

**ICESat-2 PROJECT SCIENCE OFFICE REPORT**  
**Monday, April 1, 2019 thru Sunday, April 7, 2019**

RGTs spanned: 42-148  
Cycle 3

**Items of Note:**

All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. Following acceptance testing, SIPS started production of Rel 208 ATLO3s (rapids) from April 5 (for April 3 onwards). They are being distributed to the SCF. PPD (and POD) has determined that the fix for an identified timing bias is correctly applied.

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

**CAMS/POD/PPD:**

**CAMS:** Regular CAMS operations continue with constraint and conjunction monitoring for mission week 29, and mission planning for mission week 30. Mission Week 030 required the creation of an additional SAT for a split ATS load due to an HIE with the ISS on April 6, 2019. The team agreed the best approach was to set the laser to ARM to mitigate the event.

**POD:** Regular operations continue. Final POD was completed for GPS week 2044. Intermediate POD was completed for GPS week 2046. All results look nominal.

Calibration solutions were generated using the post yaw-flip gyro timing bias corrected ANC05 products provided by PPD. The constant pitch bias solution is now consistent across the yaw-flip using these gyro timing bias corrected ANC05 products.

**PPD:** PPD (and POD) has determined that the fix for the identified timing bias is correctly applied. PPD is sending the new ANC05s to POD for the Oct-Dec timeframe and will start processing data for subsequent dates next week.

**ISF:**

All ATLAS housekeeping data is nominal

Laser 2 is firing at energy level 4 and in science mode  
WTEM Peak to Edge Ratio: 1.173  
Laser 2 Temperature Error: -0.19C  
SADA in Sailboat Mode  
Spacecraft orientation : - X

Mission Planning:

MW30 ATS is loaded to the spacecraft and currently operating, it includes additional RTW scans for POD/PPD

MW31 is being planned, it will include additional RTW scans for POD/PPD and a TOO.

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Activities during the past week

ATS activities:

All ATLAS and pointing activities were routine and completed as planned

2019/091:19:46 The SC performed Inclination maneuver 2 (~74 minute activity)

The ISF worked with the ICESat2 team to prepare a split ATS which includes a laser to ARM sequence to mitigate a possible laser conjunction with the ISS 2019/096/12:41 UTC

Real-time activities:

Daily / as-need: Executed standing CAR 91 to clear SBC errors.

2019/093/15:11 Executed CAR 307 to upload parameter test files (note 1)

2019/093/18:19 Executed standing CAR 266 to update the VBG temperature setpoint (note 2)

2019/094/14:53 Executed CAR 307 to remove parameter test files (note 1)

2019/094/14:53 Executed standing CAR 266 to update the VBG temperature setpoint (note 2)

2019/094/14:53 Executed standing CAR 102 to reset PCE PMT errors

2019/095/15:53 Executed standing CAR 266 to update the VBG temperature setpoint (note 2)

Other Activities:

Continued to investigate SBS errors (TRACKSTAT), working with the ASET.

Updated FASTX on iceisat1 to improve stability and performance

Met with ASET and the PSO to discuss the performance trending and monitoring activities for March,

including working discussions on VBG TEP only sweeps, AMCS Cal and LRS stellar and laser side analysis efforts, laser conjunction mitigation considerations, and other trending studies.

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Next week's ATLAS activities:

Routine instrument and pointing calibration scheduled activities are in the MW30 ATS. MW30 includes FSW Receiver Algorithm parameter testing and extra RTW scans for the evaluation of the ATLAS bias values.

Other Near-term activities:

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Notes/Issues:

1. Parameter test files were uploaded and then removed in support of the Rx onboard algorithms test in MW30 to improve data collection over the oceans. The test sequent ran from the ATS as follows:

2019/094:05:00:00.0000 through 2019/094:05:01:54.0000 Setup and start test  
2019/094:09:02:00.0000 test completed  
2019/094:09:02:00.0000 through 2019/094:09:03:14.0000 Revert back to defaults and go back to normal science mode.

