

ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, May 4 2020 thru Sunday, May 10, 2020

RGTs spanned: 588-694
Cycle 7

SUMMARY:

All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. Release 003 data (spanning 14 October 2018 through 6 March 2020) were released at NSIDC on May 5th (ATL07, ATL10, and ATL13 are still pending).

Operations continued nominally, in our eighth week of telework, with no major disruptions.

NSIDC ICESat-2 Metrics through May 10: 1,864 total users of 10 available data products; 4,819,050 sciences files downloaded. ATL03 is in the lead with 769 unique users of 546,680 files downloaded. ATL08 is in a close second with 748 unique users and an astounding 2,453,959 files downloaded, and ATL06 is in third place with 508 unique users and 1,481,316 files downloaded.

****ELEMENT DETAILS BELOW****

CAMS/POD:

CAMS: Regular CAMS operations: constraint and conjunction monitoring for MW086 and MW087 and mission planning for MW088.

CAMS is ensuring that RTW scans are not scheduled over AIS and GIS regions and that the RGT is being tracked per the PSO's request.

POD: Regular POD operations continue. Intermediate POD was completed for GPS week 2103. Final POD was completed for GPS week 2101.

ISF:

All ATLAS housekeeping data is nominal
Laser 2 is firing at energy level 4 and in science mode
WTEM Peak to Edge Ratio: 1.218
Laser 2 Temperature Error: -0.28C
SADA in AIRPLANE Mode
Spacecraft orientation: + X

Mission Planning:

MW87 ATS is loaded to the spacecraft and currently operating (PSO Activity List is attached)

Monitoring 4 LC HIEs

MW88 has been delivered, nominal calibrations including daytime AMCS Cals

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Activities during the past week:

**Real-time activities:**

No realtime commanding was performed due to GSFC Stage 4 status

ATS activities:

Routine Instrument calibrations, Ocean scans and Vegetation Data collection, modified RTW scans to avoid scan over the poles

Daytime AMCS Calibrations:

2020/128:15:16:42

2020/128:21:19:31

Commands to clear errors and reset stats

Other Activities:

DMU047a 2020/128 ISF set ILRS NOGO/GO flags around the activities.

ANC27 with USO Frequency Offset update delivered to SIPS

Corrected ALERT message truncation (DR ISF-613); need to test

Procedure updates

Near-term activities:

Yaw Flip to -X flying direction on May 14

Generating plot of executed AMCS Cal locations

Tech HW refresh:

On hold due to Stage 4 status

Facility:

RSA Token re-order - notified tokens delivered to GSFC

Critical patching completed via telework

Q2 patch and scan planned for June

Notes/Issues:

~ Two RAIDs were rebuilt in past two weeks due to reported disk failure. Both are now operating nominally and no operations were impacted.

LTO Schedule:

All items remain on schedule except for the Tech Refresh - schedule updates were provided to ESMO.

**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, 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.
- SIPS received a replacement final ANC05 from the POD for February 18, 2020. The Release 003 products L2A, L3A, and L3B products were reprocessed as Version 2 and distributed to NSIDC and the PSO.
- All Release 003 data products for November 16, 2019 – March 06, 2020 were picked up by NSIDC and the Rel 003 products went live on March 5<sup>th</sup>.

- Release 003 ATL03, ATL04, ATL06, ATL07, ATL08, ATL09, ATL10, ATL12, ATL13 as well as the Release 002 ATL16 and ATL17s SIPS were distributed to the PSO.
- SIPS has been working with the PSO on testing the ATL07 and ATL10 data products.

#### **ASAS:**

The 954a1 functional testing has been completed and test products have been distributed to the development server. Functional test reports are being copied to the web server.

For atmosphere, work is proceeding on L2A ATM surface finding and an investigation into discontinuities within the ATL09 density matrices. The new L3B ATBD has been evaluated and requisite Jira issues created.

ATL11 reached a metadata-milestone as a sample ATL11 was processed by atlas\_meta on ADAPT and an XML metadata file was successfully created.

Land development is awaiting an ATBD update relating to the ATL03 saturation flags.

The land ice refactor is progressing. The refactored Tx pulse shape correction software is currently being tested.

The sea ice team is investigating issues regarding differences in products created by ASAS code vs those created in the ATBD test environment. This is holding release 003 ATL07s and ATL10s.

An example ATL20 was delivered to NSIDC. After initial evaluation, NSIDC provided suggestions regarding the structure of the product that would make ATL20 more standards-compliant and significantly more usable with earth science-related tools.

For inland water, the DEM from ATL03 is being added to the ATL13 product. In addition, several custom debug datasets for examining the deconvolution have been created for ATBD lead analysis.

For ocean, work continues on the L3B product. Results of dynamic surface SNR the computation of uncertainties was approved by the ATBD lead.

#### **SCF:**

The SCF is operating nominally. Data for releases 003 and R003 are being ingested and distributed. Data from March 7 to April 4 have arrived and subscriptions for them are being fulfilled. All SCF components are checking on updates needed to accommodate a recent change to the ATL10 product. A file listing the current SCF data holdings is attached.

\* Data Management -- Operations are proceeding normally, but trending of ATL10 has been stopped until the code can be adapted to work with the new version of the product. Work is beginning to modify the trending code to operate on a per-beam basis. Updates to rSCF-related documentation are being reviewed.

\* Subsetter -- The Subsetter is performing normally in operations. Some minor changes to handle the new version of ATL10 are currently being tested.

\* Visualizer -- Development code has enabled the top x-axis for subplots that meet certain specific conditions. The top x-axis has been addressed in other features (e.g., tab contents, paging) as needed. Work continues on ensuring that the top x-axis increases in the correct direction for both ascending and descending tracks when latitude and longitude are involved.

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

A new version of CAL 08, "Zero-Range Point" is under evaluation. It reflects corrections and improvements on the previous version.

Work continues on:

- Variation of range bias on orbital and seasonal time scales
- Modeling the behavior of the ATLAS receiver during extreme saturation events.
- Refining the QA screening process
- Improving the process for calibrating transmitter-receiver alignment

### **ATL03:**

Work continues on release 004 updates, including preventing afterpulses in saturated conditions from being classified as H/M/L confidence signal. Work also continues on a users' guide for comparing ICESat-2 data to other altimetry data sets. Some text modifications were also applied to the release 003 ATBD to give some clarity about the application of certain geophysical corrections.

### **ISF ACTIVITIES MISSION WEEK 087:**

- \* 2020/128:03:12:18.0000 TEP data collection Grid 374 Duration 3 minutes
- \* 2020/128:03:16:25.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- 2020/128:06:55:59.0000 TOO TOOid 1439 RGT 637 offpoint 4.50deg Duration 2 minutes
- \* 2020/128:07:55:10.0000 TEP data collection Grid 367 Duration 3 minutes
- \* 2020/128:08:14:57.0000 AMCS Cal over open ocean Duration 2 minutes
- \* 2020/128:09:32:16.0000 AMCS Cal over open ocean Duration 2 minutes
- 2020/128:11:03:52.0000 OCEANscan Duration 22 minutes
- 2020/128:13:08:25.0000 DMU046a Duration 54 minutes
- \* 2020/128:15:16:42.0000 AMCS calibration over open ATLANTIC ocean once in daylight Duration 2 minutes
- \* 2020/128:17:28:44.0000 TEP data collection Grid 281 Duration 3 minutes
- \* 2020/128:18:55:11.0000 TEP data collection Grid 387 Duration 3 minutes
- \* 2020/128:20:34:43.0000 TEP data collection Grid 312 Duration 3 minutes
- \* 2020/128:21:19:31.0000 AMCS calibration over open ocean once in daylight Duration 2 minutes
- 2020/128:22:51:07.0000 OCEANscan Duration 22 minutes
- \* 2020/129:01:12:21.0000 TEP data collection Grid 377 Duration 3 minutes
- \* 2020/129:01:22:47.0000 TEP data collection Grid 233 Duration 3 minutes
- \* 2020/129:02:50:46.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2020/129:09:06:37.0000 AMCS Cal over open ocean Duration 2 minutes

