Daily Downlink Tagup

Monday, July 1, 2019 (DOY 182)

OSIRIS-REx™

ASTEROID SAMPLE RETURN MISSION

Happy Canada Day!

Agenda & Logistics

- **Quicklook + Weekly Instrument Status**
- **DSN Schedule**
- **Observation Timeline**
- **Uplink/Execution/Downlink Summary**
- **Alarms, Watch items, ISAs, PFRs**
- **Need for Retransmit, need for Replay?**
- **Science / PI Comments**
- **Go-backs / Additional Comments**

Daily Downlink Summaries available shortly after each Tagup at on the OREx Ops Wiki:
https://orexwiki.lpl.arizona.edu/wiki/Main_Page (LDAP login)

Daily Downlink Slides available shortly after each Tagup at:
OSIRIS-REx Bennu Proximity Operations/Science Implementation/Downlink_Daily_Summary/2019

Quicklook & Weekly Status

Team	Status	Comment
Spacecraft	G	No issues
Electrical Power System	G	No issues
Flight Software	G	No issues
Fault Protection	G	No issues
G&NC	G	No issues
Mechanisms	G	No issues
Propulsion	G	No issues
Telecom	G	No issues
Thermal	G	No issues
Payload Interfaces	G	No issues

	Health				Safety		Performance			Powered State	GO/NO-GO
	Thermal	Power	Command Response	Alarms	Trending	Limited Life & Mechanisms	Data Completeness	Pipeline Status	Science Concurrence		
OCAMS										**ON**	**GO**
OLA										**OFF**	**GO**
OTES										**ON**	**GO**
OVIRS										**OFF**	**GO**
REXIS										**ON**	**GO**

Downlink Schedule (times in UTC)

- ***Current Data Rate: 1.3 Mbps***

WOY	DOY	Start Date	HGA Start	End Date	HGA End	Duration	Note
26	182	2019-07-01	13:40	2019-07-01	20:40	00:45	**1.3 Mbps – Split Pass reduces downlink to < 1 hr *IN PROGRESS***
27	183	2019-07-02	14:03	2019-07-02	20:30	5:49*	***M6B *Waived Off.* Return to 916 kbps.**
27	184	2019-07-03	14:06	2019-07-03	20:34	2:10	**1.3 Mbps – Madrid GNM will reduce downlink duration by ~2.5 hrs.**
27	185	2019-07-04	14:03	2019-07-04	20:38	6:35*	***M7B *Waived Off*. Return to 916 kbps.**
27	186	2019-07-05	14:06	2019-07-05	20:40	6:34	
27	187	2019-07-06	14:06	2019-07-06	20:39	6:33	
27	188	2019-07-07	14:52	2019-07-07	20:38	5:46	**1.3 Mbps**

