

**ICESat-2 PROJECT SCIENCE OFFICE REPORT**

**Monday, December 2, 2019 thru Sunday, December 8, 2019**

RGTs spanned: 1010-1116  
Cycle 5

**Items of Note:**

All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode.

**NSIDC ICESat-2 Metrics through December 8:** 2,894 total users of 10 available data products; 2,233,650 sciences files downloaded. ATLO8 is once again in the lead with 1,273 users and 743,566 files downloaded! ATLO3 remains in 2<sup>nd</sup> place with 944 users of 232,567 files, and ATLO6 is in 3<sup>rd</sup> this week with 641 users and a **whopping 1,071,311** files downloaded.

Photon Phriday this week captured San Francisco, CA, where tens of thousands of Earth scientists are gathering this week for the annual meeting of the American Geophysical Union!

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

**CAMS/POD:**

**CAMS:** Regular CAMS operations: constraint and conjunction monitoring for MW064 and MW065 and mission planning for MW066.

CAMS recommended Laser ARM for HIE event with 43894 for doy336(MW064) that self-mitigated.

CAMS continues to target the moorings at 36.0259 lat, -125.105 lon per the Science Team request.

**POD:** Regular POD operations continue. Intermediate POD was completed for GPS weeks 2080 & 2081. Final POD was completed for GPS weeks 2078 & 2079. All results appear nominal.

**ISF:**

All ATLAS housekeeping data is nominal  
Laser 2 is firing at energy level 4 and in science mode  
WTEM Peak to Edge Ratio: 1.197  
Laser 2 Temperature Error: -0.23C  
SADA in SAILBOAT Mode  
Spacecraft orientation: + X

**Mission Planning:**

MW65 ATS is loaded to the spacecraft and currently operating.  
MW66 is being planned, nominal calibrations and a mini-VBG sweep

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Activities during the past week:

Real-time activities:

CAR91, CAR102 and CAR248 to clear routine SBS, SXP, SMT errors

ATS activities:

Routine Instrument calibrations, Ocean scans and Vegetation Data collection.

Other Activities:

Prepared a mini-SAT to mitigate LCA22 44415 (ORCA-1) 06-Dec-2019 05:24:31 (2019/340) with Laser to ARM mode for 10.5 seconds.

ISF tech refresh:

- Regression testing TCS with ITOS 9.6 64-bit on the current Dell dev server
- PMT and file transfer Dell server versions are ready for testing within the SPOCC environment

Near-term activities:

Continuing to work on the ISF tech refresh

Perform TCS failover contingency operations (i.e., fail over to backup server practice)

Continue routine use of FLATLAS, but power the hardware down prior to the planned power outage of Bldg 1 on 12/13.

Notes/Issues:

NA

LTO Schedule:

All items remain on schedule

**SIPS:**

- The SIPS is operating nominally:
  - o Ingested and distributed Level 0 data to the ISF.
  - o Generated L1A and L1B products and distributed ATL02s to the ISF, POD, and SCF.
  - o Distributed selected ATL01s to the ISF and SCF by special request.
  - o Generated rapids ATL03, ATL04, ATL06, ATL07, ATL08, ATL09, and ATL10 using ANC03/04/05 files from the CAMS.
  - o Distributed the rapid Science Data products to the SCF.
- Completed integration testing of SIPS Build 4.3 consisting of SDMS V6.17 (no ASAS changes). These are mostly SDMS enhancements and some fixes (nothing critical).
- Conducted a TRR for SIPS Build 4.3 on Dec. 06 and it was approved for testing on the Acceptance Test system.
- Delivered ATL01s and associated Ancillary files from Nov. 5 – 10, 2019 to “Playground” for testing of the atlas\_l1b hotfix

**ASAS:**

ASAS developers continue to work the top priority issues as identified by their respective ATBD lead.

L1B work involves testing the modified receiver sensitivity equation.

ATL03 work is focused on improving the false signal classifications.

