

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

RGTs spanned: 259-365
Cycle 4

Items of Note:

All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. ASAS successfully met its code freeze deadline of 7/15 and is building the delivery packages for ASAS v5.2 to send to SIPS and the SCF.

NSIDC has been busy serving ICESat-2 data to the general public: to date, there have been 860 users of 10 available data products. More than 507,000 science files have been downloaded by users from 50 different countries. ATL08 continues to be the winner with 328 users and more than 253,500 files downloaded, followed by ATL06 with 275 users and 154,000 files downloaded and ATL03 with 233 users and 65,500 files downloaded.

****ELEMENT DETAILS BELOW****

CAMS/POD/PPD:

CAMS: Regular CAMS operations continue with constraint and conjunction monitoring for Mission Weeks 44 and 45, and mission planning for Mission Week 46.

CAMS accomplishments this week are:

- Mitigated a HIE with the ISS during Mission Week 44.
- Delivered a MCR which successfully re-planned a MOC maneuver burn during Mission Week 45. Re-made the SAT and re-screened for laser conjunctions when the MOC discovered the timing of 2 commands in the MTL needed to be modified. This modification impacted the SAT activity directly following the maneuver and the timing was moved to accommodate the change.
- Successfully scheduled the mission's first vegetation tracks for Mission Week 46.
- Tested and verified full functionality and expected performance of the new CAMS STK machine and software.

POD: Intermediate POD was completed for GPS weeks 2058, 2059, and 2061. Final POD was completed for GPS weeks 2057, 2058, and 2059. Final ANC products have/will be generated up through DoY 177 (when ICESat-2 entered safe-hold) and will resume on DoY 190 (when complete ATL02 delivery resumed). All results appear nominal.

POD is working to process post safe-hold round-the-world scan data from DoY 193, 195, and 196. RGT tracking performance and roll/pitch pointing bias solutions post safe-hold will be assessed.

PPD: PPD delivered ANC05 data up through DOY 177. Currently we are looking at data post-safe hold to investigate any changes or anomalies that might impact pointing determination.

ISF:

All ATLAS housekeeping data is nominal

Laser 2 is firing at energy level 4 and in science mode

Laser Fire: 2019-189-18:16:08.552 (2019-July-08-18:16:08.552) UTC

All 3 PCEs in science mode: 2019-190-20:56:53.643 (2019-July-09-20:56: 53.643) UTC

WTEM Peak to Edge Ratio: 1.266

Laser 2 Temperature Error: -0.29C

SADA in Airplane Mode

Spacecraft orientation: - X

Mission Planning:

MW45 ATS is loaded to the spacecraft and currently operating

MW46 is being planned - Veg tracks are planned to start during MW46

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**Activities during the past week:**

Real-time activities:

Executed sCAR 249 to update the AMCS BSM XY offset (note 1)

ATS activities:

DMU19 - 2019/200:12:35:48 (60 minutes)

Routine calibration activities

Other Activities:

Presented the results of the post activation instrument performance and calibration activities to ASET. (note 2)

Coordinated the creation of sCAR405 to clear ATLAS PCE Logger Error with FSSE.

Daily screening MW 45 - 2 HIE laser conjunctions self-mitigated.

Near-term activities:

Monitor results of instrument calibrations and re-calibrate as needed.

Execute sCAR405 to clear the ATLAS PCE Logger Error next week.

The Rx Algorithm V8 parameters load testing will take place at FLATLAS next week.

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Notes/Issues:

1. This BSM offset update is based upon one week of AMCS Cals following our recovery from the 6/26/19 safehold.

2. All of the instrument temperature and biases were set to their pre-safe values as the last step in ATLAS activation. All of those values remained valid, the AMCS BSM offset was updated as noted above, however that was more of a continuation of motion we'd seen since the last

update in early May. The team is reviewing the frequency and location of instrument calibrations to mitigate their impact to atmospheric data collection.

3. Continuing Hardware refresh planning - testbed servers are being ordered.

LTO Schedule:

All items remain on schedule

Third quarter scanning planned for 3rd week in August; RSA maintenance agreements are being renewed

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 selected ATL01s to the ISF and SCF by special request.
 - Generated rapids ATL03, ATL04, and ATL09 using ANC03/04/05 files from the CAMS.
 - Distributed ATL03, ATL04, and ATL09 (rapids) to the SCF.
- Restarted the processing of ATL04 and ATL09 rapids this week at the PSOs request.

ASAS:

Building the v5.2 delivery packages.

SCF:

The SCF is operating nominally. Data for releases 001 and R001 (including recently restarted rapids for ATL04 and ATL09) are being ingested and distributed; full granule subscriptions are current, but subsetting subscriptions are still being processed. Some bug fixes have been made to address issues with trending and file hold/publish. Preparation to test the Python 3 code continues, and we hope to start testing next week. A file listing the current SCF data holdings is attached.

