ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, April 13, 2020 thru Sunday, April 19, 2020

RGTs spanned: 267-373
Cycle 7

SUMMARY:
All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. SIPS conducted the ORR for SIPS Build 4.4.2 on April 15. This Build contains the ASAS v5.3.2 patch (including atlas_l3a_si V4.3.1) and SDMS V6.18.2/ATLAS V1.16.1. Sea ice data products ATL07/10 are currently in production at SIPS, with ATL07/10 from October 2018 through November 15, 2019 going to NSIDC, and the most recent batch of data going to the SCF for evaluation. ATL10-02 production and distribution will be held up slightly, as a bug was detected and an override is currently being implemented.

Operations continue nominally, in our fifth week of telework, with no major disruptions.

NSIDC ICESat-2 Metrics through April 19: 1,760 total users of 10 available data products; 3,752,084 sciences files downloaded. ATL03 is in the lead with 729 unique users of 494,330 files downloaded. ATL08 is in a close second with 708 unique users and 1,581,556 files downloaded, and ATL06 is in third place with 483 unique users and 1,356,045 files downloaded.

ELEMENT DETAILS BELOW

CAMS/POD:
CAMS: Regular CAMS operations: constraint and conjunction monitoring for MW083 and MW084 and mission planning for MW085.
CAMS recommended laser arm for laser conjunction with FLOCK3P
17 (41962) 13Apr 19:31 (MW083). Event self-mitigated

POD: Nominal POD operations continue. Intermediate POD was completed for GPS week 2100. Final POD was completed for GPS week 2098.

ISF:
All ATLAS housekeeping data is nominal
Laser 2 is firing at energy level 4 and in science mode
WTEM Peak to Edge Ratio: 1.199
Laser 2 Temperature Error: -0.29C
SADA in AIRPLANE Mode
Spacecraft orientation: + X

Mission Planning:
MW84 ATS is loaded to the spacecraft and currently operating
MW85 has been delivered, nominal calibrations

Updated PSO file for MW082 attached (added the update of the BSM XY Offset)
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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
Added commands in MW84 ATS to reset stats in order to clear routine flags

Other Activities:
DMU045a 2020/107:14:15 Duration 55 minutes. ISF set ILRS NOGO/GO flags around the activities.

Near-term activities:

IA006 (inclination adjustment) 2020/109

Tech HW refresh:
On hold due to Stage 4 status

Facility:
RSA Token re-order - monitoring delivery of tokens
Critical patching completed via telework

Notes/Issues:
N/A

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.
- Continued delivery of the Release 003 ATL01, ATL02, ATL03, ATL04, ATL06, ATL08, ATL09, ATL12, and ATL13 data products for October 14, 2018-November 15, 2019 to NSIDC. We expect to have them all out by the end of next week.
- Conducted the ORR for SIPS Build 4.4.2 on April 15. This Build contains the ASAS v5.3.2 patch (including atlas_l3a_si V4.3.1) and SDMS V6.18.2/ATLAS V1.16.1.
- SIPS completed processing Release 003 ATL07 and ATL10 for November 16, 2019-March 06, 2020. They have been distributed to the PSO for review.

- SIPS completed reprocessing of Release 003 ATL07 and ATL10 for October 14, 2018- November 15, 2019, and the ATL07s will be distributed to NSIDC.
- The current batch of ATL10s will not be distributed to NSIDC. We will be reprocessing the ATL10s using additional overrides provided by the Science Team.

ASAS:

ASAS v5.3.2 passed ORR and is producing release 003 ATL07 and ATL10s.

The atlas_l3a_atm code is in testing.

ASAS generating ATL11 per-cycle tiles on the ADAPT cluster. Issues regarding extremely slow I/O are being investigated on the ADAPT side.

For Land/Veg, the code to handle truncated geolocation segments has completed testing. An experiment is underway to determine the cost of attempting canopy classification worldwide.

L3B Freeboard (ATL20) has been given preliminary approval by the ATBD lead. Testing is underway on browse, metadata and QA generation for ATL20.

L3A Sea Ice/Freeboard work is focused on freeboard unit tests and weak beam alignment of Atmosphere data.

L3A Inland Water completed work on the saturation flag. Several test datasets have been generated for evaluation.

L3A Ocean is awaiting evaluation of SNR testing.

L3B Ocean coding is underway on the ATL19 product.

The ASAS Python plotting code has been refactored for speed/memory and maintainability.

SCF:

The SCF is operating nominally. Data for releases 003 and R003 are being ingested and distributed, including ATL07 and ATL10. Note that the delayed start in producing ATL07 and ATL10 has led to a gap of about one month in the rapid data for these products. Some product dataframes for the Visualizer have been updated. A file listing the current SCF data holdings is attached.

* Data Management -- Creating trending plots of ATL10 R003 data failed recently. This appears to be due to one trending parameter being null for all files in a set, resulting in no valid values to use when plotting. This is being investigated further. Minor issues with hold requests for ATL06 were resolved. rSCF-related documentation is being reviewed and updated in preparation for the on-boarding of new Science Team members.

* Subsetter -- A small number of ATL09 files failed subsetting due to multiple jobs accessing the same file simultaneously. Subsetting of the affected files were all rerun successfully. The actual cause of this problem is a low-level HDF5 library losing track of internal pointers, which is a known issue.

* Visualizer -- The product dataframes for ATL08, ATL16, and ATL17 were updated recently and posted to the SCF web site. Internally, the software has been updated to v7.15 with all recent changes being bug fixes.

ATL02/Instrument Science:
A trial version of a new CAL 08 (zero-range calibration) has been produced to enable comparison with results using the old version.

Work continues on:

- Updated range bias calibration
- 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 saturation signal editing and continuing to investigate the TEP-as-signal that sometimes still occur. Additionally, we are starting to think about a document that will outline how to compare ICESat-2 data to other altimetry missions, with respect to the geophysical corrections applied/supplied in each.

ISF ACTIVITIES MISSION WEEK 084:

2020/107:00:24:04.0000 OCEANscan Duration 22 minutes
* 2020/107:03:00:56.0000 TEP data collection Grid 160 Duration 3 minutes
* 2020/107:04:23:42.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/107:04:37:50.0000 TEP data collection Grid 121 Duration 3 minutes
* 2020/107:05:59:06.0000 TEP data collection Grid 300 Duration 3 minutes
* 2020/107:06:09:31.0000 TEP data collection Grid 155 Duration 3 minutes
* 2020/107:07:36:00.0000 TEP data collection Grid 261 Duration 3 minutes
* 2020/107:09:02:27.0000 TEP data collection Grid 367 Duration 3 minutes
* 2020/107:09:17:40.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/107:10:39:33.0000 AMCS Cal over open ocean Duration 2 minutes
2020/107:12:11:09.0000 OCEANscan Duration 22 minutes
^ 2020/107:14:15:43.0000 DMU045a Duration 55 minutes
* 2020/107:17:12:56.0000 TEP data collection Grid 138 Duration 3 minutes
* 2020/107:17:20:02.0000 TEP data collection Grid 30 Duration 3 minutes
* 2020/107:20:12:55.0000 TEP data collection Grid 242 Duration 3 minutes
* 2020/107:20:18:08.0000 TEP data collection Grid 170 Duration 3 minutes
* 2020/108:03:58:03.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/108:04:14:48.0000 TEP data collection Grid 86 Duration 3 minutes
* 2020/108:07:07:44.0000 TEP data collection Grid 298 Duration 3 minutes

* 2020/108:08:55:04.0000 TEP data collection Grid 115 Duration 3 minutes
* 2020/108:09:00:18.0000 TEP data collection Grid 43 Duration 3 minutes
* 2020/108:10:13:55.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/108:11:45:30.0000 OCEANscan Duration 22 minutes
  2020/108:13:12:01.0000 Segmented RTWscan Part 1 Duration 37 minutes
  2020/108:14:01:41.0000 Segmented RTWscan Part 2 Duration 25 minutes
  2020/108:14:42:02.0000 Segmented RTWscan Part 3 Duration 13 minutes
* 2020/108:14:59:12.0000 TEP data collection Grid 322 Duration 3 minutes
* 2020/108:17:59:56.0000 TEP data collection Grid 426 Duration 3 minutes
* 2020/108:18:20:48.0000 TEP data collection Grid 137 Duration 3 minutes
  2020/108:23:32:46.0000 OCEANscan Duration 22 minutes
* 2020/109:03:32:25.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/109:05:06:42.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/109:06:36:52.0000 TEP data collection Grid 371 Duration 3 minutes
* 2020/109:08:19:00.0000 TEP data collection Grid 260 Duration 3 minutes
* 2020/109:09:48:16.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/109:11:19:52.0000 OCEANscan Duration 22 minutes
* 2020/109:12:56:51.0000 AMCS Cal over open ocean Duration 2 minutes
^ 2020/109:13:56:29.0000 Inclination Adjust IA006 Duration 70 minutes
  2020/109:22:15:00.0000 Stellar window dump Duration 90 minutes
* 2020/110:03:13:05.0000 TEP data collection Grid 231 Duration 3 minutes
* 2020/110:04:41:03.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/110:09:22:37.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/110:10:54:13.0000 OCEANscan Duration 22 minutes
* 2020/110:12:31:12.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/110:14:05:18.0000 TEP data collection Grid 359 Duration 3 minutes
* 2020/110:15:34:21.0000 TEP data collection Grid 429 Duration 3 minutes
* 2020/110:15:52:37.0000 TEP data collection Grid 176 Duration 3 minutes
* 2020/110:18:50:46.0000 TEP data collection Grid 316 Duration 3 minutes
* 2020/110:21:55:02.0000 TEP data collection Grid 383 Duration 3 minutes
* 2020/110:22:18:38.0000 TEP data collection Grid 58 Duration 3 minutes
  2020/110:22:41:28.0000 OCEANscan Duration 22 minutes
* 2020/110:23:31:02.0000 TEP data collection Grid 345 Duration 3 minutes
* 2020/110:23:44:56.0000 TEP data collection Grid 164 Duration 3 minutes
* 2020/110:23:54:33.0000 TEP data collection Grid 20 Duration 3 minutes
* 2020/111:01:26:12.0000 TEP data collection Grid 54 Duration 3 minutes
* 2020/111:04:15:25.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/111:06:03:50.0000 TEP data collection Grid 119 Duration 3 minutes
* 2020/111:09:07:20.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/111:10:28:34.0000 OCEANscan Duration 22 minutes
* 2020/111:12:05:33.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/111:13:29:22.0000 Segmented RTWscan Part 1 Duration 38 minutes
  2020/111:14:18:48.0000 Segmented RTWscan Part 1 Duration 25 minutes
  2020/111:14:59:18.0000 Segmented RTWscan Part 3 Duration 14 minutes
* 2020/111:15:29:34.0000 TEP data collection Grid 141 Duration 3 minutes
  2020/111:20:29:18.0000 TOO TOOid=1405, RGT=386, offpoint=4.52deg Duration 2 minutes
  2020/111:22:15:50.0000 OCEANscan Duration 22 minutes
* 2020/111:23:23:38.0000 TEP data collection Grid 93 Duration 3 minutes

2020/112:03:25:00.0000 Laser window dump Duration 2 minutes
* 2020/112:03:49:46.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/112:04:03:53.0000 TEP data collection Grid 122 Duration 3 minutes
* 2020/112:05:32:58.0000 TEP data collection Grid 192 Duration 3 minutes
* 2020/112:05:37:58.0000 TEP data collection Grid 120 Duration 3 minutes
* 2020/112:08:49:23.0000 TEP data collection Grid 79 Duration 3 minutes
2020/112:09:03:43.0000 TOO TOOid=1412, RGT=394, offpoint=0.07deg Duration 2 minutes
* 2020/112:10:05:37.0000 AMCS Cal over open ocean Duration 2 minutes
2020/112:11:37:12.0000 OCEANscan Duration 22 minutes
* 2020/112:13:19:13.0000 TEP data collection Grid 288 Duration 3 minutes
2020/112:15:20:47.0000 TOO TOOid=1406, RGT=398, offpoint=4.56deg Duration 2 minutes
* 2020/112:16:43:27.0000 TEP data collection Grid 67 Duration 3 minutes
* 2020/112:22:44:57.0000 TEP data collection Grid 274 Duration 3 minutes
* 2020/112:23:00:37.0000 TEP data collection Grid 57 Duration 3 minutes
2020/112:23:24:28.0000 OCEANscan Duration 22 minutes
* 2020/113:03:24:07.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/113:04:58:24.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/113:09:39:58.0000 AMCS Cal over open ocean Duration 2 minutes
2020/113:11:11:33.0000 OCEANscan Duration 22 minutes
* 2020/113:12:48:33.0000 AMCS Cal over open ocean Duration 2 minutes
2020/113:16:29:24.0000 TOO TOOid=1407, RGT=414, offpoint=4.56deg Duration 2 minutes
* 2020/113:19:04:34.0000 TEP data collection Grid 352 Duration 3 minutes
* 2020/113:20:42:24.0000 TEP data collection Grid 313 Duration 3 minutes
2020/113:22:58:49.0000 OCEANscan Duration 22 minutes