 5. SetBilevelOutputControlReg TXMODE_Strobe,ON • SetBilevelOutputControlReg COHERENT,ON • SetBilevelOutputControlReg COHERENT,ON 6. If additional transmitter OFF from 30 minutes before eclipse start through 30 minutes after eclipse end. b. 7. If additional transmitter OFF from 30 minutes before eclipse start through 30 minutes after eclipse end. b. 8. If additional transmitter or SSR Dump, the data rate should be at least 160 ksps & the SSR DUMP_NEW command. • SetRelay stx,on 9. SetRelay stx,on • SetRelay stx,on • SetRelay stx,on 9. If an APL contact is being used for an SSR Dump, the data rate should be at least 160 ksps & the SSR Duld only be senif the SSR pointers need to be reset this perigee. These commands					
execution. This applies to all eclipses, not just moderate or long eclipses. 1. Verify STX on/Of times, downlink rate against <i>Orbit_oXXX.txt</i> file. 10/06/18 NGA Contact Commands 1. Verify contacts in the previous ATS have not been duplicated. 10/06/18 NGA 3. Verify each contact contains the following 5 commands. • SetRelay stx, on • SetRelay stx, on • SetBilevelOutputControlReg STXMODE_Strobe,ON • SetBilevelOutputControlReg COHERENT,ON • SetRelay stx, off • If contact is near an eclipse • Verify transmitter OFF from 30 minutes before eclipse start through 30 minutes after eclipse end. • If additional transmitter constraints exist, they will be captured in Ryan's recommendations. • SetR DUMP_NEW command should be included in the contact commands. • SetRelay stx, off 6. If an APL contact is being used for an SSR Dump, the data rate should be at least 160 ksps & the SSR DUMP_NEW command should be included in the contact commands. • SetRelay stx, on • SetRelay stx, on • SetRelay stx, on • SetRelay stx, on • SetBilevelOutputControlReg STXMODE_Strobe,ON • SetBilevelOutputControlReg STXMODE_Strobe,ON • SetBilevelOutputC					
Contact Commands 1. Verify STX on/off times, downlink rate against Orbit_oXXX.txt file. 10/06/18 NGA 2. Verify contacts in the previous ATS have not been duplicated. 3. Verify contacts in the previous ATS have not been duplicated. 10/06/18 NGA 3. Verify each contact contains the following 5 commands. • SetRelay stx, on • SetBlevelOutputControlReg STMMODE_Strobe,ON • SetBillevelOutputControlReg STMMODE_Strobe,ON • SetBillevelOutputControlReg COHERENT,ON • SetBillevelOutputControlReg COHERENT,ON • SetRelay stx, off 5. If contact is near an eclipse a. Verify transmitter OFF from 30 minutes before eclipse start through 30 minutes after eclipse end. b. If additional transmitter constraints exist, they will be captured in Ryan's recommendations. 6. If an APL contact is being used for an SSR Dump, the data rate should be at least 160 ksps & the SSR DUMP_NEW command should be included in the contact commands. Commands in Orange should only be sent if the SSR pointers need to be reset this perigee. These commands should be separated by 2s and occur 2s after the SSR_DUMP_NEW command. • SetBillevelOutputControlReg STXMODE_Strobe,ON • SetBillevelOutputControlReg STXMODE_Strobe,ON • SetBillevelOutputControlReg COHERENT,ON • SetBillevelOutput			execution.		