* Data Management -- A fix for the ATL06 trending plot issue has been applied in operations and run successfully. A recent file hold request revealed an issue where the file names were too long for our database. We updated the database, and the hold request were successfully rerun and processed. A fix for a minor bug in the creation of revfiles from ANC40 files has been tested but not placed in operations, since the bug is currently being worked around successfully. The testing document is being reviewed and updated as needed.

* Subsetter -- Preparation for testing continues with the selection of a set of files to use and updating the test cases as needed. Due to product changes since the last release, some tests involving subsetting by RGT will need modifications.

* Visualizer -- Stand-alone apps were created for v5.2, the final version written in in Python 2. Work continues on converting the software to Python 3 and PyQt5. This includes using cartopy for producing maps.

ATL02/Instrument Science:

Megan Bock has left the Instrument Science team to take a systems engineering position in Code 592, effective 19 July. Among her many contributions, she played a major role in writing and maintaining the ATL02 ATBD.

An error was discovered and corrected in the way the “useflag” parameter is calculated in ATL02. This parameter indicates when ATL02 data should be used for calculating higher-level science products, and was being turned off for too long around certain instrument calibration events.

Katie Gosmeyer volunteered at the Apollo 11 anniversary celebration on the National Mall 19 July.

Tony Martino gave a presentation on ICESat-2 at the Engineers Club of Dayton, Ohio 16 July.

ATL03:

ATBD updates are ongoing as we prepare for release 002 of the data product later this summer. Analysis also continues of ATL03 data collected at the 88S calibration site with respect to ICESat-2 spot-to-spot crossovers.

ISF ACTIVITIES MISSION WEEK 045:

- * Not in science mode
- ^ Could affect science data quality

- 2019/199:00:02:56.0000 OCEANscan (22 minutes)
- * 2019/199:02:21:52.0000 TEP data collection for 3 minutes
- 2019/199:03:03:44.0000 RTWscan (90 minutes)
- * 2019/199:05:30:26.0000 TEP data collection for 3 minutes
- ^ 2019/199:05:50:03.0000 AMCS Cal for 2 minutes over open ocean
- ^ 2019/199:10:23:40.0000 AMCS Cal for 2 minutes over open ocean
- 2019/199:11:50:11.0000 OCEANscan (22 minutes)
- ^ 2019/199:13:27:09.0000 AMCS Cal for 2 minutes over open ocean
- * 2019/199:18:04:45.0000 TEP data collection for 3 minutes
- * 2019/199:19:39:03.0000 TEP data collection for 3 minutes
- * 2019/199:21:13:20.0000 TEP data collection for 3 minutes
- * 2019/199:22:47:38.0000 TEP data collection for 3 minutes
- * 2019/200:00:21:55.0000 TEP data collection for 3 minutes
- 2019/200:01:11:34.0000 OCEANscan (22 minutes)
- * 2019/200:01:56:12.0000 TEP data collection for 3 minutes
- * 2019/200:03:30:30.0000 TEP data collection for 3 minutes
- * 2019/200:05:04:47.0000 TEP data collection for 3 minutes

