

ICESat-2 PROJECT SCIENCE OFFICE REPORT

Monday, January 27, 2020 thru Sunday, February 2, 2019

RGTs spanned: 478-584

Cycle 6

Items of Note:

All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. ASAS has completed functional testing and delivered v953 products to SCF. This testing generated nearly 27 days of the ICESat-2 data products from L0 data. ASAS documentation has been updated and will be submitted to the SCF upon release of ASAS v5.3.

NSIDC ICESat-2 Metrics through February 2: 1,546 total users of 10 available data products; 2,907,622 sciences files downloaded. ATLO3 is in the lead with 632 unique users of 456,589 files downloaded. ATLO8 is in a close second with 623 unique users and 1,000,179 files downloaded, and ATLO6 is in third place with 432 unique users and 1,208,450 files downloaded.

The PSO's intrepid 88S traverse team, led by Dr. Kelly Brunt, returned to the US safely after a successful field season collecting GPS data at 88S in Antarctica!

****ELEMENT DETAILS BELOW****

CAMS/POD:

CAMS: Regular CAMS operations: constraint and conjunction monitoring for MW072 and MW073 and mission planning for MW074.

CAMS continues to target mooring at 36.0259 lat, -125.105 lon per the science team request. The code to produce the CPF ephemeris file was updated to additionally output the new CPF v2.00 format. CAMS will produce and deliver both CPF v1.00 and v2.00 format files until v2.00 has been officially blessed by the ILRS Committee.

POD: Regular POD operations continue. Intermediate POD was completed for GPS weeks 2088 & 2089. Final POD was completed for GPS weeks 2086 & 2087. All results appear nominal. A 2nd iteration of the 1°x1° GPS antenna phase center variation map was estimated. This is currently being fed back through the POD runs to assess its impact on POD performance.

ISF:

All ATLAS housekeeping data is nominal
Laser 2 is firing at energy level 4 and in science mode
WTEM Peak to Edge Ratio: 1.210
Laser 2 Temperature Error: -0.22C
SADA in SAILBOAT Mode
Spacecraft orientation: + X

Mission Planning:

MW73 ATS is loaded to the spacecraft and currently operating
MW74 has been delivered, nominal calibrations

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Activities during the past week:

Real-time activities:

Ran sCAR166 three times to optimize the VBG temperature setpoint 2020/029  
Executed sCAR91 and sCAR102 to clear routine flags

ATS activities:

Routine Instrument calibrations, Ocean scans and Vegetation Data collection.

Other Activities:

MacOS replacement host acceptance testing commenced Jan 21 as per the schedule outlined below.

FLATLAS -- tested FSSE STOL proc updates

Near-term activities:

Continuing to work on the ISF tech refresh:

Host replacing MacOS host is installed within the SPOCC environment and locally tested.

Acceptance testing: January 21

ORR: Early Feb

Release into Ops: Early Feb

Notes/Issues:

N/A

LTO Schedule:

All items remain on schedule

**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 rapid Science Data products to the SCF.

**ASAS:**

ASAS has completed functional testing and delivered v953 products to SCF. This testing generated nearly 27 days of the ICESat-2 data products from L0 data. Test coverage includes energy level 4, forward orientation, backward orientation, a cycle transition other areas of interest.

ASAS documentation has been updated and will be submitted to the SCF upon release of ASAS v5.3.

ASAS has begun characterizing blunders in the Arctic32 DEM by comparing retrievals from the combinations of GIMP/GMTED/DTU13 to each pixel in the 32m ArcticDEM tiles. Significant blunders may affect ATL03 signal classification in ASAS v5.3.

ASAS expects to deliver ASAS v5.3 to SIPS for testing this week.

**SCF:**

The SCF is operating nominally. Data for releases 002, R002, and 953 (a preview of release 003) are being ingested and distributed, with fulfillment of both full and subsetting subscriptions ongoing. The latest release at the SCF is now 953. A file listing the current SCF data holdings is attached.

\* Data Management -- All of the R002 data that SIPS reprocessed have arrived. We are consulting with ASAS to ensure that we have all 953 data, which is still being produced. Disk space is being managed accordingly.

\* Subsetter -- A number of subsetting jobs failed on the 953 data due to a change in the product templates at ASAS. ASAS is aware of this and will correct the template for the production of future data, but existing data will not be reprocessed. A modification to the Subsetter to allow it to handle data made with either template is being developed and tested. When ready and approved for use in operations, we will rerun the failed jobs using the updated code.

