**IBEX Goat Herder 4 May 18 – 14 May 18**

**ORBIT# 405**

**RAZOR# 639**: Master Reset on 1 May 18 @ 0630 UTC

Spacecraft recovery during Orbit# 405 Perigee

**CAR# 972** Recover from Master Reset on 5/05/18

**CAR# 973** Orbit# 406 Payload Return to Science

**ORBIT# 406**

**RAZOR# 640**: Star Tracker Reset on 7 May 18 @1112 UTC

The start tracker reset before APOGEE in Orbit# 406.

CAR# 344 Reset FDC Totals and Response Latch Values was executed

Command/telemetry was nominal and the inertial maneuver was successful

The PERIGEE contacts were nominal and the inertial maneuver successful

***Date*** ***Jday*** ***Time***  ***Station*** ***Razor#*** ***USNPR#*** ***PASS/FAIL***

 **Friday, May 04, 2018** 124 0630 AUWA Pass

***Controller*** ***CAR1*** ***CAR2*** ***CAR3*** ***Radius Earth*** ***S-Band Rate*** ***Station PWR***

 SWesley 17 desc 2ksps

 ***EBNO Values*** ***EBNO Values 3*** ***AGC Strength***

 ***EBNO Values 2*** ***AGC Strength 2***

 ***VC 0*** ***VC 0 Seq Err*** ***VC 1*** ***VC 1 Seq Err***  ***VC 2*** ***VC 2 Seq Err***

 183 5 0 0 0 0

 ***VC 2 Write Pointer Start*** 0 ***VC 2 Write Pointer End*** 0

 ***VC 2 Read Pointer Start*** 0 ***VC 2 Read Pointer End*** 0

 Orbit# 405 Perigee Tracking Contact

Blind\_acq.scr (2k)

STX,off (571,05:04:07:32:00)

@FMI\_SetDownlink(40k)

@FMI\_SetDownlink(2k)

S/C contingency mode from a master reset

S924-OP31003 Contingency State Recovery Procedure

reset\_master\_timer.scr

@FTV\_enableBOTM/stx,off

***Date*** ***Jday*** ***Time***  ***Station*** ***Razor#*** ***USNPR#*** ***PASS/FAIL***

 **Saturday, May 05, 2018** 125 0300 USHI01 Pass

***Controller*** ***CAR1*** ***CAR2*** ***CAR3*** ***Radius Earth*** ***S-Band Rate*** ***Station PWR***

 SWesley 12 asc 2ksps

 ***EBNO Values*** ***EBNO Values 3*** ***AGC Strength***

 ***EBNO Values 2*** ***AGC Strength 2***

 ***VC 0*** ***VC 0 Seq Err*** ***VC 1*** ***VC 1 Seq Err***  ***VC 2*** ***VC 2 Seq Err***

 1767 0 317 0 0 0

 ***VC 2 Write Pointer Start*** 0 ***VC 2 Write Pointer End*** 0

 ***VC 2 Read Pointer Start*** 0 ***VC 2 Read Pointer End*** 0

 Orbit# 405 Recovery

Blind\_acq.scr (160k)

stx,off (693.05:05:04:32:00)

 @FTG\_DumpBAckOrbitdata (from start,0,0,0,0)

CAR# 972 Recovery From MASTER RESET

 1. S924-OP31004, BCR reset recovery (summarized in bullets below)

 2. S924-OP31502, IBEX Change Heater Setpoints (tank1, tank1, zone1, zone2, zone3, and zone4 to each trip off to 18 and trip on to 16.

 3. @ECT\_DisableSolarArrayRPT

 4. @ECT\_TMSAPowerCntl – verify in telemetry that ECT\_PowControl is either CURRENT or VOLTAGE

 5. . Contingency State Recovery Procedure, step 6 only. Use the following selections:

 • ACS Mode = Low Rate

 • Turn on PCM B = Turn ON

 • Turn on gyro = Turn ON

 • Turn on star tracker = Turn ON

 • Turn on star tracker FDC = Turn ON

 • Turn on estimator FDC = Turn ON

 • Desired low rate spin sensor = ACCELEROMETER

 • Turn on CEU = Leave OFF

 • Spacecraft State = HOUSEKEEPING

 6 . Upload ATS: IBEX\_2018\_124\_o0406a\_RecoveryContacts\_v001.scr

 7. Upload ATS: IBEX\_2018\_forecast\_05may18\_05may18\_Recovery\_Man\_v001.scr

 8 . Run script add\_del\_TG.scr and select “Add”.

