

ICESat-2 PROJECT SCIENCE OFFICE REPORT

Monday, January 7, 2019 through Sunday, January 13, 2019

RGTs spanned: 162-256

Cycle 2

Items of Note:

All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. CAMS had a busy week monitoring and handling several probable laser conjunctions. The 88S Traverse team arrived safely back at the South Pole on Sunday 1/13/2018 after a successful traverse!

****ELEMENT DETAILS BELOW****

CAMS/POD/PPD:

CAMS: CAMS week was very busy monitoring several probable conjunctions. Monday's screening for conjunctions showed a probable conjunction with the ISS on January 10, 2019. CAMS provided the MOC with 3 SAT files – 1 nominal, 1 with +5 degree slew and 1 with -5 degree slew for load selection pending screening on Tuesday. The MOC produced 3 ATS loads which were validated by CAMS. Tuesday morning's screening showed the probable conjunction with the ISS was no longer a threat. However, Tuesday's screening did produce 6 probable lasing conjunctions with several cube-sats. Due to the proximity of these conjunctions, the team decided the best course of action was to produce an SAT with the laser set to arm for each probable conjunction. The ISF produced this SAT and delivered it to the MOC. CAMS performed a final screening early Wednesday morning of these events and only 1 conjunction remained (43741 (FLOCK 3R 6)). The ISF produced a new SAT with only 1 laser to arm activity for this conjunction. The MOC created the ATS and CAMS validated the IOTL for the split load.

CAMS continues to monitor and screen for laser conjunction events in mission week 18.

CAMS is planning for mission week 19.

Daily operations continue nominally.

POD: Completed intermediate POD for GPS week 2034 and final POD for GPS week 2032.

Currently downloading ATL03 files from SCF covering GPS weeks 2029-2031, calibrations for this time period are forthcoming.

PPD: PPD evaluated a gyro only attitude solution and compared to those using the SSTs. The result indicates that both solutions show similar orbital variation which implies that the biases are not a function of an individual IMSC instrument.

Analysis of the LRS continues. The LRS stellar-side PAD solutions are now possible during eclipse periods despite the few number of stars in the FOV. Adaptations in the algorithm allow for a manual star identification until the system can automate itself. Currently we are comparing the LRS stellar-side results to those using the SSTs. Once more data is analyzed we will look to remove the chromatic aberration effect using the mitigation strategy established pre-launch.

LRS- laser side analysis is focused on understanding individual laser centroid motion and working on finding correlation to ATLO2 thermal, energy and housekeeping parameter trends. We've also recently noticed a decrease in the TAMS intensity over time. This decrease is not observed in the laser spots.

The ANC05 products through DOY 360 have been delivered and today DOY 361-005 will be sent to POD.

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:

MW18 ATS is loaded to the spacecraft and currently operating.
MW19 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  
Jan 10 : Retrograde DMU Demo executed successfully: 2019-010T12:05:50 to 2019-010T13:17:52

**Real-time activities**

Jan 9: Executed standing CAR91 to clear SBC errors.  
Jan 11: Set the ILRS Go/NoGo Flag to NoGo during the DMU Demo.  
Cleared PCE and SXP Errors with standing CAR102 (see Notes/Issues)

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Upcoming activities:

MW18 scheduled activities in the ATS: MW18 Activities are attached
DMU009 on Jan 17
Other Near-term activities:
PDB E.O.O install

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**Notes/Issues:**

1. Due to furlough IOT is intermittently on-console; the team is monitoring status remotely.
2. During the Retrograde DMU Demo, Flight Software SXP (Extrapolator task) errors occurred, after looking at the data the extrapolator task was not able to extrapolate for 1700 seconds which would be expected while the maneuver was occurring and slewing/rolling off-nadir 90 degrees. The errors were cleared with standing CAR 102. While this is not an issue for the SXP (there is no internal limit on how long to not be extrapolating) the team is considering whether to disable the SXP during future retrograde maneuvers.
3. 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

1st quarter Redhat OS patching - see issues.

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.
- Received “intermediate” ANC03/04/05 files from the POD on 01/14/2019 for DOY 350-360.
 - o Currently producing and distributing Rel 201 ATL03/04/09 products for these dates to the PSO and NSIDC.
- Started production of Rel. 203 ATL06 products from the Rel. 203 ATL03 products for DOY 287-328. These will be distributed to the SCF for PSO analysis.

ASAS:

Completed 2018-12-28 analysis of the cycle and orientation change. All seemed good.

The Land Ice PGE was installed in SIPS to generate evaluation data for the Land Ice Team.

Continued working improvements to playground processing scripts.

