ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, November 23, 2020 thru Sunday, November 29, 2020

RGTs spanned: 914 - 1020
Cycle 9

SUMMARY:
All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode.

NSIDC ICESat-2 Metrics through December 1: 2,613 total users of 13 available data products; 9,370,563 sciences files downloaded. ATL03 is in the lead with 1,126 unique users of 1,083,829 files downloaded. ATL08 is in a close second with 1,077 unique users and an astounding 4,008,371 files downloaded, and ATL06 is in third place with 680 unique users and 3,001,420 files downloaded.

ELEMENT DETAILS BELOW**

CAMS/POD:
CAMS: Regular CAMS operations: constraint and conjunction monitoring for MW115 and MW116 and mission planning for MW117.
CAMS recommended laser arm for conjunction with 42030 (FLOCK 3P52) 331/07:24:41-331/07:24:51.
CAMS supported replan for MW117 DMU066b.
CAMS continues working with the project on ARB09.

POD: Regular POD operations continue. Intermediate POD was completed for GPS week 2132. Final POD was completed for GPS week 2130.

ISF:
All ATLAS housekeeping data is nominal
Laser 2 is firing at energy level 4 and in science mode
WTEM Peak to Edge Ratio: 1.21
Laser 2 Temperature Error: -0.29C
SADA in AIRPLANE Mode
Spacecraft orientation: - X

Mission Planning:
MW116 ATS is loaded to the spacecraft and currently operating
MW117 AIP has been delivered, nominal calibrations; CAMS has delivered preliminary products.
CAMS continues to perform daily laser conjunction screening and constraint analysis including screening for ISS visiting vehicles

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Activities during the past week:
  Real-time activities:
    monitoring via telework

  ATS activities:
    MW_115 (completed nominally - PSO Activity list attached)

Routine Instrument calibrations, TOOs, Ocean scans and Vegetation Data collection, Segmented RTW scans

MW_116 (currently active):

Routine Instrument calibrations, TOOs, Ocean scans and Vegetation Data collection, Segmented RTW scans

Commands to end the Receiver algorithm V10 test @ 2020/336:00:30 (December 1, 2020 00:30 UTC)

Planned a mini ATS to execute an LCA but the event self-mitigated (HIE34)

Planned a split ATS for replanned DMU66(b) that was not loaded due to updated predictions (solar weather increased drag)

Planned a split ATS for replanned DMU66(c) which included an LCA for object 31601.

The LC HIE self-mitigated but due to time of the event (early this morning) no replanning was doen and the LCA executed

Other Activities:

Updated ANC13 and ANC27 delivered to SIPS

PDB E.0.2 Update

TBS - install and testing on playback ISF server (itos2) - expected this week

PDB requires re-build. E.0.3 to be delivered early in December.

Near-term upcoming activities:

Science team analysis of receiver algorithm V10 parameter test and recommendations for loading into ops.

Facility:

Updating ITOS servers to RedHat 7.0 due to EOL of 6.0 at the end of November

Servers at the ISF are updated.

Tech HW refresh:

ISF Tech Refresh Phase 2 hardware moved to B33 Room F325

Phase 1a setup and testing complete - planning for move to B32 SPOCC and install into ops

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 independent review board.

LTO Schedule:

Tech refresh updates to be provided to ESMO Scheduler. Update to RedHat 7.0 takes priority.

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.
- · Completed Integration Testing of SIPS Build 6.0 (consisting of ASAS V5.4). A TRR has been scheduled for December 1.
- · Distributed Release 001 ATL11 data products to NSIDC. There were 58 granules that were not sent because they had a failed QA status.

ASAS:
L1A/L1B: The software developed to examine Tx/Rx issue has been able to detect the majority of tested Tx/Rxs cases, with few false positives, in 547 ATL01s checked. Additional work has gone into analysis of the results and the creation of plotting software that can help with additional analysis. The next step is to finalize the code, test with INTTEST, and deliver to SIPS so that it can be run against all launch-to-date ATL01s

L2A_ALT: Work is underway on the generation of a coarse polygon to define the geospatial bounds of ATL03 data. ATL03 is being used as the example, but this code is designed to be re-used on multiple data products. If this development is successful, it may yield more accurate geospatial metadata for NSIDC's search tools.

L2/L3 Atmosphere: Adding the ability to read interpolated DEM values from release 004+ ANC39s instead of requiring DEM inputs to the PGE.

L3A Land Ice: No work.

L3B Land Ice: The team delivered the initial release of ATL11 to NSIDC (via SIPS).

Sea Ice/Freeboard: Work on ATL21 in ongoing.

