ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, March 9, 2020 thru Sunday, March 15 2019

RGTs spanned: 1120-1226
Cycle 6

SUMMARY:
All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. The PSO Conducted the SIPS Build 4.4 ORR and were given approval for Ops installation and Release 003 data production. Data is currently flowing to the SCF, specifically for the period of 16 November 2019 through 06 February 2020 for ATBD lead and science team evaluation. However, SIPS production of Release 003 for ATL07/10 and ATL08 are holding for a patch update.

NSIDC ICESat-2 Metrics through March 15: 1,681 total users of 10 available data products; 3,399,313 sciences files downloaded. ATL03 is in the lead with 696 unique users of 480,800 files downloaded. ATL08 is in a close second with 681 unique users and 1,334,130 files downloaded, and ATL06 is in third place with 462 unique users and 1,307,953 files downloaded.

Stay safe and healthy out there!

ELEMENT DETAILS BELOW

CAMS/POD:
CAMS: Regular CAMS operations: constraint and conjunction monitoring for MW078 and MW079 and mission planning for MW080.
CAMS recommended a laser arm for a laser conjunction with 45141 (ONE-WEB0032) on 15Mar 05:16 (MW079). This event self-mitigated.

POD: Regular POD operations continue. Final POD was completed for GPS week 2093.

ISF:
All ATLAS housekeeping data is nominal
Laser 2 is firing at energy level 4 and in science mode
WTEM Peak to Edge Ratio: 1.203
Laser 2 Temperature Error: -0.26C
SADA in AIRPLANE Mode
Spacecraft orientation: + X

Mission Planning:
MW79 ATS is loaded to the spacecraft and currently operating
MW80 has been delivered, nominal calibrations including a TAMS window dump
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Activities during the past week:

Real-time activities:
Executed sCAR91 and sCAR102 to clear routine flags

ATS activities:
Routine Instrument calibrations, Ocean scans and Vegetation Data collection

Other Activities:

ICESat-2 transitioned the solar array assembly mode from SAILBOAT to AIRPLANE via SAM005 2020/069:01:56, Duration 25 minutes

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.
  - 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.
- Conducted the SIPS Build 4.4 ORR and were given approval for Ops installation and Release 003 data production.
- SIPS has started processing Release 003 ATL01, ATL02, ATL03, ATL04, ATL09, ATL06, ATL12, and ATL13 data products for the November 16, 2019 – February 06, 2020 time period.

- The ATL03, ATL04, ATL09, ATL06, ATL12, and ATL13 products are being delivered to the SCF.

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

· SIPS also started reprocessing Release 003 ATL01, ATL02, and ATL03 products for October 2018. These products will be delivered to NSIDC starting next week.

ASAS:

SIPS production of Release 003 for ATL07/10 and ATL08 are holding for a patch update.

An ASAS v5.3.1 patch specifically targeted for the ATL07 and ATL08 issues is in work. Testing has been completed on the ATL08 fix and the ATBD lead is evaluating ATL07 results from that code fix.

ASAS is investigating an issue within SIPS related to ATL13 plot jobs and memory swapping.

The segment_id from ATL03 has been added to the ATL04/09 low rate groups to simplify the alignment of low rate ATL09 data with ATL03 data in upper-level products. Atmosphere work continues with implementing changes to density ground finding.

L3B Land Ice work is focused on metadata and bending h5py to create products in a manner similar to the ASAS code.

For Land/Veg, work is in progress on pod_ppd flag rejection and DEM rejection.

L3B Freeboard products (ATL20) are in review by the ATBD lead. If approved and testing is successful, the ATL20 PGE will be delivered to SIPS in another patch release.

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

L3A Inland Water has completed the alignment/interpolation of low-rate data from ATL09.

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

The primary ASAS development server at GSFC was refreshed last week. Hats off to the sysadmin team as this was accomplished with minimal disruption.

SCF:

The SCF is operating nominally. Release 003 and R003 data have begun arriving; about 2.75 months are expected. Ingest is keeping up well, but distribution will likely take longer. A second server running SDMS is operational and running subsetting jobs; additional job types may be configured in the future. A file listing the current SCF data holdings is attached.

* Data Management -- Rapid data being replaced by release 3 final data were deleted to ensure sufficient disk space is available for new data. The second server for SDMS was set up and configured and is working as expected; settings will be adjusted as needed to try to improve performance. Users should note that the SCF's latest release is now 003/R003 for the majority of products.

* Subsetter -- Code changes to check control files against input data files for consistency of requested cycle, RGT, and orbit subsetting are being tested.

* Visualizer -- An updated Users Guide for version 7.9 has been posted to the web site, completing the set of documentation and supporting material that accompany the Visualizer software release made last week.

