

**ICESat-2 PROJECT SCIENCE OFFICE REPORT**

**Monday, November 4, 2019 thru Sunday, November 10, 2019**

RGTs spanned: 582-688

Cycle 5

**SUMMARY:**

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

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

**CAMS/POD:**

**CAMS:** Regular CAMS operations: constraint and conjunction monitoring for MW060 and MW061 and mission planning for MW0 62. A split-ATS for MW061 has been generated by CAMS and IOTL validated. 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 week 2077. Final POD was completed for GPS week 2075. All results appear nominal. POD delivered to JPL 3 months' worth of ICESat-2 data products (RINEX, SP3, attitude quaternions, SLR). This data will be used by JPL to perform further POD validation.

**ISF:**

All ATLAS housekeeping data is nominal  
Laser 2 is firing at energy level 4 and in science mode  
WTEM Peak to Edge Ratio: 1.204  
Laser 2 Temperature Error: -0.27C  
SADA in Airplane Mode  
Spacecraft orientation: + X

**Mission Planning:**

MW61 ATS is loaded to the spacecraft and currently operating.

NOTE: Three Vegetation Data collection (VegTk) activities were not completed due to the late load of the MW60 ATS. This is reflected in the PSO activity list. (see note 1)

MW62 is being planned, nominal calibration activities

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**Activities during the past week:**

Real-time activities:

CAR91 and CAR102 to clear routine SBS and SXP errors

ATS activities:

Routine Instrument calibrations, Ocean scans and Vegetation Data collection; No RTW scans during OIB campaign

DMU31 : 2019/306:13:27:12 (2019/11/2)

**Other Activities:**

Prepared a split ATS to implement an updated plan of DMU32, the split ATS was waived off however as the latest predicts show the original parameters are now a better choice for DMU32.

4th Quarter scan - November 7 - awaiting results

**Near-term activities:**

DMU32 : 2019/314:14:44 (2019/11/10)

Continuing to work on the ISF tech refresh

Clean up temp files from Rx Alg v9 test

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

DVESTO A&A Audit (Debrief scheduled for November 18)

**Notes/Issues:**

1. ATS (file) loading issue update: PTP vendor trouble-shooting found a bug with the latest software update in the PTP. SG1 has previous version and has no file uplink issues. Work-around is being implemented and tested with SG2, AS1, AS2, and AS3, early results are promising, the MW61 ATS was loaded without any issues.
2. SOCRAS (Barracuda) appliance down; team not able to remotely login to RIONet servers. (See DR ISF-579). The SOCRAS appliance is now back online as of 2019/311 (11/7/19)
3. CAMS RAID having issues - failed disk was suspected; RAID SW was updated to latest version and suspect drive replaced; operating normally

**LTO Schedule:**

All items remain on schedule

**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 rapid Science Data products to the SCF.
- Started patching all SIPS systems per results of monthly credentialed scans. The IntTest and AccTest systems were patched this week.
- Completed processing and distribution of Release 002 L2A and L3A data products for July 20, 2019 to the SCF and Cooler.

### **SCF:**

The SCF is operating nominally. Data for releases 002 and R002 are being ingested and distributed. With batch 4 ingest complete, subscriptions have caught up and finished. Production of release 001 data, for ATL16 and ATL17, has finished for the time being, so processing for all releases and products is now current. Also, deletion of previous release 002 finished this week as expected. A file listing the current SCF data holdings is attached.

\* Data Management -- A fix for the ATL04 trending issue was made, tested, and confirmed to work as expected. The code was updated in operations earlier this week and has been running successfully since then. Minor changes to the SDMS configuration and server settings were made to use a separate partition for SDMS log files.

\* Subsetter -- A minor update to the Subsetter that reduces file compression has been made and tested. This should increase processing speed by roughly 20% in exchange for files that are roughly 2% larger in size, a trade-off the PSO has approved. We expected to update operational code early next week.

\* Visualizer -- A minor update to the Users Guide was made and posted on the SCF web site as v7.0.1.

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

Investigation began into the frequency and circumstances of "Did not finish" events, in which the data from a 200-shot major frame is truncated due to a data "traffic jam" within ATLAS. A seasonally-varying dependence on orbit segment was discovered; investigation continues into specific parameters with which the DNF frequency may be correlated.

