ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, September 7, 2020 thru Sunday, September 13, 2020

RGTs spanned: 1125 - 1231
Cycle 8

SUMMARY:

Happy 2nd Birthday, ICESat-2!!!

All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. With about 2 weeks to go before code freeze, ASAS is busy wrapping up open issues, testing PGEs and continuing the documentation process. SIPS successfully completed the ORR for SIPS Build 5.1 consisting of ASASV5.3.4 and SDMS V7.0.2 on Sept. 10. 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.

The ICESat-2 science team is preparing for their first major virtual meeting to take place next week (September 21-22).

ELEMENT DETAILS BELOW

CAMS/POD:
CAMS: Regular CAMS operations: constraint and conjunction monitoring for MW104 and MW105 and mission planning for MW106.
CAMS recommended laser arm for 45250 (XJS D) 253/11:11:05 to 253/11:11:15 (MW104).
CAMS recommended laser arm for 45251 (XJS E) 253/22:10:39 to 253/22:10:49 (MW104).
CAMS recommended laser arm for 45611 (XJS G) 254/04:27:41 - 04:27:51. (MW105).
CAMS recommended laser arm for 41872 (LEMUR2 Sokolsky) 255/03:08:41 - 03:08:51 (MW105). Event self-mitigated.
CAMS recommended laser arm for 25544(ISS) 256/08:28:18 - 08:28:28(MW105). Event self-mitigated.
CAMS continues working with the project on ARB09.

POD: Regular POD operations continue. Intermediate POD was completed for GPS week 2121. Final POD was completed for GPS week 2119.

ISF:
All ATLAS housekeeping data is nominal

Laser 2 is firing at energy level 4 and in science mode
WTEM Peak to Edge Ratio: 1.223
Laser 2 Temperature Error: -0.38C
SADA in SAILBOAT Mode
Spacecraft orientation: - X

Mission Planning:
MW105 ATS is loaded to the spacecraft and currently operating (PSO Activity List is attached)
 *MW103 PSO Activity list was updated to add in the VBG temperature adjustments and is attached
MW106 AIP has been delivered, nominal calibrations

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Activities during the past week:
  Real-time activities:
    monitoring via telework
    Onsite Thursday (9/10) and today (9/14) to adjust the VBG temperature
    Onsite Thursday (9/10) to support system patching and post-patching regression test

  ATS activities:
    MW_105 (currently loaded and executing):
     Routine Instrument calibrations, TOOs, Ocean scans and Vegetation Data collection, Segmented
RTW scans and **Monthly TEP Stare**:
* 2020/255:14:14:00.0000 TEP Stare 2 orbits of TEP calibration Duration 192 minutes
      Two mini-ATS to mitigate HIEs with 45611 and 42042 with LCAs 60 and 61
* 2020/254:04:27:31.0000 Laser in ARM mode for LCA60 45611 (XJS G) 10-Sep-2020 04:27:46
* 2020/259:21:42:10.0000 Laser in ARM mode for LCA61 42042 (FLOCK 3P 56) 15-Sep-2020 21:42:25

  Other Activities:
    System Quarterly patching on Thursday September 10

Near-term upcoming activities:
  PDB E.0.2 testing and deployment
  System Quarterly scanning on September 17

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

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, ATL04, ATL06, ATL07, ATL08, ATL09, and ATL10 using ANC03/04/05 files from the CAMS.
- o Distributed the ATL01 and ATL02 Data products to NSIDC.
- o Distributed the rapid Science Data products to the SCF.
- · Successfully completed the ORR for SIPS Build 5.1 consisting of ASASV5.3.4 and SDMS V7.0.2 on Sept. 10. 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.
- · Produced and distributed Release 001 ATL20 data products from November 2018 thru June 2020 to the SCF.
- · Delivered Release 003 ATL07 and ATL10 from May 14, 2020 through July 16, 2020 to NSIDC with the appropriate holds requested by the Science Team.
- · Delivered Release 003 ATL12 from May 14, 2020 -July 16, 2020 to NSIDC.