The Atmosphere L3B developer is working towards population of the reformatted ATL16.

The Land Ice code developer started implementation of recent ATBD updates.

The Land/Veg developer is working on improvements to terrain finding under dense canopy.

The sea ice/freeboard developer provided updated code version to referee. Working on implementation of bounds about the reference surface.

The Sea Ice ATL20 L3B the developer is working on a first example product.

The Land Ice ATL11 L3B the developer is working on access to and use of ADAPT.

The inland water developer is working on windspeed implementation

The ocean developer is debugging the initial ATL12 results from the redesigned ocean manager.

ASAS is running the second series of functional tests.

#### **SCF:**

The SCF is operating nominally. Data for releases 002 and R002 are being ingested and distributed. The next batch of data from SIPS is expected to begin arriving in the next week or two. Release PG027 data from the ASAS Playground were ingested and distributed to users who needed it. Work on using the SDMS software with a second server to improve processing should resume in the near future, after upgrades to the SIPS systems make their current hardware available for reuse. The Visualizer Design Document has been fully updated to v7.0 and is now consistent with the current version of the software. A file listing the current SCF data holdings is attached.

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

We have evaluated "test" ATL02 files that incorporate the proposed fix for swap of the Leading-Lower 2 and Trailing Upper start times that resulted from the PCE2 anomaly of 7 November. The fix appears to be effective; it detects a symptom of the swap and reverses it. Additional work is under way to check for other unintended effects.

Additional parameters have been added to the automated QA screening process to detect problems with the start time, such as resulted from the PCE2 anomaly. Limit values are being adjusted to provide the right level of alertness.

In addition, work continues on:

- Investigating the mechanism of “jumps” in the TEP TOF
- Further characterization of “afterpulses” and their sources
- Reprocessing I&T data using the latest EMG fit method.
- A new method for analyzing the results of on-orbit AMCS calibrations. The current method does not separate return from background, and is usable only for AMCS calibrations done over the night side of the earth. The new method will allow AMCS calibrations to be done usefully over the day side as well.
- Development of an algorithm for estimation of OFM transmittance peak shift from 2-step VBG sweep data.

### **ATL03:**

Final ATBD updates continued for release 003 to include a QA parameter indicating the percent of granule geolocation segments with the absolute difference between reference photon height and DEM height exceeding a threshold, a flag on the actual product indicating whether or not photons resulting from saturation are likely present in a particular granule or geolocation segment, and for updating the range bias determination text based on ongoing work.

### **ISF ACTIVITIES MISSION WEEK 065:**

\* Not in science mode

^ Could affect science data quality

- \* 2019/262:00:36:54.0000 Grid 53 TEP data collection Duration 3 minutes
- \* 2019/262:01:34:26.0000 Grid 249 TEP data collection Duration 3 minutes
- \* 2019/262:01:47:29.0000 Grid 69 TEP data collection Duration 3 minutes
- \* 2019/262:02:58:17.0000 Grid 391 TEP data collection Duration 3 minutes
- \* 2019/262:03:13:56.0000 Grid 175 TEP data collection Duration 3 minutes
- \* 2019/262:03:21:47.0000 Grid 66 TEP data collection Duration 3 minutes
- \* 2019/262:03:59:18.0000 Grid 227 TEP data collection Duration 3 minutes
- \* 2019/262:04:37:48.0000 Grid 317 TEP data collection Duration 3 minutes
- \* 2019/262:05:17:09.0000 Grid 10 TEP data collection Duration 3 minutes
- \* 2019/262:05:38:03.0000 Grid 297 TEP data collection Duration 3 minutes
- \* 2019/262:05:45:37.0000 Grid 405 TEP data collection Duration 3 minutes

