ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, June 1 2020 thru Sunday, June 7, 2020

RGTs spanned: 1016-1122
Cycle 7

SUMMARY:
All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. SIPS Delivered Release 003 ATL07 and ATL10 data products to NSIDC for Oct. 14, 2018 – Nov. 15, 2019, and delivered release 002 ATL16 and ATL17 data products to NSIDC.

Operations continued nominally, in our twelth week of telework, with no major disruptions.

ELEMENT DETAILS BELOW

CAMS/POD:
CAMS: Regular CAMS operations: constraint and conjunction monitoring for MW090 and MW091 and mission planning for MW092.
CAMS is ensuring that RTW scans are not scheduled over AIS and GIS regions and that the RGT is being tracked per the PSO's request.
CAMS recommended laser arm for 14144 (GB2) 156/11:40:57 - 156/11:41:07(MW092).
CAMS recommended laser arm for 41557 (NUSAT1) 157/12:49:34 - 157/12:49:44 (MW092). Event self-mitigated.

POD: Regular POD operations continue. Intermediate POD was completed for GPS week 2107. Final POD was completed for GPS week 2105.

ISF:
All ATLAS housekeeping data is nominal
Laser 2 is firing at energy level 4 and in science mode
WTEM Peak to Edge Ratio: 1.178
Laser 2 Temperature Error: -0.29C
SADA in AIRPLANE Mode
Spacecraft orientation: - X

Mission Planning:
MW91 ATS is loaded to the spacecraft and currently operating (PSO Activity List is attached)

MW92 AIP has been delivered, nominal calibrations

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Activities during the past week:

Real-time activities:
No realtime commanding was performed due to GSFC Stage 4 status

ATS activities:
MW_90:
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Mini-ATS for LCA42 to mitigate HIE with 41983 (Laser to ARM 2020/152 07:33:46)
(Included commands from sCARs to reset counters to clear yellow flags)

MW_91:
Routine Instrument calibrations, Ocean scans and Vegetation Data collection, modified RTW scans to avoid scan over the poles

Included commands for LCA43 to mitigate HIE with 14144 (Laser to ARM 2020/156 11:40:47)
Includes commands from sCARs to reset counters to clear yellow flags

Other Activities:
DMU050a

Near-term activities:
DMU051a on 2020/163 (June 11, 2020)
System patching on-site on June 11, 2020; arrangements made with MOC FOT for bMOC test
Q2 scan on June 18

Tech HW refresh:
On hold due to Stage 4 status

Facility:
RSA Token re-order - notified tokens delivered to GSFC
Critical patching completed via telework
Q2 patch (June 11) and scan (June 18)

Notes/Issues:
~ none to report

LTO Schedule:
All items remain on schedule. Draft dates for Tech Refresh 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.
- Delivered Release 003 ATL07 and ATL10 data products to NSIDC for Oct. 14, 2018 – Nov. 15, 2019.
- Delivered Release 002 ATL16 and ATL17 data products to NSIDC.
- Continued work on expansion of the ASAS Playground, SIPS IntTest, and SIPS Acctest clusters. SIPS Facilities lead went to GSFC to do hardware and software reconfigurations.
- Patched SIPS clusters (Ops, AccTest, and IntTest) per latest credentialed scans.

ASAS:

ASAS is beginning to execute the next functional test (954a2). This test will create ATL02s with improved GPSR IMT precision, ATL03s with the new free-to-mean tide values and the re-classification of saturated

photons, and the derivative upper-level products. The SIPS facility/SDMS staff have added more CPUs and disk storage to the ASAS Playground. This will be the first full test of the upgraded Playground.

For atmosphere, work continues on the L2A surface signal algorithm and the L3A low-rate blowing snow.

L3B ATM work on templates and fixes to the observation counts is underway. The code to change the grid sizes is in testing.

The ATL11 team is working on a wrapper script to execute atlas_meta, atl11_qa_util and atlas_brw in series with the ATL11 PGE.

The software for interpolating roll/pitch/yaw for ATL03 is in development.

The Land/Veg developer has implemented changes to the canopy height percentiles and is working on saturation flag processing.

The land ice refactor is entering the integration test phase. Comparison of Release 003 ATL06s with those created by the refactored code is in work.

Work is progressing on structural changes to ATL20, based on NSIDC provided suggestions that would make ATL20 more standards-compliant and significantly more usable with earth science-related tools. These changes include a reorganization of the dimension scales and the addition of start and end delta_time values. Work also continues on the ATL20 browse products.

For inland water, the focus is on unit height adjustment , first-photon bias and preliminary work on the ATL22 L3B inland water product.

For ocean, code for the L3A layer flag is being completed and work is continuing on the L3B ocean product.

NSIDC has requested that projection information be added to the L3B products. ASAS is investigating the standards-compliant methods that can be used to add this information. Preliminary analysis indicates the best path is to add EPSG codes (which uniquely identify standard projections) to the product metadata.

SCF:

The SCF is operating nominally. Data for releases 003 and R003 are being ingested and distributed. Older data that overlaps newer data and some now-unneeded test data have been deleted. This is to free up space in preparation for two sets of data expected to arrive in the next few weeks: Apr-May release 003 data from SIPS, and about one month's worth of test data from ASAS. A file listing the current SCF data holdings is attached.

* Data Management -- Modifications to the ATL10 trending that worked in testing were placed into operations. Calculations succeeded but plotting failed, so trending of ATL10 has been disabled again while the issue is reworked. The main issues seem to be with handling empty beams and ensuring the time array for plotting data is correct. Updated rSCF documentation should be finalized next week.

* Subsetter -- The software is performing as expected in operations.

* Visualizer -- Documentation has been updated to record as a known issue the macOS Mojave case of an active button not being highlighted as such.

ATL02/Instrument Science:
Work continues on:

- Evaluating the latest analysis of ATLAS range bias.
- 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:
Work continues on saturation signal editing in preparation for release 004. Additionally, changes/updates to several parameters (mean tide/tide-free geophysical corrections, saturation declassification issues) are being proposed and discussed for release 004.

ISF ACTIVITIES MISSION WEEK 091:

* 2020/156:02:18:06.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/156:02:27:01.0000 TEP data collection Grid 193 Duration 3 minutes
* 2020/156:04:09:08.0000 TEP data collection Grid 83 Duration 3 minutes
* 2020/156:07:02:49.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/156:07:31:58.0000 TOO TOOid=1481, RGT=1065, offpoint=4.52deg Duration 2 minutes
  2020/156:08:31:15.0000 OCEANscan Duration 22 minutes
* 2020/156:10:08:14.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/156:11:40:47.0000 Put laser in ARM mode for LCA43 14144 (GB2) 04-Jun-2020 11:41:02 Duration 1 minute
* 2020/156:11:55:21.0000 TEP data collection Grid 179 Duration 3 minutes
^ 2020/156:12:03:30.0000 DMU050a Duration 72 minutes
* 2020/156:14:50:54.0000 TEP data collection Grid 355 Duration 3 minutes
* 2020/156:19:31:09.0000 TEP data collection Grid 384 Duration 3 minutes
  2020/156:20:18:30.0000 OCEANscan Duration 22 minutes
* 2020/156:21:26:19.0000 TEP data collection Grid 93 Duration 3 minutes
* 2020/156:22:47:34.0000 TEP data collection Grid 271 Duration 3 minutes
* 2020/157:00:18:27.0000 TEP data collection Grid 305 Duration 3 minutes
* 2020/157:00:32:17.0000 TEP data collection Grid 124 Duration 3 minutes
* 2020/157:01:52:26.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
  2020/157:03:45:00.0000 Stellar window dump Duration 90 minutes
* 2020/157:06:51:36.0000 AMCS Cal over open ocean Duration 2 minutes