ATL02/Instrument Science:

A complete set of ATL02 documents for Release 003, including ATBD, Change Log, Verification Matrix, and Known Issues and Advisories, has been submitted for posting to NSIDC.

Reanalysis of the data from the Zero Range Test has begun.

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. One of the ongoing ideas is the inclusion of a binary "good/no good" flag for photon data in ATL03, to be used as a first pass filter by upper-level products to dictate whether or not they'd be generated. Additionally,

work is ongoing on using the new saturation parameters in release 003 to filter these photons out of signal finding in future releases.

ISF ACTIVITIES MISSION WEEK 079:

* Not in science mode
^ Could affect science data quality

2020/072:01:13:24.0000 OCEANscan Duration 22 minutes
* 2020/072:02:08:10.0000 TEP data collection Grid 272 Duration 3 minutes
* 2020/072:02:13:23.0000 TEP data collection Grid 200 Duration 3 minutes
* 2020/072:02:21:13.0000 TEP data collection Grid 91 Duration 3 minutes
* 2020/072:05:13:02.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/072:06:47:20.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/072:06:53:39.0000 TEP data collection Grid 229 Duration 3 minutes
* 2020/072:07:01:28.0000 TEP data collection Grid 120 Duration 3 minutes
* 2020/072:10:11:46.0000 TEP data collection Grid 80 Duration 3 minutes
* 2020/072:11:28:54.0000 AMCS Cal over open ocean Duration 2 minutes
2020/072:13:00:29.0000 OCEANscan Duration 22 minutes
* 2020/072:14:37:28.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/072:17:56:17.0000 TEP data collection Grid 212 Duration 3 minutes
* 2020/072:21:02:15.0000 TEP data collection Grid 243 Duration 3 minutes
* 2020/072:22:33:57.0000 TEP data collection Grid 277 Duration 3 minutes
2020/073:00:47:45.0000 OCEANscan Duration 22 minutes
* 2020/073:02:00:44.0000 TEP data collection Grid 20 Duration 3 minutes
2020/073:03:44:05.0000 TOO TOOid 1362 RGT 1182 offpoint 4.58deg Duration 2 minutes
* 2020/073:04:45:53.0000 TEP data collection Grid 340 Duration 3 minutes
* 2020/073:06:21:41.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
2020/073:11:01:39.0000 TOO TOOid 1360 RGT 1187 offpoint 0.05deg Duration 2 minutes
* 2020/073:11:04:59.0000 AMCS Cal over open ocean Duration 2 minutes
2020/073:12:34:50.0000 OCEANscan Duration 22 minutes
* 2020/073:14:11:49.0000 AMCS Cal over open ocean Duration 2 minutes
2020/073:15:35:38.0000 RTWscan Duration 90 minutes
* 2020/073:17:25:25.0000 TEP data collection Grid 285 Duration 3 minutes
* 2020/073:17:43:43.0000 TEP data collection Grid 32 Duration 3 minutes
2020/074:00:22:05.0000 OCEANscan Duration 22 minutes
* 2020/074:01:27:08.0000 TEP data collection Grid 129 Duration 3 minutes
2020/074:04:52:43.0000 TOO TOOid 1363 RGT 1198 offpoint 4.56deg Duration 2 minutes
* 2020/074:05:56:01.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/074:09:18:44.0000 TEP data collection Grid 117 Duration 3 minutes
* 2020/074:10:37:23.0000 TEP data collection Grid 331 Duration 3 minutes
* 2020/074:10:51:17.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/074:12:11:52.0000 AMCS Cal over open ocean Duration 2 minutes

