ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, August 24, 2020 thru Sunday, August 30, 2020

RGTs spanned: 911 - 1017
Cycle 8

SUMMARY:
All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. Initial ATL03s for the 954a4 functional test have been processed and distributed to the development server (and soon to the SCF). These ATL03s include quality_ph and will give ASAS developers the data they need to test changes within their PGEs related to quality_ph.

Do you have an Android device? Well, it's about time you download the coolest app out there! One of ICESat-2's summer interns, Edward, has built an application that you can download on your phone to see when ICESat-2 will pass over your location for the current cycle (or any input location). Check it out here!

NSIDC ICESat-2 Metrics through August 31: 2,297 total users of 12 available data products; 6,687,838 sciences files downloaded. ATL03 is in the lead with 987 unique users of 911,608 files downloaded. ATL08 is in a close second with 935 unique users and an astounding 3,256,670 files downloaded, and ATL06 is in third place with 615 unique users and 2,794810 files downloaded.

ELEMENT DETAILS BELOW

CAMS/POD:
CAMS: Regular CAMS operations: constraint and conjunction monitoring for MW102 and MW103 and mission planning for MW104.
CAMS continues working with the project on ARB09.
CAMS recommended laser arm for 25544 (ISS) 237/12:49:21 - 237/12:49:31 (MW102).

POD: Regular POD operations continue. Intermediate POD was completed for GPS week 2119. Final POD was completed for GPS week 2117.

ISF:
All ATLAS housekeeping data is nominal
Laser 2 is firing at energy level 4 and in science mode
WTEM Peak to Edge Ratio: 1.229
Laser 2 Temperature Error: -0.30C
SADA in SAILBOAT Mode
Spacecraft orientation: - X

Mission Planning:
MW103 ATS is loaded to the spacecraft and currently operating (PSO Activity List is attached)

MW104 AIP has been delivered, nominal calibrations

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Activities during the past week:

Real-time activities: monitoring via telework

ATS activities:

MW_103 (currently loaded and executing):

Routine Instrument calibrations, TOOs, Ocean scans and Vegetation Data collection, modified

Other Activities:

Near-term upcoming activities:

PDB E.0.2 testing and deployment

Facility:

Tech HW refresh:

Procurement in progress for ISF Tech Refresh Phase 2 to complete during FY20

Phase 1a setup and testing continues

Notes/Issues:

1. ARB09: RMM02 Anomaly - the team continues to analyze events and determine process (automated and manual) updates to mitigate the chance of a recurrence. The team has implemented changes to the manual processes for verification of planning products. The team is providing inputs for root cause analysis and corrective action.

LTO Schedule:

Schedule updates 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.
- Completed ORR for SIPS Build 5.0. The build was installed on Ops on August 25.
- ASAS v5.3.4 was delivered to SIPS for Integration testing. This release contains v1.1 of atlas_l3b_si (and associated utilities) and is intended to produce Release 001 of the ATL20 gridded freeboard product. This will be released to Ops as part of SIPS Build 5.1.
- SIPS requested and received the ATL20 ESDTs from NSIDC.
- Distributed final Release 003 ATL03s from May 14 through July 14 to NSIDC.
- The Release 003 ATL06s from May 14 through June 25 were distributed to NSIDC with the appropriate holds requested by the Science Team.
- Submitted a letter to Chris Mishaga for a waiver or RBD to allow the SIPS/NSIDC data transfer to continue using GridFTP. The current waiver expires on February 2021.

ASAS:

Initial ATL03s for the 954a4 functional test have been processed and distributed to the development server. These ATL03s include quality_ph and will give ASAS developers the data they need to test changes within their PGEs related to quality_ph.

Baseline data (Release pod0) was generated for geolocation/range bias testing. These data were distributed to SCF.

Generation of the test data (Release pod1) using improved geolocation/range bias is in work. These data are expected to be available at SCF by mid-week.

L1B: Testing of the SXP_SSR and additional PMF_ALG_SCI data is underway.

L2A_ALT: Implementation of quality_ph was completed. Test data generated with quality_ph include Releases 954a4 and pod1.

