ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, January 20, 2020 thru Sunday, January 26, 2019

RGTs spanned: 371-477
Cycle 6

Items of Note:
All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. Test data to support release 003 (rel953) is currently being ingested at the SCF, awaiting evaluation by the science team to move the release 003 processing along.

NSIDC ICESat-2 Metrics through January 27: 1,521 total users of 10 available data products; 2,875,961 sciences files downloaded. ATL03 is in the lead with 626 unique users of 456,589 files downloaded. ATL08 is in a close second with 608 unique users and 991,224 files downloaded, and ATL06 is in third place with 427 unique users and 1,201,904 files downloaded.

ELEMENT DETAILS BELOW

CAMS/POD:
CAMS: Regular CAMS operations: constraint and conjunction monitoring for MW071 and MW072 and mission planning for MW073.
CAMS performed extensive screening for Proximity Conjunction with 29658 (SAR LUPE 1); CAMS confirmed no laser conjunctions would occur during or after the maneuver to avoid 29658.
CAMS continues to target mooring at 36.0259 lat, -125.105 lon per the science team request.

POD: Nominal POD operations continue. Final calibrated ANC products covering DoY 320-352 were delivered to SIPS on Friday, 1/24/2020.

ISF:
All ATLAS housekeeping data is nominal
Laser 2 is firing at energy level 4 and in science mode
WTEM Peak to Edge Ratio: 1.240
Laser 2 Temperature Error: -0.23C
SADA in SAILBOAT Mode
Spacecraft orientation: + X

Mission Planning:
MW72 ATS is loaded to the spacecraft and currently operating
MW73 has been delivered, nominal calibrations
~~~~~~

Activities during the past week:
~~~~~~

Real-time activities:

Ran sCAR91 sCAr102 to clear routine errors

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.
Planned and created a split ATS to include RM001, a retrograde maneuver to return us to our nominal 800m altitude box.

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 @ noon
ORR: January 30 @ 3pm
Release into Ops: Feb 6

Notes/Issues:
N/A

LTO Schedule:
All items remain on schedule

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 rapid Science Data products to the SCF.
- SIPS completed reprocessing the ATL02s and rapid R002 ATL03, ATL04, ATL06, ATL07, ATL08, ATL09, and ATL10 for Dec. 26-Jan. 15, 2019.
  - Distributed the rapid Science Data products to the SCF.

ASAS:
ASAS is wrapping up functional testing.

Developers are working on documentation.

953 data is being distributed to SCF. These data are the candidates for Release 003 data.

SCF:
The SCF is operating nominally. Data for releases 002, R002, and 953 are being ingested and distributed. The newest batch of 002 data, from Sep. 7 to Nov. 15, has been fully ingested; subscription fulfillment is ongoing. Some connection issues arose when the ISF changed to their new server, but these were promptly resolved. A file listing the current SCF data holdings is attached.

* Data Management -- Some existing data, mostly R002, soon to be reprocessed by SIPS are currently being deleted to conserve disk space. Some of the replacements are already arriving with the rest expected next week. About 27 days of release 953 data, a preview of release 3, are being ingested and distributed as ASAS produces them. This makes 953 the latest release at the SCF, so SDMS cron jobs have been modified to ensure trending of releases 002 and R002 continues.

* Subsetter -- Recent fixes that were put into operations appear to be working as expected. The problems they address have not reoccurred.

* Visualizer -- The next major feature currently in development is matching x axes across subplots on a tab. It is basically functioning, but some work remains.

ATL02/Instrument Science:
Christopher Field's investigation of "afterpulses" associated with Transmitter Echo pulses (TEP) and Main Alignment/Altimetry Target (MA/AT) return pulses recorded during ATLAS I&T reveals slight differences in temporal spacing, as predicted based on the ray-trace analysis reported recently. On-orbit ground return pulses follow the same optical path as MA/AT return pulses, so understanding the relation between TEP and MA/AT afterpulses is essential to using TEP to monitor instrument behavior and using ground-return afterpulses to recover the timing of dead-time-distorted specular returns.