2020/074:13:43:28.0000 OCEANscan Duration 22 minutes
* 2020/074:15:33:17.0000 TEP data collection Grid 179 Duration 3 minutes
* 2020/074:20:10:21.0000 TEP data collection Grid 245 Duration 3 minutes
* 2020/074:21:34:48.0000 TEP data collection Grid 387 Duration 3 minutes
2020/074:22:09:55.0000 TOO TOOid 1364 RGT 1209 offpoint 4.54deg Duration 2 minutes
2020/074:22:43:48.0000 TOO TOOid 1361 RGT 1210 offpoint 1.32deg Duration 2 minutes
* 2020/074:23:19:31.0000 TEP data collection Grid 240 Duration 3 minutes
* 2020/075:01:06:53.0000 TEP data collection Grid 57 Duration 3 minutes
2020/075:01:30:43.0000 OCEANscan Duration 22 minutes
* 2020/075:02:25:30.0000 TEP data collection Grid 271 Duration 3 minutes
2020/075:03:05:00.0000 Laser window dump Duration 2 minutes
* 2020/075:03:57:11.0000 TEP data collection Grid 305 Duration 3 minutes
* 2020/075:05:30:22.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/075:07:16:11.0000 TEP data collection Grid 156 Duration 3 minutes
2020/075:07:35:44.0000 TOO TOOid 1365 RGT 1215 offpoint 0.04deg Duration 2 minutes
* 2020/075:08:47:20.0000 TEP data collection Grid 190 Duration 3 minutes
* 2020/075:08:58:19.0000 TEP data collection Grid 45 Duration 3 minutes
* 2020/075:10:27:22.0000 TEP data collection Grid 115 Duration 3 minutes
* 2020/075:10:36:17.0000 TEP data collection Grid 6 Duration 3 minutes
* 2020/075:11:39:58.0000 TEP data collection Grid 402 Duration 3 minutes
* 2020/075:11:46:13.0000 AMCS Cal over open ocean Duration 2 minutes
2020/075:13:17:48.0000 OCEANscan Duration 22 minutes
* 2020/075:13:43:49.0000 TEP data collection Grid 2 Duration 3 minutes
* 2020/075:14:53:48.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/075:16:41:55.0000 TEP data collection Grid 178 Duration 3 minutes
* 2020/075:18:21:25.0000 TEP data collection Grid 103 Duration 3 minutes
2020/075:18:35:41.0000 TOO TOOid 1366 RGT 1222 offpoint 4.58deg Duration 2 minutes
* 2020/075:19:47:53.0000 TEP data collection Grid 209 Duration 3 minutes
* 2020/076:00:33:22.0000 TEP data collection Grid 166 Duration 3 minutes
2020/076:01:05:03.0000 OCEANscan Duration 22 minutes
* 2020/076:01:54:37.0000 TEP data collection Grid 344 Duration 3 minutes
* 2020/076:05:04:42.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/076:06:38:59.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/076:08:06:32.0000 TEP data collection Grid 407 Duration 3 minutes
* 2020/076:08:11:06.0000 TEP data collection Grid 335 Duration 3 minutes
* 2020/076:09:56:29.0000 TEP data collection Grid 188 Duration 3 minutes
* 2020/076:11:20:33.0000 AMCS Cal over open ocean Duration 2 minutes
2020/076:11:52:47.0000 TOO TOOid 1368 RGT 1233 offpoint 0.19deg Duration 2 minutes
2020/076:12:52:09.0000 OCEANscan Duration 22 minutes
* 2020/076:14:29:08.0000 AMCS Cal over open ocean Duration 2 minutes
2020/076:16:35:44.0000 TOO TOOid 1369 RGT 1236 offpoint 4.59deg Duration 2 minutes
* 2020/076:21:04:20.0000 TEP data collection Grid 99 Duration 3 minutes
2020/076:21:18:36.0000 TOO TOOid 1367 RGT 1239 offpoint 4.53deg Duration 2 minutes
2020/077:00:39:23.0000 OCEANscan Duration 22 minutes

* 2020/077:01:44:36.0000 TEP data collection Grid 128 Duration 3 minutes
* 2020/077:06:09:07.0000 TEP data collection Grid 374 Duration 3 minutes
* 2020/077:06:13:19.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/077:06:22:15.0000 TEP data collection Grid 193 Duration 3 minutes
* 2020/077:06:27:27.0000 TEP data collection Grid 121 Duration 3 minutes
* 2020/077:10:51:09.0000 TEP data collection Grid 367 Duration 3 minutes
* 2020/077:10:54:53.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/077:12:26:29.0000 OCEANscan Duration 22 minutes
* 2020/077:14:03:28.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/077:15:55:25.0000 TEP data collection Grid 107 Duration 3 minutes
  2020/077:16:10:02.0000 TOO TOOid 1370 RGT 1251 offpoint 4.58deg Duration 2 minutes
* 2020/077:20:14:10.0000 TEP data collection Grid 425 Duration 3 minutes
* 2020/077:20:30:50.0000 TEP data collection Grid 208 Duration 3 minutes
  2020/078:00:13:43.0000 OCEANscan Duration 22 minutes
* 2020/078:01:16:19.0000 TEP data collection Grid 165 Duration 3 minutes
  2020/078:01:35:45.0000 TOO TOOid 1371 RGT 1257 offpoint 4.59deg Duration 2 minutes
* 2020/078:05:47:39.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/078:10:40:56.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/078:12:03:30.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/078:13:35:05.0000 OCEANscan Duration 22 minutes
  2020/078:15:01:36.0000 RTWscan Duration 90 minutes
  2020/078:20:05:00.0000 Stellar window dump Duration 90 minutes
  2020/078:22:01:31.0000 TOO TOOid 1372 RGT 1270 offpoint 4.52deg Duration 2 minutes
* 2020/078:23:05:56.0000 TEP data collection Grid 312 Duration 3 minutes