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.
- Correcting and optimizing ATL02 QA parameters.

### **ATL03:**

Analysis continues of a test data set from July 20 to assess the scientific viability of data collected between July 9 and July 26 (TAI-GPS timing offset), specifically with respect to the height bias analysis being performed at with ATL03 data and GPS data at 88S. Additionally, work continues on how best to modify the signal finding algorithm to omit subsurface photons from saturation that are considered part of the surface return due to signal confidence rating.

### **ISF ACTIVITIES MISSION WEEK 061:**

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

- 2019/311:01:21:30.0000 TOO TOOid=1208 Duration 3 minutes
- \* 2019/311:03:14:13.0000 TEP data collection Grid 45 Duration 3 minutes
- \* 2019/311:05:01:00.0000 AMCS Cal over open ocean Duration 2 minutes
- 2019/311:06:22:57.0000 OCEANscan Duration 22 minutes
- \* 2019/311:07:59:55.0000 AMCS Cal over open ocean Duration 2 minutes
- \* 2019/311:09:40:21.0000 TEP data collection Grid 179 Duration 3 minutes
- \* 2019/311:11:03:02.0000 TEP data collection Grid 34 Duration 3 minutes
- \* 2019/311:11:26:33.0000 TEP data collection Grid 357 Duration 3 minutes
- \* 2019/311:11:30:06.0000 TEP data collection Grid 392 Duration 3 minutes
- \* 2019/311:13:06:05.0000 TEP data collection Grid 426 Duration 3 minutes
- \* 2019/311:14:19:29.0000 TEP data collection Grid 137 Duration 3 minutes
- \* 2019/311:17:30:41.0000 TEP data collection Grid 168 Duration 3 minutes
- \* 2019/311:17:43:43.0000 TEP data collection Grid 347 Duration 3 minutes
- \* 2019/311:17:48:57.0000 TEP data collection Grid 419 Duration 3 minutes
- \* 2019/311:18:57:07.0000 TEP data collection Grid 58 Duration 3 minutes
- \* 2019/311:19:02:38.0000 TEP data collection Grid 129 Duration 3 minutes
- \* 2019/311:19:10:11.0000 TEP data collection Grid 237 Duration 3 minutes
- \* 2019/311:19:23:04.0000 TEP data collection Grid 417 Duration 3 minutes
- 2019/311:19:44:19.0000 OCEANscan Duration 22 minutes
- \* 2019/311:20:44:29.0000 TEP data collection Grid 235 Duration 3 minutes
- \* 2019/311:20:51:26.0000 TEP data collection Grid 343 Duration 3 minutes
- \* 2019/311:22:17:19.0000 TEP data collection Grid 196 Duration 3 minutes
- \* 2019/311:23:57:10.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2019/312:01:14:17.0000 TEP data collection Grid 48 Duration 3 minutes
- \* 2019/312:01:27:21.0000 TEP data collection Grid 228 Duration 3 minutes
- \* 2019/312:02:53:48.0000 TEP data collection Grid 118 Duration 3 minutes
- \* 2019/312:05:59:58.0000 AMCS Cal over open ocean Duration 2 minutes
- 2019/312:07:31:35.0000 OCEANscan Duration 22 minutes
- \* 2019/312:10:52:59.0000 TEP data collection Grid 250 Duration 3 minutes
- \* 2019/312:14:06:52.0000 TEP data collection Grid 317 Duration 3 minutes

\* 2019/312:15:30:44.0000 TEP data collection Grid 171 Duration 3 minutes  
2019/312:16:02:00.0000 Stellar window dump Duration 90 minutes  
\* 2019/312:18:41:56.0000 TEP data collection Grid 202 Duration 3 minutes  
2019/312:19:18:40.0000 OCEANscan Duration 22 minutes  
\* 2019/312:20:16:30.0000 TEP data collection Grid 199 Duration 3 minutes  
\* 2019/312:20:21:25.0000 TEP data collection Grid 271 Duration 3 minutes  
\* 2019/312:21:39:56.0000 TEP data collection Grid 54 Duration 3 minutes  
\* 2019/312:23:19:34.0000 TEP data collection Grid 123 Duration 3 minutes  
\* 2019/312:23:31:30.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2019/313:04:23:19.0000 TEP data collection Grid 403 Duration 3 minutes  
\* 2019/313:05:34:19.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2019/313:07:02:45.0000 TEP data collection Grid 4 Duration 3 minutes  
2019/313:07:05:55.0000 OCEANscan Duration 22 minutes  
\* 2019/313:08:42:53.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2019/313:09:06:11.0000 TEP data collection Grid 432 Duration 3 minutes  
\* 2019/313:10:39:58.0000 TEP data collection Grid 430 Duration 3 minutes  
\* 2019/313:13:25:34.0000 TEP data collection Grid 102 Duration 3 minutes  
\* 2019/313:18:11:03.0000 TEP data collection Grid 131 Duration 3 minutes  
\* 2019/313:18:31:56.0000 TEP data collection Grid 418 Duration 3 minutes  
2019/313:18:53:01.0000 OCEANscan Duration 22 minutes  
\* 2019/313:19:37:28.0000 TEP data collection Grid 21 Duration 3 minutes  
\* 2019/313:19:53:10.0000 TEP data collection Grid 236 Duration 3 minutes  
\* 2019/313:21:29:08.0000 TEP data collection Grid 270 Duration 3 minutes  
\* 2019/313:22:51:18.0000 TEP data collection Grid 88 Duration 3 minutes  
\* 2019/313:23:05:51.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2019/313:23:12:10.0000 TEP data collection Grid 375 Duration 3 minutes  
\* 2019/314:00:40:08.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
2019/314:03:51:30.0000 TOO TOOid=1194 Duration 2 minutes  
\* 2019/314:05:08:39.0000 AMCS Cal over open ocean Duration 2 minutes  
2019/314:06:40:16.0000 OCEANscan Duration 22 minutes  
\* 2019/314:08:17:14.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2019/314:12:58:00.0000 TEP data collection Grid 66 Duration 3 minutes  
\* 2019/314:13:02:31.0000 TEP data collection Grid 138 Duration 3 minutes  
^ 2019/314:14:14:47.0000 DMU32 Duration 54 minutes  
\* 2019/314:16:26:45.0000 TEP data collection Grid 349 Duration 3 minutes  
\* 2019/314:17:58:26.0000 TEP data collection Grid 311 Duration 3 minutes  
2019/314:18:27:21.0000 OCEANscan Duration 22 minutes  
\* 2019/314:19:17:04.0000 TEP data collection Grid 93 Duration 3 minutes  
\* 2019/314:22:28:15.0000 TEP data collection Grid 124 Duration 3 minutes  
\* 2019/314:22:43:40.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2019/314:22:49:08.0000 TEP data collection Grid 411 Duration 3 minutes  
\* 2019/315:00:14:29.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2019/315:00:20:48.0000 TEP data collection Grid 373 Duration 3 minutes  
\* 2019/315:04:50:39.0000 AMCS Cal over open ocean Duration 2 minutes

2019/315:05:00:50.0000 TOO TOOid=1189 Duration 3 minutes  
2019/315:06:14:36.0000 OCEANscan Duration 22 minutes  
\* 2019/315:07:51:34.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2019/315:14:11:32.0000 TEP data collection Grid 136 Duration 3 minutes  
\* 2019/315:17:19:44.0000 TEP data collection Grid 132 Duration 3 minutes  
2019/315:19:35:59.0000 OCEANscan Duration 22 minutes  
\* 2019/315:23:48:49.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2019/316:05:51:38.0000 AMCS Cal over open ocean Duration 2 minutes  
2019/316:07:23:14.0000 OCEANscan Duration 22 minutes  
2019/316:19:10:19.0000 OCEANscan Duration 22 minutes  
\* 2019/316:23:23:09.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2019/317:05:25:58.0000 AMCS Cal over open ocean Duration 2 minutes  
2019/317:06:57:34.0000 OCEANscan Duration 22 minutes  
\* 2019/317:08:34:32.0000 AMCS Cal over open ocean Duration 2 minutes  
2019/317:14:00:00.0000 Laser window dump Duration 2 minutes  
2019/317:18:44:39.0000 OCEANscan Duration 22 minutes  
\* 2019/317:22:57:30.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes