ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, May 6, 2019 thru Sunday, May 12, 2019

RGTs spanned: 577-681
Cycle 3

Items of Note:
All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. Data product/ATBD teams are working hard to prepare users' guides and additional documentation to provide alongside data when it is released at NSIDC later this month.

ELEMENT DETAILS BELOW

CAMS/POD/PPD:
CAMS: Regular CAMS operations continue with constraint and conjunction monitoring for mission week 35, and mission planning for mission week 36.

POD: Regular POD operations have resumed, following a system modification to pull Vienna Mapping function grid files from a new and improved website. Intermediate POD was completed for GPS weeks 2049, 2050, and 2051. Final POD was completed for GPS week 2049. All results are nominal.

POD completed the delivery of the final calibrated ANC products for DoY 287-054, with our latest time-varying mean and orbital variation pointing bias corrections applied.

PPD: We continue to investigate the LRS- laser and stellar side performance. The stellar side is extremely complicated given the presence of chromatic aberration, and temporally varying distortion. Currently, we are working on a revision to the pre-launch chromatic aberration equations to provide more relevant corrections to the measurements. The laser side is working very well as the laser centroid measurement uncertainty is well below the value in the mission pointing budget.

ISF:
All ATLAS housekeeping data is nominal
    Laser 2 is firing at energy level 4 and in science mode
    WTEM Peak to Edge Ratio: 1.173
    Laser 2 Temperature Error: -0.23C
    SADA in Sailboat Mode
    Spacecraft orientation: - X

    Mission Planning:
    MW35 ATS is loaded to the spacecraft and currently operating
    MW36 is being planned. All activities were deconflicted with OIB.
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Activities during the past week:

ATS activities:
All ATLAS and pointing activities were routine and completed as planned

Real-time activities:
Daily/as-need: Executed standing CAR 91 and 102 (routine error cleanup)
2019/128/14:20 and 2019/128/19:12 execute CAR381 (note 1)
2019/129/15:28 and 2019/130/11:03 AS2 recertification testing (note 2)

Other Activities:

Team continues to investigate the inability to receive telemetry at the ISF from the bMOC.

Team is investigating the slow transfer of data from the T&C servers to the ops servers (RIONet to SEN). The switch was upgraded by the SPOCC but data is still slow. High-rate / volume of GEDI data seems to be the culprit. The impact is slow transfer of the telemetry PB data to OpenMCT.

Completed testing of splitting PMT processing by ATLAS product type to improve efficiency. Acceptance tests were completed without issues and processing speeds are much faster. The updated will be presented to the CCB for release to ops.

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Next week's ATLAS activities:
Routine instrument and pointing calibration scheduled activities are in the MW35 ATS. (see attached)

Other Near-term activities:

Complete execution of CAR381 to remove the uploaded files used in the test. This will take place over a pair of contacts early next week.

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Notes/Issues:

1.   CAR 381 tests the ATLAS Receiver Algorithm Parameter v8 updates. These updates the improve amount of data collected over the Ocean, land-ice, sea-ice, and propagate the previously tested changes (v7a, CAR370) to the Alternate Knobs Files. The test had FSSE support and executed successfully from the ATS 2019/128, and the data is being analyzed by the Rx Algo team. Early indications are that the test was successful.

2. AS2 testing was in support of the PTP recertification and consists of verifying telemetry and command connections from the MOC and ISF to AS2 during real-time contacts.
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LTO Schedule:
All items remain on schedule
ATLASCCR002 PDB E.0.1 install in operations to be Boarded at FOT CCB NET

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 using ANC03/04/05 files from the CAMS.
  o Distributed ATL03 (rapids) to the SCF.
· Reprocessed ATL01 and ATL02 products from Oct 14, 2018 through May 3, 2019 as release 204 using SIPS Build 4.1.
· Started reprocessing ATL03, ATL04, ATL06, ATL07, ATL08, ATL09, ATL10, ATL12, and ATL13 finals (Release 209) from Oct 14,2018 - Feb 23, 2019 using the Release 005 ANC03/04/05 files from the POD. These are being distributed to both the NSIDC and the SCF.

ASAS:
Entirety of ASAS is under review by the development lead for FPU exception checking.

Work continues on GEBCO bathymetry. Code is written and in testing.

Evaluation of the ArcticDEM/REMA for Land Ice is underway.

Sea ice work is focused on PGE hangs and identifying the TEP realization being used.

Inland water development is working control parameter implementation.

Land/Veg development is working on the point spread function and flag.

Ocean development is focused on finding out why segments get lost in processing.

The Atmosphere developer has completed the changes to method1 and is working on cloud flag ASR.

The L3B atmosphere PGE is being prepared for delivery as an intermediate release.

SCF:
The SCF is operating nominally. Data for releases 204, 209, and R209 are being ingested, and disk space is being monitored to ensure this continues smoothly. Distribution is proceeding as

expected, but there is some lag in fulfilling subsetting subscriptions, due to the time required to perform subsetting and the large amount of data that needs to be processed. A file listing the current SCF data holdings is attached.

* Data Management -- Some suggested improvements for operating with the SDMS software are being explored and appear to be working correctly in initial testing. The code changes involved are not major but may need further testing before they are ready for operations. We hope to implement these updates in time for the public data release.

* Visualizer -- Preparation for releasing v5.1 of the software continues. Product dataframes usable with ASAS v5.1 data (e.g., those in releases 204, 209, and R209) are ready, and sample plot configuration files have been updated as needed. We anticipate apps being made and tested for release within the next week or two.

ATL02/Instrument Science:
Final edits are being made to the ATL02 ATBD version to accompany Release 001. A draft "ATL02 Known Issues" document has been prepared.

The team is reviewing the range bias correction process.

ATL03:
Review of release 209 ATL03 granules (rapids and finals) has turned up no problems or unexpected issues. We have been updating the necessary documentation to accompany data release from NSIDC (users' guide, known issues document, and data dictionary) to ensure that the public data release is fully supported by the latest data product information.

ISF ACTIVITIES MISSION WEEK 035:

* Not in science mode
^ Could affect science data quality

* 2019/129:00:54:36.0000 TEP data collection for 3 minutes
^ 2019/129:01:57:57.0000 AMCS Cal for 2 minutes over open ocean
* 2019/129:02:28:53.0000 TEP data collection for 3 minutes
  2019/129:03:16:05.0000 OCEANscan (22 minutes)
* 2019/129:04:45:23.0000 Setup for Receiver Algorithm Parameter test for 3 minutes 20 seconds
^ 2019/129:04:48:47.0000 Execute Receiver Algorithm Parameter test for 4 hours 42 minutes
  2019/129:06:16:54.0000 RTWscan (90 minutes)
* 2019/129:09:30:01.0000 Cleanup after Receiver Algorithm Parameter test for 1 minute 30 seconds
  2019/129:15:03:21.0000 OCEANscan (22 minutes)
* 2019/129:21:17:55.0000 TEP data collection for 3 minutes
* 2019/129:22:52:12.0000 TEP data collection for 3 minutes

* 2019/130:00:26:30.0000 TEP data collection for 3 minutes
^ 2019/130:01:35:48.0000 AMCS Cal for 2 minutes over open ocean
* 2019/130:02:00:47.0000 TEP data collection for 3 minutes
^ 2019/130:03:07:11.0000 AMCS Cal for 2 minutes over open ocean
* 2019/130:03:35:04.0000 TEP data collection for 3 minutes
  2019/130:04:24:43.0000 OCEANscan (22 minutes)
* 2019/130:05:09:22.0000 TEP data collection for 3 minutes
* 2019/130:06:43:39.0000 TEP data collection for 3 minutes
* 2019/130:08:17:56.0000 TEP data collection for 3 minutes
^ 2019/130:08:36:35.0000 AMCS Cal for 2 minutes over open ocean
* 2019/130:09:31:09.0000 TEP data collection for 3 minutes
  2019/130:16:11:58.0000 OCEANscan (22 minutes)
* 2019/130:22:26:33.0000 TEP data collection for 3 minutes
* 2019/131:00:00:50.0000 TEP data collection for 3 minutes
* 2019/131:01:35:08.0000 TEP data collection for 3 minutes
^ 2019/131:02:42:03.0000 AMCS Cal for 2 minutes over open ocean
* 2019/131:03:09:25.0000 TEP data collection for 3 minutes
  2019/131:03:59:04.0000 OCEANscan (22 minutes)
* 2019/131:04:43:42.0000 TEP data collection for 3 minutes
* 2019/131:06:18:00.0000 TEP data collection for 3 minutes
* 2019/131:07:52:17.0000 TEP data collection for 3 minutes
^ 2019/131:08:11:11.0000 AMCS Cal for 2 minutes over open ocean
* 2019/131:09:05:30.0000 TEP data collection for 3 minutes
* 2019/131:10:39:47.0000 TEP data collection for 3 minutes
  2019/131:15:46:19.0000 OCEANscan (22 minutes)
* 2019/131:22:00:53.0000 TEP data collection for 3 minutes
* 2019/131:23:35:11.0000 TEP data collection for 3 minutes
* 2019/132:01:09:28.0000 TEP data collection for 3 minutes
^ 2019/132:02:16:53.0000 AMCS Cal for 2 minutes over open ocean
* 2019/132:02:43:46.0000 TEP data collection for 3 minutes
  2019/132:03:33:24.0000 OCEANscan (22 minutes)
* 2019/132:04:18:03.0000 TEP data collection for 3 minutes
^ 2019/132:05:25:32.0000 AMCS Cal for 2 minutes over open ocean
* 2019/132:05:52:20.0000 TEP data collection for 3 minutes
* 2019/132:07:26:37.0000 TEP data collection for 3 minutes
^ 2019/132:07:45:46.0000 AMCS Cal for 2 minutes over open ocean
^ 2019/132:08:00:22.0000 Laser image dump over Greenland during day for 7 minutes
* 2019/132:08:42:17.0000 TEP data collection for 3 minutes
^ 2019/132:09:20:04.0000 AMCS Cal for 2 minutes over open ocean
* 2019/132:10:16:35.0000 TEP data collection for 3 minutes
  2019/132:12:31:40.0000 TOO (TOOid=963) for 3 minutes
  2019/132:15:20:40.0000 OCEANscan (22 minutes)
* 2019/132:21:35:14.0000 TEP data collection for 3 minutes
* 2019/132:23:09:31.0000 TEP data collection for 3 minutes

* 2019/133:00:43:49.0000 TEP data collection for 3 minutes
^ 2019/133:01:51:43.0000 AMCS Cal for 2 minutes over open ocean
* 2019/133:02:18:06.0000 TEP data collection for 3 minutes
  2019/133:03:07:45.0000 OCEANscan (22 minutes)
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  2019/133:06:08:33.0000 RTWscan (90 minutes)
* 2019/133:08:17:30.0000 TEP data collection for 3 minutes
* 2019/133:08:35:15.0000 TEP data collection for 3 minutes
^ 2019/133:08:54:38.0000 AMCS Cal for 2 minutes over open ocean
* 2019/133:09:50:55.0000 TEP data collection for 3 minutes
  2019/133:14:55:00.0000 OCEANscan (22 minutes)
* 2019/133:21:12:01.0000 TEP data collection for 3 minutes
* 2019/133:22:46:18.0000 TEP data collection for 3 minutes
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* 2019/134:01:54:53.0000 TEP data collection for 3 minutes
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* 2019/134:03:29:11.0000 TEP data collection for 3 minutes
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* 2019/134:05:03:28.0000 TEP data collection for 3 minutes
* 2019/134:06:37:45.0000 TEP data collection for 3 minutes
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* 2019/135:23:26:50.0000 TEP data collection for 3 minutes