

ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, December 31, 2018 thru Sunday, January 6, 2019

RGTs spanned: 49-161
Cycle 2

Items of Note:

All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and is in science mode. CAMS successfully mitigated its first laser conjunction event last week. ATLO3 users are evaluating release 203 for improvements over release 202.

****ELEMENT DETAILS BELOW****

CAMS/POD/PPD:

CAMS: CAMS successfully mitigated its first laser conjunction event last week. The event involved space asset 36119 (WISE) with TCA of 28-Dec-2018 20:59:32 and a laser miss distance of 0.84 km and estimated PI of 1.585%. A SAT which placed the laser into ARM mode for 5 seconds was created by the ISF and loaded onboard.

CAMS continues to monitor and screen for laser conjunction events in mission week 17.

CAMS is planning for mission week 18.

Daily operations continue nominally.

POD: POD has completed:

- Intermediate POD processing through GPS week 2033
- Final POD processing through GPS week 2031

POD is downloading ATLO3 files for DoY 329-349 from the SCF. We will perform calibration runs for these dates, compute time-varying pointing corrections, and provide final ANC products for these dates.

ISF:

All ATLAS housekeeping data is nominal
Laser 2 is firing at energy level 4 and in science mode
SADA in Airplane Mode
Spacecraft orientation : -X

Mission Planning:

MW17 ATS is loaded to the spacecraft and currently operating.
MW18 is being planned

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Activities during the past week:

ATS activities:

All ATLAS and pointing activities were routine and completed as planned

Real-time activities

Jan 3: Executed standing CAR91 to clear SBC errors.

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Upcoming activities:

MW17 scheduled activities in the ATS: MW17 Activities are attached

Retrograde DMU demo (no burn) on Jan 10,

Other Near-term activities:

ISF server patching - Wordpress security patching on webserver

PDB E.0.0.0 install
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Notes/Issues:

1. Due to furlough IOT is intermittently on-console; the team is monitoring status remotely.
  2. ISF server patching - trouble-shooting an issue for Redhat patching across RIONet. However this did not impact the quarterly scanning no medium or high vulnerabilities were detected.
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LTO Schedule:

All items remain on schedule except for 1st quarter Redhat OS patching - see issues.

2019 1st quarter scanning complete in December - no medium or high vulnerabilities were detected

PDB E.0.0.0 install in operations tentatively scheduled for Jan 11 - to be coordinated with the MOC.

#### **SIPS:**

The SIPS is operating nominally:

- Ingested and distributed Level 0 data to the ISF.
- Generated L1A and L1B products and distributed ATL02s to the ISF, POD, and SCF.
- Distributed ATL01s via special request to the SCF.

#### **ASAS:**

Continued reprocessing of 2018 on-orbit functional test data. This includes 2018-10-14, 2018-10-15, 2018-10-16, 2018-10-17 and 2018-10-19.

Waiting for 2018-12-12 data delivery to analyze the cycle and orientation change.

Prepared a version of Land Ice PGE for delivery to SIPS and provided test ATL06 outputs (generated in the ASAS playground) for evaluation.

Made some potential improvements to playground processing scripts.

Developed code to automatically generate Functional Test Reports for on-orbit data.

#### **L1A –ATL01**

Submitted alignment of VC5 star tracker STOH2 to the ASAS CCB.

#### **L1B- ATL02**

Received a sample CAL-47 that works. Awaiting delivery of full suite of updated CAL-47 products.

Evaluating ATBD QA check using on-orbit data.

#### **L2A-ALT ATL03**

Improved the flagging of TEP photons and their “removal” from consideration within ATL03 signal classification. Updated the code to also flag (as TEP) those photons within small band widths (< 29m).

Investigated the SDT-reported issue regarding photon heights outside of the band windows. Determined the ATL03-specific issue had to do with application of the atmosphere delay. Updated the code to correct the band top heights using the final\_geolocation method instead of simple derivatives. This

yielded significant improvement. The one remaining issue regarding photons outside of the band windows likely involves a TOF calibration constant in ATL02. This is under investigation.

Submitted TEP QA and TX pulse width issues to the ASAS CCB.

Completed implementation of static overrides for uncertainty values. This will be submitted to the ASAS CCB once testing is complete.

#### **L2A – ATM ATL04**

A PGE with the updated background method1 algorithm was delivered for testing in the ASAS playground.

Started the implementation of calibration method 2

#### **L3A-ATM ATL09**

No work

#### **L3B –ATM ATL16/17**

Continued developing unit tests.

#### **L3A- Land Ice ATL06**

Several bugs were fixed and prepared for CCB review.

Implemented the height window limitation issue and submitted to the ASAS CCB.

Implemented the ATL06 product format changes and submitted to the for ASAS CCB.

Working on final issues for next ASAS release.