 • Enabled? = “Enabled”

 • Qid = 0x3037

 • Function = 0x08

 • Subfunction = 0x4a

 • Num\_params = 0

 • Param\_0 = 0

 • Param\_1 = 0

 • Param\_2 = 0

 • Param\_3 = 0

 • Real-time period (sec) = 0

 • Real-time start (sec) = 0

 • Backorbit period (sec) = 10

 • Backorbit start (sec) = 0

 • Mode = "MISSION\_LR\_MODE"

***Date*** ***Jday*** ***Time***  ***Station*** ***Razor#*** ***USNPR#*** ***PASS/FAIL***

 125 0530 USHI02 Pass

***Controller*** ***CAR1*** ***CAR2*** ***CAR3*** ***Radius Earth*** ***S-Band Rate*** ***Station PWR***

 SWesley 973 14 asc 160ksps

 ***EBNO Values*** ***EBNO Values 3*** ***AGC Strength***

 ***EBNO Values 2*** ***AGC Strength 2***

 ***VC 0*** ***VC 0 Seq Err*** ***VC 1*** ***VC 1 Seq Err***  ***VC 2*** ***VC 2 Seq Err***

 1840 1 0 0 0 0

 ***VC 2 Write Pointer Start*** 0 ***VC 2 Write Pointer End*** 6740

 ***VC 2 Read Pointer Start*** 0 ***VC 2 Read Pointer End*** 6500

 Orbit# 406 Master Reset Recovery

CAR# 973 Payload Recovery

 @FCT\_SetScState science

 ceu\_on.scr ()

 @CEU\_SSR\_SET\_WRT\_PTR 6500

 @CEU\_SSR\_SET\_RD\_PTR 6500

 %constraint off

 %conversion off

 @CEU\_SET\_PARAMETER 16, 123

 %conversion on

 %constraint on

 @CEU\_SET\_PARAMETER 64, LO\_STAR\_HISTO\_CADENCE

 @CEU\_SET\_PARAMETER 123, ROUND\_ROBIN\_START

 @CEU\_SET\_PARAMETER 123, ROUND\_ROBIN\_END

 @CEU\_SET\_PARAMETER 3, ROUND\_ROBIN\_START

 @CEU\_SET\_PARAMETER 3, ROUND\_ROBIN\_END

 @CEU\_SET\_PARAMETER 0, ROUND\_ROBIN\_START

 @CEU\_SET\_PARAMETER 128, ROUND\_ROBIN\_END

 sweep\_table\_upload\_160922.scr ()

 LV\_Checkout.scr ()

 %constraint off

 %conversion off

 @CEU\_SET\_PARAMETER 1, 127

 @CEU\_SET\_PARAMETER 1, 128

 %conversion on

 %constraint on

 @CEU\_SET\_PARAMETER 127, ROUND\_ROBIN\_START

 @CEU\_SET\_PARAMETER 127, ROUND\_ROBIN\_END

 @CEU\_SET\_PARAMETER 0, ROUND\_ROBIN\_START

 @CEU\_SET\_PARAMETER 128, ROUND\_ROBIN\_END

 @CEU\_MACRO\_EXEC OFF\_TO\_STANDBY\_PL1

 @CEU\_MACRO\_EXEC OFF\_TO\_STANDBY\_LO

 @CEU\_MACRO\_EXEC OFF\_TO\_STANDBY\_HI

 @CEU\_MACRO\_EXEC OFF\_TO\_STANDBY\_PL2

 stx,off

***Date*** ***Jday*** ***Time***  ***Station*** ***Razor#*** ***USNPR#*** ***PASS/FAIL***

 **Saturday, May 05, 2018** 125 0800 USHI01 Pass

***Controller*** ***CAR1*** ***CAR2*** ***CAR3*** ***Radius Earth*** ***S-Band Rate*** ***Station PWR***

 SWesley 973 15 asc 160ksps

 ***EBNO Values*** ***EBNO Values 3*** ***AGC Strength***

 ***EBNO Values 2*** ***AGC Strength 2***

 ***VC 0*** ***VC 0 Seq Err*** ***VC 1*** ***VC 1 Seq Err***  ***VC 2*** ***VC 2 Seq Err***

 1373 1 0 0 0 0

 ***VC 2 Write Pointer Start*** 6781 ***VC 2 Write Pointer End*** 6990

 ***VC 2 Read Pointer Start*** 6500 ***VC 2 Read Pointer End*** 6500

 Orbit# 406 Master Reset Recovery/

 IBEX\_2018\_124\_o0406a\_Recovery\_v001.scr (823-898)

 @CEU\_LO\_SCIENCE\_MODE NORMAL

 @CEU\_MACRO\_EXEC ASCENDING\_PL1

 @CEU\_MACRO\_EXEC ASCENDING\_HI

 @CEU\_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

 @CEU\_MACRO\_EXEC ASCENDING\_LO

 @CEU\_MACRO\_EXEC ASCENDING\_PL2

 IBEX\_2018\_133\_o0407a\_v002.scr (899-993)

***Date*** ***Jday*** ***Time***  ***Station*** ***Razor#*** ***USNPR#*** ***PASS/FAIL***

 **Wednesday, May 09, 2018** 129 1300 USHI02

***Controller*** ***CAR1*** ***CAR2*** ***CAR3*** ***Radius Earth*** ***S-Band Rate*** ***Station PWR***

 SWesley 344 44 asc 2ksps

 ***EBNO Values*** ***EBNO Values 3*** ***AGC Strength***

 ***EBNO Values 2*** ***AGC Strength 2***

 ***VC 0*** ***VC 0 Seq Err*** ***VC 1*** ***VC 1 Seq Err***  ***VC 2*** ***VC 2 Seq Err***

 645 5 1431 30 0 0

 ***VC 2 Write Pointer Start*** 19430 ***VC 2 Write Pointer End*** 19510

 ***VC 2 Read Pointer Start*** 6500 ***VC 2 Read Pointer End*** 6500

 Orbit# 406 Apogee Tracking Contact

@FMI\_SetDownlink (40k)

CAR# 344 Star Tracker Reset

 @ACT\_ResetRespReqLatch(AC\_FDC,FDC\_STA,FDC\_STA\_STALETEST)

 @ACT\_ResetRespReqLatch(AC\_FDC,FDC\_STA,FDC\_STA\_NOSOLUTIONTEST)

 @ACT\_ResetTAskRawFailed(AC\_FDC)

 @FTG\_DumpBAckorbit (from start,0,0,0,0)

 IBEX Orbit# 406 APOGEE Target Vectors 9 May 18

 J2000 Spin Axis

 ECI X 0.748035

 ECI Y 0.609142

 ECI Z 0.263418

 Precession Maneuver

 MPS Diff 0.560 deg

 \*MPS Diff should be < 1.5\*

 -0.57725500 ActNor.EstInrToBdy[0]

 0.18726300 ActNor.EstInrToBdy[1]

 -0.43136700 ActNor.EstInrToBdy[2]

 0.66755600 ActNor.EstInrToBdy[3]

 1209540000.000 ActNor.EstTime

 Right Ascension - RA 39.157 deg

 Declination - DEC 15.273 deg

 IBEX Spin Axis vs. Sun Vector

 IBEX Sun Angle -3.201 deg

 MPS Generated APOGEE Target Vecotrs

 MPS Cmd Vector X 0.745068000

 MPS Cmd Vector Y 0.615608000

 MPS Cmd Vector Z 0.256711000

CSS Angle TLM 0.780344

CSS Sun-Pointing Angle 1.560688

 5 May 18 @0530

CSS Angle TLM 0.780344

CSS Sun-Pointing Angle 1.560688

 9 May 18 @1300

Pre-Burn

Thruster 1 288 5 May 18 @0530

Thruster 2 288

Thruster 3 288

Thruster 4 288

Post-Burn

Thruster 1 544 9 May 18 @1300

Thruster 2 544

Thruster 3 576

Thruster 4 576

Number of Pulses

Thruster 1 256

Thruster 2 256

Thruster 3 288

Thruster 4 288

Thruster Pairs

Thruster 1 & 2 512

Thruster 3 & 4 576

***Date*** ***Jday*** ***Time***  ***Station*** ***Razor#*** ***USNPR#*** ***PASS/FAIL***

 **Sunday, May 13, 2018** 133 0845 AUWA Pass

***Controller*** ***CAR1*** ***CAR2*** ***CAR3*** ***Radius Earth*** ***S-Band Rate*** ***Station PWR***

 SWesley 17 desc 2ksps 120 watts

 ***EBNO Values*** ***EBNO Values 3*** ***AGC Strength***

 ***EBNO Values 2*** ***AGC Strength 2***

 ***VC 0*** ***VC 0 Seq Err*** ***VC 1*** ***VC 1 Seq Err***  ***VC 2*** ***VC 2 Seq Err***

 247 7 0 0 0 0

 ***VC 2 Write Pointer Start*** 29880 ***VC 2 Write Pointer End*** 29964

 ***VC 2 Read Pointer Start*** 6500 ***VC 2 Read Pointer End*** 6500

 Orbit# 406 Perigee Tracking Contact

@FMI\_SetDownlink(40k)

@FMI\_SetDownlink (2k)

stf, off

***Date*** ***Jday*** ***Time***  ***Station*** ***Razor#*** ***USNPR#*** ***PASS/FAIL***

 **Monday, May 14, 2018** 134 0500 USHI01 Pass

***Controller*** ***CAR1*** ***CAR2*** ***CAR3*** ***Radius Earth*** ***S-Band Rate*** ***Station PWR***

 SWesley 12 asc 160ksps 170 watts

 ***EBNO Values*** ***EBNO Values 3*** ***AGC Strength***

 ***EBNO Values 2*** ***AGC Strength 2***

 ***VC 0*** ***VC 0 Seq Err*** ***VC 1*** ***VC 1 Seq Err***  ***VC 2*** ***VC 2 Seq Err***

 1905 2 1309 0 24716 0

 ***VC 2 Write Pointer Start*** 31212 ***VC 2 Write Pointer End*** 31269

 ***VC 2 Read Pointer Start*** 6500 ***VC 2 Read Pointer End*** 31216

 Orbit# 406 SSR\_Dump/Tracking Contact

@FMI\_SetDownlink(320k)

SSR\_Dump.scr (new)

CAR# 974 Upload Orbit# 408 ATS 1.IBEX\_2018\_143\_o0408a\_v001.scr (35-127)

ops\_set\_sc\_time.scr

@FTG\_DumpBackorbit (from start,0,0,0,0)

 IBEX Orbit# 406 PERIGEE Target Vectors 14 May 18

 J2000 Spin Axis

 ECI X 0.640736

 ECI Y 0.703665

 ECI Z 0.307105

 Precession Maneuver

 MPS Diff 0.804 deg

 \*MPS Diff should be < 1.5\*

 -0.46011000 ActNor.EstInrToBdy[0]

 -0.36707800 ActNor.EstInrToBdy[1]

 -0.79825800 ActNor.EstInrToBdy[2]

 0.12781600 ActNor.EstInrToBdy[3]

 1210310000.000 ActNor.EstTime

 Right Ascension - RA 47.680 deg

 Declination - DEC 17.885 deg

 IBEX Spin Axis vs. Sun Vector

 IBEX Sun Angle -3.248 deg

 MPS Generated PERIGEE Target Vector

 MPS Cmd Vector X 0.634157000

 MPS Cmd Vector Y 0.713064000

 MPS Cmd Vector Z 0.298974000

CSS Angle TLM 0.5292813

CSS Sun-Pointing Angle 1.0585626

 9 May 18 @1300

CSS Angle TLM 0.632729

CSS Sun-Pointing Angle 1.265458

 14 May18 @0500

Pre-Burn

Thruster 1 544 9 May 18 @1300

Thruster 2 544

Thruster 3 576

Thruster 4 576

Post-Burn

Thruster 1 848 14 May18 @0500

Thruster 2 816

Thruster 3 880

Thruster 4 912

Number of Pulses

Thruster 1 304

Thruster 2 272

Thruster 3 304

Thruster 4 336

Thruster Pairs

Thruster 1 & 2 576

Thruster 3 & 4 640