* 2020/157:08:08:18.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/157:09:39:53.0000 OCEANscan Duration 22 minutes
  2020/157:10:14:53.0000 TOO TOOid=1482, RGT=1082, offpoint=4.55deg Duration 2 minutes
  2020/157:11:06:24.0000 Segmented RTWscan Part 1 Duration 37 minutes
  2020/157:11:56:00.0000 Segmented RTWscan Part 2 Duration 34 minutes
  2020/157:12:36:18.0000 Segmented RTWscan Part 3 Duration 14 minutes
* 2020/157:20:42:25.0000 TEP data collection Grid 346 Duration 3 minutes
  2020/157:21:27:09.0000 OCEANscan Duration 22 minutes
* 2020/158:00:04:01.0000 TEP data collection Grid 161 Duration 3 minutes
* 2020/158:01:26:47.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/158:04:39:05.0000 TEP data collection Grid 262 Duration 3 minutes
* 2020/158:07:42:38.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/158:09:14:14.0000 OCEANscan Duration 22 minutes
* 2020/158:10:45:47.0000 TEP data collection Grid 397 Duration 3 minutes
* 2020/158:10:51:13.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/158:12:19:50.0000 TEP data collection Grid 431 Duration 3 minutes
* 2020/158:14:23:07.0000 TEP data collection Grid 31 Duration 3 minutes
* 2020/158:15:49:32.0000 TEP data collection Grid 137 Duration 3 minutes
  2020/158:17:40:42.0000 TOO TOOid=1483, RGT=1102, offpoint=4.52deg Duration 2 minutes
* 2020/158:19:05:59.0000 TEP data collection Grid 24 Duration 3 minutes
  2020/158:21:01:29.0000 OCEANscan Duration 22 minutes
* 2020/158:23:40:59.0000 TEP data collection Grid 125 Duration 3 minutes
* 2020/159:01:01:08.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/159:02:35:25.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/159:07:16:59.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/159:08:48:35.0000 OCEANscan Duration 22 minutes
* 2020/159:10:25:34.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/159:12:07:11.0000 TEP data collection Grid 251 Duration 3 minutes
  2020/159:12:32:11.0000 TOO TOOid=1484, RGT=1114, offpoint=4.60deg Duration 2 minutes
* 2020/159:13:33:06.0000 TEP data collection Grid 357 Duration 3 minutes
* 2020/159:13:44:22.0000 TEP data collection Grid 212 Duration 3 minutes
* 2020/159:15:23:11.0000 TEP data collection Grid 138 Duration 3 minutes
* 2020/159:16:45:08.0000 TEP data collection Grid 316 Duration 3 minutes
  2020/159:17:47:14.0000 TOO TOOid=1480, RGT=1118, offpoint=0.37deg Duration 2 minutes
* 2020/159:18:38:42.0000 TEP data collection Grid 60 Duration 3 minutes
  2020/159:20:35:50.0000 OCEANscan Duration 22 minutes
* 2020/159:21:33:13.0000 TEP data collection Grid 236 Duration 3 minutes
* 2020/159:22:57:09.0000 TEP data collection Grid 378 Duration 3 minutes
* 2020/159:23:10:07.0000 TEP data collection Grid 198 Duration 3 minutes
* 2020/160:00:33:58.0000 TEP data collection Grid 340 Duration 3 minutes
* 2020/160:00:41:48.0000 TEP data collection Grid 232 Duration 3 minutes
* 2020/160:00:57:29.0000 TEP data collection Grid 15 Duration 3 minutes
* 2020/160:02:09:46.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/160:02:29:09.0000 TEP data collection Grid 49 Duration 3 minutes
* 2020/160:03:36:40.0000 TEP data collection Grid 408 Duration 3 minutes
* 2020/160:04:01:21.0000 TEP data collection Grid 82 Duration 3 minutes
* 2020/160:05:19:27.0000 TEP data collection Grid 297 Duration 3 minutes
* 2020/160:06:52:41.0000 AMCS Cal over open ocean Duration 2 minutes

2020/160:08:22:55.0000 OCEANscan Duration 22 minutes
2020/160:08:57:54.0000 TOO TOOid=1485, RGT=1127, offpoint=4.56deg Duration 2 minutes
* 2020/160:09:59:54.0000 AMCS Cal over open ocean Duration 2 minutes
2020/160:11:23:44.0000 Segmented RTWscan Part 1 Duration 37 minutes
2020/160:12:12:55.0000 Segmented RTWscan Part 2 Duration 35 minutes
2020/160:12:53:17.0000 Segmented RTWscan Part 3 Duration 14 minutes
* 2020/160:13:18:43.0000 TEP data collection Grid 213 Duration 3 minutes
* 2020/160:15:00:50.0000 TEP data collection Grid 102 Duration 3 minutes
* 2020/160:17:56:22.0000 TEP data collection Grid 278 Duration 3 minutes
2020/160:20:10:11.0000 OCEANscan Duration 22 minutes
* 2020/161:00:05:42.0000 TEP data collection Grid 377 Duration 3 minutes
* 2020/161:01:36:14.0000 TEP data collection Grid 411 Duration 3 minutes
* 2020/161:01:44:06.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/161:06:41:22.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/161:07:59:58.0000 AMCS Cal over open ocean Duration 2 minutes
2020/161:09:31:33.0000 OCEANscan Duration 22 minutes
* 2020/161:17:25:18.0000 TEP data collection Grid 351 Duration 3 minutes
2020/161:20:04:00.0000 Laser window dump Duration 2 minutes
2020/161:21:18:48.0000 OCEANscan Duration 22 minutes
* 2020/161:22:26:37.0000 TEP data collection Grid 91 Duration 3 minutes
2020/162:00:15:08.0000 TOO TOOid=1486, RGT=1152, offpoint=4.57deg Duration 2 minutes
* 2020/162:01:18:27.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/162:04:37:44.0000 TEP data collection Grid 154 Duration 3 minutes
* 2020/162:05:54:35.0000 TEP data collection Grid 404 Duration 3 minutes
* 2020/162:07:34:18.0000 AMCS Cal over open ocean Duration 2 minutes
2020/162:09:05:54.0000 OCEANscan Duration 22 minutes
* 2020/162:10:42:48.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/162:11:05:52.0000 TEP data collection Grid 36 Duration 3 minutes
* 2020/162:16:57:13.0000 TEP data collection Grid 387 Duration 3 minutes
2020/162:20:53:09.0000 OCEANscan Duration 22 minutes
2020/162:22:15:11.0000 TOO TOOid=1487, RGT=1166, offpoint=4.58deg Duration 2 minutes