

ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, October 26, 2020 thru Sunday, November 1, 2020

RGTs spanned: 487 - 593
Cycle 9

SUMMARY:

All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. ASAS has delivered v5.4 of the software to SIPS for integration and acceptance testing, on the road to release 004 data product generation. Source code and documentation has been transferred to SCF.

NSIDC ICESat-2 Metrics through November 1: 2,519 total users of 12 available data products; 9,039,324 sciences files downloaded. ATL03 is in the lead with 1,086 unique users of 1,026,617 files downloaded. ATL08 is in a close second with 1,012 unique users and an astounding 3,905,971 files downloaded, and ATL06 is in third place with 665 unique users and 2,927,963 files downloaded.

****ELEMENT DETAILS BELOW****

CAMS/POD:

CAMS: Regular CAMS operations: constraint and conjunction monitoring for MW111 and MW112 and mission planning for MW113.

CAMS recommended laser arm for 25544 (ISS) 302/21:08:55 - 302/21:09:05 (MW111)

CAMS continues working with the project on ARB09.

POD: Regular POD operations continue. Intermediate POD was completed for GPS week 2128. Final POD was completed for GPS week 2126.

ISF:

All ATLAS housekeeping data is nominal
Laser 2 is firing at energy level 4 and in science mode
WTEM Peak to Edge Ratio: 1.206
Laser 2 Temperature Error: -0.31C
SADA in SAILBOAT Mode
Spacecraft orientation: - X

Mission Planning:

MW112 ATS is loaded to the spacecraft and currently operating
MW113 AIP has been delivered, nominal calibrations; CAMS has delivered preliminary products.

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**Activities during the past week:**

Real-time activities:

monitoring via telework

ATS activities:

MW\_111 (completed nominally - PSO Activity list attached)

split ATS for DMU61c

split ATS for LCA64 ISS 28-Oct-2020 21:08:59

MW\_112 (currently active):

Routine Instrument calibrations, TOOs, Ocean scans and Vegetation Data collection, Segmented RTW scans

Other Activities:

PDB E.0.2 Testing

Install complete on primary ISF ITOS server on October 19; Regression and MOC testing successful  
Completed install and testing on backup ISF server (iceisf1) on October 23  
TBS - install and testing on playback ISF server (itos2)

Near-term upcoming activities:

Testing of receiver algorithm parameter updates

**(FSSE testing results under review)**

**(FLATLAS testing Tentative for next week)**

Facility:

**Updating ITOS servers to RedHat 7.0 due to EOL of 6.0 at the end of November**  
**Install on the primary server (itos1) - scheduled for 11/5**

Tech HW refresh:

ISF Tech Refresh Phase 2 hardware moved to B33 Room F325

Phase 1a setup and testing continues (on-hold for RedHat OS update)

Notes/Issues:

1. ARB09: RMM02 Anomaly - the team continues to analyze events and determine process (automated and manual) updates to mitigate the chance of a recurrence. The team has implemented changes to the manual processes for verification of planning products. The team is providing inputs for root cause analysis and corrective action.

LTO Schedule:

Tech refresh updates to be provided to ESMO Scheduler. Update to RedHat 7.0 takes priority and phase 2 hardware shipment was delayed.

### **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 rapid ATL03, ATL04, ATL06, ATL07, ATL08, ATL09, and ATL10 using ANC03/04/05 files from the CAMS.
  - Distributed the ATL01 and ATL02 Data products to NSIDC.
  - Distributed the rapid Science Data products to the SCF.
- Distributed a sample set of ATL11 data products to NSIDC for verification.
- Attended acceptance review for the PGEs to be included in the ASAS v5.4 software release.
- ASAS v5.4 was release to the CM on October 30<sup>th</sup>. SIPS Build 6.0 will consist of this ASAS release. Integration tests will start shortly.
- Distributed Release 003 ATL07 and ATL10 from May 14, 2020 through July 16, 2020 to NSIDC with the appropriate holds applied

### **ASAS:**

ASAS has delivered v5.4 of the software to SIPS for integration and acceptance testing. Source code and documentation has been transferred to SCF.

ASAS has generated the 3 week 'pod3' dataset and distributed same to SCF/Cooler. This dataset was created with the combination of Release 003 ANC04 POD files and newly-delivered ANC05 PPD files. The new ANC05s provide improved beam-to-beam calibrations.

ASAS has generated a final 954 functional test data set. This will be used as reference for future development. The 954 functional test will soon replace the existing 954b1 dataset on SCF.

L1A/L1B: ASAS is coming up to speed on the Tx/Rx anomaly investigation.

