ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, May 25 2020 thru Sunday, May 31, 2020

RGTs spanned: 909-1015
Cycle 7

SUMMARY:
All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. SIPS Build 4.4.3 consisting of the latest revision of ATL07/ATL10, release 003 was installed into operations on May 27. SIPS is currently producing Release 003 ATL07 and ATL10s from Oct 2018 through mid-November 2019 and will be staged for NSIDC this upcoming week, and delivered these products to the SCF/Cooler for the period Nov. 16, 2019 – Apr. 04, 2020 for PSO/ST evaluation.

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

NSIDC ICESat-2 Metrics through May 31: 1,955 total users of 10 available data products; 5,289,808 sciences files downloaded. ATL03 is in the lead with 819 unique users of 650,112 files downloaded. ATL08 is in a close second with 787 unique users and an astounding 2,618,205 files downloaded, and ATL06 is in third place with 528 unique users and 1,667,554 files downloaded. *(*this will be the last weekly update of user statistics from NSIDC; next report will be at the beginning of July as we switch to a monthly reporting cadence*)*

ELEMENT DETAILS BELOW

CAMS/POD:
CAMS: Regular CAMS operations: constraint and conjunction monitoring for MW089 and MW091 and mission planning for MW091.
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.
CAMS recommended +5deg slew for 25544 (ISS) 146/08:54:23 (MW089).
CAMS recommended laser arm for 41616 (FLOCK 2P 5) 150/22:35:25 – 150/22:35:35 (MW090).
CAMS recommends laser arm for 41983 (FLOCK 3P 85) 152/07:33:41 – 152/07:33:51 (MW090).

POD: Regular POD operations continue. Intermediate POD was completed for GPS week 2106. Final POD was completed for GPS week 2104.

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: -0.26C
SADA in AIRPLANE Mode
Spacecraft orientation: - X

Mission Planning:
MW90 ATS is loaded to the spacecraft and currently operating (PSO Activity List is attached)

MW91 has been delivered, nominal calibrations

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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:
MW089 - attached updated MW89 PSO Activity (LCA40 added)

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

Daytime AMCS Cals:
2020/149:14:09
2020/149:20:12
TEP Stare:
2020/152:04:15

Other Activities:

Mini-ATS for LCA41 to mitigate HIE with 41616 (Laser to ARM 2020/150 22:35:25)
Includes commands from sCARs to reset counters to clear yellow flags

Near-term activities:
None scheduled
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:
~ none to report

LTO Schedule:
All items remain on schedule. Draft dates for Tech Refresh provided to ESMO scheduler.

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 Build 4.4.3 consisting of atlas_l3a_si v4.3.2 was installed in Ops on May 27.
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- Produced and delivered to the SCF/Cooler the Release 003 ATL07 and ATL10s for the Nov. 16, 2019 – Apr. 04, 2020.
- Started production of Rel 003 ATL07 and ATL10s for Oct. 14, 2018 – Nov 15, 2019. Processing is expected to be completed by June 3rd and products will be delivered to NSIDC after applying the Science Team supplied holds.
- Started delivery of Rel 003 data products from 7 March 2020 through 4 April 2020 to NSIDC after PSO approval.

ASAS:
Several code updates are underway to support new ATL03 features. These include the addition of roll, pitch and yaw on the product; the computation and addition of free-to-mean tide values and the re-classification of saturated photons.

For atmosphere, work continues on the L2A surface signal algorithm and the L3A low-rate blowing snow.

L3B ATM work on templates and fixes to the observation counts is underway. The code to change the grid sizes is in testing.

The ATL11 team has delivered an updated ATL11 example product to NSIDC, including XML and browse companion files.

An updated ATL08 ATBD was delivered and the developer is beginning to work the high-priority issues.

The land ice refactor is progressing well with all of the fitting routines selecting EVERY SINGLE photon selected by the ATBD lead Matlab code. Still working an inconsistency with tx_pulse_shape where ASAS values for some test data sets match to 1e-16 meters and other data sets are nearly a centimeter off. Code to produce release 003 ATL07s and ATL10s has been delivered to SIPS as the ASAS v5.3.3 hotfix.

Work is progressing on structural changes to ATL20, based on NSIDC provided suggestions that would make ATL20 more standards-compliant and significantly more usable with earth science-related tools. Work also continues on the ATL20 browse products.

For inland water, the focus is on unit height adjustment and preliminary work on the ATL22 L3B inland water product.

For ocean, code for the L3A layer flag is being completed and work is continuing on the L3B ocean product.

SCF:
The SCF is operating nominally. Data for releases 003 and R003 are being ingested and distributed. Reprocessed ATL07 and ATL10 release 003 data for Nov. 16 to Apr. 4 are currently arriving, and ingest is expected to be complete shortly after production finishes at SIPS. A file listing the current SCF data holdings is attached.

* Data Management -- Test data for ATL07 and ATL10 were received from SIPS early in the week for evaluation by relevant users prior to official reprocessing late in the week. Work to modify the ATL10

trending code to operate per-beam is almost complete. Plots now appear to be correct, but some additional checks will be made to confirm this before the code is put into operations.

* Subsetter -- Some warning messages had been treated as errors by SDMS, causing jobs to fail when there was no actual error. A minor update was made to the code in operations to prevent this, and it is running as expected.

* Visualizer -- The design document is being updated for v8.0 of the software. The macOS-specific problem that was found recently, where a button is active but not highlighted to indicate this, has been identified as a known issue involving Mojave. It is being included as such in the Release Notes and User Guide.

ATL02/Instrument Science:
Work continues on:

- Evaluating the latest analysis of ATLAS range bias.
- Writing up the results of the study of variation of range bias on orbital and seasonal time scales.
- Modeling the behavior of the ATLAS receiver during extreme saturation events.
- Investigating and explaining "interesting" behavior revealed by the expanded ATLAS QA screening process.
- Improving the process for calibrating transmitter-receiver alignment.

ATL03:
Work continues on saturation signal editing in preparation for release 004. Additionally, changes/updates to several parameters (mean tide/tide-free geophysical corrections, saturation declassification issues) are being proposed and discussed for release 004.

ISF ACTIVITIES MISSION WEEK 090:

* 2020/149:02:09:07.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/149:02:31:07.0000 TEP data collection Grid 13 Duration 3 minutes
* 2020/149:05:31:50.0000 TEP data collection Grid 117 Duration 3 minutes
* 2020/149:06:45:15.0000 TEP data collection Grid 404 Duration 3 minutes
* 2020/149:08:24:58.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/149:09:56:34.0000 OCEANscan Duration 22 minutes
* 2020/149:10:22:25.0000 TEP data collection Grid 2 Duration 3 minutes
  2020/149:11:04:00.0000 Laser window dump Duration 2 minutes
* 2020/149:11:41:10.0000 TEP data collection Grid 252 Duration 3 minutes
* 2020/149:11:50:47.0000 TEP data collection Grid 108 Duration 3 minutes
* 2020/149:14:09:24.0000 AMCS calibration over open ATLANTIC ocean once in daylight Duration 2 minutes
* 2020/149:14:36:41.0000 TEP data collection Grid 428 Duration 3 minutes
* 2020/149:14:57:34.0000 TEP data collection Grid 139 Duration 3 minutes

* 2020/149:15:02:49.0000 TEP data collection Grid 67 Duration 3 minutes
* 2020/149:17:53:07.0000 TEP data collection Grid 315 Duration 3 minutes
* 2020/149:19:23:12.0000 TEP data collection Grid 384 Duration 3 minutes
* 2020/149:20:12:13.0000 AMCS calibration over open ocean once in daylight Duration 2 minutes
* 2020/149:21:04:18.0000 TEP data collection Grid 274 Duration 3 minutes
  2020/149:21:31:36.0000 TOO TOOid 1472 RGT 967 offpoint 4.52deg Duration 2 minutes
  2020/149:21:43:49.0000 OCEANscan Duration 22 minutes
* 2020/149:22:38:52.0000 TEP data collection Grid 271 Duration 3 minutes
* 2020/150:00:10:17.0000 TEP data collection Grid 305 Duration 3 minutes
* 2020/150:00:18:05.0000 TEP data collection Grid 197 Duration 3 minutes
* 2020/150:01:43:28.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/150:03:17:31.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/150:03:34:30.0000 TEP data collection Grid 84 Duration 3 minutes
* 2020/150:03:39:44.0000 TEP data collection Grid 12 Duration 3 minutes
  2020/150:06:25:07.0000 TOO TOOid 1470 RGT 973 offpoint 0.04deg Duration 2 minutes
* 2020/150:07:59:19.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/150:08:31:37.0000 TOO TOOid 1473 RGT 974 offpoint 4.51deg Duration 2 minutes
  2020/150:09:30:54.0000 OCEANscan Duration 22 minutes
* 2020/150:11:07:54.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/150:12:57:37.0000 TEP data collection Grid 142 Duration 3 minutes
  2020/150:21:18:10.0000 OCEANscan Duration 22 minutes
* 2020/150:22:35:15.0000 LCA41 41616 (FLOCK 2P 5) 29-May-2020 22:35:30 laser to ARM Duration 1 minutes
* 2020/151:01:18:35.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/151:01:29:20.0000 TEP data collection Grid 159 Duration 3 minutes
* 2020/151:02:52:06.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
  2020/151:06:31:40.0000 TOO TOOid 1474 RGT 988 offpoint 4.48deg Duration 2 minutes
* 2020/151:07:33:40.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/151:09:05:15.0000 OCEANscan Duration 22 minutes
* 2020/151:10:42:14.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/151:12:06:04.0000 Segmented RTWscan Part Duration 37 minutes
  2020/151:12:55:07.0000 Segmented RTWscan Part Duration 34 minutes
  2020/151:13:35:49.0000 Segmented RTWscan Part Duration 14 minutes
* 2020/151:17:01:49.0000 TEP data collection Grid 316 Duration 3 minutes
* 2020/151:17:07:01.0000 TEP data collection Grid 244 Duration 3 minutes
  2020/151:20:52:31.0000 OCEANscan Duration 22 minutes
* 2020/151:23:13:44.0000 TEP data collection Grid 379 Duration 3 minutes
* 2020/151:23:32:00.0000 TEP data collection Grid 126 Duration 3 minutes
* 2020/152:02:26:26.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/152:04:14:00.0000 TEP Stare 2 orbits of TEP calibration Duration 188 minutes
* 2020/152:07:25:01.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/152:07:33:31.0000 LCA42 41983 (FLOCK 3P 85) 31-May-2020 07:33:46 laser to ARM Duration 1 minutes
  2020/152:08:39:36.0000 OCEANscan Duration 22 minutes
* 2020/152:10:16:35.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/152:11:40:24.0000 Segmented RTWscan Part Duration 37 minutes
  2020/152:12:29:39.0000 Segmented RTWscan Part Duration 35 minutes
  2020/152:13:10:14.0000 Segmented RTWscan Part Duration 14 minutes

* 2020/152:13:32:47.0000 TEP data collection Grid 249 Duration 3 minutes
* 2020/152:13:40:36.0000 TEP data collection Grid 141 Duration 3 minutes
* 2020/152:13:45:51.0000 TEP data collection Grid 68 Duration 3 minutes
* 2020/152:15:22:46.0000 TEP data collection Grid 30 Duration 3 minutes
* 2020/152:20:05:39.0000 TEP data collection Grid 23 Duration 3 minutes
  2020/152:20:14:39.0000 TOO TOOid 1475 RGT 1012 offpoint 4.55deg Duration 2 minutes
* 2020/152:21:13:24.0000 TEP data collection Grid 382 Duration 3 minutes
  2020/152:22:01:09.0000 OCEANscan Duration 22 minutes
* 2020/153:01:54:03.0000 TEP data collection Grid 411 Duration 3 minutes
* 2020/153:02:00:47.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/153:02:09:42.0000 TEP data collection Grid 194 Duration 3 minutes
* 2020/153:03:49:12.0000 TEP data collection Grid 119 Duration 3 minutes
* 2020/153:05:05:14.0000 TEP data collection Grid 370 Duration 3 minutes
* 2020/153:05:10:52.0000 TEP data collection Grid 297 Duration 3 minutes
* 2020/153:05:31:17.0000 TEP data collection Grid 9 Duration 3 minutes
* 2020/153:07:01:04.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/153:08:16:38.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/153:09:48:14.0000 OCEANscan Duration 22 minutes
* 2020/153:11:35:27.0000 TEP data collection Grid 216 Duration 3 minutes
* 2020/153:11:45:54.0000 TEP data collection Grid 71 Duration 3 minutes
  2020/153:11:57:30.0000 TOO TOOid 1476 RGT 1022 offpoint 4.58deg Duration 2 minutes
* 2020/153:14:46:38.0000 TEP data collection Grid 175 Duration 3 minutes
* 2020/153:18:05:42.0000 TEP data collection Grid 26 Duration 3 minutes
  2020/153:21:35:29.0000 OCEANscan Duration 22 minutes
* 2020/154:00:14:58.0000 TEP data collection Grid 125 Duration 3 minutes
* 2020/154:01:35:08.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
  2020/154:02:06:07.0000 TOO TOOid 1477 RGT 1031 offpoint 4.53deg Duration 2 minutes
* 2020/154:03:02:40.0000 TEP data collection Grid 409 Duration 3 minutes
* 2020/154:03:08:16.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/154:06:21:43.0000 TEP data collection Grid 260 Duration 3 minutes
* 2020/154:07:50:59.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/154:09:22:34.0000 OCEANscan Duration 22 minutes
  2020/154:10:15:00.0000 Stellar window dump Duration 90 minutes
* 2020/154:14:13:09.0000 TEP data collection Grid 284 Duration 3 minutes
* 2020/154:15:39:36.0000 TEP data collection Grid 390 Duration 3 minutes
* 2020/154:17:29:33.0000 TEP data collection Grid 171 Duration 3 minutes
* 2020/154:20:43:21.0000 TEP data collection Grid 94 Duration 3 minutes
  2020/154:21:09:50.0000 OCEANscan Duration 22 minutes
* 2020/154:23:40:51.0000 TEP data collection Grid 234 Duration 3 minutes
* 2020/155:01:09:28.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/155:02:43:45.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/155:05:47:32.0000 TEP data collection Grid 369 Duration 3 minutes
* 2020/155:07:25:19.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/155:08:56:55.0000 OCEANscan Duration 22 minutes
* 2020/155:10:33:54.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/155:15:49:03.0000 TOO TOOid 1478 RGT 1055 offpoint 4.54deg Duration 2 minutes
  2020/155:20:44:10.0000 OCEANscan Duration 22 minutes