ASAS:
With about 2 weeks to go before code freeze, ASAS is busy wrapping up open issues, testing PGEs and continuing the documentation process.

All products (except ATL13) for the 954a4 functional test have been created and will be available at SCF this week.

A special POD test case (using revised PPD calibrations without updated range bias) will be available at SCF this week.

L1A: No open issues for the ASAS v5.4 release.

L1B: No open issues for the ASAS v5.4 release.

L2A_ALT: No open issues for the ASAS v5.4 release.

L2A Atmosphere: No open issues for the ASAS v5.4 release.

L3A Atmosphere: Working on L3A cloud/surface discrimination in high-relief terrain.

L3A Ice Sheet: No open issues for the ASAS v5.4 release.

L3A Sea Ice/Freeboard: Awaiting verification of outstanding issues.

L3A Land/Veg: Use of the ATL03 quality_ph data is in testing.

L3A Inland Water: The addition of anomalous short segment information to ATL13.

L3A Ocean: Use of the ATL03 quality_ph data is in testing.

L3B Land Ice: ASAS worked with ECS to develop polygon-based geographic extents for metadata as is awaiting test results from NSIDC.

L3B Atmosphere: No open issues for the ASAS v5.4 release.

L3B Freeboard: Work is underway on the addition of ATL21 (reference surface).

L3B Ocean: Work continues on L3B Ocean with development of browse and QA products.

SCF:
The SCF is operating nominally. Data for releases 003 and R003 are being ingested and distributed, and release 001 data for ATL20 have begun arriving at the SCF. A file listing the current SCF data holdings is attached.

* Data Management -- Setup for handling ATL20 was completed. This involved new and updated database tables, some code updates, and a new resource in SDMS. Initial ingest of ATL20 worked as expected and other existing operations continued as usual, indicating that updates made were successful. Work has begun on implementing two new ATL10 trending plots. The initial focus is on the calculation step and how to update the code, database, etc. to obtain the values needed to generate the plots.

* Subsetter -- Working as expected in operations with no failed jobs.

ATL02/Instrument Science:
 A paper is in preparation on detailed characterization of the ATLAS impulse response, including the small "after-pulses" that are visible in extremely strong surface returns.

In addition, work continues on:

- Investigation of data from July 15.

- 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.

- Improving the process for calibrating transmitter-receiver alignment.

ATL03:
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 105

* 2020/254:02:48:15.0000 TEP data collection Grid 330 Duration 3 minutes
* 2020/254:02:56:16.0000 AMCS Cal over open Pacific ocean Duration 2 minutes