L1A –ATL01

No work

L1B- ATL02

Received the full suite of updated CAL-47 products. Generated a new ANC21 calibrations file and am testing the improved receiver/background sensitivity results.

Evaluating ATBD QA checks using on-orbit data.

L2A-ALT ATL03

Evaluating the identification of TEP photons and their “removal” from consideration within ATL03 signal classification. Recent updates include identifying (as TEP) those photons within small band widths (< 29m).

The ASAS CCB approved the implementation of static overrides for uncertainty values.

L2A – ATM ATL04

Completed implementation of calibration method 2

Evaluating calibration method 3

L3A-ATM ATL09

Comparing results of Ute DDA code vs ASAS code

L3B –ATM ATL16/17

Detected and fixed bugs related to polar latitude bands between 1 by 1 and 2 by 2 degree grids.

L3A- Land Ice ATL06

Preparing information to submit final issues for next ASAS release to ASAS CCB

L3A Sea Ice ATL07/10

Fixed a crash when processing on-orbit data.

Implemented control override for multi-beam freeboard

Preparing information to submit issues to ASAS CCB.

L3A- Land ATL08

Submitted DRAGANN improvement and evaluation to ASAS CCB

L3A Ocean ATL12

No work.

L3A Inland Water ATL13

Preparing issues for CCB review.

Continued contingency unit test case development based on results provided by the ST.

SCF:

The SCF has operated nominally. All data received from SIPS has been ingested and distributed. The product list of files available at the SCF is attached. Trending and browse plots have been posted routinely on the website along with data distribution reports.

Data on cooler

Requested data types have been copied to cooler. They are available on any of the iceproc nodes under /cooler/I2-ASAS/relxxx/ATLnn (or ANCnn) where xxx is the release name and nn is the 2-digit product identifier. All release 201, 202 and 203 data is available on cooler.

SCF Visualizer:

Work continued on modifications to the visualizer to allow users to define any parameter as a mask and to add curves to subplots after the tab is drawn for x-y type plots

SCF Subsetter:

Work continued on making the index in subsetted ATLO3 files refer to the index in the subsetted parameters.

ISF ACTIVITIES MISSION WEEK 018

* Not in science mode

^ Could affect science data quality

* 2019/010:01:06:42.0000 TEP data collection for 3 minutes

^ 2019/010:02:21:25.0000 AMCS Cal for 2 minutes over Atlantic

^ 2019/010:07:19:21.0000 AMCS Cal for 2 minutes over open ocean

^ 2019/010:08:37:17.0000 AMCS Cal for 2 minutes over open ocean

2019/010:10:08:52.0000 OCEANscan (22 minutes)

^ 2019/010:12:05:50.0000 Retrograde DMU DEMO for 73 minutes

* 2019/010:15:15:18.0000 TEP data collection for 3 minutes

* 2019/010:16:49:35.0000 TEP data collection for 3 minutes

* 2019/010:18:23:53.0000 TEP data collection for 3 minutes

* 2019/010:19:58:10.0000 TEP data collection for 3 minutes

^ 2019/010:20:15:00.0000 Stellar centroid window dump for 90 minutes (no stellar centroids)

2019/010:21:56:07.0000 OCEANscan (22 minutes)

* 2019/010:23:06:45.0000 TEP data collection for 3 minutes

* 2019/011:00:41:02.0000 TEP data collection for 3 minutes

^ 2019/011:01:55:45.0000 AMCS Cal for 2 minutes over Atlantic

* 2019/011:02:15:19.0000 TEP data collection for 3 minutes

^ 2019/011:08:11:36.0000 AMCS Cal for 2 minutes over open ocean

2019/011:09:43:12.0000 OCEANscan (22 minutes)