L2A\_ALT: No work.

L2/L3 Atmosphere: About three weeks of ATL04s and ATL09s have been created with overrides specified by the ATBD lead.

L3A Land Ice: Added sigma\_tx and t\_dead to ATL06 just in time for the v5.4 delivery.

L3B Land Ice: The transfer path of ATL11 via ADAPT->SIPS->NSIDC is in testing.

Sea Ice/Freeboard: Work is underway on ATL21.

L3A Land/Veg: Investigating issues related to a strong/weak beam crossing..

Inland Water: Work is underway on ATL22..

Ocean: Work is underway on ATL19.

### **SCF:**

The SCF is operating nominally. Data for releases 003 and R003 are being ingested and distributed. Fulfillment of subscriptions for the latest batch of finals is ongoing and being monitored; an initial rough estimate is for completion in 2-3 weeks. ASAS has copied POD3 data to the SCF, and they are available in the ASAS-dedicated storage location. A file listing the current SCF data holdings is attached.

\* Data Management -- Some recent hold requests required checking to confirm that they were processed correctly. One of these revealed that blank lines in a valid request will result in a failed SDMS job and the hold correctly being sent to SIPS. We are looking into adding a check to the code to ignore blank lines. Work continues on updating the ATL10 trending plot creation code in the test/dev system to generate new plots.

\* Subsetter -- A few ATL09 files failed subsetting, but they were rerun successfully. Testing with release 954b1 data is going well and there are no major issues, but a few updates will be made to better handle certain warning messages and to account for the removal of a top-level group ATL10.

\* Visualizer -- Work continues on adding support for ATL20. How best to handle the different grid sizes for the Arctic and Antarctic subproducts of ATL20 is being examined.

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

Work continues on:

- Quantifying the expected annual number of back reflections from solar arrays on other spacecraft (e.g. Starlink).
- Re-examining the distance limit for illuminating other spacecraft with ATLAS beams.
- Transmit/receive data slips
- Investigating and modeling the properties of saturated returns.

### **ATL03:**

Updating documentation for rel004, and continuing investigation of TxRx alignment slip cases.

## **ISF ACTIVITIES MISSION WEEK 112**

\* Not in science mode

^ Could affect science data quality

2020/303:02:14:28.0000 OCEANscan Duration 22 minutes  
\* 2020/303:03:04:10.0000 TEP data collection Grid 92 Duration 3 minutes  
\* 2020/303:03:14:18.0000 TEP data collection Grid 236 Duration 3 minutes  
\* 2020/303:03:19:49.0000 TEP data collection Grid 307 Duration 3 minutes  
^ 2020/303:03:49:55.0000 RM003b for RGT excursion Duration 64 minutes  
\* 2020/303:04:59:20.0000 TEP data collection Grid 377 Duration 3 minutes  
\* 2020/303:06:27:18.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/303:06:33:37.0000 TEP data collection Grid 374 Duration 3 minutes  
\* 2020/303:09:42:12.0000 TEP data collection Grid 370 Duration 3 minutes  
\* 2020/303:11:00:18.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
\* 2020/303:11:12:03.0000 TEP data collection Grid 295 Duration 3 minutes  
\* 2020/303:12:27:28.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
\* 2020/303:12:48:10.0000 TEP data collection Grid 329 Duration 3 minutes  
\* 2020/303:12:53:24.0000 TEP data collection Grid 401 Duration 3 minutes  
2020/303:14:01:43.0000 OCEANscan Duration 22 minutes  
\* 2020/303:15:36:03.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
\* 2020/303:17:12:46.0000 TEP data collection Grid 107 Duration 3 minutes  
\* 2020/303:18:52:17.0000 TEP data collection Grid 176 Duration 3 minutes  
\* 2020/303:19:00:06.0000 TEP data collection Grid 284 Duration 3 minutes  
\* 2020/303:20:44:51.0000 TEP data collection Grid 425 Duration 3 minutes  
\* 2020/303:21:53:01.0000 TEP data collection Grid 64 Duration 3 minutes