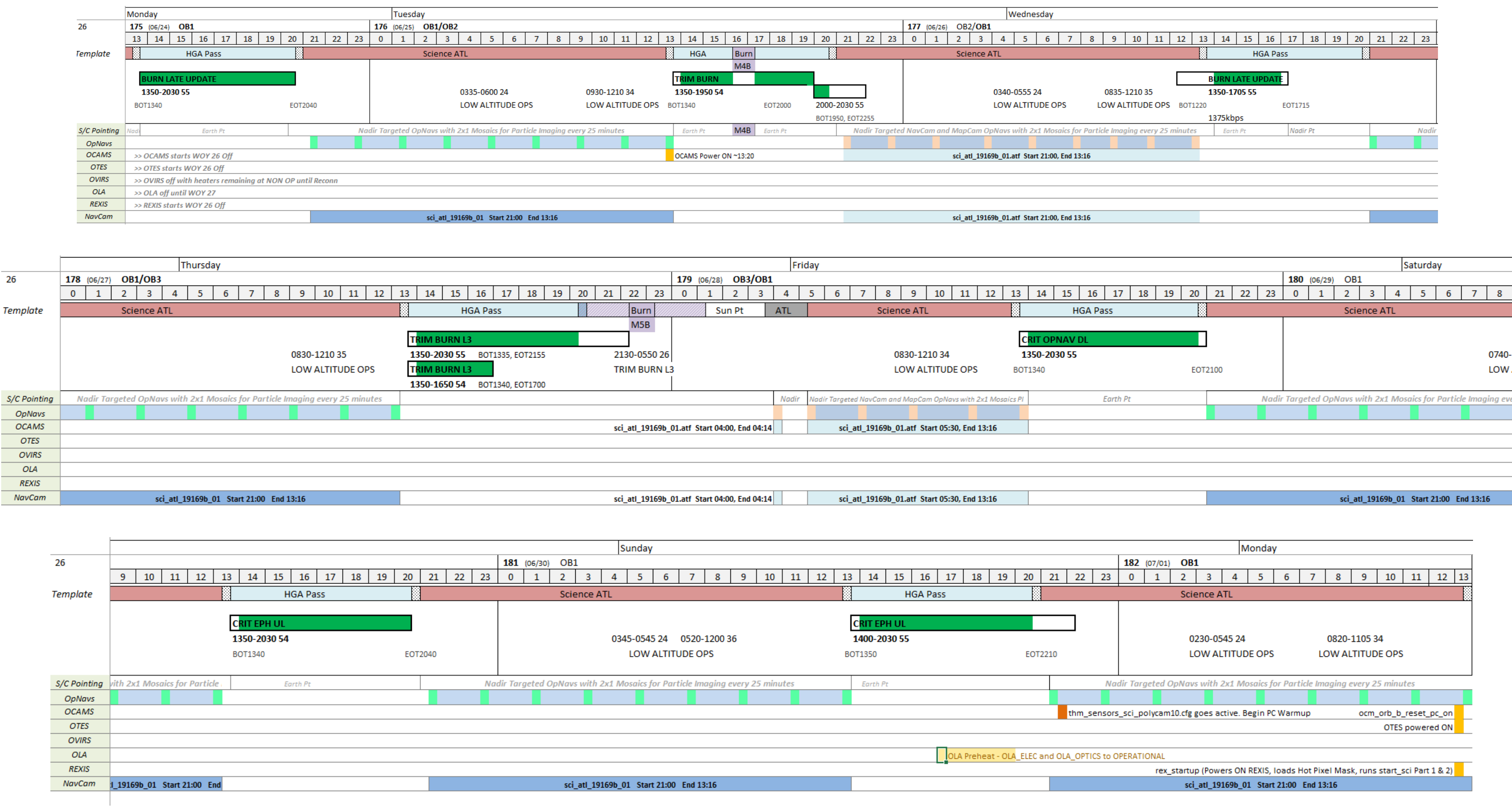
DSS24/ORX 182/0257Z DR G120314 Spacecraft/ Entered 182/0308Z 0011 Originating Site:CDSCC
Did not go 2-way at expected time. Despite the rcv (Dc09) dropping lock, at the RTLT End of Tune Time, the rcv would not lock up 2-Way after multiple attempts. Reswept uplink and locked up 1-Way. Placed a second receiver in the link (DC07) and acquired 2-Way. Both receivers dropped lock at expected time (End of Tune + RTLT) and both re-acquired 2-way. DOP2 LOST 11

RED EQUIPMENT STATUS:

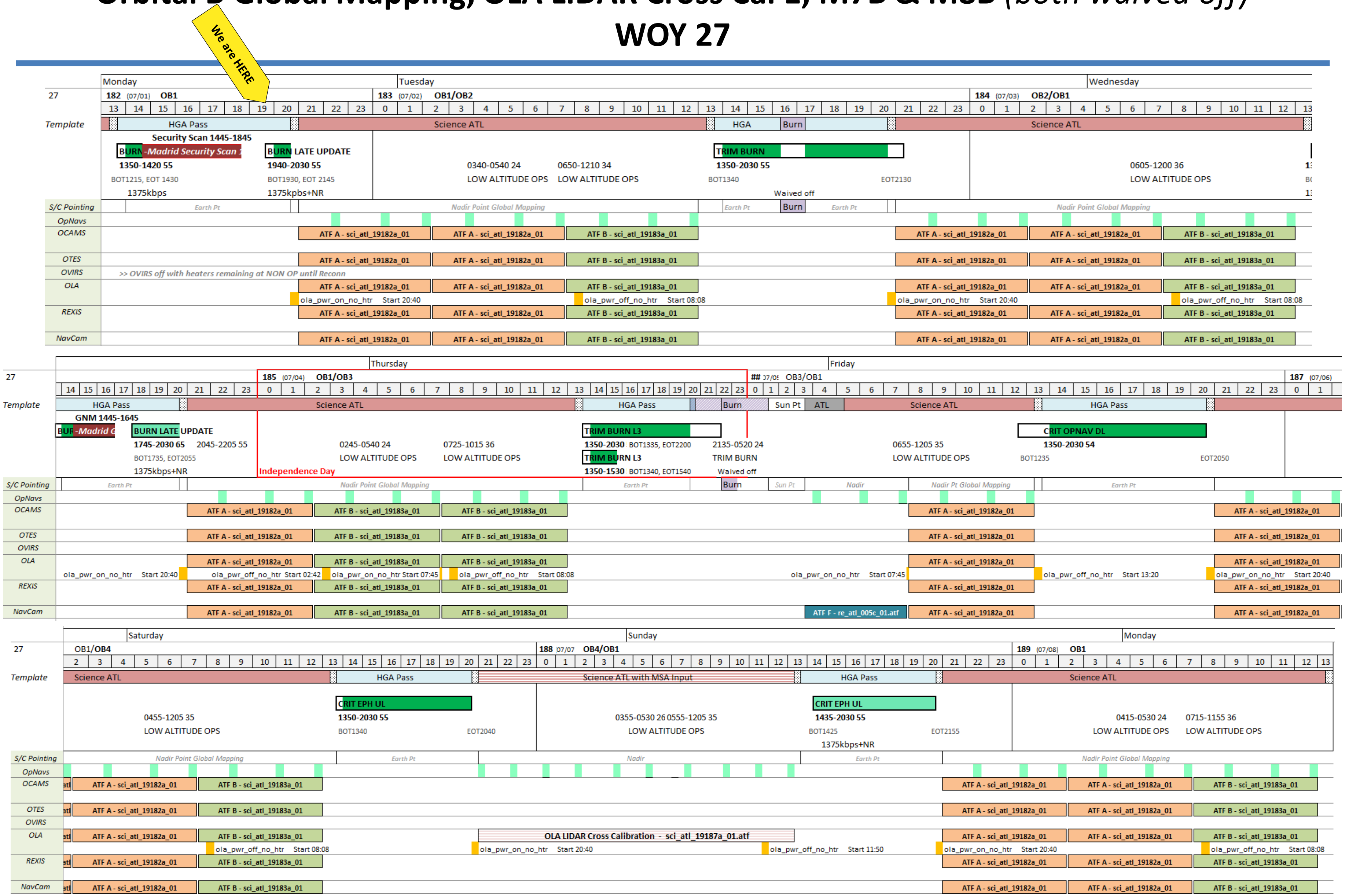
SPC/DSS	EQUIPMENT	ETRO
SPC60	RRT4	183/1500z
SPC10	RSR2	186/2300z
DSS54	NDA	236/1530z
DSS14	X500kw-R	310/2300z
SPC60	VSR	350/1648z
DSS63	EAC	355/1621z

