ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, February 25, 2019 thru Sunday, March 3, 2019

RGTs spanned: 895-1001
Cycle 2

Items of Note:
All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. The science team and community continue to analyze release 205 ATL03 (and upper-level) data products and are noticing marked improvements over release 203 data in terms of elevation knowledge and accuracy. Specific analyses have included comparing release 205 ATL03 data with GPS data collected at 88S in Antarctica and Lake Tahoe, as well as using crossover data from ATL06 in Antarctica.

ELEMENT DETAILS BELOW

CAMS/POD/PPD:
CAMS: CAMS continues to monitor and screen for laser conjunction events in mission week 25. CAMS is planning for mission week 26.

CAMS continued delivering corrected rapid ANC05 products to SIPS this week

POD: Final POD has been completed for GPS week 2039. Intermediate POD has NOT been completed for GPS week 2041, due to re-delivery of ATL02 files.

A package containing data for GPS week 2028 and ICESat-2 spacecraft macro-model information was delivered to JPL for POD validation.

PPD: We are focused on determining the best way to remove the newly identified timing bias and testing the fix with POD.

ISF:
All ATLAS housekeeping data is nominal
Laser 2 is firing at energy level 4 and in science mode
SADA in Sailboat Mode
Spacecraft orientation : - X

Mission Planning:

MW25 ATS is loaded to the spacecraft and currently operating.

MW26 is being planned, it will include 7 RTW scans for PPD.

~~~~~~

~~
Activities during the past week:
ATS activities:
All ATLAS and pointing activities were routine and completed as planned

Real-time activities:
Executed standing CAR 91 to clear SBC errors.

Other Activities:
Quarterly scanning completed with high vulnerabilities (see note 1 under issues)
FLATLAS testing of stellar background image v4.3; update is to mitigate impact of warm pixels

~~~~~~
~~

Upcoming activities:
MW25 scheduled activities in the ATS: MW25 Activities are attached

Other Near-term activities:
Trip to MOC @ Dulles for bISF proficiency operations (need to coordinate with the MOC).

~~~~~~
~~

Notes/Issues:

1. Quarterly scanning detected high vulnerabilities on the DRAC port on the CAMS STK
(Windows) servers. Patching was completed to resolve the vulnerabilities and a re-scan is
tentatively scheduled for Wednesday, March 6.

~~~~~~
~~

LTO Schedule:
    All items remain on schedule except

        PDB E.0.1 delivery TBD.

SIPS:
- The SIPS is operating nominally:
  - Ingested and distributed Level 0 data to the ISF.
  - Generated Release 202 L1A and L1B products and distributed ATL02s to the ISF, POD, and SCF.
  - Distributed selected ATL01s to the ISF and SCF by special request.
  - Generating Release 206 (rapids) ATL03, ATL04, ATL09, and ATL06 using ANC03/04/05 files from the CAMS
    § Distributing ATL03, ATL04, and ATL09 to NSIDC and the SCF.

§ Distributing ATL06 to the SCF.
- Reprocessed and distributed Release 205 (finals) from DOY 287-328 (2018).
  - ATL03, ATL04, ATL09, and ATL06 distributed to NSIDC and SCF
  - ATL07 and ATL10 distributed to the SCF.
- Received "final" ANC03/04/05 files from the POD for DOY 288, 2018 – DAY 05, 2019
  - Started processing of Release 205 ATL03, ATL04, ATL09, ATL06, ATL07, and ATL10 for the above dates.
  - Distributing ATL03, ATL04, ATL06, and ATL09 to NSIDC and the SCF.
  - Distributing ATL07 and ATL10 to the SCF.

ASAS:
ATL02 - implemented fixes to the telemetry window band heights/widths. Fixed a time-tagging issue on atmosphere profiles related to the major frame counter. Awaiting updated TOF channel skew calibrations.

ATL03 - improved the selection of the reference photon. Fixed issues with TEP-base impulse response QA. Set the classification flag to -2 (to indicate TEP) for all photons within a telemetry band < 29m. Fix to DAC was approved.

ATL04/09 - Updated the ground finding algorithm. Added sea_level_pressure to ATL04/ATL09. Fixed an edge case where there were not sufficient ATM profiles to process. Working on cloud contamination in surface height removal.

ATL07/ATL10 - Working on product updates, correction of lead length and and filling of the freeboard reference surface.

ATL08 - Completed cloud filtering and canopy flagging. Working mid-segment lat/lon computations & revised granule organization.