^ 2019/200:05:24:24.0000 AMCS Cal for 2 minutes over open ocean
^ 2019/200:10:11:57.0000 AMCS Cal for 2 minutes over open ocean
2019/200:11:24:32.0000 OCEANscan (22 minutes)
^ 2019/200:12:35:48.0000 DMU19 for 60 minutes
* 2019/200:17:39:06.0000 TEP data collection for 3 minutes
* 2019/200:19:13:24.0000 TEP data collection for 3 minutes
* 2019/200:20:47:41.0000 TEP data collection for 3 minutes
^ 2019/200:21:00:00.0000 Laser Window dump for 6 minutes
* 2019/200:22:21:59.0000 TEP data collection for 3 minutes
* 2019/200:23:56:16.0000 TEP data collection for 3 minutes
2019/201:00:45:55.0000 OCEANscan (22 minutes)
* 2019/201:01:30:34.0000 TEP data collection for 3 minutes
* 2019/201:03:04:51.0000 TEP data collection for 3 minutes
* 2019/201:04:39:08.0000 TEP data collection for 3 minutes
^ 2019/201:04:58:45.0000 AMCS Cal for 2 minutes over open ocean
^ 2019/201:11:01:34.0000 AMCS Cal for 2 minutes over open ocean
2019/201:12:33:11.0000 OCEANscan (22 minutes)
^ 2019/201:14:10:09.0000 AMCS Cal for 2 minutes over open ocean
* 2019/201:18:47:45.0000 TEP data collection for 3 minutes
* 2019/201:20:22:03.0000 TEP data collection for 3 minutes
* 2019/201:21:56:20.0000 TEP data collection for 3 minutes
* 2019/201:23:30:38.0000 TEP data collection for 3 minutes
^ 2019/202:00:01:00.0000 Stellar centroid window dump for 90 minutes (no stellar centroids)
2019/202:01:54:34.0000 OCEANscan (22 minutes)
* 2019/202:02:39:13.0000 TEP data collection for 3 minutes
* 2019/202:04:13:30.0000 TEP data collection for 3 minutes
^ 2019/202:04:33:07.0000 AMCS Cal for 2 minutes over open ocean
^ 2019/202:06:07:13.0000 AMCS Cal for 2 minutes over open ocean
^ 2019/202:10:35:56.0000 AMCS Cal for 2 minutes over open ocean
2019/202:12:07:32.0000 OCEANscan (22 minutes)
^ 2019/202:13:44:31.0000 AMCS Cal for 2 minutes over open ocean
* 2019/202:18:22:07.0000 TEP data collection for 3 minutes
* 2019/202:19:56:24.0000 TEP data collection for 3 minutes
* 2019/202:21:30:42.0000 TEP data collection for 3 minutes
* 2019/202:23:04:59.0000 TEP data collection for 3 minutes
2019/202:23:54:38.0000 OCEANscan (22 minutes)
* 2019/203:00:39:17.0000 TEP data collection for 3 minutes
2019/203:01:45:30.0000 TOO (TOOid=1078) for 2 minutes
* 2019/203:02:13:34.0000 TEP data collection for 3 minutes
* 2019/203:03:47:52.0000 TEP data collection for 3 minutes
^ 2019/203:04:07:42.0000 AMCS Cal for 2 minutes over open ocean
* 2019/203:05:22:09.0000 TEP data collection for 3 minutes
^ 2019/203:05:41:46.0000 AMCS Cal for 2 minutes over open ocean
^ 2019/203:10:13:28.0000 AMCS Cal for 2 minutes over open ocean

2019/203:11:41:54.0000 OCEANscan (22 minutes)
^ 2019/203:13:18:52.0000 AMCS Cal for 2 minutes over open ocean
* 2019/203:17:56:28.0000 TEP data collection for 3 minutes
* 2019/203:19:30:46.0000 TEP data collection for 3 minutes
* 2019/203:21:05:03.0000 TEP data collection for 3 minutes
* 2019/203:22:39:21.0000 TEP data collection for 3 minutes
* 2019/204:00:13:38.0000 TEP data collection for 3 minutes
2019/204:01:03:17.0000 OCEANscan (22 minutes)
* 2019/204:01:47:56.0000 TEP data collection for 3 minutes
2019/204:02:29:48.0000 RTWscan (90 minutes)
* 2019/204:04:56:30.0000 TEP data collection for 3 minutes
^ 2019/204:05:16:07.0000 AMCS Cal for 2 minutes over open ocean
^ 2019/204:10:02:16.0000 AMCS Cal for 2 minutes over open ocean
^ 2019/204:11:18:56.0000 AMCS Cal for 2 minutes over open ocean
2019/204:12:50:33.0000 OCEANscan (22 minutes)
* 2019/204:17:30:50.0000 TEP data collection for 3 minutes
* 2019/204:19:05:07.0000 TEP data collection for 3 minutes
* 2019/204:20:39:25.0000 TEP data collection for 3 minutes
* 2019/204:22:13:42.0000 TEP data collection for 3 minutes
* 2019/204:23:48:00.0000 TEP data collection for 3 minutes
2019/205:00:37:38.0000 OCEANscan (22 minutes)
* 2019/205:01:22:17.0000 TEP data collection for 3 minutes
* 2019/205:02:56:34.0000 TEP data collection for 3 minutes
* 2019/205:04:30:52.0000 TEP data collection for 3 minutes
^ 2019/205:04:50:29.0000 AMCS Cal for 2 minutes over open ocean
^ 2019/205:10:53:17.0000 AMCS Cal for 2 minutes over open ocean
2019/205:12:24:54.0000 OCEANscan (22 minutes)
^ 2019/205:14:01:52.0000 AMCS Cal for 2 minutes over open ocean
* 2019/205:17:08:46.0000 TEP data collection for 3 minutes
* 2019/205:18:39:28.0000 TEP data collection for 3 minutes
* 2019/205:20:13:46.0000 TEP data collection for 3 minutes
* 2019/205:21:48:04.0000 TEP data collection for 3 minutes
* 2019/205:23:22:21.0000 TEP data collection for 3 minutes