\* 2020/303:22:06:05.0000 TEP data collection Grid 243 Duration 3 minutes  
\* 2020/303:22:13:54.0000 TEP data collection Grid 351 Duration 3 minutes  
\* 2020/303:23:24:16.0000 TEP data collection Grid 26 Duration 3 minutes  
\* 2020/304:00:10:43.0000 TEP data collection Grid 402 Duration 3 minutes  
\* 2020/304:00:59:05.0000 TEP data collection Grid 23 Duration 3 minutes  
\* 2020/304:01:25:06.0000 TEP data collection Grid 382 Duration 3 minutes  
2020/304:01:48:48.0000 OCEANscan Duration 22 minutes  
\* 2020/304:02:33:23.0000 TEP data collection Grid 21 Duration 3 minutes  
\* 2020/304:04:15:25.0000 TEP data collection Grid 126 Duration 3 minutes  
\* 2020/304:04:28:09.0000 TEP data collection Grid 306 Duration 3 minutes  
\* 2020/304:05:49:42.0000 TEP data collection Grid 124 Duration 3 minutes  
\* 2020/304:06:01:38.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/304:09:03:30.0000 TEP data collection Grid 191 Duration 3 minutes  
\* 2020/304:09:08:41.0000 TEP data collection Grid 263 Duration 3 minutes  
\* 2020/304:10:45:36.0000 TEP data collection Grid 296 Duration 3 minutes  
\* 2020/304:12:01:49.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
2020/304:13:36:03.0000 OCEANscan Duration 22 minutes  
\* 2020/304:15:10:24.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
\* 2020/304:18:30:55.0000 TEP data collection Grid 249 Duration 3 minutes  
\* 2020/304:19:53:04.0000 TEP data collection Grid 67 Duration 3 minutes  
\* 2020/304:20:13:57.0000 TEP data collection Grid 354 Duration 3 minutes  
\* 2020/304:21:40:25.0000 TEP data collection Grid 244 Duration 3 minutes  
\* 2020/304:21:50:51.0000 TEP data collection Grid 387 Duration 3 minutes  
\* 2020/304:23:25:09.0000 TEP data collection Grid 385 Duration 3 minutes  
\* 2020/305:00:54:13.0000 TEP data collection Grid 311 Duration 3 minutes  
2020/305:01:23:09.0000 OCEANscan Duration 22 minutes  
\* 2020/305:03:44:31.0000 TEP data collection Grid 55 Duration 3 minutes  
2020/305:04:23:57.0000 Segmented RTWscan Part 1 Duration 37 minutes  
2020/305:05:13:10.0000 Segmented RTWscan Part 2 Duration 34 minutes  
2020/305:05:53:47.0000 Segmented RTWscan Part 3 Duration 14 minutes  
\* 2020/305:07:10:16.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
2020/305:08:48:17.0000 TOO TOOid 1761 RGT 568 offpoint 3.95deg Duration 2 minutes  
\* 2020/305:09:58:56.0000 TEP data collection Grid 10 Duration 3 minutes  
\* 2020/305:11:36:09.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
\* 2020/305:13:10:27.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
2020/305:14:44:41.0000 OCEANscan Duration 22 minutes  
\* 2020/305:16:24:04.0000 TEP data collection Grid 144 Duration 3 minutes  
\* 2020/305:17:50:36.0000 TEP data collection Grid 34 Duration 3 minutes  
\* 2020/305:18:14:00.0000 TEP data collection Grid 357 Duration 3 minutes  
\* 2020/305:21:04:19.0000 TEP data collection Grid 101 Duration 3 minutes  
\* 2020/305:21:17:22.0000 TEP data collection Grid 280 Duration 3 minutes  
\* 2020/305:22:33:28.0000 TEP data collection Grid 27 Duration 3 minutes  
\* 2020/306:00:20:44.0000 TEP data collection Grid 204 Duration 3 minutes  
\* 2020/306:02:05:27.0000 TEP data collection Grid 345 Duration 3 minutes  
2020/306:02:31:46.0000 OCEANscan Duration 22 minutes  
\* 2020/306:03:29:19.0000 TEP data collection Grid 199 Duration 3 minutes

- \* 2020/306:05:11:25.0000 TEP data collection Grid 304 Duration 3 minutes
- \* 2020/306:06:44:36.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2020/306:08:09:35.0000 TEP data collection Grid 156 Duration 3 minutes
- \* 2020/306:11:10:30.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
- \* 2020/306:12:44:47.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
- 2020/306:14:19:01.0000 OCEANscan Duration 22 minutes
- \* 2020/306:15:52:52.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
- 2020/306:17:30:00.0000 Laser window dump Duration 2 minutes
- \* 2020/306:20:36:08.0000 TEP data collection Grid 65 Duration 3 minutes
- 2020/306:22:58:42.0000 TOO TOOid 1758 RGT 592 offpoint 0.82deg Duration 2 minutes
- 2020/307:02:06:07.0000 OCEANscan Duration 22 minutes
- \* 2020/307:06:18:57.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2020/307:10:50:06.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
- \* 2020/307:12:19:08.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
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