ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, June 10, 2019 thru Sunday, June 16, 2019

RGTs spanned: 1111-1217
Cycle 3

Items of Note:
All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. Release 001 data continue to be developed and delivered nominally by SIPS to NSIDC and the SCF. ASAS continues to move towards a 15 July 2019 code freeze for all data products; this will support release 002 in September to the SCF and NSIDC.

Photon Phriday continues to be a big hit on social media!!

ELEMENT DETAILS BELOW

CAMS/POD/PPD:
CAMS: Regular CAMS operations continue with constraint and conjunction monitoring for Mission Weeks 39 and 40, and mission planning for Mission Week 41.

CAMS warm spare DELL replacement arrived today. IT personnel are working on getting the machine ready for OPS.

Aseel Syed joined the CAMS team this week. She is going to work closely with the team to learn nominal operations and aide in the conjunction and constraint analysis.

POD: Regular POD operations continue. Final POD was completed for GPS week 2054. Intermediate POD was completed for GPS week 2056. All results appear nominal.

Data from the round-the-world scan on DoY 155 was analyzed to assess the impact of the switch-flip that occurred on DoY 154. Calibrated rapid and final ANC05 files for this date have been delivered to SIPS, who will create ATL03 files for further assessment of pointing performance.

POD delivered corrected ANC04 files to SIPS for the 12 dates which had issues with RGT-related datasets. POD will compute RGT-related datasets using the final precise orbit moving forward, rather than copy these datasets from rapid ANC04 files.

ISF:
All ATLAS housekeeping data is nominal
    Laser 2 is firing at energy level 4 and in science mode
    WTEM Peak to Edge Ratio: 1.196
    Laser 2 Temperature Error: -0.30C
    SADA in Sailboat Mode

Spacecraft orientation: - X

Mission Planning:
MW40 ATS is loaded to the spacecraft and currently operating
MW41 is being planned.
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Activities during the past week:

ATS activities:
All ATLAS and pointing activities were routine and completed as planned. MW40 and an updated MW39 are attached.

Real-time activities:
Daily/as-need: Executed standing CAR 91 and 102 (routine error cleanup)

Executed standing CAR 192 to update the SHG temperature setpoint 2019/162-163 (6/11-12/19) (note 1)

Supported a successful test which flowed telemetry to the ISF from the bMOC 2019/163 (6/12/19) (note 2).

Other Activities:

PDB E.0.1 - Approved for release to ops at FOT CCB on 2019/06/13. The ISF and MOC will coordinate the timing of change early next week.

Team continues to plan and schedule the upcoming tech refresh

Team continues to work with the project, PSO, CAMS, and the MOC to review the MCR and Laser Conjunction processes.

Team continues to investigate the slow transfer of data from the T&C servers to the ops servers (RIONet to SEN).

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Next week's ATLAS activities:

Routine instrument and pointing calibration scheduled activities are in the MW40 ATS. (see attached)

Other Near-term activities:

The spacecraft will change the orientation of the SADA from the current sailboat configuration to airplane, two weeks from now, approx. 2019/178 (6/27/19).

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Notes/Issues:

1. ATLAS SE requested that the team make a controlled series of updates to the SHG temperature setpoint to increase the amount of green light emitted from the laser. The team executed standing CAR 192 five times, decreasing the setpoint 0.03 degrees C each time, and monitored the SPD laser energy following each adjustment. The energy value increased approximately 2% total. The team will continue to monitor the laser energy in the upcoming week to see if any additional adjustments should be made.

2. Team continued to investigate the inability to flow telemetry from the bMOC to the ISF. A series of tests with bMOC, MOC, GCC 2019/158 (6/7/19) and found the bMOC station was sending EOF signal to the ISF station. A bMOC configuration error was found, corrected, and retested successfully 2019/163 (6/12/19).

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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 using ANC03/04/05 files from the CAMS.
  o Distributed ATL03 (rapids) to the SCF.

· Conducted ORR for SIPS Build 4.1.1 (contained only SDMS mods) on June 13, 2018 and installed in OPS on June 14.

· Delivered all the remaining ATL02s, ATL07s, and ATL10s to NSIDC for data through Feb 23, 2019.

· Received new calibrated rapid and final ANC05s for DOY 155 from the POD. SIPS generated rapid and final ATL03s for the POD to assist them in finalizing their evaluation of the current performance.

ASAS:
All PGEs were buttoned up for an intermediate functional test. That functional test is executing on playground at this time.

A notable change is that ATL03 now includes the DEM at the segment rate.

The ArcticDEM (32m) replaces the GIMP dem. REMA (100m-patched) replaces the Cryosat-2 1KM DEM.

No work on ATL01.

ATL02 - developer is working on QA checks.

ATL03 - developer added the DEM. Additional QA checks for ANC41 is in work.

ATL04/ATL09 - an issue regarding vertical alignment was resolved. density-based surface return detection is in workd.

ATL06 - uniform method of computing the number of shots/segment is implemented and iin testing.

ATL07/10 - Infinite loop issues have been addressed, developer is updating test cases

ATL08 - developer found an issue in an interpolation routine and the fix significantly improved ground and canopy results.

ATL12 - limit by ocean depth has been implemented, work has began on use of the cloud flag

SCF:
The SCF is operating nominally. Data for releases 001 and R001 are being ingested and distributed, with full granule subscriptions caught up but subsetting subscriptions still running. A few code changes have been implemented to improve operations, including a fix for the non-production of ATL07 and ATL10 trending plots, which are now being made regularly. A file listing the current SCF data holdings is attached.

* Data Management -- Fixed the trending calculation code for ATL07 and ATL10, put the updates into operations, and generated the previously missing plots. Finished modifying scripts to send data status requests to SIPS via SCP, and finished testing file hold/publish bug fix; both changes are now in operations. Continued tests on limiting the number of subscriptions that

are submitted in a single SDMS job; need to clarify exactly where to apply the limit, but code should be ready soon, hopefully before more release 001 data arrive.

* Subsetter -- Testing of the Python 3 code continued. We are also working to ensure that the Subsetter code works correctly in conjunction with the data management scripts in Python 3.

* Visualizer -- Helped some NOAA people get the latest software up and running and discussed possibly creating a custom plot for sea ice. Started looking into converting the code base to Python 3 and setting up a Python 3 environment.

ATL02/Instrument Science:
Reanalysis of ATLAS I&T data, comparing the Transmitter Echo time of flight (TEP TOF) for the AA and BB configurations, revealed that the reference TEP TOF value in CAL 08 was incorrect. A new version CAL 08 has been produced and released for testing. The new version used a corrected process for computing the reference TEP TOF, and up-to-date calibration values for computing all times of flight.

ATL03:
Work continues on updating TEP QA threshold statistics, implementing a new inland water mask to assist ATL13 development, and updating certain uncertainty/geolocation parameters prior to the 15 July code freeze. ATBD updates ongoing as well to capture these product changes.

ISF ACTIVITIES MISSION WEEK 040

* Not in science mode
^ Could affect science data quality

* 2019/164:01:37:03.0000 TEP data collection for 3 minutes
  2019/164:02:26:42.0000 OCEANscan (22 minutes)
* 2019/164:03:11:20.0000 TEP data collection for 3 minutes
* 2019/164:04:45:37.0000 TEP data collection for 3 minutes
* 2019/164:06:19:55.0000 TEP data collection for 3 minutes
^ 2019/164:06:39:32.0000 AMCS Cal for 2 minutes over open ocean
* 2019/164:07:35:46.0000 TEP data collection for 3 minutes
* 2019/164:09:10:03.0000 TEP data collection for 3 minutes
* 2019/164:10:44:21.0000 TEP data collection for 3 minutes
* 2019/164:12:18:39.0000 TEP data collection for 3 minutes
^ 2019/164:12:42:20.0000 AMCS Cal for 2 minutes over open ocean
* 2019/164:13:52:56.0000 TEP data collection for 3 minutes
  2019/164:14:13:57.0000 OCEANscan (22 minutes)
* 2019/164:15:27:14.0000 TEP data collection for 3 minutes
^ 2019/164:15:50:55.0000 AMCS Cal for 2 minutes over open ocean
* 2019/164:17:01:32.0000 TEP data collection for 3 minutes

* 2019/164:18:35:49.0000 TEP data collection for 3 minutes
* 2019/164:20:30:58.0000 TEP data collection for 3 minutes
* 2019/164:22:05:15.0000 TEP data collection for 3 minutes
* 2019/164:23:39:33.0000 TEP data collection for 3 minutes
* 2019/165:01:13:50.0000 TEP data collection for 3 minutes
  2019/165:02:01:02.0000 OCEANscan (22 minutes)
* 2019/165:02:48:08.0000 TEP data collection for 3 minutes
* 2019/165:04:22:25.0000 TEP data collection for 3 minutes
* 2019/165:05:56:42.0000 TEP data collection for 3 minutes
^ 2019/165:06:13:52.0000 AMCS Cal for 2 minutes over open ocean
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* 2019/165:08:44:29.0000 TEP data collection for 3 minutes
* 2019/165:10:18:46.0000 TEP data collection for 3 minutes
* 2019/165:11:53:04.0000 TEP data collection for 3 minutes
^ 2019/165:12:00:00.0000 Stellar centroid image dump for 90 minutes (no stellar centroids)
  2019/165:13:48:17.0000 OCEANscan (22 minutes)
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* 2019/166:03:54:19.0000 TEP data collection for 3 minutes
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