

ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, May 18 2020 thru Sunday, May 24, 2020

RGTs spanned: 802-908
Cycle 7

SUMMARY:

All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. The ASAS V5.3.3 patch consisting of new software for ATL07/ATL10 was delivered on May 22. Conducted the SIPS Build 4.4.3 TRR on 5/22 and it was approved for Acceptance Testing. The ATL07 and ATL10 products will be delivered to the Science Team for verification. ASAS has received a sample ANC04 from POD that contains roll, pitch and yaw. These values will be interpolated to the geolocation segment rate and added to the ATL03 product.

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

NSIDC ICESat-2 Metrics through May 24: 1,930 total users of 10 available data products; 5,201,262 sciences files downloaded. ATL03 is in the lead with 802 unique users of 615,287 files downloaded. ATL08 is in a close second with 776 unique users and an astounding 2,599,009 files downloaded, and ATL06 is in third place with 522 unique users and 1,637,779 files downloaded.

****ELEMENT DETAILS BELOW****

CAMS/POD:

CAMS: Regular CAMS operations: constraint and conjunction monitoring for MW088 and MW089 and mission planning for MW090.

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 -5deg slew for 43140 (SPACEBEE-3) 144/03:55:08 (MW089). Event self-mitigated

POD: Regular POD operations continue. Intermediate POD was completed for GPS week 2105. Final POD was completed for GPS week 2103.

ISF:

All ATLAS housekeeping data is nominal
Laser 2 is firing at energy level 4 and in science mode
WTEM Peak to Edge Ratio: 1.188
Laser 2 Temperature Error: -0.29C
SADA in AIRPLANE Mode
Spacecraft orientation: - X

Mission Planning:

MW89 ATS is loaded to the spacecraft and currently operating (PSO Activity List is attached)

MW90 has been delivered, nominal calibrations including final set of daytime AMCS Cals

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Activities during the past week:

Real-time activities:

No realtime commanding was performed due to GSFC Stage 4 status and the MOC was busy with SSR dumping on Wednesday when we were on-site

ATS activities:

MW087 - attached updated MW87 PSO Activity list to note that OCEAN and RTW scans were 4 degrees instead of 5

MW088 - attached updated MW88 PSO Activity list to add another VBG temperature update and note that OCEAN and RTW scans were 4 degrees instead of 5

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

Daytime AMCS Calibrations:

2020/142:14:00:26

2020/142:20:02:14

Updated the BSM XY Offset to 19.0/11.5 on 2020/142:12:00:00

Update based on analysis of post-Yaw flip AMCS cals

Other Activities:

DMU049a 2020/147 ISF set ILRS NOGO/GO flags around the activities.

Near-term activities:

Routine maintenance reboot of operational servers

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 and scan planned for June

Notes/Issues:

~ CNE NameServer and Mailhost routing issue impacted resolving hostnames and access to the mail server causing 2000 failed scp messages this morning.

LTO Schedule:

All items remain on schedule. Draft dates for Tech Refresh provided to ESMO scheduler.

### **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 ANCO3/04/05 files from the CAMS.
  - o Distributed the ATL01 and ATL02 Data products to NSIDC.
  - o Distributed the rapid Science Data products to the SCF.

The ASAS V5.3.3 patch consisting of atlas\_l3a\_si v4.3.2 was delivered on May 22. Conducted the SIPS Build 4.4.3 TRR on 5/22 and it was approved for Acceptance Testing. The ATL07 and ATL10 products will be delivered to the Science Team for verification.

#### **ASAS:**

ASAS has received a sample ANC04 from POD that contains roll, pitch and yaw. These values will be interpolated to the geolocation segment rate and added to the ATL03 product.

For atmosphere, work continues on the L2A surface signal algorithm and the L3A low-rate blowing snow. Changes related to DDA improvements and calibration method 3 were approved by the ASAS CCB. L3B ATM work on templates and fixes to the observation counts is underway.

The ATL11 team is working on an ASAS-style QA utility and delivering an updated ATL11 example product to NSIDC.

An ATL08 was created with the software set to ignore the Landsat canopy flags. The effect on runtime was not significant.

The land ice refactor is progressing well. Nearly all major components have been refactored and example ATL06s from the refactored code is being compared with ATL06s from the Release 003 code.

Code to produce release 003 ATL07s and ATL10s has been delivered to SIPS as the ASAS v5.3.3 hotfix.

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. Work also continues on the ATL20 browse products.

For inland water, preliminary work underway on the L3B inland water product.

For ocean, work continues on the L3B ocean product.

#### **SCF:**

The SCF is operating nominally. Data for releases 003 and R003 are being ingested and distributed, and subscriptions are generally caught up. Reprocessed R003 data for May 15 is available, and a new batch of data from early April to mid-May is expected to arrive in 1-2 weeks. A file listing the current SCF data holdings is attached.

