

**ICESat-2 PROJECT SCIENCE OFFICE REPORT**  
**Monday, April 22, 2019 thru Sunday, April 28, 2019**

RGTs spanned: 363-469  
Cycle 3

**Items of Note:**

All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. ASAS v5.1 was delivered to SIPS for integration and acceptance testing, and initial v951 test data was delivered to SCF but subsequently replaced when it was discovered the original data were processed with a test version of the receiver skew calibrations. The replacement v951 data, currently on SCF, uses the same receiver skew calibrations as v950 (and 205). All elements (specifically SIPS and ASAS) are actively preparing for public data release next month with acceptance testing, final algorithm modifications, and data product quality assessment.

**\*\*ELEMENT DETAILS BELOW\*\***

**CAMS/POD/PPD:**

CAMS: Regular CAMS operations continue with constraint and conjunction monitoring for mission week 33, and mission planning for mission week 34.

POD: Regular POD operations continue. Final POD was completed for GPS weeks 2046 & 2047. Intermediate POD was completed for GPS weeks 2047 & 2048. All results appear nominal.

POD has continued to perform calibration runs using gyro timing bias corrected ANC05 files. We're working on generating solutions during distinct time periods (pre/post AMSC calibrations), which will include time-varying mean roll/pitch biases and orbital variation.

PPD: PPD is investigating the potential correlation between AMCS maneuvers and related laser/TAMS motion to identified geolocation offsets on the ground. PPD also continues analysis on the LRS stellar side performance characterization.

Updated ANC05s with timing corrections have been delivered to POD for support of r209 and are currently on the normal processing cadence (e.g. 20 days latency from ATL02 delivery)

**ISF:**

All ATLAS housekeeping data is nominal  
Laser 2 is firing at energy level 4 and in science mode  
WTEM Peak to Edge Ratio: 1.18  
Laser 2 Temperature Error: -0.28C  
SADA in Sailboat Mode  
Spacecraft orientation: - X

Mission Planning:  
MW33 ATS is loaded to the spacecraft and currently operating  
MW34 is being planned, and will include DMU15 on 2019/05-02. All activities were deconflicted with OIB.

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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-needed: Executed standing CAR 91 and CAR 102 to clear SBS PCE and SXP errors.  
2019/112, 113 and 116 WG1 and AS2 Cert (note 1)

2019/113 the ISF T&C servers were unable to communicate to the Ops servers. The interruptions were tracked to an unintended consequence of NASCOM upgrades to two RIONet switches. Service was restored later that evening, and there were no lasting impacts to ISF operations.

Other Activities:  
Testing splitting the PMT processing by ATLAS product type to improve efficiency - Acceptance tests started on April 23 and will run for several days.

Investigating increased SBS errors (TRACKSTAT) , these are related to hot pixels; not tied to any instrument events.

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Next week's ATLAS activities:  
Routine instrument and pointing calibration scheduled activities are in the MW33 ATS.

Other Near-term activities:  
DMU15 will take place on 2019-05-02 (MW34)

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 and AS2 testing is in support of the PTP recertification and consists of verifying telemetry and command connections from the MOC and ISF to WG1/AS2 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

**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.
- SIPS Build 4.1 TRR was conducted on April 26 and is now in Acceptance Testing
  - Using ASAS V5.1 (part 2) and SDMS V6.15.0 & Atlas V1.13.0

**ASAS:**

ASAS v5.1 was delivered to SIPS for integration and acceptance testing.

The next ASAS version is scheduled for code freeze in mid-July 2019.

The initial v951 test data was delivered to SCF but subsequently replaced when it was discovered the original data were processed with a test version of the receiver skew calibrations. The replacement v951 data, currently on SCF, uses the same receiver skew calibrations as v950 (and 205).

Work continued on updated receiver skew corrections.

Worked an issue in the calculation of first photon bias for land ice. The estimated number of pulses in an inland ice segment is not being computed accurately.

Other developers are working on code cleanup and beginning work on high priority issue for the next release.