#### **L3A Sea Ice ATL07/10**

Fixed bugs that caused a crash when processing on-orbit data.

Implemented product updates.

Implementing control override for multi-beam freeboard

Working on final issues for next ASAS release.

#### **L3A- Land ATL08**

Working on unit tests.

#### **L3A Ocean ATL12**

No work.

#### **L3A Inland Water ATL13**

Preparing issues for CCB review.

Continued implementing contingency unit test cases based on updated data provided by the SDT.

#### **SCF:**

All data from SDMS has been ingested and distributed. A list of available data at the SCF is attached as a PDF. Additional disks have been added to the cooler raid system. The ICESat-2 data is now available under /cooler/I2-ASAS/relxxx/ATLnnn on all iceproc nodes. A new version of the visualizer is available from the SCF website. It works with asav4.4 products. Work continued on making ATL03 subsetted products with indices and index references that on consistent with the subsetted data. This is still in testing.

#### **ATL02:**

Continued work on ATBD and data product issues; promoting issues for closure. Analysis of pre-yaw-flip and post-yaw-flip data is underway to check for any anomalies.

#### **ATL03:**

Analysis continues of the release 203 ATL03 data product; there are definite improvements over release 202.

## **ISF ACTIVITIES MISSION WEEK 017**

\* Not in science mode

^ Could affect science data quality

\* 2019/003:00:57:45.0000 TEP data collection for 3 minutes

^ 2019/003:02:12:28.0000 AMCS Cal for 2 minutes over Atlantic

\* 2019/003:02:32:02.0000 TEP data collection for 3 minutes

^ 2019/003:03:46:11.0000 AMCS Cal for 2 minutes over Atlantic

^ 2019/003:08:28:19.0000 AMCS Cal for 2 minutes over Atlantic

2019/003:09:59:55.0000 OCEANscan (22 minutes)

^ 2019/003:11:36:54.0000 AMCS Cal for 2 minutes over Atlantic

\* 2019/003:15:06:21.0000 TEP data collection for 3 minutes

^ 2019/003:15:15:00.0000 Stellar centroid image dump for 90 minutes (no stellar centroids)

\* 2019/003:16:40:39.0000 TEP data collection for 3 minutes

\* 2019/003:18:14:56.0000 TEP data collection for 3 minutes

\* 2019/003:19:49:13.0000 TEP data collection for 3 minutes

\* 2019/003:21:23:31.0000 TEP data collection for 3 minutes

2019/003:21:47:10.0000 OCEANscan (22 minutes)

\* 2019/003:22:57:48.0000 TEP data collection for 3 minutes

\* 2019/004:00:32:06.0000 TEP data collection for 3 minutes

^ 2019/004:01:46:49.0000 AMCS Cal for 2 minutes over Atlantic

\* 2019/004:02:06:23.0000 TEP data collection for 3 minutes

^ 2019/004:03:21:06.0000 AMCS Cal for 2 minutes over Atlantic

^ 2019/004:08:02:40.0000 AMCS Cal for 2 minutes over Atlantic

2019/004:09:34:16.0000 OCEANscan (22 minutes)

^ 2019/004:11:11:15.0000 AMCS Cal for 2 minutes over Atlantic

\* 2019/004:14:40:42.0000 TEP data collection for 3 minutes

\* 2019/004:16:14:59.0000 TEP data collection for 3 minutes

\* 2019/004:17:49:17.0000 TEP data collection for 3 minutes

\* 2019/004:19:23:34.0000 TEP data collection for 3 minutes

^ 2019/004:19:45:00.0000 Stellar centroid window dump for 90 minutes (no stellar centroids)

2019/004:21:21:31.0000 OCEANscan (22 minutes)

\* 2019/004:22:32:09.0000 TEP data collection for 3 minutes

\* 2019/005:00:06:26.0000 TEP data collection for 3 minutes

\* 2019/005:01:40:44.0000 TEP data collection for 3 minutes

^ 2019/005:02:55:27.0000 AMCS Cal for 2 minutes over Atlantic

^ 2019/005:07:40:47.0000 AMCS Cal for 2 minutes over Atlantic

2019/005:09:08:36.0000 OCEANscan (22 minutes)

^ 2019/005:10:45:35.0000 AMCS Cal for 2 minutes over Atlantic

2019/005:12:09:25.0000 RTWscan (90 minutes)

^ 2019/005:14:24:17.0000 Laser image dump over Antarctica for 6 minutes (no laser centroids)