* 2020/254:03:28:58.0000 TEP data collection Grid 23 Duration 3 minutes
  2020/254:04:20:02.0000 OCEANscan Duration 22 minutes
* 2020/254:04:27:31.0000 Laser in ARM mode for LCA60 45611 (XJS G) 10-Sep-2020 04:27:46 Duration 1 minute
* 2020/254:06:04:51.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
* 2020/254:06:15:05.0000 TEP data collection Grid 108 Duration 3 minutes
* 2020/254:07:36:20.0000 TEP data collection Grid 287 Duration 3 minutes
* 2020/254:08:11:49.0000 TEP data collection Grid 16 Duration 3 minutes
  2020/254:08:50:46.0000 TOO TOOid 1711 RGT 1176 offpoint 4.69deg Duration 2 minutes
* 2020/254:09:00:10.0000 TEP data collection Grid 429 Duration 3 minutes
* 2020/254:09:05:24.0000 TEP data collection Grid 356 Duration 3 minutes
* 2020/254:09:28:55.0000 TEP data collection Grid 31 Duration 3 minutes
* 2020/254:10:55:20.0000 TEP data collection Grid 137 Duration 3 minutes
^ 2020/254:11:46:11.1420 Adjust the VBG Setpoint to 62.96 to optimize the laser wavelength Duration 1 minute
* 2020/254:12:18:06.0000 TEP data collection Grid 280 Duration 3 minutes
* 2020/254:12:34:52.0000 TEP data collection Grid 63 Duration 3 minutes
* 2020/254:15:35:36.0000 TEP data collection Grid 166 Duration 3 minutes
* 2020/254:15:43:27.0000 TEP data collection Grid 58 Duration 3 minutes
  2020/254:16:07:18.0000 OCEANscan Duration 22 minutes
* 2020/254:16:56:51.0000 TEP data collection Grid 345 Duration 3 minutes
* 2020/254:18:31:09.0000 TEP data collection Grid 342 Duration 3 minutes
* 2020/254:18:46:47.0000 TEP data collection Grid 126 Duration 3 minutes
* 2020/254:20:02:49.0000 TEP data collection Grid 376 Duration 3 minutes
* 2020/254:20:06:56.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/254:20:14:37.0000 TEP data collection Grid 196 Duration 3 minutes
* 2020/254:21:41:14.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/254:21:57:59.0000 TEP data collection Grid 85 Duration 3 minutes
* 2020/254:22:02:33.0000 TEP data collection Grid 13 Duration 3 minutes
* 2020/254:23:08:54.0000 TEP data collection Grid 407 Duration 3 minutes
* 2020/254:23:14:01.0000 TEP data collection Grid 335 Duration 3 minutes
* 2020/254:23:19:14.0000 TEP data collection Grid 263 Duration 3 minutes
* 2020/254:23:54:43.0000 TEP data collection Grid 28 Duration 3 minutes
  2020/255:00:33:39.0000 TOO TOOid 1712 RGT 1186 offpoint 4.64deg Duration 2 minutes
* 2020/255:00:53:31.0000 TEP data collection Grid 261 Duration 3 minutes
* 2020/255:01:09:10.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
  2020/255:02:21:12.0000 TOO TOOid 1710 RGT 1187 offpoint 0.15deg Duration 2 minutes
* 2020/255:02:30:37.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
  2020/255:03:54:23.0000 OCEANscan Duration 22 minutes
* 2020/255:05:39:12.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
  2020/255:06:55:11.0000 Segmented RTWscan Part 1 Duration 37 minutes
  2020/255:07:44:20.0000 Segmented RTWscan Part 2 Duration 35 minutes
  2020/255:08:24:49.0000 Segmented RTWscan Part 3 Duration 14 minutes

* 2020/255:14:14:00.0000 TEP Stare 2 orbits of TEP calibration Duration 192 minutes
* 2020/255:19:45:00.0000 TEP data collection Grid 268 Duration 3 minutes
* 2020/255:21:15:34.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/256:00:30:28.0000 TEP data collection Grid 225 Duration 3 minutes
* 2020/256:00:42:50.0000 TEP data collection Grid 45 Duration 3 minutes
* 2020/256:02:04:58.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
  2020/256:03:16:34.0000 TOO TOOid 1713 RGT 1203 offpoint 4.68deg Duration 2 minutes
* 2020/256:03:31:14.0000 TEP data collection Grid 329 Duration 3 minutes
* 2020/256:03:34:45.0000 TEP data collection Grid 292 Duration 3 minutes
* 2020/256:03:39:15.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
* 2020/256:05:00:00.0000 TEP data collection Grid 399 Duration 3 minutes
  2020/256:05:03:01.0000 OCEANscan Duration 22 minutes
* 2020/256:06:58:04.0000 TEP data collection Grid 107 Duration 3 minutes
* 2020/256:08:11:29.0000 TEP data collection Grid 394 Duration 3 minutes
* 2020/256:08:15:17.0000 TEP data collection Grid 357 Duration 3 minutes
* 2020/256:08:34:59.0000 TEP data collection Grid 69 Duration 3 minutes
* 2020/256:10:01:25.0000 TEP data collection Grid 175 Duration 3 minutes
* 2020/256:11:22:40.0000 TEP data collection Grid 353 Duration 3 minutes
  2020/256:11:30:00.0000 Stellar window dump Duration 90 minutes
* 2020/256:13:17:51.0000 TEP data collection Grid 62 Duration 3 minutes
* 2020/256:14:26:01.0000 TEP data collection Grid 420 Duration 3 minutes
  2020/256:16:50:16.0000 OCEANscan Duration 22 minutes
* 2020/256:17:36:35.0000 TEP data collection Grid 380 Duration 3 minutes
* 2020/256:17:58:05.0000 TEP data collection Grid 91 Duration 3 minutes
* 2020/256:20:43:10.0000 TEP data collection Grid 411 Duration 3 minutes
* 2020/256:20:49:55.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/256:22:40:54.0000 TEP data collection Grid 84 Duration 3 minutes
* 2020/257:01:39:18.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
* 2020/257:03:13:36.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
  2020/257:04:37:22.0000 OCEANscan Duration 22 minutes
  2020/257:05:59:31.0000 TOO TOOid 1714 RGT 1220 offpoint 4.70deg Duration 2 minutes
* 2020/257:09:43:37.0000 TEP data collection Grid 67 Duration 3 minutes
* 2020/257:11:07:27.0000 TEP data collection Grid 209 Duration 3 minutes
* 2020/257:15:50:19.0000 TEP data collection Grid 202 Duration 3 minutes
  2020/257:16:24:37.0000 OCEANscan Duration 22 minutes
^ 2020/258:16:27:18.5420 Adjust the VBG Setpoint to 62.93 to optimize the laser wavelength Duration 1 minute
* 2020/257:19:04:06.0000 TEP data collection Grid 125 Duration 3 minutes
* 2020/257:20:24:16.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/258:01:13:39.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
* 2020/258:02:47:56.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
  2020/258:04:11:42.0000 OCEANscan Duration 22 minutes
* 2020/258:05:56:31.0000 AMCS Cal over open Pacific ocean Duration 2 minutes

2020/258:14:59:36.0000 TOO TOOid 1715 RGT 1241 offpoint 4.65deg Duration 2 minutes
 2020/258:15:58:58.0000 OCEANscan Duration 22 minutes
* 2020/258:19:58:36.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/258:21:32:54.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/259:00:59:07.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
* 2020/259:02:22:17.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
 2020/259:03:46:03.0000 OCEANscan Duration 22 minutes
* 2020/259:05:30:52.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
 2020/259:12:30:00.0000 Laser window dump Duration 2 minutes
 2020/259:15:33:18.0000 OCEANscan Duration 22 minutes
 2020/259:17:42:30.0000 TOO TOOid 1716 RGT 1258 offpoint 4.67deg Duration 2 minutes
* 2020/259:21:07:14.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/259:21:42:10.0000 Laser in ARM mode for LCA61 42042 (FLOCK 3P 56) 15-Sep-2020 21:42:25 Duration 1 minute
* 2020/260:01:56:38.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
* 2020/260:03:24:11.0000 TEP data collection Grid 328 Duration 3 minutes
* 2020/260:03:30:55.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
 2020/260:04:54:41.0000 OCEANscan Duration 22 minutes
 2020/260:06:21:12.0000 Segmented RTWscan Part 1 Duration 37 minutes
 2020/260:07:10:38.0000 Segmented RTWscan Part 2 Duration 35 minutes
 2020/260:07:51:09.0000 Segmented RTWscan Part 3 Duration 15 minutes
 2020/260:10:59:41.0000 TOO TOOid 1717 RGT 1269 offpoint 4.64deg Duration 2 minutes
 2020/260:16:41:56.0000 OCEANscan Duration 22 minutes
* 2020/260:20:41:35.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes