ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, March 16, 2020 thru Sunday, March 22 2019

RGTs spanned: 1227-1333
Cycle 6

Items of Note:
All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. SIPS completed reprocessing Release 003 ATL01 and ATL02 data products from October 2018-November 2019. These products are being delivered to the NSIDC. SIPS is continuing with reprocessing of Release 003 ATL03, ATL04, ATL09, ATL06, ATL12, and ATL13 for the October 2018-Nov 2019 and distributing the products to NSIDC. ASAS v5.3.1, containing atlas_l3a_ld v3.3.1, was delivered to SIPS. After testing and approval, this should enable the production of Release 003 ATL08s.

Currently, the ISF is not doing any real-time commanding for ATLAS due to the Stage 3 GSFC "response framework" status.

NSIDC ICESat-2 Metrics through March 22: 1,694 total users of 10 available data products; 3,429,446 sciences files downloaded. ATL03 is in the lead with 699 unique users of 482,128 files downloaded. ATL08 is in a close second with 686 unique users and 1,337,209 files downloaded, and ATL06 is in third place with 466 unique users and 1,314,250 files downloaded.

Stay safe and healthy!

ELEMENT DETAILS BELOW

CAMS/POD:
CAMS: Regular CAMS operations: constraint and conjunction monitoring for MW079 and MW080 and mission planning for MW081.
CAMS recommended a laser arm for a laser conjunction with 43891 (OBJECT R) on 20 Mar 04:43 (MW080). This event self-mitigated.
CAMS recommends a laser arm for a laser conjunction with 4221 (AZUR GRS A) on 22 Mar 17:52 (MW080)

POD: Regular POD operations continue. Final POD was completed for GPS week 2094.

ISF:
All ATLAS housekeeping data is nominal
Laser 2 is firing at energy level 4 and in science mode
WTEM Peak to Edge Ratio: 1.209
Laser 2 Temperature Error: -0.26C
SADA in AIRPLANE Mode

Spacecraft orientation: + X

Mission Planning:
MW80 ATS is loaded to the spacecraft and currently operating
MW81 has been delivered, nominal calibrations including the monthly TEP stare
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Activities during the past week:

Real-time activities:
No realtime commanding was performed due to GSFC Stage 3 status

ATS activities:
Routine Instrument calibrations, Ocean scans and Vegetation Data collection
TAMS window dump 2020/080:07:00

Other Activities:
Created a mini-ATS for LCA33 4221 (AZUR) via a laser to ARM sequence for 10 seconds 22-Mar-2020 17:52:09 (2020/082)
Prepared a SAT for a mini-ATS for HIE22, the event self-mitigated.
DMU042 is scheduled for Weds March 25

Near-term activities:

Tech HW refresh plan Phase 1 released into operations

Tech HW refresh plan Phase 2:
Procurement has begun

Facility:
Red Hat OS License re-order
RSA Token re-order

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.
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- 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.

· SIPS completed processing Release 003 ATL01, ATL02, ATL03, ATL04, ATL09, ATL06, ATL12, ATL13, ATL16, and ATL17 data products for the November 16, 2019 – February 06, 2020 time period.
- These products are being delivered to the SCF.

· Release 003 ATL07 and ATL08 product generation is pending a patch release of their PGEs.

· SIPS completed reprocessing Release 003 ATL01 and ATL02 data products from October 2018-November 2019. These products are being delivered to the NSIDC.

· SIPS is continuing with reprocessing of Release 003 ATL03, ATL04, ATL09, ATL06, ATL12, and ATL13 for the October 2018-Nov 2019 and distributing the products to NSIDC.

ASAS:

ASAS v5.3.1, containing atlas_l3a_ld v3.3.1, was delivered to SIPS. After testing and approval, this should enable the production of Release 003 ATL08s.

Results of the ATL07 patch are still being evaluated by the ATBD lead. Once approved, the updated code will be delivered in an ASAS v5.3.2 patch release that will enable the production of Release 003 ATL07/10s.

ASAS continues to investigate an issue within SIPS related to ATL13 plot jobs and memory swapping.

The atlas_l3a_atm code is being updated to improve low-rate blowing snow.

ASAS is bulk-testing ATL11 code by generating a full cycle of ATL11s on the ADAPT cluster.

For Land/Veg, the code changes for podppd_flag rejection and DEM rejection is being tested. The code to handle truncated geolocation segments is in work.

L3B Freeboard (ATL20) work involves setting invalid values empty cells and for those grid cells contained with the land mask.

L3A Sea Ice work is focused on verification of the fix for the length-scale issue regarding surface determination.

L3A Inland Water is progressing on recovering photons lost at the end of a 100-photon segment.

The Ocean work is progressing on the calculation of uncertainties and the calculation of SNR for the harmonic fits to the ocean surface.