\* 2019/262:06:04:14.0000 Grid 423 TEP data collection Duration 3 minutes  
\* 2019/262:06:19:54.0000 Grid 206 TEP data collection Duration 3 minutes  
\* 2019/262:06:31:14.0000 Grid 61 TEP data collection Duration 3 minutes  
\* 2019/262:06:51:56.0000 Grid 7 TEP data collection Duration 3 minutes  
\* 2019/262:07:07:08.0000 Grid 223 TEP data collection Duration 3 minutes  
\* 2019/262:07:15:18.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2019/262:07:48:59.0000 Grid 276 TEP data collection Duration 3 minutes  
\* 2019/262:07:54:12.0000 Grid 204 TEP data collection Duration 3 minutes  
\* 2019/262:08:04:39.0000 Grid 59 TEP data collection Duration 3 minutes  
\* 2019/262:08:31:10.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2019/262:09:31:05.0000 Grid 165 TEP data collection Duration 3 minutes  
2019/262:10:02:47.0000 OCEANscan Duration 22 minutes  
\* 2019/262:10:27:50.0000 Grid 398 TEP data collection Duration 3 minutes  
\* 2019/262:10:47:04.0000 Grid 416 TEP data collection Duration 3 minutes  
\* 2019/262:10:54:57.0000 Grid 307 TEP data collection Duration 3 minutes  
\* 2019/262:11:39:33.0000 Grid 108 TEP data collection Duration 3 minutes  
^ 2019/262:12:07:12.0000 DMU026 Duration 55 minutes  
\* 2019/262:14:02:26.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2019/262:14:25:32.0000 Grid 13 TEP data collection Duration 3 minutes  
\* 2019/262:14:55:58.0000 Grid 211 TEP data collection Duration 3 minutes  
\* 2019/262:15:32:36.0000 Grid 372 TEP data collection Duration 3 minutes  
\* 2019/262:17:09:30.0000 Grid 334 TEP data collection Duration 3 minutes  
\* 2019/262:18:46:24.0000 Grid 295 TEP data collection Duration 3 minutes  
\* 2019/262:19:28:25.0000 Grid 60 TEP data collection Duration 3 minutes  
\* 2019/262:20:18:17.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2019/262:21:10:32.0000 Grid 166 TEP data collection Duration 3 minutes  
2019/262:21:49:53.0000 OCEANscan Duration 22 minutes  
\* 2019/262:22:41:12.0000 Grid 128 TEP data collection Duration 3 minutes  
\* 2019/263:01:45:33.0000 Grid 51 TEP data collection Duration 3 minutes  
\* 2019/263:01:53:24.0000 Grid 159 TEP data collection Duration 3 minutes  
\* 2019/263:02:02:43.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2019/263:02:32:38.0000 Grid 392 TEP data collection Duration 3 minutes  
\* 2019/263:02:58:46.0000 Grid 31 TEP data collection Duration 3 minutes  
\* 2019/263:03:45:10.0000 Grid 408 TEP data collection Duration 3 minutes  
\* 2019/263:05:49:03.0000 Grid 279 TEP data collection Duration 3 minutes  
\* 2019/263:06:25:47.0000 Grid 8 TEP data collection Duration 3 minutes  
\* 2019/263:07:15:30.0000 Grid 385 TEP data collection Duration 3 minutes  
\* 2019/263:07:19:52.0000 Grid 313 TEP data collection Duration 3 minutes  
\* 2019/263:08:05:32.0000 AMCS Cal over open ocean Duration 2 minutes  
2019/263:09:37:08.0000 OCEANscan Duration 22 minutes  
\* 2019/263:11:14:06.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2019/263:13:36:47.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2019/263:14:25:06.0000 Grid 140 TEP data collection Duration 3 minutes  
\* 2019/263:15:14:47.0000 Grid 265 TEP data collection Duration 3 minutes

\* 2019/263:18:23:22.0000 Grid 260 TEP data collection Duration 3 minutes  
\* 2019/263:19:14:37.0000 Grid 241 TEP data collection Duration 3 minutes  
\* 2019/263:19:52:39.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2019/263:20:39:10.0000 Grid 95 TEP data collection Duration 3 minutes  
2019/263:21:24:14.0000 OCEANscan Duration 22 minutes  
\* 2019/263:23:01:13.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2019/264:01:19:48.0000 Grid 52T EP data collection Duration 3 minutes  
\* 2019/264:01:37:04.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2019/264:03:04:00.0000 2 orbits of TEP calibration with BSM in manual mode Duration 192 minutes  
\* 2019/264:07:39:53.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2019/264:08:29:23.0000 Grid 311 TEP data collection Duration 3 minutes  
2019/264:09:11:30.0000 OCEANscan Duration 22 minutes  
\* 2019/264:10:48:28.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2019/264:14:45:26.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2019/264:15:36:22.0000 Grid 174 TEP data collection Duration 3 minutes  
\* 2019/264:16:23:26.0000 Grid 266 TEP data collection Duration 3 minutes  
\* 2019/264:16:30:16.0000 Grid 155 TEP data collection Duration 3 minutes  
\* 2019/264:19:27:00.0000 AMCS Cal over open ocean Duration 2 minutes  
2019/264:21:00:00.0000 Laser window dump Duration 2 minutes  
\* 2019/264:21:10:01.0000 AMCS Cal over open ocean Duration 2 minutes  
2019/264:22:32:53.0000 OCEANscan Duration 22 minutes  
2019/264:23:59:24.0000 RTWscan Duration 90 minutes  
\* 2019/265:02:45:43.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2019/265:07:16:45.0000 AMCS Cal over open ocean Duration 2 minutes  
2019/265:08:45:51.0000 OCEANscan Duration 22 minutes  
\* 2019/265:10:22:49.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2019/265:14:19:47.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2019/265:19:11:02.0000 AMCS Cal over open ocean Duration 2 minutes  
2019/265:20:32:57.0000 OCEANscan Duration 22 minutes  
\* 2019/265:22:09:56.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2019/265:23:54:00.0000 VBG sweep in Manual TEP mode with AMCS in Manual mode Duration 172 minutes  
\* 2019/266:07:05:32.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2019/266:08:22:53.0000 AMCS Cal over open ocean Duration 2 minutes  
2019/266:09:54:29.0000 OCEANscan Duration 22 minutes  
\* 2019/266:13:54:08.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2019/266:20:09:59.0000 AMCS Cal over open ocean Duration 2 minutes  
2019/266:21:41:35.0000 OCEANscan Duration 22 minutes  
2019/266:23:08:06.0000 RTWscan Duration 90 minutes  
\* 2019/267:01:54:25.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
2019/267:02:02:00.0000 Stellar window dump Duration 90 minutes  
\* 2019/267:07:57:14.0000 AMCS Cal over open ocean Duration 2 minutes  
2019/267:09:28:50.0000 OCEANscan Duration 22 minutes

- \* 2019/267:11:05:48.0000 AMCS Cal over open ocean Duration 2 minutes
- \* 2019/267:13:28:29.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2019/267:15:02:46.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2019/267:19:44:20.0000 AMCS Cal over open ocean Duration 2 minutes
- 2019/267:21:15:56.0000 OCEANscan Duration 22 minutes
- \* 2019/267:22:52:55.0000 AMCS Cal over open ocean Duration 2 minutes
- \* 2019/268:01:28:46.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2019/268:07:31:35.0000 AMCS Cal over open ocean Duration 2 minutes
- 2019/268:09:03:11.0000 OCEANscan Duration 22 minutes
- \* 2019/268:10:40:09.0000 AMCS Cal over open ocean Duration 2 minutes
- \* 2019/268:13:05:40.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2019/268:14:37:07.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2019/268:19:18:41.0000 AMCS Cal over open ocean Duration 2 minutes
- 2019/268:20:50:17.0000 OCEANscan Duration 22 minutes
- \* 2019/268:22:27:16.0000 AMCS Cal over open ocean Duration 2 minutes