ATL12 - Working on product updates

ATL13 - Working anomaly detection and detrending.

ATL16/17 - Provided example ATL16/17s generated from 30+ days of on-orbit ATL09s to the ATBD lead.

Other - developed a granule status table for SIPS. Updated the SIPS development website.

SCF:
The SCF is operating nominally. Issues with the SDMS Scheduling software that created a backlog of jobs have been resolved. All data for releases 202, 205, and 206 have been ingested. Due to the prior issues though, distribution of these products is still in progress and expected to complete by early next week. A file listing the current SCF data holdings is attached.

* Data Management -- continued to improve trending scripts and worked on moving code base to Python 3. Initial tests using a Python 3 environment revealed some issues that are being worked. Preparation for formal testing has begun, and will be done on the Python 3 version if the Python 3 environment is ready when preparation is complete; otherwise the existing Python 2 version will be used for the next release.
* Subsetter -- an issue where empty ATL03 geolocation datasets were not correctly identified has been fixed. This will undergo further testing before it is included in the next release, expected to coincide with the next data management scripts release. Therefore, any ATL03 subsets still have the indexing incorrect.
* Visualizer -- completed addition of custom plot of "land ice segments and ATL03 photons" and started working on allowing colorbars for existing subplots to be changed.

ATL03:
The ATL03 team and members of the science team continue to evaluate r205 ATL03 granules, as well as r206 rapid granules that continue showing up in our SCF directories. Work continues on parameter refinement and language improvements to the ATBD.
ISF ACTIVITIES MISSION WEEK 025:

* Not in science mode
^ Could affect science data quality

^ 2019/059:01:00:00.0000 Stellar centroid image dump for 90 minutes (no stellar centroids)
^ 2019/059:05:04:31.0000 AMCS Cal for 2 minutes over open ocean
  2019/059:06:29:07.0000 OCEANscan (22 minutes)
^ 2019/059:08:06:06.0000 AMCS Cal for 2 minutes over open ocean
  2019/059:09:29:55.0000 RTWscan (90 minutes)
* 2019/059:13:09:50.0000 TEP data collection for 3 minutes
* 2019/059:14:44:08.0000 TEP data collection for 3 minutes
* 2019/059:16:18:25.0000 TEP data collection for 3 minutes
  2019/059:18:53:00.0000 Spacecraft Star Tracker reconfiguration to clear the Precession bit for 2 minutes
^ 2019/060:03:28:08.0000 Laser image dump for 6 minutes over Antarctica during day
^ 2019/060:06:06:09.0000 AMCS Cal for 2 minutes over open ocean
  2019/060:07:37:45.0000 OCEANscan (22 minutes)
* 2019/060:12:44:11.0000 TEP data collection for 3 minutes
* 2019/060:14:18:28.0000 TEP data collection for 3 minutes
* 2019/060:15:52:46.0000 TEP data collection for 3 minutes
* 2019/060:17:27:03.0000 TEP data collection for 3 minutes
* 2019/060:19:01:21.0000 TEP data collection for 3 minutes
  2019/060:19:25:00.0000 OCEANscan (22 minutes)
* 2019/060:20:35:38.0000 TEP data collection for 3 minutes
* 2019/060:22:09:55.0000 TEP data collection for 3 minutes
^ 2019/060:23:24:38.0000 AMCS Cal for 2 minutes over open ocean