L3A Land/Veg: Investigation of issues related to a strong/weak beam crossing is awaiting release 004 ATL03s (which contain roll/pitch/yaw).

Inland Water: ATL22 development is making good progress with the initial product content defined.

Ocean: ATL19 product refinement continues.

SCF:
The SCF is operating nominally. Data for releases 003 and R003 are being ingested and distributed. A file listing the current SCF data holdings is attached.

* Data Management -- The data management pipeline is operating nominally.

* Subsetter -- Operations continue normally. The Subsetter is ready for ASAS 5.4 data products.

* Visualizer -- Nothing to report.

ATL02/Instrument Science:

Craig Swenson has begun analyzing the variation of ATLAS transmit/receive alignment during the monthly two-orbit TEP stares, when the alignment control loop is turned off and the BSM is in a fixed position. The goal is to see whether this variation can be modeled.

Work continues on:

- Updating ATL02 documents for Release 004

- Investigating and modeling the properties of saturated returns.

ATL03:
Continuing investigation of TxRx alignment slip cases.

ISF ACTIVITIES MISSION WEEK 115

* Not in science mode
^ Could affect science data quality

* 2020/324:00:40:50.0000 TEP data collection Grid 346 Duration 3 minutes
* 2020/324:00:46:33.0000 TEP data collection Grid 417 Duration 3 minutes
  2020/324:01:07:10.0000 OCEANscan Duration 22 minutes
* 2020/324:02:13:12.0000 TEP data collection Grid 307 Duration 3 minutes
* 2020/324:03:54:39.0000 TEP data collection Grid 413 Duration 3 minutes
* 2020/324:04:11:42.0000 TEP data collection Grid 431 Duration 3 minutes
* 2020/324:05:13:17.0000 TEP data collection Grid 195 Duration 3 minutes
* 2020/324:05:20:00.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/324:05:28:57.0000 TEP data collection Grid 410 Duration 3 minutes
* 2020/324:05:46:00.0000 TEP data collection Grid 429 Duration 3 minutes
* 2020/324:06:44:58.0000 TEP data collection Grid 157 Duration 3 minutes
* 2020/324:06:50:11.0000 TEP data collection Grid 229 Duration 3 minutes
* 2020/324:08:19:26.0000 TEP data collection Grid 154 Duration 3 minutes
* 2020/324:08:32:17.0000 TEP data collection Grid 334 Duration 3 minutes
* 2020/324:08:54:34.0000 TEP data collection Grid 424 Duration 3 minutes
* 2020/324:09:57:39.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
* 2020/324:11:20:11.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
  2020/324:12:54:25.0000 OCEANscan Duration 22 minutes
* 2020/324:14:28:45.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
^ 2020/324:14:52:01.0000 DMU64a for RGT excursion Duration 74 minutes
* 2020/324:19:07:36.0000 TEP data collection Grid 31 Duration 3 minutes
* 2020/324:19:24:30.0000 TEP data collection Grid 246 Duration 3 minutes
* 2020/324:19:30:37.0000 TEP data collection Grid 317 Duration 3 minutes
* 2020/324:20:43:06.0000 TEP data collection Grid 28 Duration 3 minutes
* 2020/324:20:48:21.0000 TEP data collection Grid 100 Duration 3 minutes
* 2020/324:20:58:47.0000 TEP data collection Grid 243 Duration 3 minutes