\* Visualizer -- The software is at version 7.7 internally and includes a new feature to match x axis of subplots (under certain qualifying conditions). Work continues on options to show masked data at the unmasked ranges for some plot types and to allow color-coded on map plots to be shown with either a full world map or a map that only covers the extent of the data.

**ATL02/Instrument Science:**

Evaluation of ATL02 and ANC41 files produced with the patched ATL02 software reveals that, while the ground return times of flight appear correct, TEP times of flight show residual errors, apparently caused by errors in the leading-lower coarse counts, in data from the December PCE2 event. We are investigating the exact nature of the error.

In addition, work continues on:

- Simulating the effect of “slips” and “swaps” in the timing data
- Investigating the mechanism of “jumps” in the TEP TOF
- A new method for analyzing the results of on-orbit AMCS calibrations. The current method does not separate return from background, and is usable only for AMCS calibrations done over the night side of the earth. The new method will allow AMCS calibrations to be done usefully over the day side as well.
- Development of an algorithm for estimation of OFM transmittance peak shift from 2-step VBG sweep data.

**ATL03:**

Evaluation of rel953 granules did not turn up anything problematic prior to the schedule rollout of release 003. Minor improvements to the saturation flagging parameters and DEM/reference photon quality assessment parameters will make it in time for the software’s delivery to SIPS.

**ISF ACTIVITIES MISSION WEEK 073:**

\* Not in science mode

^ Could affect science data quality

2020/030:03:28:00.0000 OCEANscan Duration 22 minutes

\* 2020/030:04:12:19.0000 TEP data collection Grid 416 Duration 3 minutes

\* 2020/030:04:21:25.0000 TEP data collection Grid 307 Duration 3 minutes

\* 2020/030:04:25:23.0000 TEP data collection Grid 235 Duration 3 minutes

\* 2020/030:07:27:38.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes

\* 2020/030:07:41:46.0000 TEP data collection Grid 122 Duration 3 minutes

\* 2020/030:09:01:23.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes

\* 2020/030:09:13:27.0000 TEP data collection Grid 156 Duration 3 minutes

\* 2020/030:10:28:44.0000 TEP data collection Grid 407 Duration 3 minutes

2020/030:11:05:00.0000 Laser window dump Duration 2 minutes

\* 2020/030:12:03:46.0000 TEP data collection Grid 404 Duration 3 minutes

2020/030:12:07:20.0000 TOO TOOid 1296 RGT 531 offpoint 0.68deg Duration 2 minutes

\* 2020/030:12:14:13.0000 TEP data collection Grid 260 Duration 3 minutes

\* 2020/030:12:17:54.0000 TEP data collection Grid 223 Duration 3 minutes

\* 2020/030:12:24:39.0000 TEP data collection Grid 115 Duration 3 minutes

\* 2020/030:13:43:30.0000 AMCS Cal over open ocean Duration 2 minutes

2020/030:14:15:42.0000 TOO TOOid 1305 RGT 532 offpoint 0.02deg Duration 2 minutes