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.

ISF ACTIVITIES MISSION WEEK 072:

* Not in science mode
^ Could affect science data quality

2020/023:02:05:00.0000 Stellar window dump Duration 90 minutes
* 2020/023:03:40:20.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/023:03:46:01.0000 TEP data collection Grid 398 Duration 3 minutes
* 2020/023:04:03:19.0000 TEP data collection Grid 417 Duration 3 minutes
2020/023:04:53:17.0000 OCEANscan Duration 22 minutes
* 2020/023:05:19:15.0000 TEP data collection Grid 432 Duration 3 minutes
* 2020/023:05:40:13.0000 TEP data collection Grid 378 Duration 3 minutes
* 2020/023:05:50:40.0000 TEP data collection Grid 234 Duration 3 minutes
* 2020/023:05:58:29.0000 TEP data collection Grid 125 Duration 3 minutes
* 2020/023:07:21:46.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/023:08:52:55.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/023:09:57:29.0000 TEP data collection Grid 353 Duration 3 minutes
* 2020/023:10:43:27.0000 TEP data collection Grid 82 Duration 3 minutes
* 2020/023:12:10:26.0000 TEP data collection Grid 188 Duration 3 minutes
* 2020/023:13:06:06.0000 TEP data collection Grid 349 Duration 3 minutes
* 2020/023:13:29:39.0000 TEP data collection Grid 402 Duration 3 minutes
* 2020/023:13:34:29.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/023:14:45:00.0000 TEP data collection Grid 418 Duration 3 minutes
2020/023:15:06:05.0000 OCEANscan Duration 22 minutes
* 2020/023:16:43:04.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/023:18:34:59.0000 TEP data collection Grid 106 Duration 3 minutes
* 2020/023:20:04:29.0000 TEP data collection Grid 176 Duration 3 minutes
* 2020/023:23:00:02.0000 TEP data collection Grid 352 Duration 3 minutes
* 2020/023:23:05:15.0000 TEP data collection Grid 280 Duration 3 minutes
* 2020/024:00:29:05.0000 TEP data collection Grid 422 Duration 3 minutes
* 2020/024:01:40:38.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/024:02:13:50.0000 TEP data collection Grid 275 Duration 3 minutes
2020/024:02:53:20.0000 OCEANscan Duration 22 minutes
* 2020/024:04:49:15.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/024:05:17:11.0000 TEP data collection Grid 343 Duration 3 minutes