* 2020/324:21:04:00.0000 TEP data collection Grid 315 Duration 3 minutes
* 2020/324:22:21:09.0000 TEP data collection Grid 61 Duration 3 minutes
* 2020/324:22:38:17.0000 TEP data collection Grid 313 Duration 3 minutes
  2020/325:00:41:30.0000 OCEANscan Duration 22 minutes
* 2020/325:01:54:43.0000 TEP data collection Grid 416 Duration 3 minutes
* 2020/325:03:13:21.0000 TEP data collection Grid 198 Duration 3 minutes
* 2020/325:03:18:33.0000 TEP data collection Grid 270 Duration 3 minutes
* 2020/325:04:47:38.0000 TEP data collection Grid 196 Duration 3 minutes
* 2020/325:04:54:21.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/325:06:28:23.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/325:07:53:36.0000 TEP data collection Grid 155 Duration 3 minutes
* 2020/325:08:04:02.0000 TEP data collection Grid 299 Duration 3 minutes
* 2020/325:09:35:43.0000 TEP data collection Grid 260 Duration 3 minutes
* 2020/325:10:54:32.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
* 2020/325:11:15:13.0000 TEP data collection Grid 330 Duration 3 minutes
  2020/325:12:28:46.0000 OCEANscan Duration 22 minutes
* 2020/325:14:03:07.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
* 2020/325:15:42:27.0000 TEP data collection Grid 143 Duration 3 minutes
* 2020/325:17:19:21.0000 TEP data collection Grid 177 Duration 3 minutes
* 2020/325:17:24:34.0000 TEP data collection Grid 249 Duration 3 minutes
* 2020/325:20:19:14.0000 TEP data collection Grid 65 Duration 3 minutes
  2020/326:00:15:51.0000 OCEANscan Duration 22 minutes
* 2020/326:01:16:01.0000 TEP data collection Grid 237 Duration 3 minutes
  2020/326:03:16:40.0000 Segmented RTWscan Part 1 Duration 37 minutes
  2020/326:04:05:58.0000 Segmented RTWscan Part 2 Duration 35 minutes
  2020/326:04:46:36.0000 Segmented RTWscan Part 3 Duration 14 minutes
* 2020/326:06:02:59.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/326:10:28:53.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
* 2020/326:12:03:10.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
  2020/326:13:37:24.0000 OCEANscan Duration 22 minutes
* 2020/326:15:22:01.0000 TEP data collection Grid 216 Duration 3 minutes
^ 2020/326:16:14:00.0000 IA08a inclination adjust Duration 75 minutes
* 2020/326:18:30:36.0000 TEP data collection Grid 211 Duration 3 minutes
* 2020/326:18:35:48.0000 TEP data collection Grid 283 Duration 3 minutes
* 2020/326:19:51:48.0000 TEP data collection Grid 29 Duration 3 minutes
* 2020/326:19:59:40.0000 TEP data collection Grid 137 Duration 3 minutes
* 2020/327:00:52:58.0000 TEP data collection Grid 273 Duration 3 minutes
  2020/327:01:24:30.0000 OCEANscan Duration 22 minutes
* 2020/327:04:11:59.0000 TEP data collection Grid 412 Duration 3 minutes
* 2020/327:05:37:20.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/327:10:03:13.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
  2020/327:10:21:48.0000 TOO TOOid 1773 RGT 905 offpoint 4.32deg Duration 2 minutes
  2020/327:11:37:28.0000 OCEANscan Duration 22 minutes
* 2020/327:13:11:48.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
  2020/327:13:15:00.0000 Laser window dump Duration 2 minutes
* 2020/327:13:25:40.0000 TEP data collection Grid 218 Duration 3 minutes

* 2020/327:13:32:30.0000 TEP data collection Grid 326 Duration 3 minutes
* 2020/327:14:46:06.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
* 2020/327:16:18:12.0000 TEP data collection Grid 34 Duration 3 minutes
* 2020/327:17:54:29.0000 TEP data collection Grid 68 Duration 3 minutes
* 2020/327:19:44:26.0000 TEP data collection Grid 281 Duration 3 minutes
* 2020/327:19:49:39.0000 TEP data collection Grid 353 Duration 3 minutes
  2020/328:00:58:50.0000 OCEANscan Duration 22 minutes
* 2020/328:05:11:41.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/328:09:47:19.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
* 2020/328:11:11:51.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
  2020/328:12:46:06.0000 OCEANscan Duration 22 minutes
* 2020/328:14:20:26.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
* 2020/328:15:57:09.0000 TEP data collection Grid 107 Duration 3 minutes
  2020/328:16:35:00.0000 Stellar window dump Duration 90 minutes
  2020/328:19:52:13.0000 TOO TOOid 1774 RGT 926 offpoint 2.55deg Duration 2 minutes
  2020/329:00:33:11.0000 OCEANscan Duration 22 minutes
* 2020/329:04:46:01.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/329:06:19:05.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/329:09:22:44.0000 TEP data collection Grid 188 Duration 3 minutes
* 2020/329:10:46:12.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
  2020/329:12:20:26.0000 OCEANscan Duration 22 minutes
* 2020/329:13:54:46.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
^ 2020/329:15:52:20.0000 DMU65a for RGT excursion Duration 74 minutes
  2020/330:00:07:31.0000 OCEANscan Duration 22 minutes
  2020/330:03:08:20.0000 Segmented RTWscan Part 1 Duration 37 minutes
  2020/330:03:57:34.0000 Segmented RTWscan Part 2 Duration 35 minutes
  2020/330:04:38:16.0000 Segmented RTWscan Part 3 Duration 13 minutes
* 2020/330:05:54:39.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/330:10:20:33.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
* 2020/330:11:54:50.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
  2020/330:13:29:04.0000 OCEANscan Duration 22 minutes