\* Data Management -- Work continues on modifying and debugging a per-beam version of the ATL10 trending code. Calculations appear to be correct, but plots seem to have problems that are being investigated. Database connection issues overnight Thursday caused a half-day delay in processing that was quickly made up when the issue was resolved Friday morning.

\* Subsetter -- The code was updated in operations to handle the new version of the ATL10 product that no longer contains one top-level group. Two other modifications have been brought into ops with this update: one to check that input files are consistent with requested cycle, RGT, and orbit, and one to store instead of remake masks in one particular situation. All changes have been working as expected.

\* Visualizer -- Apps have been made for v8.0 of the software and are now available on the SCF web site for macOS and Linux along with relevant documentation. A macOS-specific issue turned up recently, and a work-around for it is being investigated; if implemented, a patch release will be issued.

### **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.
- Modeling the behavior of the ATLAS receiver during extreme saturation events.
- 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 and improvements to geophysical correction language, hopefully for a rollout in release 004.

### **ISF ACTIVITIES MISSION WEEK 089:**

- \* 2020/142:02:00:09.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2020/142:03:34:26.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2020/142:05:22:52.0000 TEP data collection Grid 118 Duration 3 minutes
- 2020/142:05:39:43.0000 TOO TOOid 1460 RGT 850 offpoint 4.50deg Duration 2 minutes
- \* 2020/142:06:44:07.0000 TEP data collection Grid 296 Duration 3 minutes
- \* 2020/142:06:54:04.0000 TEP data collection Grid 152 Duration 3 minutes
- \* 2020/142:08:16:00.0000 AMCS Cal over open ocean Duration 2 minutes
- 2020/142:09:47:35.0000 OCEANscan Duration 22 minutes
- \* 2020/142:11:19:09.0000 TEP data collection Grid 397 Duration 3 minutes
- \* 2020/142:11:24:35.0000 AMCS Cal over open ocean Duration 2 minutes
- \* 2020/142:11:40:01.0000 TEP data collection Grid 144 Duration 3 minutes
- ^ 2020/142:12:00:00.0000 Update BSM XY Offset to 19.0/11.5 Duration 1 minute
- \* 2020/142:12:53:26.0000 TEP data collection Grid 431 Duration 3 minutes
- \* 2020/142:14:00:26.0000 AMCS calibration over open ATLANTIC ocean once in daylight Duration 2 minutes
- \* 2020/142:14:27:04.0000 TEP data collection Grid 429 Duration 3 minutes
- \* 2020/142:14:45:59.0000 TEP data collection Grid 176 Duration 3 minutes
- \* 2020/142:17:44:09.0000 TEP data collection Grid 315 Duration 3 minutes
- \* 2020/142:20:03:14.0000 AMCS calibration over open ocean once in daylight Duration 2 minutes
- 2020/142:21:34:51.0000 OCEANscan Duration 22 minutes
- \* 2020/142:23:56:05.0000 TEP data collection Grid 378 Duration 3 minutes
- \* 2020/143:00:11:29.0000 TEP data collection Grid 162 Duration 3 minutes
- \* 2020/143:01:37:57.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes

2020/143:02:15:00.0000 Stellar window dump Duration 90 minutes  
\* 2020/143:07:50:20.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/143:09:21:56.0000 OCEANscan Duration 22 minutes  
\* 2020/143:10:58:55.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/143:11:12:57.0000 TOO TOOid 1467 RGT 869 offpoint 2.34deg Duration 2 minutes  
\* 2020/143:11:16:17.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2020/143:14:04:41.0000 TEP data collection Grid 393 Duration 3 minutes  
\* 2020/143:17:21:06.0000 TEP data collection Grid 280 Duration 3 minutes  
\* 2020/143:18:50:10.0000 TEP data collection Grid 350 Duration 3 minutes  
\* 2020/143:20:37:29.0000 TEP data collection Grid 167 Duration 3 minutes  
\* 2020/143:20:44:32.0000 TEP data collection Grid 59 Duration 3 minutes  
2020/143:21:09:11.0000 OCEANscan Duration 22 minutes  
\* 2020/144:01:22:58.0000 TEP data collection Grid 124 Duration 3 minutes  
2020/144:01:39:48.0000 TOO TOOid 1462 RGT 878 offpoint 4.56deg Duration 2 minutes  
\* 2020/144:02:43:07.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/144:02:52:26.0000 TEP data collection Grid 193 Duration 3 minutes  
\* 2020/144:07:33:41.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/144:08:56:16.0000 OCEANscan Duration 22 minutes  
\* 2020/144:10:33:15.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/144:11:57:05.0000 Segmented RTWscan Part 1 Duration 37 minutes  
2020/144:12:46:23.0000 Segmented RTWscan Part 2 Duration 35 minutes  
2020/144:13:27:01.0000 Segmented RTWscan Part 3 Duration 13 minutes  
\* 2020/144:16:44:59.0000 TEP data collection Grid 425 Duration 3 minutes  
\* 2020/144:17:05:51.0000 TEP data collection Grid 136 Duration 3 minutes  
\* 2020/144:19:58:47.0000 TEP data collection Grid 348 Duration 3 minutes  
\* 2020/144:21:48:43.0000 TEP data collection Grid 129 Duration 3 minutes  
2020/144:22:17:49.0000 OCEANscan Duration 22 minutes  
\* 2020/144:23:01:16.0000 TEP data collection Grid 416 Duration 3 minutes  
\* 2020/145:02:17:27.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/145:07:09:15.0000 TEP data collection Grid 187 Duration 3 minutes  
\* 2020/145:08:33:18.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/145:10:04:54.0000 OCEANscan Duration 22 minutes  
2020/145:10:39:55.0000 TOO TOOid 1463 RGT 899 offpoint 4.56deg Duration 2 minutes  
\* 2020/145:11:41:41.0000 TEP data collection Grid 360 Duration 3 minutes  
\* 2020/145:14:47:38.0000 TEP data collection Grid 392 Duration 3 minutes  
\* 2020/145:14:55:29.0000 TEP data collection Grid 283 Duration 3 minutes  
\* 2020/145:15:14:53.0000 TEP data collection Grid 30 Duration 3 minutes  
\* 2020/145:16:41:53.0000 TEP data collection Grid 101 Duration 3 minutes  
\* 2020/145:18:09:16.0000 TEP data collection Grid 206 Duration 3 minutes  
\* 2020/145:21:25:41.0000 TEP data collection Grid 93 Duration 3 minutes  
2020/145:21:52:09.0000 OCEANscan Duration 22 minutes  
\* 2020/145:22:44:19.0000 TEP data collection Grid 308 Duration 3 minutes  
\* 2020/146:00:34:15.0000 TEP data collection Grid 89 Duration 3 minutes  
\* 2020/146:00:39:31.0000 TEP data collection Grid 16 Duration 3 minutes  
\* 2020/146:01:51:47.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/146:02:11:10.0000 TEP data collection Grid 50 Duration 3 minutes  
\* 2020/146:03:26:05.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/146:03:37:36.0000 TEP data collection Grid 156 Duration 3 minutes

\* 2020/146:06:43:25.0000 TEP data collection Grid 188 Duration 3 minutes  
\* 2020/146:08:07:38.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/146:09:39:14.0000 OCEANscan Duration 22 minutes  
\* 2020/146:11:16:13.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2020/146:11:39:32.0000 TEP data collection Grid 36 Duration 3 minutes  
\* 2020/146:16:19:46.0000 TEP data collection Grid 65 Duration 3 minutes  
2020/146:16:31:22.0000 TOO TOOid 1464 RGT 918 offpoint 4.52deg Duration 2 minutes  
2020/146:21:26:29.0000 OCEANscan Duration 22 minutes  
\* 2020/147:00:05:58.0000 TEP data collection Grid 125 Duration 3 minutes  
\* 2020/147:01:28:38.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/147:03:00:25.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/147:03:16:41.0000 TEP data collection Grid 85 Duration 3 minutes  
\* 2020/147:06:30:27.0000 TEP data collection Grid 8 Duration 3 minutes  
\* 2020/147:07:41:59.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/147:09:13:34.0000 OCEANscan Duration 22 minutes  
2020/147:09:48:36.0000 TOO TOOid 1465 RGT 929 offpoint 4.57deg Duration 2 minutes  
\* 2020/147:10:50:33.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/147:12:14:22.0000 Segmented RTWscan Part 1 Duration 37 minutes  
2020/147:13:03:27.0000 Segmented RTWscan Part 2 Duration 34 minutes  
2020/147:13:44:08.0000 Segmented RTWscan Part 3 Duration 13 minutes  
^ 2020/147:17:28:43.0000 DMU049a Duration 13 minutes  
2020/147:21:00:49.0000 OCEANscan Duration 22 minutes  
\* 2020/147:23:19:26.0000 TEP data collection Grid 415 Duration 3 minutes  
2020/147:23:30:00.0000 Laser window dump Duration 2 minutes  
\* 2020/147:23:47:46.0000 TEP data collection Grid 18 Duration 3 minutes  
\* 2020/148:02:34:45.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/148:04:06:27.0000 TEP data collection Grid 336 Duration 3 minutes  
\* 2020/148:07:23:20.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/148:08:47:55.0000 OCEANscan Duration 22 minutes  
\* 2020/148:10:24:54.0000 AMCS Cal over open ocean Duration 2 minutes  
\* 2020/148:12:17:15.0000 TEP data collection Grid 107 Duration 3 minutes  
2020/148:12:31:30.0000 TOO TOOid 1466 RGT 946 offpoint 4.56deg Duration 2 minutes  
2020/148:22:09:28.0000 OCEANscan Duration 22 minutes  
\* 2020/148:22:56:24.0000 TEP data collection Grid 379 Duration 3 minutes