\* 2019/005:15:49:20.0000 TEP data collection for 3 minutes

\* 2019/005:17:23:37.0000 TEP data collection for 3 minutes  
\* 2019/005:18:57:55.0000 TEP data collection for 3 minutes  
\* 2019/005:20:32:12.0000 TEP data collection for 3 minutes  
2019/005:20:55:51.0000 OCEANscan (22 minutes)  
\* 2019/005:22:06:29.0000 TEP data collection for 3 minutes  
\* 2019/005:23:40:47.0000 TEP data collection for 3 minutes  
\* 2019/006:01:15:04.0000 TEP data collection for 3 minutes  
^ 2019/006:02:29:47.0000 AMCS Cal for 2 minutes over Atlantic  
^ 2019/006:07:29:33.0000 AMCS Cal for 2 minutes over Atlantic  
^ 2019/006:08:45:39.0000 AMCS Cal for 2 minutes over Atlantic  
2019/006:10:17:14.0000 OCEANscan (22 minutes)  
\* 2019/006:15:23:40.0000 TEP data collection for 3 minutes  
\* 2019/006:16:57:58.0000 TEP data collection for 3 minutes  
\* 2019/006:18:32:15.0000 TEP data collection for 3 minutes  
\* 2019/006:20:06:32.0000 TEP data collection for 3 minutes  
\* 2019/006:21:40:50.0000 TEP data collection for 3 minutes  
2019/006:22:04:29.0000 OCEANscan (22 minutes)  
\* 2019/006:23:15:07.0000 TEP data collection for 3 minutes  
\* 2019/007:00:49:24.0000 TEP data collection for 3 minutes  
^ 2019/007:02:04:08.0000 AMCS Cal for 2 minutes over Atlantic  
\* 2019/007:02:23:42.0000 TEP data collection for 3 minutes  
^ 2019/007:08:19:59.0000 AMCS Cal for 2 minutes over Atlantic  
2019/007:09:51:34.0000 OCEANscan (22 minutes)  
^ 2019/007:11:28:34.0000 AMCS Cal for 2 minutes over Atlantic  
\* 2019/007:14:58:00.0000 TEP data collection for 3 minutes  
\* 2019/007:16:32:18.0000 TEP data collection for 3 minutes  
\* 2019/007:18:06:35.0000 TEP data collection for 3 minutes  
\* 2019/007:19:40:53.0000 TEP data collection for 3 minutes  
\* 2019/007:21:15:10.0000 TEP data collection for 3 minutes  
2019/007:21:38:49.0000 OCEANscan (22 minutes)  
\* 2019/007:22:49:27.0000 TEP data collection for 3 minutes  
\* 2019/008:00:23:45.0000 TEP data collection for 3 minutes  
^ 2019/008:01:38:28.0000 AMCS Cal for 2 minutes over Atlantic  
\* 2019/008:01:58:02.0000 TEP data collection for 3 minutes  
^ 2019/008:03:12:45.0000 AMCS Cal for 2 minutes over Atlantic  
^ 2019/008:07:54:19.0000 AMCS Cal for 2 minutes over Atlantic  
2019/008:09:25:55.0000 OCEANscan (22 minutes)  
^ 2019/008:11:02:54.0000 AMCS Cal for 2 minutes over Atlantic  
\* 2019/008:14:32:21.0000 TEP data collection for 3 minutes  
\* 2019/008:16:06:38.0000 TEP data collection for 3 minutes  
\* 2019/008:17:40:55.0000 TEP data collection for 3 minutes  
2019/008:18:24:34.0000 TOO (TOOid=798) for 2 minutes  
\* 2019/008:19:15:13.0000 TEP data collection for 3 minutes  
\* 2019/008:20:49:30.0000 TEP data collection for 3 minutes  
2019/008:21:13:10.0000 OCEANscan (22 minutes)  
\* 2019/008:22:23:48.0000 TEP data collection for 3 minutes

\* 2019/008:23:58:05.0000 TEP data collection for 3 minutes  
\* 2019/009:01:32:22.0000 TEP data collection for 3 minutes  
^ 2019/009:02:47:05.0000 AMCS Cal for 2 minutes over Atlantic  
^ 2019/009:07:30:37.0000 AMCS Cal for 2 minutes over Atlantic  
2019/009:09:00:15.0000 OCEANscan (22 minutes)  
^ 2019/009:10:37:14.0000 AMCS Cal for 2 minutes over Atlantic  
2019/009:12:01:03.0000 RTWscan (90 minutes)  
\* 2019/009:14:10:46.0000 TEP data collection for 3 minutes  
\* 2019/009:15:40:58.0000 TEP data collection for 3 minutes  
\* 2019/009:17:15:15.0000 TEP data collection for 3 minutes  
\* 2019/009:18:49:33.0000 TEP data collection for 3 minutes  
\* 2019/009:20:23:50.0000 TEP data collection for 3 minutes  
2019/009:20:47:30.0000 OCEANscan (22 minutes)  
\* 2019/009:21:58:07.0000 TEP data collection for 3 minutes  
\* 2019/009:23:32:25.0000 TEP data collection for 3 minutes