Particle Imaging, OpNavs, M4B, M5B

WOY 26 *COMPLETE*



Orbital B Global Mapping, OLA LIDAR Cross Cal 1, M7B & M8B *(both waived off)*
WOY 27



<u>Mission stats as of 2019-06-26 (L+1021):</u>

- Earth Range: 1.11 AU (↑)
- Sun Range: 1.31 AU (↑)
- Bennu Range: 0.95 km (in orbit)
- One Way Light-Time: 00:09:15 hh:mm:s (↑)

Uplink Summary

UPLINK

WOY 27 (2019-182 – 2019-189)

- BG Seq, Sci Genies, Payload Sequences uplinked 2019-180

Ephemeris Updates

- Ephemeris Update: od159 uplinked 2019-180

Other Files

- thm_sensors_sci File for PolyCam CCD Survival Heater Set points uplinked on DOY 2019-172
- REXIS Hot Pixel Mask v03 uplinked 2019-172
- OLA LIDAR xCal sequences uplinked 2019-180
- LIDAR1 Power On Setup Sequence and Power Off Cleanup Sequence uplinked 2019-180

Orbital B Key

ATF A: OLA, PolyCam, OTES, REXIS, OpNav, and Particle Imaging
ATF B: Polycam, OTES, REXIS, OpNav, and Particle Imaging
ATF C: OTES, REXIS, OpNav, and Particle Imaging
ATF D: MapCam, OTES, REXIS, OpNav, and Particle Imaging
ATF E: OLA, OTES, REXIS, OpNav, and Particle Imaging
ATF F: OpNav + Particle Imaging Only

Execution Summary

Executed (times in UTC):

- 2019/180 (Saturday, June 29)
  - Nadir+1-deg Offset OpNav Only (Nadir Tagcams Landmark OpNavs/ 2 hrs), 2x1 NavCam Particle Imaging offset alonge terminator (4 images / ~25 min)
    - » # of NavCam OpNav images expected/**received** : 9 / **9**
    - » # of NavCam Particle images expected/**received**: 152 / **152**
- 2019/181 (Sunday, June 30)
  - Nadir+1-deg Offset OpNav Only (Nadir Tagcams Landmark OpNavs/ 2 hrs), 2x1 NavCam Particle Imaging offset alonge terminator (4 images / ~25 min)
    - » # of NavCam OpNav images expected/**received** : 9 / **9**
    - » # of NavCam Particle images expected/**received**: 152 / **152**
  - OLA_OPTICS and OLA_ELEC Preheat began ~17:00 UTC
  - Thm_sensors_sci_polycam10 (PolyCam Primary and Secondary Heater Set Pts) adjusted. Warmup began ~20:00.
- 2019/182 (Monday, July 1)
  - Nadir+1-deg Offset OpNav Only (Nadir Tagcams Landmark OpNavs/ 2 hrs), 2x1 NavCam Particle Imaging offset alonge terminator (4 images / ~25 min)
    - » # of NavCam OpNav images expected/**received** : 9 / **9**
    - » # of NavCam Particle images expected/**received**: 152 / **TBD**
  - Ocm_orb_b_reset (includes selecting Poly as active camera, setting the Orb B Poly Focus mechanism min/max positions, and moving to a nearby Orb B shutter position)
  - OTES Power-on ~13:20
  - REXIS Startup (includes REXIS Power-on, Loading of new Hot Pixel Mask, and running start_sci Part 1 and 2) ~13:20