* 2019/060:23:44:13.0000 TEP data collection for 3 minutes
^ 2019/061:00:58:56.0000 AMCS Cal for 2 minutes over open ocean
^ 2019/061:05:40:30.0000 AMCS Cal for 2 minutes over open ocean
  2019/061:07:12:05.0000 OCEANscan (22 minutes)
^ 2019/061:08:49:04.0000 AMCS Cal for 2 minutes over open ocean
* 2019/061:12:18:31.0000 TEP data collection for 3 minutes
* 2019/061:13:52:49.0000 TEP data collection for 3 minutes
* 2019/061:15:27:06.0000 TEP data collection for 3 minutes
* 2019/061:17:01:24.0000 TEP data collection for 3 minutes
* 2019/061:18:35:41.0000 TEP data collection for 3 minutes
  2019/061:18:59:21.0000 OCEANscan (22 minutes)
* 2019/061:20:09:59.0000 TEP data collection for 3 minutes
* 2019/061:21:44:16.0000 TEP data collection for 3 minutes
^ 2019/061:22:59:46.0000 AMCS Cal for 2 minutes over open ocean
* 2019/061:23:18:33.0000 TEP data collection for 3 minutes
^ 2019/062:00:33:16.0000 AMCS Cal for 2 minutes over open ocean
^ 2019/062:05:14:50.0000 AMCS Cal for 2 minutes over open ocean
  2019/062:06:46:26.0000 OCEANscan (22 minutes)
^ 2019/062:08:23:25.0000 AMCS Cal for 2 minutes over open ocean
* 2019/062:11:52:52.0000 TEP data collection for 3 minutes
* 2019/062:13:27:09.0000 TEP data collection for 3 minutes
* 2019/062:15:01:27.0000 TEP data collection for 3 minutes
* 2019/062:16:35:44.0000 TEP data collection for 3 minutes
* 2019/062:18:10:02.0000 TEP data collection for 3 minutes
  2019/062:18:33:41.0000 OCEANscan (22 minutes)
* 2019/062:19:44:19.0000 TEP data collection for 3 minutes
* 2019/062:21:18:36.0000 TEP data collection for 3 minutes
* 2019/062:22:52:54.0000 TEP data collection for 3 minutes
^ 2019/063:00:07:37.0000 AMCS Cal for 2 minutes over open ocean
^ 2019/063:04:54:13.0000 AMCS Cal for 2 minutes over open ocean
  2019/063:06:20:46.0000 OCEANscan (22 minutes)
^ 2019/063:07:57:45.0000 AMCS Cal for 2 minutes over open ocean
  2019/063:09:21:35.0000 RTWscan (90 minutes)
* 2019/063:13:01:30.0000 TEP data collection for 3 minutes
* 2019/063:14:35:47.0000 TEP data collection for 3 minutes
* 2019/063:16:10:05.0000 TEP data collection for 3 minutes
* 2019/063:17:44:22.0000 TEP data collection for 3 minutes
* 2019/063:19:18:39.0000 TEP data collection for 3 minutes
  2019/063:19:42:19.0000 OCEANscan (22 minutes)
* 2019/063:20:52:57.0000 TEP data collection for 3 minutes
* 2019/063:22:27:14.0000 TEP data collection for 3 minutes
^ 2019/063:23:41:57.0000 AMCS Cal for 2 minutes over open ocean
* 2019/064:00:00:18.0000 TEP data collection for 3 minutes
^ 2019/064:04:42:31.0000 AMCS Cal for 2 minutes over open ocean

^ 2019/064:05:57:48.0000 AMCS Cal for 2 minutes over open ocean
  2019/064:07:29:24.0000 OCEANscan (22 minutes)
* 2019/064:12:35:50.0000 TEP data collection for 3 minutes
* 2019/064:14:10:08.0000 TEP data collection for 3 minutes
* 2019/064:15:44:25.0000 TEP data collection for 3 minutes
* 2019/064:17:18:42.0000 TEP data collection for 3 minutes
* 2019/064:18:53:00.0000 TEP data collection for 3 minutes
  2019/064:19:16:39.0000 OCEANscan (22 minutes)
* 2019/064:20:27:17.0000 TEP data collection for 3 minutes
* 2019/064:22:01:34.0000 TEP data collection for 3 minutes
^ 2019/064:23:16:18.0000 AMCS Cal for 2 minutes over open ocean
* 2019/064:23:35:52.0000 TEP data collection for 3 minutes
^ 2019/065:00:49:43.0000 AMCS Cal for 2 minutes over open ocean
^ 2019/065:05:32:09.0000 AMCS Cal for 2 minutes over open ocean
  2019/065:07:03:44.0000 OCEANscan (22 minutes)
^ 2019/065:08:40:43.0000 AMCS Cal for 2 minutes over open ocean
* 2019/065:12:10:11.0000 TEP data collection for 3 minutes
* 2019/065:13:44:28.0000 TEP data collection for 3 minutes
^ 2019/065:14:00:00.0000 Stellar centroid window dump for 90 minutes (no stellar centroids)
* 2019/065:16:53:03.0000 TEP data collection for 3 minutes
* 2019/065:18:27:20.0000 TEP data collection for 3 minutes
  2019/065:18:51:00.0000 OCEANscan (22 minutes)
* 2019/065:20:01:38.0000 TEP data collection for 3 minutes
* 2019/065:21:35:55.0000 TEP data collection for 3 minutes
^ 2019/065:22:50:38.0000 AMCS Cal for 2 minutes over open ocean
* 2019/065:23:10:12.0000 TEP data collection for 3 minutes