L2/L3 Atmosphere: L2A work on TEP removal has been completed. Work is underway on L3A ground/cloud discrimination over high-relief terrain.

L3A Ice Sheet: Continued evaluation of ATL06 products created by the refactored PGE.

L3A Sea Ice/Freeboard: Working on free2mean changes and requisite adjustment to height filters.

L3A Land/Veg: Began development on changes related to the new ATL03 quality_ph flag.

L3A Inland Water: Working on the addition of anomalous short segment information to ATL13.

L3A Ocean: Outstanding L3A ocean work has been approved by the ASAS CCB.

L3B Land Ice: The team has developed instructions for end-to-end processing. Work is underway on development of polygon-based geospatial bounds within Metadata.

L3B Atmosphere: Populated grid statistics and updated the plot code to use same. Working on high-rate blowing snow.

L3B Freeboard: Work is underway on the development of ATL21.

L3B Ocean: Working on filling data values and edit criteria for L3B Ocean.

SCF:

The SCF is operating nominally. Data for releases 003 and R003 are being ingested and distributed, and subscriptions are currently being processed on the latest batch of data (5/14 through 7/16). The latest hold requests for ATL06 approved by the PSO were submitted to SIPS. A file listing the current SCF data holdings is attached.

* Data Management -- SDMS stopped running for ~1.5 hours Wednesday morning, causing a delay in processing. As with previous similar issues, most jobs resumed automatically after SDMS was restarted, and ones that didn't were made to rerun, succeeding the second time.

* Subsetter -- Operations continue normally with the only failed jobs being ones running when SDMS went down; these were rerun successfully. The problem subsetting some files obtained from EarthData (which was reported to them) appears to be from a known bug in the hdf5 library. The issue has been recorded in JIRA for tracking.

ATL02/Instrument Science:
ATL02 data from July 8-14 have been deemed valid and are no longer being held back. Data from July 15 are still under investigation.

In addition, work continues on:

- Quantifying the expected annual number of back reflections from solar arrays on other spacecraft (e.g. Starlink)
- Investigating and modeling the properties of saturated returns.
- Writing up the results of the study of variation of range bias on orbital and seasonal time scales.
- Re-examining the temperature dependence of the ATLAS transmitted beam divergence.
- Investigating and explaining "interesting" behavior revealed by the expanded ATLAS QA screening process.
- Improving the process for calibrating transmitter-receiver alignment.

ATL03:
Continued improvements to quality_ph saturation flagging for release 004. Additionally, ATBD updates to the reference DEM and geophysical correction sections are underway to put the document current for what is planned for release 004.

ISF ACTIVITIES MISSION WEEK 103

* 2020/240:02:38:17.0000 AMCS calibration over Pacific ocean Duration 2 minutes
* 2020/240:04:12:34.0000 AMCS calibration over Pacific ocean Duration 2 minutes
2020/240:05:36:20.0000 OCEANscan Duration 22 minutes
2020/240:06:58:29.0000 TOO TOOid 1689 RGT 961 offpoint 4.71deg Duration 2 minutes
* 2020/240:07:15:44.0000 TEP data collection Grid 324 Duration 3 minutes
* 2020/240:07:20:57.0000 TEP data collection Grid 252 Duration 3 minutes
* 2020/240:07:53:53.0000 TEP data collection Grid 17 Duration 3 minutes
* 2020/240:09:10:56.0000 TEP data collection Grid 33 Duration 3 minutes
* 2020/240:10:39:57.0000 TEP data collection Grid 103 Duration 3 minutes
* 2020/240:11:50:47.0000 TEP data collection Grid 425 Duration 3 minutes
* 2020/240:12:06:25.0000 TEP data collection Grid 209 Duration 3 minutes
* 2020/240:12:14:15.0000 TEP data collection Grid 100 Duration 3 minutes
* 2020/240:13:32:54.0000 TEP data collection Grid 315 Duration 3 minutes