Up Next (times In UTC):

- 2019/183 (Tuesday, July 2nd)
  - Start of Global Mapping for Orbital B. We will executed ~2 to 3 5.4 hour ATFs daily. ATFs will be optimized for data volume and downlink constraints during WOY 27. OLA Data will be routed to overflow into the OVIRS Data Partition. OVIRS will remain off during Orbital B.
  - Executes ATF A, A, B
    - # of NavCam OpNav images expected: 9
    - # of NavCam Particle images expected: 18
    - # of PolyCam images expected: 141
    - # of MapCam images expected: None
    - OTES Data Vol expected: 104.7 MB
    - OLA Data Vol expected: 1604 MB
    - REXIS Data Vol expected: 59.78 MB
- 2019/184 (Wednesday, July 3)
  - Executes ATF A, A, B
    - # of NavCam OpNav images expected: 9
    - # of NavCam Particle images expected: 18
    - # of PolyCam images expected: 141
    - # of MapCam images expected: None
    - OTES Data Vol expected: 104.7 MB
    - OLA Data Vol expected: 1604 MB
    - REXIS Data Vol expected: 59.78 MB

Downlink Summary

- *Current Data Rate: 1375 kbps*

Downlink

- Today's Partition Status :

	Part. Start Vol (MB)	New Data Vol (MB)	Partition Fill (MB)	Expected Partition Fill (%)	Current End Partition (%)	Comments
OpNav	0.00	99.37	99.37	14.20%	0.00%	
OTES	0.00	0.00	7.53	2.73%	0.00%	
REXIS	0.00	0.00	6.74	4.55%	0.02%	
OLA	0.00	0.00	0.00	0.00%	0.00%	
OVIRS	0.00	0.00	0.00	0.00%	0.00%	
OCAMS	0.00	1678.31	1678.31	45.64%	45.80%	
Tagcams/Overflow	0.00	0.00	3.51	0.44%	0.00%	

Downlink Summary

- ***Tomorrow's Data Rate: 1375 kbps***

Downlink

- Tomorrow's Expected Partition Status :

	Part. Start Vol (MB)	New Data Vol (MB)	Partition Fill (MB)	Expected Partition Fill (%)	Expected End Partition (%)	Comments
OpNav	0.00	99.37	99.37	14.20%	0.00%	
OTES	0.00	89.64	97.17	35.21%	0.00%	
REXIS	0.00	45.97	106.61	72.03%	0.00%	
OLA	0.00	858.00	926.00	100.00%	0.00%	
OVIRS	0.00	678.00	678.00	64.82%	0.00%	
OCAMS	1685.36	529.55	2221.96	60.17%	29.96%	
Tagcams/Overflow	0.00	0.00	3.51	0.44%	0.00%	

SMSA Outage

- **The SMSA is currently down.**
- **This may impact our ability to receive NavCam Particle images at the SPOC**
- **ETR Wednesday, July 3**

Need for Retransmit? Need for Replay?

- None

List of Unexpected Alarms, Watch Items, ISAs, PFRs

Unexpected Alarms

- None

New or Updated Watch Items, ISA's and PFR's

- **ISA # 10466 – TAGCAMS DOY 2019-175 Uncorrectable errors, rejected commands and images not transferred**
    - ISA Status: New
    - ISA Type: Spacecraft minor
    - ISA Criticality: 3 – minimal impact
- **ISA # 10201 - RW3 Digital Tach Variance & Low Voltage Red Alarms**
    - ISA Status: In Progress
    - ISA Type: Spacecraft minor
    - ISA Criticality: 3 – minimal impact
- **ISA #10004 - 1923 ote_spacecal_002 missing from payload bundle and weeklong softsim**
    - ISA Status: In Progress
    - ISA Type: Ground Minor
    - ISA Criticality: 3 – minimal impact
- **ISA # 9704 - 4 Uplinks Failed in Full-Duration SS Test**
    - ISA Status: **Monitor**
    - ISA Type: Ground Minor
    - ISA Criticality: 4 – no significant impact
- **ISA # 9628 – Red alarm notifications were not received by MSA personnel for the TAGCAMS safing event**
    - ISA Status: In Progress
    - ISA Type: Ground Minor
    - ISA Criticality: 3 – minimal impact
- **ISA # 8809 – SPOC FEDS to SPOCFLIGHT data delivery drop outs**
    - ISA Status: In Progress
    - ISA Type: Ground minor
    - ISA Criticality: 3 – minimal impact
- **ISA # 8767 - Re-occurrence: STL intermittent downlink issues during setup**
    - ISA Status: In Progress
    - ISA Type: Ground minor
    - ISA Criticality: 3 – minimal impact

Science Status and/or PI Status

Looking Ahead

	25							26							27							28						
	168	169	170	171	172	###	###	175	176	177	178	179	###	###	182	183	184	185	186	###	###	189	190	191	192	193	###	###
	6/17	6/18	6/19	6/20	6/21	###	###	6/24	6/25	6/26	6/27	6/28	###	###	7/1	7/2	7/3	7/4	7/5	7/6	7/7	7/8	7/9	7/10	7/11	7/12	###	###
	M	T	W	R	F	Sa	Su	M	T	W	R	F	Sa	Su	M	T	W	R	F	Sa	Su	M	T	W	R	F	Sa	Su
Milestones				Site 1 Selected																								
Week 8 - Tactical kickoff																												
Week 7 - SOS																												
Week 6 - J-A 1																												
Week 5 - J-A 2	xm1930 - Orbit B Global Week 4							xm1931 - Orbit B Global Week 5							xm1932 - Orbit C (Opnav, Particle Img Only)							xm1933 - Orbit C (Opnav, Particle Img Only)						
Week 4 - TCR approval, Handshake	xm1929 - Orbit B Global Week 3							xm1930 - Orbit B Global Week 4							xm1931 - Orbit B Global Week 5							xm1932 - Orbit C (Opnav, Particle Img Only)						
Week 3 - FA Kickoff	xm1928 - Orbit B Global Week 2							xm1929 - Orbit B Global Week 3							xm1930 - Orbit B Global Week 4							xm1931 - Orbit B Global Week 5						
Week 2 - Final Build/Delivery/Test	xm1927 - Orbit B Global Week 1							xm1928 - Orbit B Global Week 2							xm1929 - Orbit B Global Week 3							xm1930 - Orbit B Global Week 4						
Week 1 - Review/Uplink	xm1926 - Orbit B Particle Imaging 2							xm1927 - Orbit B Global Week 1							xm1928 - Orbit B Global Week 2							xm1929 - Orbit B Global Week 3						
Week 0 - Execution	**xm1925 - Orbit B Particle Imaging 1**							**xm1926 - Orbit B Particle Imaging 2**							**xm1927 - Orbit B Global Week 1**							**xm1928 - Orbit B Global Week 2**						

Looking Ahead – Science Observation Forecast (1 of 2)

Task Name	Related DP #	MRD	Baseline Finish	WOY BL Finish
Orbital B Science Observations				
Global Mapping Observations				
OLA Observations				
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/1/2019	2019-27
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/2/2019	2019-27
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/3/2019	2019-27
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/4/2019	2019-27
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/5/2019	2019-27
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/6/2019	2019-27
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/7/2019	2019-27
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/8/2019	2019-28
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/9/2019	2019-28
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/10/2019	2019-28
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/11/2019	2019-28
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/12/2019	2019-28
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/14/2019	2019-28
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/15/2019	2019-29
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/16/2019	2019-29
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/17/2019	2019-29
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/18/2019	2019-29
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/19/2019	2019-29
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/21/2019	2019-29
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/25/2019	2019-28
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/26/2019	2019-29
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/28/2019	2019-29
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/29/2019	2019-29
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/30/2019	2019-29
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	7/31/2019	2019-29
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	8/1/2019	2019-29
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	8/2/2019	2019-29
Shape & Tilt: OLA Scans (PRI.)	ALT-18, 5cm OLA shape model	115b	8/4/2019	2019-29
PolyCam Observations				
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/1/2019	2019-27
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/2/2019	2019-27
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/3/2019	2019-27
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/4/2019	2019-27
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/5/2019	2019-27
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/7/2019	2019-27
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/8/2019	2019-28
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/9/2019	2019-28
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/10/2019	2019-28
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/11/2019	2019-28
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/12/2019	2019-28
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/14/2019	2019-28
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/15/2019	2019-29

Looking Ahead – Science Observation Forecast (2 of 2)

Task Name	Related DP #	MRD	Baseline Finish	WOY BL Finish
Orbital B Science Observations				
Global Mapping Observations				
PolyCam Observations				
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/16/2019	2019-29
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/17/2019	2019-29
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/18/2019	2019-29
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/19/2019	2019-29
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/21/2019	2019-29
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/25/2019	2019-29
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/26/2019	2019-29
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/28/2019	2019-29
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/29/2019	2019-29
Sampleability imagery: PolyCam Images (PRI.)	RD-3	183c2	7/30/2019	2019-29
OTES Observations				
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/1/2019	2019-27
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/2/2019	2019-27
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/3/2019	2019-27
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/4/2019	2019-27
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/5/2019	2019-27
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/7/2019	2019-27
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/8/2019	2019-28
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/9/2019	2019-28
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/10/2019	2019-28
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/11/2019	2019-28
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/12/2019	2019-28
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/13/2019	2019-28
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/14/2019	2019-28
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/15/2019	2019-29
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/16/2019	2019-29
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/17/2019	2019-29
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/18/2019	2019-29
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/19/2019	2019-29
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/20/2019	2019-29
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/21/2019	2019-29
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/25/2019	2019-27
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/26/2019	2019-29
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/27/2019	2019-29
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/28/2019	2019-29
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/29/2019	2019-29
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/30/2019	2019-29
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	7/31/2019	2019-29
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	8/1/2019	2019-29
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	8/3/2019	2019-29
Local Thermal Inertia: OTES Spectra (PRI.)	SA-10	540	8/4/2019	2019-29

Go Backs / Additional Comments

- **We will wait to see how the first two days of Orbital B Global Mapping go before deciding whether to cancel the Daily Downlink this Friday, 7/5. Expect a decision on Wednesday, 7/3.**

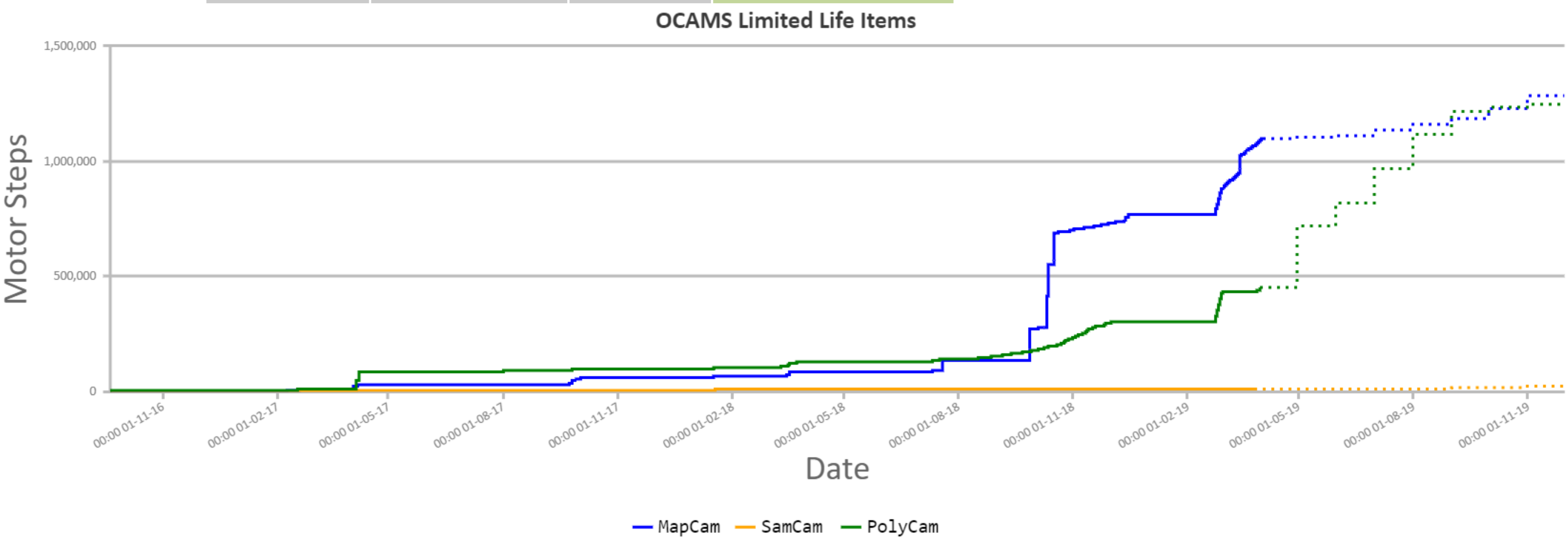
Instrument Weekly Status

- OCAMS (Bashar) – On and temperatures, voltages and currents look like they are supposed to. Temperatures at their higher setpoints.
- OLA (Emily) – Off and nominal, heaters have turned on, good and ready to go
- OTES (Chris) – On and heaters looks like they are warming to set point. We're good.
- OVIRS (Amy) – Off and nominal
- REXIS (Maddy) – On in science mode with telem off. Ready to take data.

OCAMS Mechanism Life Tracking

	Launch (steps)	Flight (steps)	NTE (steps)
MapCam	1057475	1583532	3400320
SamCam	738110	15246	958384
PolyCam	1775496	462567	8876160

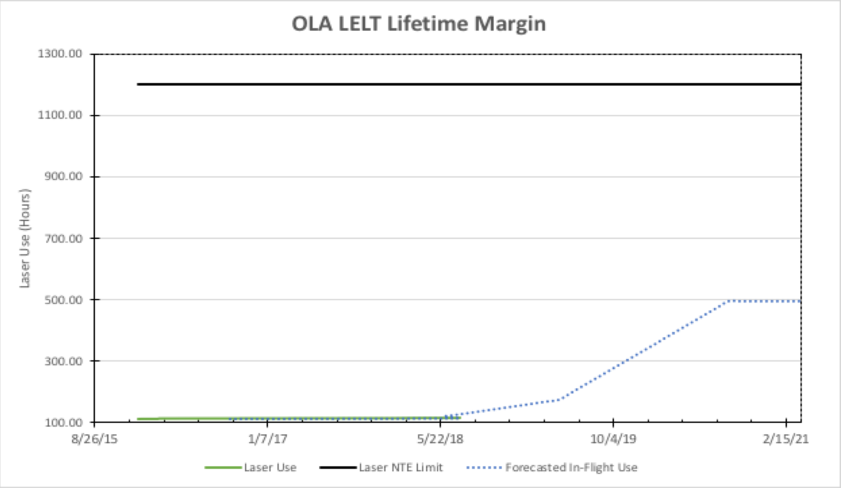
Status as of May 31, 2019

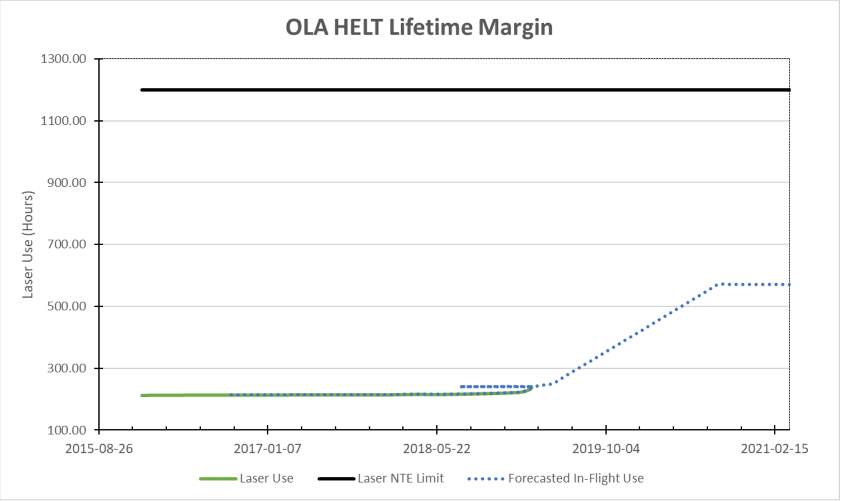


OLA Limited Life Laser Tracking

	Launch (hours)	Flight (hours)	NTE Margin (hours)
LELT	110.70	4.29	1,085.01
HELT	212.50	87.83	983.80

Status as of May 31, 2019
OLA Downlink Report WOY 21





SPOC Watch Item List

Todays Date:	06/10/2019	SPOC Watch Item List									
Status	Date Added	Date Removed	Item ID	Instrument	Title	Watch Item Description	Impact Type	Watch Item Age	ISA # or TCR #	Watch Item Action	Watch Item Action Plan
Open	4/3/18		Item10	OLA	OLA T0 Intensity	L+10 day, L+6 mo, and L+10 mo On-orbit checkouts showed that OLA's T0 signal intensity (Return Intensity) is an order of magnitude lower than expected as compared with pre-launch spacecraft and stand-alone test data. The L+18 calibrations revealed that the T0 intensity is at pre-launch levels on both the Gold and Silver sides of OLA. SPOC has opted to close ISA 2257 and continue to monitor T0 intensity as a watch item.	Instrument Performance	433		Watch	Monitor the T0 Intensity at the L+22 and L+30 OLA checkouts Update 08/06/2018: Based on results from L+18 and L+22, OLA has not been able to discern a temperature dependency with t0 Intensity value. We will continue to watch, but may never fully understand the cause. OLA can still operate as expected despite the inconsistency seen in the t0 value. Update 5/9/2019: The OLA Team continues to monitor the T0 intensity. Since it was first detected, the behavior of the HELT laser has remained constant through Orbital A and Detailed Survey. At this time, our recommendation is to maintain this item on the watch list through (at least) Orbital-B so as to observe behavior of the second laser (LELT).
Open	9/5/18		Item11	OCAMS	OCAMS Error on Polycam Startup	During power on of the OCAMS cameras there is the possibility of a 4 byte packet being created due to line noise. SPOCFLIGHT is unsure what to do with this packet, so flags it as an error. So far this has only occurred twice during flight, both times with Polycam but it is possible this could occur with any of the OCAMS cameras. As OCAMS has only been used sparingly during Cruise, it is not certain how frequently this error will occur.	Instrument Performance	278		Watch	Will monitor for future occurances across all of the OCAMS cameras and assess if any action is warranted. Update 5/7/2019: We are continuing to monitor this behavior. We have seen this issue crop up all when powering on PolyCam.

Anomaly Response & Status

ISA #	Date Created	Type	Priority	Title	Detailed Description - Action Plan	Notes	Status	Resolved Date	Need Date
10004	5/24/19	Ground minor	Normal	1923 ote_spacecal_002 missing from payload bundle and weeklong softsim	The 1923 SS test revealed ote_spacecal_002 was missing from our uplink product set for the week. As we started digging, we noticed it was not explicitly included in the UPBL under “Previously delivered sequences”. This has been true for the past couple of weeks, and somehow the engineers added it without the explicit call out in the UPBL. Unfortunately, this time it did not get included in the payload bundle for the week.		In Progress	TBD	TBD
9931	5/22/19	Spacecraft Minor	Normal	TAGCAMS Safed on DOY 142 (2019)	TAGCAMS was marked failed and powered off by the aliveness Fault Protection check on DOY 142. Below are the times associated with the failure: 19/142-12:40:14 - First aliveness count 19/142-12:42:15 - Persistence of 3 reached, TAGCAMS marked failed and safing block loaded (NFT was also marked failed as a side effect) 19/142-12:42:25 - TGM_MAIN_PWR off		In Progress	TBD	TBD
9895	5/21/19	Ground Major	High	SPOC systems down 5/20/2019	SPOC servers went down due to an unknown reason at approximately 20:40 on 5/2/19. This caused email and all other systems to cease functioning.		In Progress	TBD	TBD
9628	5/4/19	Ground minor	Normal	Red alarm notifications were not received by MSA personnel for the TAGCAMS safing event	Red alarm text messages and/or e-mails were not received for any of the red alarms that occurred on board due to the TAGCAMS safing event on DOY 124.		In Progress	TBD	TBD
8809	3/25/19	Ground minor	Normal	SPOC FEDS to SPOCFlight data delivery drop outs	OPnav group has reported: Data delivery drop outs for NavCam OpNavs from 3/24 2300 and 3/25 0100 epochs, and MapCam OpNavs from 3/24 2300 and 3/25 0100 and 0300 epochs. This data showed up on the SPOC FEDS but not on SPOCFlight. Initial replays were attempted but did not resolve the issue, which is expected given that the data was on the FEDS.		In Progress	TBD	TBD
7704	1/10/19	Spacceraft Major	Normal	Potential particles detected in NavCam images while in Bennu Orbit-A Phase	Investigation and detailed image analysis are underway to determine if particles detected in a pair of NavCam images taken on 01/06/19 may have originated from Bennu (or from other causes such as cold traps on the spacecraft, cosmic rays, etc.) MPB convened to determine if it was safe for the spacecraft to remain in orbit and agreed to remain in orbit but to collect more data for the remaining weeks of the orbit phase as a precaution. The details of the additional and more efficient and targeted observations are being worked.		In Progress	TBD	TBD
7518	1/4/19	Ground Major	High	CenturyLink National Outage	A nationwide CenturyLink outage did not allow normal ground activities for OSIRIS-REx including uplink, downlink, and moving data between elements. Outage Start December 27, 2018 08:40 GMT Outage Stop December 29, 2018 10:12 GMT Approximately 50 hours		Monitor	TBD	TBD
7246	12/6/18	Ground Minor	High	FOB connection down	A FOB connectivity issue was discovered when team members were looking for the 12/06/18 downlink of OpNav images (criticality 3) on the FOB. The OpNav images were obtained via SpocFlight. Investigation ongoing.		In Progress	TBD	TBD

Current ISA Status

#	Status	Priority	Subject	Assignee	Updated
10201	In Progress	Normal	RW3 Digital Tach Variance & Low Voltage Red Alarms	Mark Fisher	6/6/19 15:36
10004	In Progress	Normal	1923 ote_spacecal_002 missing from payload bundle and weeklong softsim	OSIRIS-REx Operations	6/7/19 8:56
9931	In Progress	Normal	TAGCAMS Safed on DOY 142 (2019)	Brent Bos	5/28/19 10:22
9704	Monitor	Normal	1921: 4 Uplinks Failed in Full-Duration SS Test	Mark Fisher	5/24/19 9:50
9628	In Progress	Normal	Red alarm notifications were not received by MSA personnel for the TAGCAMS safing event	Paul Falkenstern	5/28/19 10:37
8913	In Progress	Normal	Products Sent Outside Uplink Window (preceding the window start)	Mark Fisher	5/24/19 9:54
8809	In Progress	Normal	SPOC FEDS to SPOCFlight data delivery drop outs	Karl Harshman	5/10/19 9:58
8767	In Progress	Normal	Re-occurrence: STL intermittent downlink issues during setup	Mike Skeen	3/29/19 14:44
8672	In Progress	Normal	JPL Firewall Config Changed without LM Notification - affected Matlab license access/use and Maneuver Automation	Andy Calloway	5/24/19 9:56
8542	In Progress	Normal	Uplink Products Could not be Radiated due to SEQ Configuration Change	Mark Fisher	5/24/19 10:03
7994	Monitor	Normal	ACSTBT Overburn	Ryan Olds	5/10/19 9:45
7704	In Progress	Normal	Potential particles detected in NavCam images while in Bennu Orbit-A Phase	Ron Mink	3/28/19 12:37
7518	Monitor	High	CenturyLink National Outages	Andy Calloway	4/17/19 14:04
7246	In Progress	High	FOB connection down	Paul Falkenstern	5/21/19 14:27