

ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, September 28, 2020 thru Sunday, October 4, 2020

RGTs spanned: 59 - 165
Cycle 9

SUMMARY:

All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. The ASAS code freeze went well, with all code promoted before the October 1st deadline; developers are currently updating the documentation required to support the v5.4 release.

NSIDC ICESat-2 Metrics through October 1: 2,390 total users of 12 available data products; 8,394,007 sciences files downloaded. ATLO3 is in the lead with 1,028 unique users of 981,026 files downloaded. ATLO8 is in a close second with 973 unique users and an astounding 3,450,119 files downloaded, and ATLO6 is in third place with 635 unique users and 2,881,565 files downloaded.

****ELEMENT DETAILS BELOW****

CAMS/POD:

CAMS: Regular CAMS operations: constraint and conjunction monitoring for MW107 and MW108 and mission planning for MW109.

CAMS supported RMM002-RMM002d for ESMO red event with 41980 (FLOCK 3P 70) 273/04:43:01.

CAMS recommends laser arm for 43196 (GOMX4-B) 277/08:30:14 - 277/08:30:24(MW108).

CAMS continues working with the project on ARB09.

POD: Regular POD operations continue. Intermediate POD was completed for GPS week 2124. Final POD was completed for GPS week 2122.

ISF:

All ATLAS housekeeping data is nominal
Laser 2 is firing at energy level 4 and in science mode
WTEM Peak to Edge Ratio: 1.175
Laser 2 Temperature Error: -0.30C
SADA in SAILBOAT Mode
Spacecraft orientation: - X

Mission Planning:

MW108 ATS is loaded to the spacecraft and currently operating (PSO Activity List is attached)
MW109 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

**Onsite Wednesday (9/30) and today (10/05) to adjust the VBG temperature**

ATS activities:

MW\_106 (completed nominally - PSO list updated to correct timing of VBG temperature adjustment):

MW\_107 (completed nominally - PSO list updated for VBG temperature adjustment):

MW\_108 (currently loaded and executing):

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

DMU60b (2020/275)

Raised the ATLAS SHG temperature to optimize the laser energy (2020/275)

**mini-ATS to Put Laser to ARM mode for LCA63 with 41615 2020/277 (Oct 3)**

Other Activities:

Received PDB E.0.2 delivery from NGSS; began install and testing on development server

Near-term upcoming activities:

PDB E.0.2 testing on FLATLAS and deployment in ops

Testing of receiver algorithm parameter updates

Facility:

**Updating ITOS servers to RedHat 7.0 due to EOL of 6.0 at the end of November**

**Completed install on the dev servers**

Tech HW refresh:

**ISF Tech Refresh Phase 2 hardware delivered to GSFC**

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 is not received.

**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.
- Met with the Sea Ice Team to discuss hold file implementation for ATL07, ATL10, and ATL20.
- Upgraded the operating system on dev1 to Ubuntu 20.04. We will ultimately be upgrading all the SIPS clusters to Ubuntu 20.04 as the current version will reach end of support in April 2021.
- Participated in the ESDIS Assessment and Authorization (A&A) audit.

**ASAS:**

The ASAS code freeze went well, with all code promoted before the deadline.

Developers are currently updating the documentation required to support the v5.4 release.

Production of the 954b1 functional test data is currently underway. 954b1 is the test data that will be provided to the Science Team in support of the acceptance reviews for ASAS v5.4.

**SCF:**

The SCF is operating nominally. Data for releases 003 and R003 are being ingested and distributed; subsetting subscriptions are still being fulfilled but will likely be complete in the near future. New finals (rel003) from SIPS and release 004 preview data (rel954) from ASAS are both expected later this month. A file listing the current SCF data holdings is attached.

\* Data Management -- Work continues on developing new trending plots for ATL10. A script to update the database table has been created, and edits are being made to the calculation code on the dev system. A minor issue with trending plots was identified where plots containing data from two repeat cycles do not display as expected; this has been logged in JIRA for further investigation.

\* Subsetter -- One ATL09 file failed subsetting recently, and we are looking into this issue. Initial tests with release 954a3 data indicate there should be no major concerns with ensuring that the Subsetter works with ASAS v5.4 data products.

**ATL02/Instrument Science:**

"ICESat-2/ATLAS Instrument Linear System Impulse Response" has been submitted to Earth and Space Science for the ICESat-2 special collection.

Christopher Field's last day working on the ICESat-2/ATLAS instrument science team was September 30. He has taken a position on another project.

In addition, work continues on:

- Investigation of data from July 15 and September 26.
- Quantifying the expected annual number of back reflections from solar arrays on other spacecraft (e.g. Starlink).
- Investigating and modeling the properties of saturated returns.
- Re-examining the temperature dependence of the ATLAS transmitted beam divergence.
- Improving the process for calibrating transmitter-receiver alignment.

**ATL03:**

There has been a request for more clarity on what the invalid fill values are on ATL03 (and other data products). This is an HDF5/NetCDF standard, and the team is working on how best to spell it out in the ATBDs/users' guides.

## ISF ACTIVITIES MISSION WEEK 108

\* Not in science mode

^ Could affect science data quality

2020/275:03:12:38.0000 OCEANscan Duration 22 minutes  
\* 2020/275:04:04:58.0000 TEP data collection Grid 128 Duration 3 minutes  
\* 2020/275:04:18:00.0000 TEP data collection Grid 308 Duration 3 minutes  
\* 2020/275:04:25:02.0000 TEP data collection Grid 416 Duration 3 minutes  
^ 2020/275:05:10:20.0000 DMU060b Duration 75 minutes  
^ 2020/275:06:49:59.0000 Adjust SHG temperature to 49.96C to optimize the laser energy Duration 1 minute  
\* 2020/275:07:18:46.0000 TEP data collection Grid 195 Duration 3 minutes  
\* 2020/275:07:25:28.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/275:08:58:15.0000 TEP data collection Grid 265 Duration 3 minutes  
\* 2020/275:10:19:30.0000 TEP data collection Grid 83 Duration 3 minutes  
\* 2020/275:10:35:09.0000 TEP data collection Grid 298 Duration 3 minutes  
\* 2020/275:12:09:26.0000 TEP data collection Grid 296 Duration 3 minutes  
\* 2020/275:12:35:03.0000 TEP data collection Grid 422 Duration 3 minutes  
\* 2020/275:13:25:39.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
\* 2020/275:13:47:54.0000 TEP data collection Grid 366 Duration 3 minutes  
\* 2020/275:14:09:25.0000 TEP data collection Grid 419 Duration 3 minutes  
2020/275:14:59:53.0000 OCEANscan Duration 22 minutes  
\* 2020/275:16:34:14.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
\* 2020/275:18:10:57.0000 TEP data collection Grid 107 Duration 3 minutes  
\* 2020/275:18:34:27.0000 TEP data collection Grid 430 Duration 3 minutes  
\* 2020/275:19:54:27.0000 TEP data collection Grid 249 Duration 3 minutes  
\* 2020/275:20:06:06.0000 TEP data collection Grid 392 Duration 3 minutes  
\* 2020/275:21:43:40.0000 TEP data collection Grid 425 Duration 3 minutes  
\* 2020/275:22:56:26.0000 TEP data collection Grid 136 Duration 3 minutes  
\* 2020/275:23:04:16.0000 TEP data collection Grid 244 Duration 3 minutes  
\* 2020/276:00:30:44.0000 TEP data collection Grid 134 Duration 3 minutes  
\* 2020/276:02:20:40.0000 TEP data collection Grid 347 Duration 3 minutes  
2020/276:02:46:59.0000 OCEANscan Duration 22 minutes  
\* 2020/276:03:41:55.0000 TEP data collection Grid 165 Duration 3 minutes  
\* 2020/276:03:47:08.0000 TEP data collection Grid 237 Duration 3 minutes  
\* 2020/276:03:54:57.0000 TEP data collection Grid 344 Duration 3 minutes  
\* 2020/276:05:31:51.0000 TEP data collection Grid 378 Duration 3 minutes  
2020/276:05:47:47.0000 Segmented RTWscan Part 1 Duration 37 minutes  
2020/276:06:37:01.0000 Segmented RTWscan Part 3 Duration 34 minutes  
2020/276:07:17:29.0000 Segmented RTWscan Part 3 Duration 14 minutes  
\* 2020/276:08:34:06.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/276:09:51:14.0000 TEP data collection Grid 48 Duration 3 minutes  
\* 2020/276:13:00:00.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
2020/276:13:45:00.0000 Laser window dump Duration 2 minutes  
2020/276:14:34:14.0000 OCEANscan Duration 22 minutes  
\* 2020/276:16:08:35.0000 AMCS Cal over open Pacific ocean Duration 2 minutes

2020/276:17:35:00.0000 Stellar window dump Duration 90 minutes  
\* 2020/276:19:40:27.0000 TEP data collection Grid 393 Duration 3 minutes  
\* 2020/276:22:28:10.0000 TEP data collection Grid 101 Duration 3 minutes  
\* 2020/276:22:46:26.0000 TEP data collection Grid 352 Duration 3 minutes  
\* 2020/277:03:31:55.0000 TEP data collection Grid 381 Duration 3 minutes  
2020/277:03:55:37.0000 OCEANscan Duration 22 minutes  
\* 2020/277:04:40:07.0000 TEP data collection Grid 20 Duration 3 minutes  
\* 2020/277:05:04:38.0000 TEP data collection Grid 342 Duration 3 minutes  
\* 2020/277:06:19:37.0000 TEP data collection Grid 89 Duration 3 minutes  
\* 2020/277:06:37:53.0000 TEP data collection Grid 340 Duration 3 minutes  
\* 2020/277:07:53:49.0000 TEP data collection Grid 87 Duration 3 minutes  
\* 2020/277:08:08:27.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/277:08:30:24.0000 Laser in ARM mode for LCA63 43196 (GOMX4-B) 03-Oct-2020 08:30:19  
Duration 1 minute  
\* 2020/277:09:23:20.0000 TEP data collection Grid 12 Duration 3 minutes  
\* 2020/277:09:33:26.0000 TEP data collection Grid 156 Duration 3 minutes  
\* 2020/277:12:34:21.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
\* 2020/277:14:08:38.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
2020/277:15:42:53.0000 OCEANscan Duration 22 minutes  
\* 2020/277:17:16:29.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
\* 2020/277:17:32:42.0000 TEP data collection Grid 288 Duration 3 minutes  
\* 2020/277:19:04:23.0000 TEP data collection Grid 250 Duration 3 minutes  
\* 2020/277:20:46:29.0000 TEP data collection Grid 355 Duration 3 minutes  
\* 2020/277:22:23:23.0000 TEP data collection Grid 388 Duration 3 minutes  
\* 2020/278:01:29:21.0000 TEP data collection Grid 348 Duration 3 minutes  
2020/278:03:29:58.0000 OCEANscan Duration 22 minutes  
\* 2020/278:07:42:48.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/278:10:49:53.0000 TEP data collection Grid 262 Duration 3 minutes  
\* 2020/278:12:08:31.0000 TEP data collection Grid 44 Duration 3 minutes  
\* 2020/278:12:13:24.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
\* 2020/278:12:25:01.0000 TEP data collection Grid 259 Duration 3 minutes  
\* 2020/278:13:42:59.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
2020/278:15:17:14.0000 OCEANscan Duration 22 minutes  
\* 2020/278:16:51:34.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
\* 2020/278:21:34:15.0000 TEP data collection Grid 66 Duration 3 minutes  
\* 2020/279:00:50:41.0000 TEP data collection Grid 169 Duration 3 minutes  
2020/279:03:04:19.0000 OCEANscan Duration 22 minutes  
\* 2020/279:07:17:09.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
2020/279:12:02:59.0000 TOO TOOid 1738 RGT 173 offpoint 3.44deg Duration 2 minutes  
\* 2020/279:13:14:18.0000 TEP data collection Grid 7 Duration 3 minutes  
\* 2020/279:13:17:20.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
2020/279:14:51:34.0000 OCEANscan Duration 22 minutes  
\* 2020/279:16:25:55.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
^ 2020/279:17:05:15.8890 Adjust VBG temperature to 62.96C to optimize the laser wavelength Duration  
1 minute  
2020/280:02:38:40.0000 OCEANscan Duration 22 minutes  
2020/280:05:39:28.0000 Segmented RTWscan Part 1 Duration 37 minutes  
2020/280:06:28:40.0000 Segmented RTWscan Part 2 Duration 35 minutes

2020/280:07:09:01.0000 Segmented RTWscan Part 3 Duration 14 minutes  
\* 2020/280:08:25:47.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/280:12:51:41.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
2020/280:14:25:55.0000 OCEANscan Duration 22 minutes  
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2020/281:03:47:18.0000 OCEANscan Duration 22 minutes  
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\* 2020/281:14:00:19.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
2020/281:15:34:33.0000 OCEANscan Duration 22 minutes