* 2020/240:13:43:19.0000 TEP data collection Grid 170 Duration 3 minutes
* 2020/240:13:48:32.0000 TEP data collection Grid 98 Duration 3 minutes
* 2020/240:14:11:03.0000 TEP data collection Grid 8 Duration 3 minutes
* 2020/240:15:15:00.0000 TEP data collection Grid 204 Duration 3 minutes
* 2020/240:15:22:50.0000 TEP data collection Grid 96 Duration 3 minutes
* 2020/240:16:44:05.0000 TEP data collection Grid 274 Duration 3 minutes
  2020/240:17:23:36.0000 OCEANscan Duration 22 minutes
* 2020/240:18:17:21.0000 TEP data collection Grid 272 Duration 3 minutes
* 2020/240:18:36:40.0000 TEP data collection Grid 19 Duration 3 minutes
* 2020/240:19:43:43.0000 TEP data collection Grid 378 Duration 3 minutes
* 2020/240:20:07:19.0000 TEP data collection Grid 53 Duration 3 minutes
* 2020/240:20:10:58.0000 TEP data collection Grid 16 Duration 3 minutes
* 2020/240:21:19:07.0000 TEP data collection Grid 375 Duration 3 minutes
* 2020/240:21:23:14.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/240:21:45:15.0000 TEP data collection Grid 14 Duration 3 minutes
* 2020/240:22:50:47.0000 TEP data collection Grid 409 Duration 3 minutes
* 2020/240:22:57:52.0000 TEP data collection Grid 301 Duration 3 minutes
  2020/241:01:49:56.0000 TOO TOOid 1690 RGT 973 offpoint 4.71deg Duration 2 minutes
  2020/241:02:04:53.0000 TOO TOOid 1686 RGT 973 offpoint 0.00deg Duration 2 minutes
* 2020/241:02:12:37.0000 AMCS calibration over Pacific ocean Duration 2 minutes
* 2020/241:03:46:55.0000 AMCS calibration over Pacific ocean Duration 2 minutes
* 2020/241:05:06:47.0000 TEP data collection Grid 400 Duration 3 minutes
  2020/241:05:10:41.0000 OCEANscan Duration 22 minutes
* 2020/241:06:54:24.0000 AMCS calibration over Pacific ocean Duration 2 minutes
* 2020/241:08:16:31.0000 TEP data collection Grid 431 Duration 3 minutes
* 2020/241:11:43:22.0000 TEP data collection Grid 173 Duration 3 minutes
* 2020/241:13:22:53.0000 TEP data collection Grid 99 Duration 3 minutes
* 2020/241:14:38:55.0000 TEP data collection Grid 349 Duration 3 minutes
* 2020/241:14:46:44.0000 TEP data collection Grid 241 Duration 3 minutes
  2020/241:16:57:57.0000 OCEANscan Duration 22 minutes
* 2020/241:17:55:19.0000 TEP data collection Grid 236 Duration 3 minutes
* 2020/241:20:57:35.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/241:21:11:43.0000 TEP data collection Grid 123 Duration 3 minutes
* 2020/241:22:27:45.0000 TEP data collection Grid 373 Duration 3 minutes
* 2020/241:22:31:52.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/242:00:04:39.0000 TEP data collection Grid 335 Duration 3 minutes
* 2020/242:01:36:20.0000 TEP data collection Grid 369 Duration 3 minutes
* 2020/242:01:51:41.0000 AMCS calibration over Pacific ocean Duration 2 minutes
* 2020/242:03:21:16.0000 AMCS calibration over Pacific ocean Duration 2 minutes
  2020/242:04:45:02.0000 OCEANscan Duration 22 minutes
* 2020/242:06:29:50.0000 AMCS calibration over Pacific ocean Duration 2 minutes
* 2020/242:08:03:56.0000 TEP data collection Grid 251 Duration 3 minutes
* 2020/242:09:25:09.0000 TEP data collection Grid 429 Duration 3 minutes
* 2020/242:09:30:24.0000 TEP data collection Grid 357 Duration 3 minutes
  2020/242:10:50:02.0000 TOO TOOid 1691 RGT 994 offpoint 4.68deg Duration 2 minutes
* 2020/242:12:54:37.0000 TEP data collection Grid 135 Duration 3 minutes