SCF:

The SCF is operating nominally. Data for releases 003 and R003 are being ingested and distributed. Subscriptions are still being fulfilled, mainly for subsetting. About half of the subsetting jobs are running through SDMS on the second server, which should reduce overall processing time. A file listing the current SCF data holdings is attached.

* Data Management -- Ingest of rel003 data for 2019-11-14 through 2020-02-06 is complete, but distribution is ongoing. There have been no major problems using SDMS on a second server. Documentation is being updated to incorporate information on using multiple servers with SDMS.

* Subsetter -- One ATL09 subsetting job failed, but it was due to multiple jobs accessing the input file simultaneously (a known issue). This was resolved by rerunning the file. Code changes to check control files against input data files for consistency of requested cycle, RGT, and orbit subsetting have passed testing; the current plan is to incorporate them into the operational code with the next Subsetter release.

* Visualizer -- An atmosphere custom plot will be reactivated, since ASAS v5.3 data have valid data values to be used with it. Work continues on resolving high-priority JIRA issues and fixing bugs as needed.

ATL02/Instrument Science:

Additional parameters have been added to ATL01/ATL02 QA screening. Some of these parameters are new in Release 003; others existed in Release 002 but were not used for screening. Some of these parameters have been triggering alerts during nominal instrument behavior; causes are being investigated and limits adjusted.

Preliminary reanalysis of the data from the Zero Range Test has yielded new zero-range values for the BB1 instrument configuration. A full error analysis is now under way.

In addition, work continues on:

- Analysis of TEP time of flight during full-orbit TEP stares
- Modeling the behavior of the ATLAS receiver during extreme saturation events.
- Extending the QA screening process beyond ATL01 and ATL02.
- Characterizing ATLAS' radiometric sensitivity. The Release 003 correction to the calculation of throughput loss due to misalignment appears to result in only a few percent change in calculated values.
- Investigating the mechanism of "jumps" in the TEP TOF.

- 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.

ATL03:

Plans for automatic QA trending/screening of rapid ATL03 granules is ongoing. Work continues on development future improvements to the ATL03 data product, including using the saturation fraction parameters for signal filtering and improving the algorithm that works to exclude TEP photons from high/medium/low signal classification.

ISF ACTIVITIES MISSION WEEK 080:

* Not in science mode
^ Could affect science data quality

2020/079:01:22:24.0000 OCEANscan Duration 22 minutes
* 2020/079:02:30:13.0000 TEP data collection Grid 91 Duration 3 minutes
* 2020/079:04:04:30.0000 TEP data collection Grid 88 Duration 3 minutes
* 2020/079:05:22:03.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/079:05:38:48.0000 TEP data collection Grid 86 Duration 3 minutes
* 2020/079:07:13:28.0000 TEP data collection Grid 83 Duration 3 minutes
* 2020/079:10:11:14.0000 TEP data collection Grid 223 Duration 3 minutes
* 2020/079:10:16:26.0000 TEP data collection Grid 151 Duration 3 minutes
2020/079:10:36:00.0000 TOO TOOid 1378 RGT 1278 offpoint 0.02deg Duration 2 minutes
* 2020/079:11:37:54.0000 AMCS Cal over open ocean Duration 2 minutes
2020/079:13:09:29.0000 OCEANscan Duration 22 minutes
* 2020/079:16:23:10.0000 TEP data collection Grid 322 Duration 3 minutes
* 2020/079:16:41:27.0000 TEP data collection Grid 69 Duration 3 minutes
* 2020/079:18:07:53.0000 TEP data collection Grid 175 Duration 3 minutes
* 2020/079:19:26:38.0000 TEP data collection Grid 389 Duration 3 minutes
* 2020/079:19:39:34.0000 TEP data collection Grid 209 Duration 3 minutes
* 2020/079:21:14:59.0000 TEP data collection Grid 206 Duration 3 minutes
2020/079:22:11:00.0000 TOO TOOid 1373 RGT 1286 offpoint 0.86deg Duration 2 minutes
2020/080:00:56:44.0000 OCEANscan Duration 22 minutes
* 2020/080:03:15:21.0000 TEP data collection Grid 414 Duration 3 minutes
* 2020/080:03:20:00.0000 TEP data collection Grid 342 Duration 3 minutes
* 2020/080:04:56:23.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/080:06:30:40.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
2020/080:07:00:00.0000 TAMS window dump Duration 2 minutes
* 2020/080:11:12:14.0000 AMCS Cal over open ocean Duration 2 minutes
2020/080:12:43:50.0000 OCEANscan Duration 22 minutes
* 2020/080:14:20:49.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/080:20:48:12.0000 TEP data collection Grid 207 Duration 3 minutes

* 2020/080:20:53:24.0000 TEP data collection Grid 135 Duration 3 minutes
* 2020/080:21:00:43.0000 TEP data collection Grid 27 Duration 3 minutes
  2020/081:00:31:04.0000 OCEANscan Duration 22 minutes
* 2020/081:03:05:21.0000 TEP data collection Grid 198 Duration 3 minutes
* 2020/081:04:34:30.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/081:06:05:00.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/081:10:46:34.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/081:12:18:10.0000 OCEANscan Duration 22 minutes
* 2020/081:12:44:11.0000 TEP data collection Grid 3 Duration 3 minutes
* 2020/081:13:55:09.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/081:14:09:11.0000 TOO TOOid 1377 RGT 1311 offpoint 0.75deg Duration 2 minutes
* 2020/081:14:12:31.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/081:15:18:58.0000 RTWscan Duration 90 minutes
* 2020/081:21:43:46.0000 TEP data collection Grid 386 Duration 3 minutes
* 2020/081:23:15:27.0000 TEP data collection Grid 420 Duration 3 minutes
  2020/082:00:05:24.0000 OCEANscan Duration 22 minutes
  2020/082:04:05:00.0000 Stellar window dump Duration 90 minutes
* 2020/082:05:39:20.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
  2020/082:10:18:08.0000 TOO TOOid 1374 RGT 1324 offpoint 1.57deg Duration 2 minutes
* 2020/082:10:30:35.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/082:10:44:13.0000 TEP data collection Grid 6 Duration 3 minutes
  2020/082:11:52:30.0000 OCEANscan Duration 22 minutes
* 2020/082:13:29:29.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/082:14:53:18.0000 RTWscan Duration 90 minutes
* 2020/082:17:51:54.0000 LCA33 4221 (AZUR) 22-Mar-2020 17:52:09 Laser to ARM mode Duration 1 minutes
* 2020/082:19:46:26.0000 TEP data collection Grid 353 Duration 3 minutes
* 2020/082:21:25:56.0000 TEP data collection Grid 278 Duration 3 minutes
* 2020/082:23:18:32.0000 TEP data collection Grid 23 Duration 3 minutes
* 2020/083:00:24:04.0000 TEP data collection Grid 418 Duration 3 minutes
  2020/083:01:14:02.0000 OCEANscan Duration 22 minutes
* 2020/083:03:37:52.0000 TEP data collection Grid 341 Duration 3 minutes
* 2020/083:03:46:52.0000 TEP data collection Grid 232 Duration 3 minutes
* 2020/083:05:13:40.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/083:06:39:56.0000 TEP data collection Grid 409 Duration 3 minutes
* 2020/083:11:29:31.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/083:13:01:07.0000 OCEANscan Duration 22 minutes
* 2020/083:14:37:54.0000 TEP data collection Grid 360 Duration 3 minutes
* 2020/083:18:07:21.0000 TEP data collection Grid 67 Duration 3 minutes
* 2020/083:23:57:14.0000 TEP data collection Grid 419 Duration 3 minutes
  2020/084:00:48:21.0000 OCEANscan Duration 22 minutes
* 2020/084:04:48:00.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/084:06:22:17.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
  2020/084:08:27:29.0000 TOO TOOid 1379 RGT 1353 offpoint 0.00deg Duration 2 minutes

* 2020/084:09:39:47.0000 TEP data collection Grid 188 Duration 3 minutes
* 2020/084:11:03:51.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/084:12:35:26.0000 OCEANscan Duration 22 minutes
  2020/084:14:05:00.0000 Laser window dump Duration 2 minutes
* 2020/084:14:15:01.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/084:17:36:22.0000 TEP data collection Grid 140 Duration 3 minutes
* 2020/084:19:15:58.0000 TEP data collection Grid 65 Duration 3 minutes
* 2020/084:23:37:57.0000 TEP data collection Grid 347 Duration 3 minutes
  2020/085:00:22:41.0000 OCEANscan Duration 22 minutes
* 2020/085:01:27:53.0000 TEP data collection Grid 128 Duration 3 minutes
* 2020/085:04:25:10.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/085:04:44:20.0000 TEP data collection Grid 15 Duration 3 minutes
* 2020/085:05:56:37.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/085:09:16:43.0000 TEP data collection Grid 152 Duration 3 minutes
* 2020/085:10:38:11.0000 AMCS Cal over open ocean Duration 2 minutes
^ 2020/085:11:52:50.0000 DMU042 Duration 55 minutes
  2020/085:13:44:03.0000 OCEANscan Duration 22 minutes
* 2020/085:21:32:46.0000 TEP data collection Grid 422 Duration 3 minutes
* 2020/085:23:14:54.0000 TEP data collection Grid 311 Duration 3 minutes