**SCF:**

The SCF is operating nominally. Data for releases 951 and 208 are being ingested and distributed, and disk space issues are being worked to ensure this continues smoothly. The SCF software may need updating to handle data products produced with ASAS v5.1 software; this is being examined as needed. A few possible effects on the Subsetter have been identified and are being worked. A file listing the current SCF data holdings is attached.

\* Data Management -- Some possible issues with QA trending, potentially due to changes in the 951 data products, are being worked. Some modifications to the scripts and/or SDMS software configuration are under consideration; these would improve performance and/or provide better control over running jobs but need sufficient testing before they can be brought into operations. Free disk space is running low, but a general plan is in place for handling the situation.

\* Subsetter -- Recent testing with the release 950 and 951 data have shown some possible issues that are being worked. Most appear to be relatively minor, but one or two will need further investigation.

### **ATL02/Instrument Science:**

Tim Cole, who led the ATLAS pre-launch calibration effort, will be concluding his ICESat-2 work effective May 1. During the past week, he has released many revised Calibration Product Description documents and a few updated calibration data files. These will be posted on the SCF shortly.

Two walkthroughs of the ATL02 ATBD were held, with a final walkthrough scheduled for April 30 in preparation for release for wider review by May 3.

Work continues on resolving discrepancies between results of different test approaches for CAL 49 (receiver channel skews).

### **ATL03:**

Quality assessment of the ASAS rel951 test granules revealed no major issues with ATL03 processing and output. We are working on improving our ATL03 "known issues/features" document prior to public data release, as well as making sure the users' guide developed by NSIDC is as accurate as possible.

### **ISF ACTIVITIES MISSION WEEK 033:**

\* Not in science mode

^ Could affect science data quality

\* 2019/115:02:08:28.0000 TEP data collection for 3 minutes

^ 2019/115:03:03:36.0000 AMCS Cal for 2 minutes over open ocean

\* 2019/115:03:42:46.0000 TEP data collection for 3 minutes

2019/115:04:32:24.0000 OCEANscan (22 minutes)

\* 2019/115:05:17:03.0000 TEP data collection for 3 minutes

^ 2019/115:06:12:17.0000 AMCS Cal for 2 minutes over open ocean

\* 2019/115:06:51:20.0000 TEP data collection for 3 minutes

\* 2019/115:08:25:37.0000 TEP data collection for 3 minutes

\* 2019/115:09:38:50.0000 TEP data collection for 3 minutes

2019/115:16:19:40.0000 OCEANscan (22 minutes)  
^ 2019/115:20:22:43.0000 AMCS Cal for 2 minutes over open ocean  
\* 2019/115:20:38:52.0000 TEP data collection for 3 minutes  
^ 2019/115:21:55:45.0000 AMCS Cal for 2 minutes over open ocean  
^ 2019/115:22:01:00.0000 Stellar centroid window dump for 90 minutes (no stellar centroids)  
\* 2019/116:00:08:31.0000 TEP data collection for 3 minutes  
\* 2019/116:01:42:49.0000 TEP data collection for 3 minutes  
^ 2019/116:02:38:48.0000 AMCS Cal for 2 minutes over open ocean  
\* 2019/116:03:17:06.0000 TEP data collection for 3 minutes  
2019/116:04:06:45.0000 OCEANscan (22 minutes)  
\* 2019/116:04:51:23.0000 TEP data collection for 3 minutes  
^ 2019/116:05:47:29.0000 AMCS Cal for 2 minutes over open ocean  
\* 2019/116:06:25:41.0000 TEP data collection for 3 minutes  
\* 2019/116:07:59:58.0000 TEP data collection for 3 minutes  
\* 2019/116:09:13:11.0000 TEP data collection for 3 minutes  
\* 2019/116:09:34:15.0000 TEP data collection for 3 minutes  
2019/116:15:54:00.0000 OCEANscan (22 minutes)  
\* 2019/116:20:15:39.0000 TEP data collection for 3 minutes  
^ 2019/116:21:30:55.0000 AMCS Cal for 2 minutes over open ocean  
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