2020/129:10:38:13.0000 OCEANscan Duration 22 minutes  
\* 2020/129:12:15:12.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2020/129:13:43:36.0000 TEP data collection Grid 431 Duration 3 minutes  
2020/129:15:25:00.0000 Laser window dump Duration 2 minutes  
\* 2020/129:16:55:15.0000 TEP data collection Grid 390 Duration 3 minutes  
\* 2020/129:18:27:08.0000 TEP data collection Grid 423 Duration 3 minutes  
\* 2020/129:18:47:37.0000 TEP data collection Grid 135 Duration 3 minutes  
\* 2020/129:21:53:46.0000 TEP data collection Grid 166 Duration 3 minutes  
2020/129:22:25:28.0000 OCEANscan Duration 22 minutes  
\* 2020/129:23:22:51.0000 TEP data collection Grid 236 Duration 3 minutes  
\* 2020/130:02:25:07.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/130:03:59:24.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/130:08:40:58.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2020/130:09:04:17.0000 TEP data collection Grid 5 Duration 3 minutes  
2020/130:10:12:34.0000 OCEANscan Duration 22 minutes  
\* 2020/130:11:49:33.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/130:13:13:22.0000 Segmented RTW Part 1 Duration 37 minutes  
2020/130:14:02:10.0000 Segmented RTW Part 2 Duration 35 minutes  
2020/130:14:42:57.0000 Segmented RTW Part 3 Duration 15 minutes  
2020/130:15:30:25.0000 TOO TOOid 1441 RGT 673 offpoint 4.54deg Duration 2 minutes  
2020/130:19:11:13.0000 TOO TOOid 1446 RGT 676 offpoint 1.80deg Duration 2 minutes  
\* 2020/130:19:51:13.0000 TEP data collection Grid 205 Duration 3 minutes  
2020/130:21:59:49.0000 OCEANscan Duration 22 minutes  
\* 2020/130:22:46:46.0000 TEP data collection Grid 381 Duration 3 minutes  
\* 2020/130:22:51:46.0000 TEP data collection Grid 309 Duration 3 minutes  
\* 2020/131:00:34:06.0000 TEP data collection Grid 198 Duration 3 minutes  
\* 2020/131:03:33:45.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/131:03:47:53.0000 TEP data collection Grid 121 Duration 3 minutes  
\* 2020/131:07:01:43.0000 TEP data collection Grid 44 Duration 3 minutes  
\* 2020/131:08:16:05.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/131:09:46:54.0000 OCEANscan Duration 22 minutes  
\* 2020/131:11:23:54.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/131:12:47:43.0000 Segmented RTW Part 1 Duration 37 minutes  
2020/131:13:36:53.0000 Segmented RTW Part 2 Duration 35 minutes  
2020/131:14:17:17.0000 Segmented RTW Part 3 Duration 15 minutes  
\* 2020/131:14:55:47.0000 TEP data collection Grid 32 Duration 3 minutes  
\* 2020/131:17:35:37.0000 TEP data collection Grid 425 Duration 3 minutes  
\* 2020/131:17:40:51.0000 TEP data collection Grid 352 Duration 3 minutes  
2020/131:19:47:36.0000 TOO TOOid 1442 RGT 691 offpoint 4.60deg Duration 2 minutes  
\* 2020/131:21:10:19.0000 TEP data collection Grid 59 Duration 3 minutes  
\* 2020/131:21:14:06.0000 TEP data collection Grid 22 Duration 3 minutes  
2020/131:21:34:10.0000 OCEANscan Duration 22 minutes  
\* 2020/132:00:13:39.0000 TEP data collection Grid 126 Duration 3 minutes  
\* 2020/132:01:37:31.0000 TEP data collection Grid 268 Duration 3 minutes  
\* 2020/132:03:08:06.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/132:04:46:06.0000 TEP data collection Grid 264 Duration 3 minutes  
\* 2020/132:06:09:56.0000 TEP data collection Grid 406 Duration 3 minutes  
\* 2020/132:06:28:12.0000 TEP data collection Grid 153 Duration 3 minutes

\* 2020/132:07:44:14.0000 TEP data collection Grid 403 Duration 3 minutes  
\* 2020/132:07:49:28.0000 TEP data collection Grid 331 Duration 3 minutes  
\* 2020/132:08:04:42.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2020/132:09:23:57.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/132:10:55:32.0000 OCEANscan Duration 22 minutes  
2020/132:11:30:32.0000 TOO TOOid 1443 RGT 701 offpoint 4.55deg Duration 2 minutes  
\* 2020/132:12:27:06.0000 TEP data collection Grid 432 Duration 3 minutes  
\* 2020/132:20:17:22.0000 TEP data collection Grid 421 Duration 3 minutes  
2020/132:22:42:48.0000 OCEANscan Duration 22 minutes  
\* 2020/132:23:48:00.0000 TEP data collection Grid 127 Duration 3 minutes  
\* 2020/133:02:42:26.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
2020/133:04:47:49.0000 TOO TOOid 1447 RGT 712 offpoint 0.01deg Duration 2 minutes  
2020/133:07:56:24.0000 TOO TOOid 1448 RGT 714 offpoint 0.08deg Duration 2 minutes  
\* 2020/133:08:58:18.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/133:10:29:53.0000 OCEANscan Duration 22 minutes  
2020/133:11:04:53.0000 TOO TOOid 1444 RGT 716 offpoint 4.54deg Duration 2 minutes  
\* 2020/133:12:06:29.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2020/133:15:36:08.0000 TEP data collection Grid 67 Duration 3 minutes  
\* 2020/133:17:11:51.0000 TEP data collection Grid 29 Duration 3 minutes  
\* 2020/133:18:36:51.0000 TEP data collection Grid 171 Duration 3 minutes  
\* 2020/133:19:55:30.0000 TEP data collection Grid 385 Duration 3 minutes  
\* 2020/133:21:50:40.0000 TEP data collection Grid 94 Duration 3 minutes  
2020/133:22:17:08.0000 OCEANscan Duration 22 minutes  
\* 2020/134:02:16:47.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
2020/134:03:15:00.0000 Stellar window dump Duration 90 minutes  
\* 2020/134:07:03:22.0000 TEP data collection Grid 260 Duration 3 minutes  
\* 2020/134:08:32:38.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/134:10:04:13.0000 OCEANscan Duration 22 minutes  
\* 2020/134:11:41:13.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2020/134:17:52:56.0000 TEP data collection Grid 424 Duration 3 minutes  
2020/134:21:51:29.0000 OCEANscan Duration 22 minutes