Contact Commands 2. Verify contacts in the previous ATS have not been duplicated. 10/06/18 10/06/18 NGA 3. Verify all currently planned contacts in Orbit_xxx.txt are in the ATS. 4. Verify each contact contains the following 5 commands. • SetRelay stx,on • SetRelay stx,on • SetDownlink2K (2K, 40K, 64K, 160K, or 320K) • SetBilevelOutputControlReg STXMODE_Strobe,ON • SetBilevelOutputControlReg STXMODE_Strobe,ON • SetBilevelOutputControlReg COHERENT,ON • SetBilevelOutputControlReg STXMODE_Strobe,ON • SetBilevelOutputControlReg STXMODE_Strobe,ON • SetBilevelOutputControlReg COHERENT,ON					
Commands 2. Verify contacts in the previous ATS have not been duplicated. 3. Verify all currently planned contacts in Orbit_xxx.txt are in the ATS. 4. Verify each contact contains the following 5 commands. • SettPlay stx,on • SettBilevelOutputControlReg STXMODE_Strobe,ON • SettBilevelOutputControlReg COHERENT,ON • SettBilevelOutputControlReg Commands should be included in the contact commands. Commands in Orange should only be sent if the SSR pointers need to be reset this perigee. These commands should be separated by 2s and occur 2s after the SSR_DUMP_NEW command. • SettBilevelOutputControlReg STXMODE_Strobe,ON • SettBilevelOutputControlReg COHERENT,ON • SettBilevelOutputControlReg COHERENT,ON • SettBilevelOutputControlReg COHERENT,ON • SettBilevelOutputControlReg COHERENT,ON • SettBilevelOutputContr	Contact			10/06/18	NGA
 4. Verify each contact contains the following 5 commands. SetRelay stx, on SetRelay stx, on SetBilevelOutputControlReg STXMODE_Strobe,ON SetBilevelOutputControlReg COHERENT,ON SetRelay stx, off 5. If contact is near an eclipse a. Verify transmitter OFF from 30 minutes before eclipse start through 30 minutes after eclipse end. b. If additional transmitter constraints exist, they will be captured in Ryan's recommendations. 6. If an APL contact is being used for an SSR Dump, the data rate should be at least 160 ksps & the SSR DUMP_NEW command should be included in the contact commands. Commands in Orange should only be sent if the SSR pointers need to be reset this perigee. These commands should be separated by 2s and occur 2s after the SSR_DUMP_NEW command. SetBilevelOutputControlReg STXMODE_Strobe,ON SetBilevelOutputControlReg STXMODE_Strobe,ON SetBilevelOutputControlReg COHERENT,ON SetBilevelOutputControlReg COHERENT,ON SetBilevelOutputControlReg COHERENT,ON SetBilevelOutputControlReg STXMODE_Strobe,ON SetBilevelOutputControlReg COHERENT,ON 		2.			
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 SetBilevelOutputControlReg STXMODE_Strobe,ON SetBilevelOutputControlReg COHERENT,ON SetDownlink320K SSR_DUMP_NEW 					
 SetBilevelOutputControlReg COHERENT,ON SetDownlink320K SSR_DUMP_NEW 					
SetDownlink320KSSR_DUMP_NEW					
SSR_DUMP_NEW					
SSR_SET_WRT_PTR 6500					
SetRelay stx,off	1				

SC State Science: arc a	 Transition to Science state will be first command of each ATS (at 14 Re). SetScState science \$TIME=2018/10:17:01:45:44 Lo science mode will be the next command (at 14 Re). 	10/06/18	NGA
	LO SCIENCE MODE NORMAL		
	3. Verify no transition to Science again at the end of the ATS. The ATS commands go from 14 Re to		
	14 Re in each orbit.		
	4. Verify the transition to Science commands for this orbit are not part of the previous ATS using		
	http://ibex.unh.edu/cgi-bin/ats.cgi.		
	5. Verify that the beginning of this ATS does not overlap with the end of the previous orbit's ATS		
	using http://ibex.unh.edu/cgi-bin/ats.cgi.		
	1. Verify w/ Crossing Times report that it occurs about 15 Re ascending. The arc a ASCENDING	40/00/40	NICA
Payload	commands can start any time at or above 15 Re ascending.	10/06/18	NGA
Mode HVSCI :	2. Verify commanding takes ~ 24 minutes.		
arc a	 ASCENDING_PL1 \$TIME=2018/10:17:03:29:04 		
aica	ASCENDING_HI		
	SET_PARAMETER 1, TLM_RATE_SOH		
	 SET_PARAMETER 4, HV_STEP_DWELL 		
	SET PARAMETER 3, HV STEP FRAC		
	HI_COL_NEG_LVL 1400		
	• CEU_HI_CEM_1_LVL 1780		
	• CEU_HI_CEM_2_LVL 1780		
	• CEU_HI_CEM_3_LVL 1780		
	• CEU_HI_CEM_4_LVL 1900		
	SET PARAMETER 0, TLM RATE SOH		
	• ASCENDING PL2		
	• ASCENDING PL1		
	ASCENDING_LO		
	 ASCENDING_PL2 \$TIME=2018/10:17:03:52:52 		
	1. Payload DESCENDING commands end 1.5h before thruster enable.		
Payload	 Verify commands take ~23 minutes to execute. 	10/06/18	NGA
Mode	• DESCENDING PL1 \$TIME=2018/10:20:23:36:25		
HVSTANDBY	DESCENDING LO		
: arc a	• ASCENDING PL2		
	DESCENDING PL1		
	DESCENDING_HI		
	 DESCENDING_PL2 \$TIME=2018/10:20:23:59:15 		
	1. Spacecraft Housekeeping command occurs 1h before thruster enable.		
SC State	SetScState housekeeping \$TIME=2018/10:21:00:32:25	10/06/18	NGA
HK : arc a		l I	

Last update 09/12/2018

Inertial	1.	Use this command sequence if an apogee inertial maneuver is used, otherwise skip to the 'Sun	N/A	
Maneuver :	2	Precession Maneuver : Apogee' sequence below.		
Apogee	2.	Verify Thruster enable command occurs within STF maneuver window.		
	3.			
	4.	Verify cat bed heaters come on 55 min before burn.		
	_	• CATBED_5N_HTR,ON		
	5.	Verify Kalman Filter input select is ground command & estimator update is disabled.		
		 SetKFInputSelect GND_CMD, 0, 0, 0, 0 		
		SetEstUpdateEnables ENABLE, DISABLE		
	6.	Verify in FC mode Burn.		
		SetFcMode burn		
	7.	Compare SetInrDir in ATS with pointing as defined in the Forecast STF & verify the vectors		
		match.		
		• SetInrDir		
	8.	Verify inertial maneuver chosen.		
	0.	SetLrTarget ACS_INERTIAL		
	9.	Verify thrust time set to 11 min.		
	9.	SetThrustTime 660		
	10			
	10.	Verify thruster enable command matches RepointingManeuverStart time in OEF.		
		SetThrustEnable ENABLE		
		RepointingManeuverStart		
	11.	Verify 10 minutes after thrusters enabled: thrusters disabled, cat bed heaters off, thrust time set		
		to 0.		
		SetThrustEnable DISABLE		
		 SetHTRCmd CATBED_5N_HTR,OFF 		
		SetThrustTime 0		
	12.	Verify 25 min after thrusters enabled: Static Z rate set, outage %valid set, FC mode Mission.		
		SetStaticZrate ESTIMATOR, 0.418		
		 SetKFInputSelect STA_PCT_VALID, 43,28,33,48 		
		SetFcMode Mission		
-	1.	Use this command sequence in the event of an apogee Sun maneuver.		
Sun	2.	Verify Thruster enable command occurs within STF maneuver window.	10/06/18	NGA
Precession	3.	Verify no eclipse occurs from cat bed heater on through set FC mode Mission.		
Maneuver	3. 4.	Verify cat bed heaters powered on 55 min before thruster enable.		
: Apogee	ч.	 CATBED_5N_HTR,ON \$TIME=2018/10:21:00:37:23 		
	5	Verify in FC mode Burn and Sun target.		
	э.	SetFcMode burn		
	~	SetLrTarget ACS_SUN		
	6.	Verify thrust time set to 16 min.		
	_	SetThrustTime 960		
	7.	Verify thruster enable command matches SunMvrBegin time in OEF.		
		SetThrustEnable ENABLE \$TIME=2018/10:21:01:32:23		
		 SunMvrBegin 2018-10-21T01:32:23 		
	8.	Verify 15 minutes after thrusters enabled: thrusters disabled, cat bed heaters off, thrust time set		
		to 0, FC mode Mission.		