2020/030:15:15:05.0000 OCEANscan Duration 22 minutes

- \* 2020/030:16:26:40.0000 TEP data collection Grid 379 Duration 3 minutes
- \* 2020/030:16:52:04.0000 AMCS Cal over open ocean Duration 2 minutes
- \* 2020/030:18:28:46.0000 TEP data collection Grid 322 Duration 3 minutes
- \* 2020/030:18:41:48.0000 TEP data collection Grid 142 Duration 3 minutes
- \* 2020/030:19:36:52.0000 TEP data collection Grid 410 Duration 3 minutes
- \* 2020/030:20:21:13.0000 TEP data collection Grid 67 Duration 3 minutes
- \* 2020/030:21:32:07.0000 TEP data collection Grid 390 Duration 3 minutes
- \* 2020/030:21:37:21.0000 TEP data collection Grid 318 Duration 3 minutes
- \* 2020/030:21:52:59.0000 TEP data collection Grid 101 Duration 3 minutes
- \* 2020/030:23:19:27.0000 TEP data collection Grid 207 Duration 3 minutes
- \* 2020/031:00:53:35.0000 TEP data collection Grid 205 Duration 3 minutes
- \* 2020/031:01:01:34.0000 TEP data collection Grid 96 Duration 3 minutes
- \* 2020/031:01:52:29.0000 TEP data collection Grid 365 Duration 3 minutes
- \* 2020/031:02:38:26.0000 TEP data collection Grid 58 Duration 3 minutes
- 2020/031:03:02:20.0000 OCEANscan Duration 22 minutes
- \* 2020/031:07:02:10.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2020/031:07:21:21.0000 TEP data collection Grid 51 Duration 3 minutes
- \* 2020/031:08:36:16.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2020/031:08:47:48.0000 TEP data collection Grid 157 Duration 3 minutes
- \* 2020/031:10:11:40.0000 TEP data collection Grid 299 Duration 3 minutes
- \* 2020/031:11:53:46.0000 TEP data collection Grid 188 Duration 3 minutes
- \* 2020/031:13:17:50.0000 AMCS Cal over open ocean Duration 2 minutes
- 2020/031:14:49:25.0000 OCEANscan Duration 22 minutes
- \* 2020/031:16:26:25.0000 AMCS Cal over open ocean Duration 2 minutes
- \* 2020/031:18:00:30.0000 TEP data collection Grid 359 Duration 3 minutes
- \* 2020/031:18:18:45.0000 TEP data collection Grid 106 Duration 3 minutes
- 2020/031:23:50:03.0000 TOO TOOid 1297 RGT 554 offpoint 0.78deg Duration 2 minutes
- \* 2020/032:01:59:46.0000 TEP data collection Grid 239 Duration 3 minutes
- \* 2020/032:02:04:59.0000 TEP data collection Grid 167 Duration 3 minutes
- \* 2020/032:02:10:12.0000 TEP data collection Grid 94 Duration 3 minutes
- 2020/032:02:36:41.0000 OCEANscan Duration 22 minutes
- \* 2020/032:03:02:39.0000 TEP data collection Grid 399 Duration 3 minutes
- \* 2020/032:06:40:02.0000 TEP data collection Grid 268 Duration 3 minutes
- \* 2020/032:08:10:36.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2020/032:09:56:25.0000 TEP data collection Grid 155 Duration 3 minutes
- \* 2020/032:11:22:54.0000 TEP data collection Grid 261 Duration 3 minutes
- \* 2020/032:12:56:33.0000 AMCS Cal over open ocean Duration 2 minutes
- 2020/032:14:23:46.0000 OCEANscan Duration 22 minutes
- \* 2020/032:16:00:45.0000 AMCS Cal over open ocean Duration 2 minutes
- 2020/032:17:24:34.0000 RTWscan Duration 90 minutes
- \* 2020/032:19:24:46.0000 TEP data collection Grid 141 Duration 3 minutes
- \* 2020/032:22:16:37.0000 TEP data collection Grid 353 Duration 3 minutes
- \* 2020/032:22:40:08.0000 TEP data collection Grid 28 Duration 3 minutes
- \* 2020/033:01:26:17.0000 TEP data collection Grid 348 Duration 3 minutes

\* 2020/033:01:41:55.0000 TEP data collection Grid 131 Duration 3 minutes  
2020/033:03:45:18.0000 OCEANscan Duration 22 minutes  
\* 2020/033:06:12:53.0000 TEP data collection Grid 304 Duration 3 minutes  
\* 2020/033:07:44:57.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/033:12:44:56.0000 AMCS Cal over open ocean Duration 2 minutes  
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\* 2020/033:17:27:26.0000 TEP data collection Grid 107 Duration 3 minutes  
\* 2020/033:19:06:09.0000 TEP data collection Grid 33 Duration 3 minutes  
\* 2020/034:02:57:40.0000 TEP data collection Grid 21 Duration 3 minutes  
2020/034:03:19:39.0000 OCEANscan Duration 22 minutes  
\* 2020/034:07:19:17.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/034:08:51:23.0000 TEP data collection Grid 337 Duration 3 minutes  
2020/034:09:24:40.0000 TOO TOOid 1304 RGT 590 offpoint 0.13deg Duration 2 minutes  
\* 2020/034:13:35:08.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/034:15:06:44.0000 OCEANscan Duration 22 minutes  
\* 2020/034:16:43:43.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/035:02:53:59.0000 OCEANscan Duration 22 minutes  
\* 2020/035:06:53:37.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/035:08:27:55.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
2020/035:12:05:00.0000 Stellar window dump Duration 90 minutes  
2020/035:14:41:04.0000 OCEANscan Duration 22 minutes  
\* 2020/035:16:18:03.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/036:02:28:19.0000 OCEANscan Duration 22 minutes  
\* 2020/036:08:02:15.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
2020/036:12:42:38.0000 TOO TOOid 1298 RGT 623 offpoint 2.56deg Duration 2 minutes  
\* 2020/036:12:46:21.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/036:14:15:24.0000 OCEANscan Duration 22 minutes  
\* 2020/036:15:52:23.0000 AMCS Cal over open ocean Duration 2 minutes  
2020/036:17:16:12.0000 RTWscan Duration 90 minutes