

ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, April 15, 2019 thru Sunday, April 21, 2019

RGTs spanned: 256-362
Cycle 3

Items of Note:

All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. Members of the PSO participated in the bi-annual ICESat-2 science team meeting this week in Boulder, CO (hosted by NSIDC); we heard overall mission updates, ATLAS performance and trending updates, preliminary science analyses and results from data we've seen so far, and plans for developing the remaining upper-level data products (i.e., gridded products, aggregated time series). ASAS found an issue where a test calibration product was accidentally used to create the v951 ATL02s. This causes a centimeter-level height bias by the time it ripples into v951 ATL03s.

****ELEMENT DETAILS BELOW****

CAMS/POD/PPD:

CAMS: CAMS continues to plan and monitor for mission weeks 32 and 31, respectively.

Latest RGT pointing analysis has shown that ICESat-2 is straddling the RGT successfully.

CAMS updated the Constraint Monitoring code to provide more general information of individual assets during preliminary screening as well as screening ellipse sizing versus prediction time.

POD: POD performed calibration runs using gyro timing bias corrected ANC05 files from PPD from the beginning of the mission through February 23rd. This allowed us to observe the change in the mean roll/pitch pointing biases over time as well as the remaining orbital variation after the means were removed. Results will be used to provide an updated set of calibrated ANC products.

ISF:

All ATLAS housekeeping data is nominal

Laser 2 is firing at energy level 4 and in science mode
WTEM Peak to Edge Ratio: 1.22
Laser 2 Temperature Error: -0.26C
SADA in Sailboat Mode
Spacecraft orientation: - X

Mission Planning:

MW32 ATS is loaded to the spacecraft and currently operating, it includes additional RTW scans for POD/PPD

MW33 is being planned, it will include multiple TOOs.

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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:

Daily / as-need: Executed standing CAR 91 and CAR 102 to clear SBS PCE and SXP errors.

2019/108&109 WG1 Cert (note 1)

Other Activities:

DMU 0014 beginning at 2019/106:18:59:23 and lasting 75 minutes

Continued to investigate the increased SBS errors (TRACKSTAT). Analysis of the instrument schedule shows that the time of the events cannot be correlated to instrument calibration activities while analysis of the centroid data is showing the likelihood of the events being correlated to a hot pixel in the image.

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Next week's ATLAS activities:

Routine instrument and pointing calibration scheduled activities are in the MW32 ATS.

Other Near-term activities:

ASET/ has their completed analysis of the test of the v7a on board receiver algorithm parameters and have additional updates based upon that data and input from the PSO. These updates will be v7b parameters and will go through ground testing and be tested from the ATS similar to the V7a testing. This will mostly likely be part of MW35.

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Notes/Issues:

1. WG1 testing is in support of the PTP recertification and consists of verifying telemetry and command connections from the MOC and ISF to WG1 during real-time contacts.

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LTO Schedule:

All items remain on schedule

ATLASCCR002 PDB E.0.1 install in operations to be Boarded at FOT CCB NET April 24

SIPS:

- The SIPS is operating nominally:
 - Ingested and distributed Level 0 data to the ISF.
 - Generated Release 203 L1A and L1B products and distributed ATL02s to the ISF, POD, and SCF.
 - Distributed selected ATL01s to the ISF and SCF by special request.
 - Generated Release 208 (rapids) ATL03 using ANC03/04/05 files from the CAMS.
 - Distributed ATL03 (rapids) to the SCF.
- Started SIPS Build 4.1 informal testing on the SIPS Integration Test branch
 - Using ASAS V5.1 (part 2) and SDMS V6.15.0 & Atlas V1.13.0

ASAS:

Published v951 test data to SCF (ATL02->ATL13). Found an issue where a test calibration product was accidentally used to create the v951 ATL02s. This causes a centimeter-level height bias by the time it ripples into v951 ATL03s.

Significantly improved the performance of inland water PGE.

All functional/integration testing for ASAS v5.1 has passed.

Preparing to deliver ASAS v5.1 to SIPS.

SCF:

The SCF is operating nominally. Data for releases 203, 207, and 208 are being ingested and distributed to users as they are processed and match users' requests.

* Data Management -- We monitoring the ingest of release 203, 207, 208, and 951 products. We are also closely tracking available disk space to ensure that the ingest and distribution of products proceeds smoothly.

ATL02/Instrument Science:

Analysis of returns from features on the ground that are small compared to the ATLAS beam diameter has yielded beam profiles consistent with pre-launch measurements.

Analysis of solar background count rates over the first 6 months of the mission has yielded values that roughly agree with pre-launch modeling, within the limitations of the modeling method.

The latest ATLAS performance and trends were reported at the ICESat-2 Science Team meeting.

Work continues on a new version of CAL 49 (receiver channel skews). The changes were not included in Release 203 of ATL02 because of testing discrepancies.

Review comments are being incorporated into a new version of the ATL02 ATBD for final review before release.

ATL03:

Evaluation of rapid release 208 continued and evaluation of ASAS rel951 began with few to no issues to report. At the science team meeting in Boulder, we collected idea for better QA metrics/assessments for ATL03, as well as revisiting the ICESat-2 data product “lexicon” for better agreement of commonly used terms across data product related publications/ATBDs and ways to improve the ATL03 “known issues/features” documentation prior to public data release in May.

ISF ACTIVITIES MISSION WEEK 032:

* Not in science mode

^ Could affect science data quality

- * 2019/108:01:59:29.0000 TEP data collection for 3 minutes
- ^ 2019/108:02:51:50.0000 AMCS Cal for 2 minutes over open ocean
- * 2019/108:03:33:46.0000 TEP data collection for 3 minutes
- 2019/108:04:23:25.0000 OCEANscan (22 minutes)
- * 2019/108:05:08:04.0000 TEP data collection for 3 minutes
- ^ 2019/108:06:00:24.0000 AMCS Cal for 2 minutes over open ocean
- * 2019/108:06:42:21.0000 TEP data collection for 3 minutes
- 2019/108:07:24:13.0000 RTWscan (90 minutes)
- * 2019/108:09:32:20.0000 TEP data collection for 3 minutes
- * 2019/108:09:50:56.0000 TEP data collection for 3 minutes
- 2019/108:16:10:40.0000 OCEANscan (22 minutes)
- 2019/108:16:40:30.0000 TOO (TOOid=920) for 3 minutes
- * 2019/108:20:32:20.0000 TEP data collection for 3 minutes
- ^ 2019/108:21:44:36.0000 AMCS Cal for 2 minutes over open ocean
- ^ 2019/108:22:13:24.0000 VBG sweep in Science mode for 3 minutes
- * 2019/108:22:25:15.0000 TEP data collection for 3 minutes
- * 2019/108:23:59:32.0000 TEP data collection for 3 minutes
- * 2019/109:01:33:49.0000 TEP data collection for 3 minutes
- ^ 2019/109:02:38:34.0000 AMCS Cal for 2 minutes over open ocean
- * 2019/109:03:08:07.0000 TEP data collection for 3 minutes
- ^ 2019/109:04:00:28.0000 AMCS Cal for 2 minutes over open ocean
- * 2019/109:04:42:24.0000 TEP data collection for 3 minutes
- 2019/109:05:24:40.0000 TOO (TOOid=920) for 3 minutes
- 2019/109:05:32:03.0000 OCEANscan (22 minutes)

* 2019/109:06:16:42.0000 TEP data collection for 3 minutes
* 2019/109:07:50:59.0000 TEP data collection for 3 minutes
* 2019/109:09:25:16.0000 TEP data collection for 3 minutes
* 2019/109:10:40:56.0000 TEP data collection for 3 minutes
2019/109:17:19:18.0000 OCEANscan (22 minutes)
* 2019/109:20:06:40.0000 TEP data collection for 3 minutes
^ 2019/109:21:18:57.0000 AMCS Cal for 2 minutes over open ocean
^ 2019/109:21:47:45.0000 VBG sweep in Science mode for 3 minutes
* 2019/109:21:59:35.0000 TEP data collection for 3 minutes
* 2019/109:23:33:53.0000 TEP data collection for 3 minutes
* 2019/110:01:08:10.0000 TEP data collection for 3 minutes
* 2019/110:02:42:28.0000 TEP data collection for 3 minutes
^ 2019/110:03:34:48.0000 AMCS Cal for 2 minutes over open ocean
* 2019/110:04:16:45.0000 TEP data collection for 3 minutes
2019/110:05:06:24.0000 OCEANscan (22 minutes)
* 2019/110:05:51:48.0000 TEP data collection for 3 minutes
* 2019/110:07:26:54.0000 TEP data collection for 3 minutes
* 2019/110:09:01:26.0000 TEP data collection for 3 minutes
* 2019/110:10:15:17.0000 TEP data collection for 3 minutes
2019/110:16:53:39.0000 OCEANscan (22 minutes)
* 2019/110:19:41:01.0000 TEP data collection for 3 minutes
^ 2019/110:20:53:18.0000 AMCS Cal for 2 minutes over open ocean
* 2019/110:21:15:18.0000 TEP data collection for 3 minutes
^ 2019/110:22:27:35.0000 AMCS Cal for 2 minutes over open ocean
* 2019/110:23:10:31.0000 TEP data collection for 3 minutes
* 2019/111:00:44:52.0000 TEP data collection for 3 minutes
* 2019/111:02:19:13.0000 TEP data collection for 3 minutes
^ 2019/111:03:09:09.0000 AMCS Cal for 2 minutes over open ocean
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* 2019/112:00:19:18.0000 TEP data collection for 3 minutes
* 2019/112:01:53:36.0000 TEP data collection for 3 minutes
^ 2019/112:02:43:41.0000 AMCS Cal for 2 minutes over open ocean
* 2019/112:03:27:53.0000 TEP data collection for 3 minutes
^ 2019/112:04:18:02.0000 AMCS Cal for 2 minutes over open ocean

^ 2019/112:04:30:00.0000 Stellar centroid window dump for 90 minutes (no stellar centroids)
^ 2019/112:06:00:01.0000 AMCS Cal for 2 minutes over open ocean
2019/112:06:06:00.0000 TOO (TOOid=916) for 3 minutes
^ 2019/112:06:09:27.0000 AMCS Cal for 2 minutes over open ocean
* 2019/112:06:34:01.0000 TEP data collection for 3 minutes
* 2019/112:08:08:18.0000 TEP data collection for 3 minutes
* 2019/112:09:22:33.0000 TEP data collection for 3 minutes
* 2019/112:09:45:02.0000 TEP data collection for 3 minutes
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* 2019/112:22:16:55.0000 TEP data collection for 3 minutes
* 2019/112:23:51:12.0000 TEP data collection for 3 minutes
* 2019/113:01:25:30.0000 TEP data collection for 3 minutes
^ 2019/113:02:00:00.0000 Stellar centroid image dump for 90 minutes (no stellar centroids)
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* 2019/113:21:51:15.0000 TEP data collection for 3 minutes
* 2019/113:23:25:33.0000 TEP data collection for 3 minutes
* 2019/114:00:59:50.0000 TEP data collection for 3 minutes
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