		 SetThrustEnable DISABLE \$TIME=2018/10:21:01:47:23 		
		SetHTRCmd CATBED_5N_HTR,OFF		
		SetThrustTime 0		
		SetFcMode Mission		
	1.	Spacecraft Science commands occur ~1h after thruster Disable.	 	
SC State		SetScState science \$TIME=2018/10:21:02:47:29	10/06/18	NGA
Science :		 LO_SCIENCE_MODE NORMAL 		
arc b	1		1	

Rev 16e

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Payload Mode HVSCI : arc b	1. 2.	Verify payload ASCENDING commands begin at least 1.5 hours after thruster DISABLE. Verify commands take ~24 minutes to execute. ASCENDING_PL1 \$TIME=2018/10:21:03:17:29 ASCENDING_HI SET_PARAMETER 1, TLM_RATE_SOH SET_PARAMETER 4, HV_STEP_DWELL SET_PARAMETER 3, HV_STEP_FRAC HI_COL_NEG_LVL 1400 CEU_HI_CEM_1_LVL 1780 CEU_HI_CEM_2_LVL 1780 CEU_HI_CEM_3_LVL 1780 CEU_HI_CEM_4_LVL 1900 SET_PARAMETER 0, TLM_RATE_SOH ASCENDING_PL2 ASCENDING_PL2 ASCENDING_L0 ASCENDING_L0 SET_PL2 \$TIME=2018/10:21:03:41:17	10/06/18	NGA
Payload Mode HVSTANDBY : arc b	1. 2.	 Verify w/ Crossing Times report that it occurs about 15 Re descending. The arc b DESCENDING commands can complete any time at or above 15 Re descending. Verify commands take ~23 minutes to execute. DESCENDING_PL1 \$TIME=2018/10:24:23:23:59 DESCENDING_LO ASCENDING_PL2 DESCENDING_PL1 DESCENDING_HI DESCENDING_PL2 \$TIME=2018/10:24:23:46:49 	10/06/18	NGA
SC State HK : arc b	1.	Verify with Crossing Times report that Transition to Housekeeping state occurs at 14 Re desc (or an hour before the maneuver if the maneuver occurs less than 1 hour after 14 Re desc). • SetScState housekeeping \$TIME=2018/10:25:01:05:56	10/06/18	NGA

Inertial	1.	Use this command sequence if a perigee inertial maneuver is used, otherwise skip to the 'Sun	N/A	
Maneuver :	-	Precession Maneuver : Perigee' sequence below.		
Perigee	2.	Verify no eclipse occurs from cat bed heater on through set FC mode Mission.		
	3.	Verify cat bed heaters come on 55 min before burn.		
		CATBED_5N_HTR,ON		
	4.	Verify in Housekeeping state.		
	5.	Verify Kalman Filter input select is ground command & estimator update is disabled.		
		SetKFInputSelect GND_CMD, 0, 0, 0, 0		
		SetEstUpdateEnables ENABLE, DISABLE		
	6.	Verify in FC mode Burn.		
		SetFcMode burn		
	7.	Compare SetInrDir in ATS with target vector in the Forecast STF & verify the vectors match.		
		• SetInrDir		
	8.	Verify inertial maneuver chosen.		
		SetLrTarget ACS_INERTIAL		
	9.	Verify thrust time set to 11 min.		
		SetThrustTime 660		
	10.	Verify thruster enable command matches RepointingManeuverStart time in OEF.		
		SetThrustEnable ENABLE		
		RepointingManeuverStart		
	11	Verify 10 minutes after thrusters enabled: thrusters disabled, cat bed heaters off, thrust time set		
		to 0.		
		SetThrustEnable DISABLE		
		CATBED_5N_HTR,OFF SetThrustTime 0		
	12	Verify 25 min after thrusters enabled: Static Z rate set, outage %valid set, FC mode Mission.		
	12.			
		SetStaticZrate ESTIMATOR, 0.418 SetVirian State STAL DET MANDA 42 20 22 40		
		SetKFInputSelect STA_PCT_VALID, 43,28,33,48		
		SetFcMode Mission	-	
Sun	1.	Use this command sequence in the event of a perigee Sun maneuver.	10/06/18	NGA
Precession	2.	Verify Thruster enable command occurs within STF maneuver window.		
Maneuver :	3.	Verify no eclipse occurs from cat bed heater on through set FC Mode Mission.		
Perigee	4.	Verify cat bed heaters come on 55 min before burn.		
	-	CATBED_5N_HTR,ON \$TIME=2018/10:25:01:12:41 Varify in EC made Burn and Sun target		
	5.	Verify in FC mode Burn and Sun target.		
		SetFcMode burn SetLatarat ACC SUN		
	c	SetLrTarget ACS_SUN		
	6.	 Verify thrust time set to 16 min. SetThrustTime 960 		
	7	Verify thruster enable command matches SunMvrBegin time in OEF.		
	7.	SetThrustEnable ENABLE \$TIME=2018/10:25:02:07:41		
		 Settinustenable eNABLE \$11012-2018/10.25.02.07.41 SunMvrBegin 2018-10-25T02:07:41 		
	0	Verify 15 minutes after thrusters enabled: thrusters disabled, cat bed heaters off, thrust time set		
	8.	to 0, FC mode Mission.		
		SetThrustEnable DISABLE \$TIME=2018/10:25:02:22:41		
		 SetHTRCmd CATBED_5N_HTR,OFF SetThrustTime 0 		
	1			
	1	SetFcMode Mission		

Battery Cell Balancing	, , , , ,	10/06/18	NGA
Cmd Violation	1. Review CCVR. If you have any questions Reply All to the ATS Approval email and ask the team.	10/06/18	NGA

Activity		Anomaly Response : Non-nominal burn	Date Completed	Completed By
	•	If the maneuver has not occurred or the spacecraft pointing as designated by either the star	_	_
		tracker or coarse Sun sensor is off by more than 2 degrees from the expected pointing, an		
		anomaly has occurred.		
		• If the spacecraft is in Contingency state all stored commands are flushed from the		
		command queue. Follow standard anomaly process.		
		If the Sun maneuver did not occur and the spacecraft is in either Science or		
		Housekeeping state follow the steps below.		
		• If a partial Sun maneuver has occurred and the spacecraft is in either Science or		
		Housekeeping state follow the steps below.		
	•	Please note that there is no anticipated hardware damage associated with exceeding the		
		12.5 degree constraint; this constraint is in place because we should not exceed the largest		
	1	pointing achieved thus far in the mission.		
	1.	If the payload is in HVSTANDBY, LVENG or OFF, and there are no commands loaded to bring it to HVSCI voltages, no experitional pointing constraints will be violated. Follow		
		bring it to HVSCI voltages, no operational pointing constraints will be violated. Follow standard anomaly process.		
	2.	If the payload is in HVSCI mode or there are uploaded commands to bring the payload to		
	2.	HVSCI mode.		
		a. Determine current off Sun pointing. If the off Sun angle has already exceeded 12.5		
		degrees, the MOC should notify the MOM and immediately send the		
		DESCENDING command suite in real-time, as described below. If this cannot be		
		done in the contact where the pointing anomaly was discovered, another contact		
		will be planned as soon as possible to execute these commands.		
		<pre>@CEU_MACRO_EXEC DESCENDING_PL1 (< 1 min)</pre>		
		<pre>@CEU_MACRO_EXEC DESCENDING_LO (~ 10 min)</pre>		
		<pre>@CEU_MACRO_EXEC DESCENDING_HI (~ 8 min)</pre>		
		@CEU_MACRO_EXEC_DESCENDING_PL2 (< 1 min)		
		Please note: The only scenario where hitting 12.5 degrees is expected is when a		
		perigee Sun precession maneuver is completely missed after an inertial apogee		
		maneuver which occurs late in the maneuver window (near apogee + 10 hours).		
		 b. If current Sun pointing is below 12.5 degrees, the ISOC should input ST Sun- pointing angle into ibex rotate to determine the Sun angle at the time of 		
		DESCENDING.		
		Sun-Angle at payload DESCENDING		
		c. If 12.5 degrees is not exceeded by the time of DESCENDING, no payload-specific		
		action is needed for this arc. Follow standard anomaly response process.		
		d. If 12.5 degrees is exceeded by the time of DESCENDING, a new command set		
		should be sent.		
	1	i. The ISOC will generate the new STF which has the DESCENDING		
	1	commands executing early such that 12.5 degrees is not exceeded while		
	1	the payload is in HVSCI.		
	1	ii. The MOC will create an associated ATS.		
	1	iii. Approval is needed by the MOM, MOC & ISOC prior to upload.		
		iv. The MOC will assess whether an additional pass is needed in order to		
		upload the commands prior to exceeding the 12.5 degree constraint. The		
	1	onboard DESCENDING commands do not need to be deleted.		