* 2020/024:08:27:16.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/024:08:34:57.0000 TEP data collection Grid 194 Duration 3 minutes
* 2020/024:09:36:28.0000 TEP data collection Grid 426 Duration 3 minutes
* 2020/024:13:17:09.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/024:14:40:26.0000 OCEANscan Duration 22 minutes
* 2020/024:16:17:25.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/024:17:41:14.0000 RTWscan Duration 90 minutes
* 2020/024:19:36:13.0000 TEP data collection Grid 213 Duration 3 minutes
* 2020/024:20:14:00.0000 TEP Stare Duration 191 minutes
  2020/024:23:38:24.0000 TOO TOOid 1291 RGT 447 offpoint 2.94deg Duration 2 minutes
* 2020/025:01:15:14.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/025:01:42:57.0000 TEP data collection Grid 348 Duration 3 minutes
* 2020/025:02:49:32.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/025:02:53:40.0000 TEP data collection Grid 400 Duration 3 minutes
  2020/025:04:01:59.0000 OCEANscan Duration 22 minutes
* 2020/025:04:56:45.0000 TEP data collection Grid 271 Duration 3 minutes
* 2020/025:06:32:50.0000 TEP data collection Grid 233 Duration 3 minutes
* 2020/025:08:01:37.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/025:08:18:20.0000 TEP data collection Grid 86 Duration 3 minutes
* 2020/025:09:48:53.0000 TEP data collection Grid 120 Duration 3 minutes
  2020/025:10:06:58.0000 TOO TOOid 1292 RGT 453 offpoint 0.20deg Duration 2 minutes
* 2020/025:12:56:01.0000 TEP data collection Grid 151 Duration 3 minutes
* 2020/025:14:17:29.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/025:15:49:04.0000 OCEANscan Duration 22 minutes
* 2020/025:17:33:41.0000 TEP data collection Grid 252 Duration 3 minutes
* 2020/025:17:43:51.0000 TEP data collection Grid 108 Duration 3 minutes
* 2020/025:19:09:49.0000 TEP data collection Grid 214 Duration 3 minutes
* 2020/025:20:06:49.0000 TEP data collection Grid 338 Duration 3 minutes
* 2020/025:22:21:45.0000 TEP data collection Grid 173 Duration 3 minutes
* 2020/025:23:48:14.0000 TEP data collection Grid 279 Duration 3 minutes
* 2020/026:00:02:42.0000 TEP data collection Grid 62 Duration 3 minutes
  2020/026:00:50:21.0000 TOO TOOid 1289 RGT 463 offpoint 1.75deg Duration 2 minutes
* 2020/026:02:24:08.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/026:02:56:49.0000 TEP data collection Grid 274 Duration 3 minutes
  2020/026:03:36:20.0000 OCEANscan Duration 22 minutes
* 2020/026:07:35:58.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/026:09:10:16.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/026:13:51:50.0000 AMCS Cal over open ocean Duration 2 minutes
  2020/026:14:24:02.0000 TOO TOOid 1293 RGT 471 offpoint 0.07deg Duration 2 minutes
  2020/026:15:23:25.0000 OCEANscan Duration 22 minutes
* 2020/026:17:00:24.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/026:18:54:22.0000 TEP data collection Grid 70 Duration 3 minutes
* 2020/026:20:11:24.0000 TEP data collection Grid 320 Duration 3 minutes
* 2020/026:21:58:43.0000 TEP data collection Grid 137 Duration 3 minutes

2020/027:03:10:41.0000 OCEANscan Duration 22 minutes
* 2020/027:07:12:18.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/027:08:44:37.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/027:12:11:43.0000 TEP data collection Grid 44 Duration 3 minutes
* 2020/027:13:26:11.0000 AMCS Cal over open ocean Duration 2 minutes
2020/027:14:57:46.0000 OCEANscan Duration 22 minutes
* 2020/027:16:34:45.0000 AMCS Cal over open ocean Duration 2 minutes
^ 2020/027:16:48:14.0000 DMU039 RMM1 Duration 79 minutes
2020/028:02:45:02.0000 OCEANscan Duration 22 minutes
2020/028:04:05:00.0000 Laser window dump Duration 2 minutes
* 2020/028:08:18:58.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
2020/028:12:57:59.0000 TOO TOOid 1288 RGT 501 offpoint 1.58deg Duration 2 minutes
* 2020/028:13:06:50.0000 AMCS Cal over open ocean Duration 2 minutes
2020/028:14:32:07.0000 OCEANscan Duration 22 minutes
* 2020/028:16:09:06.0000 AMCS Cal over open ocean Duration 2 minutes
2020/028:17:32:55.0000 RTWscan Duration 90 minutes
* 2020/028:22:41:42.0000 TEP data collection Grid 136 Duration 3 minutes
2020/029:03:53:40.0000 OCEANscan Duration 22 minutes
* 2020/029:04:45:50.0000 TEP data collection Grid 307 Duration 3 minutes
* 2020/029:07:53:18.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
* 2020/029:12:54:09.0000 AMCS Cal over open ocean Duration 2 minutes
* 2020/029:14:09:10.0000 AMCS Cal over open ocean Duration 2 minutes
2020/029:15:40:45.0000 OCEANscan Duration 22 minutes