^ 2019/011:11:20:11.0000 AMCS Cal for 2 minutes over open ocean

* 2019/011:14:49:38.0000 TEP data collection for 3 minutes

* 2019/011:16:23:55.0000 TEP data collection for 3 minutes

* 2019/011:17:58:12.0000 TEP data collection for 3 minutes

* 2019/011:19:32:30.0000 TEP data collection for 3 minutes
* 2019/011:21:06:47.0000 TEP data collection for 3 minutes
2019/011:21:30:26.0000 OCEANscan (22 minutes)
* 2019/011:22:41:04.0000 TEP data collection for 3 minutes
* 2019/012:00:15:22.0000 TEP data collection for 3 minutes
^ 2019/012:01:30:05.0000 AMCS Cal for 2 minutes over Atlantic
* 2019/012:01:49:39.0000 TEP data collection for 3 minutes
^ 2019/012:03:04:22.0000 AMCS Cal for 2 minutes over Atlantic
^ 2019/012:07:45:56.0000 AMCS Cal for 2 minutes over open ocean
2019/012:09:17:31.0000 OCEANscan (22 minutes)
^ 2019/012:10:54:30.0000 AMCS Cal for 2 minutes over open ocean
2019/012:12:18:19.0000 RTWscan (90 minutes)
* 2019/012:14:23:57.0000 TEP data collection for 3 minutes
* 2019/012:15:58:14.0000 TEP data collection for 3 minutes
* 2019/012:17:32:32.0000 TEP data collection for 3 minutes
2019/012:18:16:09.0000 TOO (TOOid=802) for 2 minutes
* 2019/012:19:06:49.0000 TEP data collection for 3 minutes
* 2019/012:20:41:07.0000 TEP data collection for 3 minutes
2019/012:21:04:46.0000 OCEANscan (22 minutes)
* 2019/012:22:15:24.0000 TEP data collection for 3 minutes
* 2019/012:23:49:41.0000 TEP data collection for 3 minutes
* 2019/013:01:23:58.0000 TEP data collection for 3 minutes
^ 2019/013:02:38:42.0000 AMCS Cal for 2 minutes over Atlantic
^ 2019/013:07:20:33.0000 AMCS Cal for 2 minutes over open ocean
2019/013:08:51:51.0000 OCEANscan (22 minutes)
^ 2019/013:10:28:50.0000 AMCS Cal for 2 minutes over open ocean
2019/013:11:52:39.0000 RTWscan (90 minutes)
* 2019/013:14:01:49.0000 TEP data collection for 3 minutes
* 2019/013:15:32:34.0000 TEP data collection for 3 minutes
* 2019/013:17:06:51.0000 TEP data collection for 3 minutes
* 2019/013:18:41:09.0000 TEP data collection for 3 minutes
* 2019/013:20:15:26.0000 TEP data collection for 3 minutes
2019/013:20:39:05.0000 OCEANscan (22 minutes)
* 2019/013:21:49:43.0000 TEP data collection for 3 minutes
* 2019/013:23:24:01.0000 TEP data collection for 3 minutes
* 2019/014:00:58:18.0000 TEP data collection for 3 minutes
^ 2019/014:02:13:01.0000 AMCS Cal for 2 minutes over Atlantic
^ 2019/014:07:09:03.0000 AMCS Cal for 2 minutes over open ocean
^ 2019/014:08:28:52.0000 AMCS Cal for 2 minutes over open ocean
2019/014:10:00:27.0000 OCEANscan (22 minutes)
* 2019/014:15:06:53.0000 TEP data collection for 3 minutes
* 2019/014:16:41:11.0000 TEP data collection for 3 minutes
* 2019/014:18:15:28.0000 TEP data collection for 3 minutes
* 2019/014:19:49:45.0000 TEP data collection for 3 minutes
* 2019/014:21:24:03.0000 TEP data collection for 3 minutes
2019/014:21:47:42.0000 OCEANscan (22 minutes)

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* 2019/015:14:41:13.0000 TEP data collection for 3 minutes
* 2019/015:16:15:30.0000 TEP data collection for 3 minutes
* 2019/015:17:49:47.0000 TEP data collection for 3 minutes
* 2019/015:19:24:05.0000 TEP data collection for 3 minutes
* 2019/015:20:58:22.0000 TEP data collection for 3 minutes
2019/015:21:22:01.0000 OCEANscan (22 minutes)
* 2019/015:22:32:39.0000 TEP data collection for 3 minutes
* 2019/016:00:06:56.0000 TEP data collection for 3 minutes
^ 2019/016:01:21:40.0000 AMCS Cal for 2 minutes over Atlantic
* 2019/016:01:41:14.0000 TEP data collection for 3 minutes
^ 2019/016:02:55:57.0000 AMCS Cal for 2 minutes over Atlantic
^ 2019/016:05:00:00.0000 Stellar centroid image dump for 90 minutes (no stellar centroids)
^ 2019/016:07:37:31.0000 AMCS Cal for 2 minutes over open ocean
2019/016:09:09:06.0000 OCEANscan (22 minutes)
^ 2019/016:10:46:05.0000 AMCS Cal for 2 minutes over open ocean
* 2019/016:14:15:32.0000 TEP data collection for 3 minutes
* 2019/016:15:49:49.0000 TEP data collection for 3 minutes
* 2019/016:17:24:06.0000 TEP data collection for 3 minutes
* 2019/016:18:58:24.0000 TEP data collection for 3 minutes
* 2019/016:20:32:41.0000 TEP data collection for 3 minutes
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* 2019/016:22:06:58.0000 TEP data collection for 3 minutes
* 2019/016:23:41:16.0000 TEP data collection for 3 minutes