2. The ISF altered ASET to the fact that the WTEM peak to edge ratio was trending down from the desired 1.2 and generating occasional yellow limits. ASET directed the ISF to make a series of VBG setpoint changes over a 3 day period, 62.86, 62.96, and 63.10 to get the peak to edge ratio back to 1.2. At this time the ratio is trending up, the ISF will continue to monitor the ratio and adjust the VBG setpoint as necessary.

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LTO Schedule:

All items remain on schedule except PDB E.O.1 installation in ops to be coordinated with the MOC.

**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.
  - Generating ATL03 (rapids) using ANC03/04/05 files from the CAMS.
  - Distributing ATL03 the SCF.
- Installed SIPS Build 4.0.2 (with ASAS V5.1 Part 1) in Ops on April 5.
- Reprocessed Rel 203 ATL01 and ATL02s from Oct 14, 2018 until real-time.
- Started production of Rel 208 ATL03s (rapids) from April 5 (for April 3 onwards). They are being distributed to the SCF.

**ASAS:**

Created pre-release test products for 2018-10-18.

ATL01 - Installed into SIPS to produce release 203

ATL02 - Installed into SIPS to produce release 203. Continuing to work receiver skews.

ATL03 - Installed into SIPS to produce release 207/208. Working on a possible granule seaming issue.

ATL04/09 - Working on the ATL09 DDA control parameters.

ATL06 - Completed the first photon bias update. Addressed issue with inconsistent flag values & invalid values. Wrapping for release.

ATL07/ATL10 - Fixed the ATL07 infinite loop. Addressed tide/dac issues. Implemented beam-specific gain, specular return and sea level pressure. Working on ATL10 granule boundaries.

ATL08 - Completed conversion of ATL08 to along-track regions and implemented minimum photon count filtering. Wrapping for release.

ATL12 - Addressed tide/dac issues. Working on sea state bias and SWH.

ATL13 - Working on performance improvements in surface response height adjustment.

ATLAS\_BRW - Working a request by NSIDC to put the default browse images into a "default" group. Also attempting to fix an issue where Cartopy wants to download shapefiles remotely.

ATL16/17 - Continued to address issues and provide sample data to the ATBD lead.

### **SCF:**

The SCF is operating nominally. Data for releases 202, 205, and 206 are being ingested and distributed. Processing of release 203 for ATL02 has begun and release 208 of ATL03 is expected soon. Distribution of data to users halted over the weekend when a job failed and left a lockfile in place. After checking on the problem on Monday, the lockfile was removed and distribution resumed without further incident. A file listing the current SCF data holdings is attached.

\* Data Management -- Investigation of some possible bugs continued, and old data were deleted from systems to ensure sufficient disk space was available for new data. Preparations were made for ingesting new releases, which began on Friday afternoon.

\* Subsetter -- The bug fix for indexing of ATL03 subsets was included in a new release of the code that was placed into operations. A few test requests indicated it was operating as expected, and later requests by other users have not revealed any further issues. Subsets of ATL03 created after about 2:20pm on April 2 should now have the correct indices.

\* Visualizer -- Testing for the next release has continued, with documentation being updated accordingly. Testing is expected to be completed by Monday, with the release of the software being made next week.

### **ATL02:**

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:**

ATL03 continues to collect text edits of the ATBD prior to a wide release at the end of April. The team evaluated pre-released granules (ASAS v950p2) to ensure necessary changes were implemented prior to the planned data release in May, and we anticipate release 207 granules to be released next week for another quick evaluation. As looking at ASAS v950p2 did not illuminate any outstanding issues, we are not anticipating any more critical fixes to release 207 prior to release and all outstanding issues for (public) release 001 have been closed.

### **ISF ACTIVITIES MISSION WEEK 030:**

\* Not in science mode

^ Could affect science data quality

^ 2019/094:05:00:00.0000 Algorithm Parameter test for 4 hours 14 seconds

2019/094:17:27:01.0000 OCEANscan (22 minutes)

\* 2019/094:20:11:57.0000 TEP data collection for 3 minutes

^ 2019/094:21:26:40.0000 AMCS Cal for 2 minutes over open ocean

\* 2019/094:21:46:14.0000 TEP data collection for 3 minutes

^ 2019/094:23:00:57.0000 AMCS Cal for 2 minutes over open ocean

^ 2019/095:01:30:00.0000 Stellar centroid image dump for 90 minutes (no stellar centroids)

^ 2019/095:03:42:31.0000 AMCS Cal for 2 minutes over open ocean

2019/095:05:14:07.0000 OCEANscan (22 minutes)

^ 2019/095:06:51:06.0000 AMCS Cal for 2 minutes over open ocean

2019/095:08:14:55.0000 RTWscan (90 minutes)

\* 2019/095:10:20:33.0000 TEP data collection for 3 minutes

2019/095:17:01:22.0000 OCEANscan (22 minutes)

\* 2019/095:19:46:17.0000 TEP data collection for 3 minutes

\* 2019/095:21:20:35.0000 TEP data collection for 3 minutes

^ 2019/095:22:35:18.0000 AMCS Cal for 2 minutes over open ocean

^ 2019/096:03:20:37.0000 AMCS Cal for 2 minutes over open ocean

2019/096:04:48:27.0000 OCEANscan (22 minutes)

^ 2019/096:06:25:27.0000 AMCS Cal for 2 minutes over open ocean

2019/096:07:49:16.0000 RTWscan (90 minutes)

2019/096:16:35:42.0000 OCEANscan (22 minutes)

\* 2019/096:20:54:55.0000 TEP data collection for 3 minutes

^ 2019/096:22:09:39.0000 AMCS Cal for 2 minutes over open ocean

^ 2019/097:03:09:25.0000 AMCS Cal for 2 minutes over open ocean

2019/097:04:22:48.0000 OCEANscan (22 minutes)

^ 2019/097:05:30:00.0000 Stellar centroid window dump for 90 minutes (no stellar centroids)  
2019/097:07:23:36.0000 RTWscan (90 minutes)  
2019/097:17:44:20.0000 OCEANscan (22 minutes)  
\* 2019/097:20:29:16.0000 TEP data collection for 3 minutes  
^ 2019/097:21:43:59.0000 AMCS Cal for 2 minutes over open ocean  
\* 2019/097:22:03:33.0000 TEP data collection for 3 minutes  
^ 2019/098:03:59:50.0000 AMCS Cal for 2 minutes over open ocean  
2019/098:05:31:26.0000 OCEANscan (22 minutes)  
^ 2019/098:07:08:25.0000 AMCS Cal for 2 minutes over open ocean  
\* 2019/098:10:37:52.0000 TEP data collection for 3 minutes  
2019/098:17:18:41.0000 OCEANscan (22 minutes)  
\* 2019/098:20:03:36.0000 TEP data collection for 3 minutes  
^ 2019/098:21:18:20.0000 AMCS Cal for 2 minutes over open ocean  
\* 2019/098:21:37:54.0000 TEP data collection for 3 minutes  
^ 2019/098:22:52:37.0000 AMCS Cal for 2 minutes over open ocean  
^ 2019/099:03:34:11.0000 AMCS Cal for 2 minutes over open ocean  
2019/099:05:05:46.0000 OCEANscan (22 minutes)  
^ 2019/099:06:42:46.0000 AMCS Cal for 2 minutes over open ocean  
2019/099:08:06:35.0000 RTWscan (90 minutes)  
\* 2019/099:10:12:12.0000 TEP data collection for 3 minutes  
2019/099:14:04:00.0000 TOO TOOid=907 for 162 seconds  
2019/099:16:53:02.0000 OCEANscan (22 minutes)  
\* 2019/099:21:12:14.0000 TEP data collection for 3 minutes  
^ 2019/099:22:26:58.0000 AMCS Cal for 2 minutes over open ocean  
^ 2019/100:03:10:27.0000 AMCS Cal for 2 minutes over open ocean  
2019/100:04:40:07.0000 OCEANscan (22 minutes)  
^ 2019/100:06:17:06.0000 AMCS Cal for 2 minutes over open ocean  
2019/100:07:40:55.0000 RTWscan (90 minutes)  
\* 2019/100:09:50:14.0000 TEP data collection for 3 minutes  
2019/100:16:27:22.0000 OCEANscan (22 minutes)  
\* 2019/100:20:46:35.0000 TEP data collection for 3 minutes  
^ 2019/100:22:01:18.0000 AMCS Cal for 2 minutes over open ocean