2020/242:13:45:36.0000 TOO TOOid 1688 RGT 996 offpoint 0.25deg Duration 2 minutes
* 2020/242:15:57:59.0000 TEP data collection Grid 203 Duration 3 minutes
2020/242:16:32:17.0000 OCEANscan Duration 22 minutes
* 2020/242:18:53:31.0000 TEP data collection Grid 379 Duration 3 minutes
* 2020/242:20:34:22.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/242:22:06:13.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/243:01:13:17.0000 TEP data collection Grid 333 Duration 3 minutes
* 2020/243:02:55:36.0000 AMCS calibration over Pacific ocean Duration 2 minutes
2020/243:04:19:22.0000 OCEANscan Duration 22 minutes
* 2020/243:06:04:11.0000 AMCS calibration over Pacific ocean Duration 2 minutes
2020/243:07:20:11.0000 Segmented RTWscan Part 1 Duration 37 minutes
2020/243:08:09:25.0000 Segmented RTWscan Part 2 Duration 35 minutes
2020/243:08:50:01.0000 Segmented RTWscan Part 3 Duration 13 minutes
* 2020/243:09:09:57.0000 TEP data collection Grid 285 Duration 3 minutes
* 2020/243:12:26:21.0000 TEP data collection Grid 172 Duration 3 minutes
* 2020/243:13:52:49.0000 TEP data collection Grid 278 Duration 3 minutes
2020/243:14:00:00.0000 Stellar window dump Duration 90 minutes
2020/243:16:41:33.0000 TOO TOOid 1692 RGT 1013 offpoint 4.68deg Duration 2 minutes
2020/243:17:40:55.0000 OCEANscan Duration 22 minutes
* 2020/243:19:59:32.0000 TEP data collection Grid 413 Duration 3 minutes
* 2020/243:20:10:08.0000 TEP data collection Grid 268 Duration 3 minutes
* 2020/243:21:40:33.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/243:23:15:57.0000 TEP data collection Grid 300 Duration 3 minutes
* 2020/244:02:29:57.0000 AMCS calibration over Pacific ocean Duration 2 minutes
* 2020/244:04:04:14.0000 AMCS calibration over Pacific ocean Duration 2 minutes
2020/244:05:28:00.0000 OCEANscan Duration 22 minutes
2020/244:06:54:31.0000 Segmented RTWscan Part 1 Duration 37 minutes
2020/244:07:44:09.0000 Segmented RTWscan Part 2 Duration 35 minutes
2020/244:08:24:24.0000 Segmented RTWscan Part 3 Duration 13 minutes
2020/244:17:15:16.0000 OCEANscan Duration 22 minutes
2020/244:19:24:28.0000 TOO TOOid 1693 RGT 1030 offpoint 4.69deg Duration 2 minutes
* 2020/244:21:14:54.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/245:02:04:17.0000 AMCS calibration over Pacific ocean Duration 2 minutes
* 2020/245:03:38:35.0000 AMCS calibration over Pacific ocean Duration 2 minutes
2020/245:05:02:21.0000 OCEANscan Duration 22 minutes
2020/245:14:15:55.0000 TOO TOOid 1694 RGT 1042 offpoint 4.67deg Duration 2 minutes
2020/245:16:49:36.0000 OCEANscan Duration 22 minutes
* 2020/245:20:49:15.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/245:22:23:13.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
2020/245:22:50:00.0000 Laser window dump Duration 2 minutes
* 2020/246:01:41:19.0000 AMCS calibration over Pacific ocean Duration 2 minutes
* 2020/246:03:12:55.0000 AMCS calibration over Pacific ocean Duration 2 minutes
2020/246:04:36:42.0000 OCEANscan Duration 22 minutes

* 2020/246:06:21:30.0000 AMCS calibration over Pacific ocean Duration 2 minutes
  2020/246:16:23:57.0000 OCEANscan Duration 22 minutes
* 2020/246:20:24:14.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
  2020/246:21:41:45.0000 TOO TOOid 1695 RGT 1062 offpoint 4.72deg Duration 2 minutes
* 2020/246:21:57:53.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes