ICESat-2 PROJECT SCIENCE OFFICE REPORT
Monday, May 27, 2019 thru Sunday, June 2, 2019

RGTs spanned: 898-1004
Cycle 3

Items of Note:
All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. Public data release at NSIDC began on Tuesday, May 28 and is continuing nominally; NSIDC is already seeing a wide array of international users expressing interest in all data products.

NSIDC/ICESat-2 Data Metrics Summary (28 May thru 2 June)
- 168 total users of 9 available products
- 122,345 science files downloaded
    - ATL02: 8 users; 48 files downloaded
    - ATL03: 45 users; 8,630 files downloaded
    - ATL04: 1 user; 1 file downloaded
    - ATL06: 35 users; 48,366 files downloaded
    - ATL07: 3 users, 13 files downloaded
    - ATL08: 89 users; 63,182 files downloaded
    - ATL09: 2 users; 18 files downloaded
    - ATL10: 9 users; 949 files downloaded
    - ATL13: 20 users; 1,138 files downloaded
- Users from 25 different countries (China, USA, Canada, Netherlands and the UK all with more than 1 user)

ELEMENT DETAILS BELOW

CAMS/POD/PPD:
CAMS: Regular CAMS operations continue with constraint and conjunction monitoring for mission weeks 37 and 38, and mission planning for mission week 39.

CAMS planned an alternative maneuver sequence for DMU017 next week that satisfied instrument
health constraints. However, the new sequence has a likely (87% PI) chance of lasing another space
asset (WISE-36119). CAMS is making slight modifications to the maneuver sequence (delaying an
attitude slew) which has the potential to mitigate the threat and satisfy all other constraints.
These CAMS provided alternative solutions for executing maneuvers at this particular time in the mission (sun-orbit
geometry) allow the ICESat-2 mission to closely follow the RGT and meet its pointing requirements.

POD: Final POD was completed for GPS week 2052, results appear nominal.

Questions regarding ATL02 files were just recently sorted out with SIPS, so intermediate POD for GPS weeks 2053 & 2054 will be completed next week.

ISF:
All ATLAS housekeeping data is nominal
    Laser 2 is firing at energy level 4 and in science mode
    WTEM Peak to Edge Ratio: 1.230
    Laser 2 Temperature Error: -0.29C
    SADA in Sailboat Mode
    Spacecraft orientation: - X

    Mission Planning:
    MW38 ATS is loaded to the spacecraft and currently operating
    MW39 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

    Real-time activities:
    Daily/as-need: Executed standing CAR 91 and 102 (routine error cleanup)
    Supported an additional unsuccessful attempt at flowing telemetry to the ISF from the bMOC (note 1).

    Other Activities:

    Team continues to investigate the slow transfer of data from the T&C servers to the ops servers (RIONet to SEN).
    Team continued exploring the technical options we can implement as part of the upcoming ISF tech refresh.

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    Next week's ATLAS activities:
    Routine instrument and pointing calibration scheduled activities are in the MW38 ATS. (see attached)

    Other Near-term activities:

ICESat2 will perform DMU #17 2019/154:23:41:51.0000 (65 minute activity)

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      Notes/Issues:

1.   The bMOC is unable to send telemetry to the ISF. ISF and the MOC/bMOC continue to investigate the issue.

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   LTO Schedule:
      All items remain on schedule
      ATLASCCR002 PDB E.0.1 install in operations to be Boarded at FOT CCB NET

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.
·   Completed reprocessing of Release 001 from October to February 23, 2019.

ASAS:
L3A Atmosphere developer is working the layer density confidence flag

L3B Atmosphere developer delivered a new sample ATL17. This was provided to NSIDC for initial discussion of L3B products.

Land/Veg developer completed requested product updates and is working on improving ground/canopy classifications.

Sea Ice developer is working on data gap issues, occasional infinite loops on ATL07 and weighted means/sigmas for ATL10.

Inland Water developer is working on filtering inland water bodies and handling breaks in those bodies.

Ocean developer is adding GEBCo bathymetry to ATL12 processing.

ATL03 developers have added instrument state flags and long period tides to ATL03.

A new inland water mask file was ingested and is ready for testing.

A new ANC42 (reference TEP) file was created and is ready for testing.

Work is on-going for replacement of GIMP/CrysoSat-2 DEMs with 100m ArcticDEM and REMA. This is a pre-cursor to working the 30m versions of the same DEMs for Land Ice.

SCF:
The SCF is operating nominally. Data for releases 001 and R001 are being ingested and distributed, and older data are being deleted as needed. Version 5.1 of the Visualizer is expected to be released early next week. A file listing the current SCF data holdings is attached.

* Data Management -- There have been no significant issues ingesting and distributing data. Product Hold/Publish requests have been temporarily suspended due to the unanticipated large volume of requests.

* Subsetter -- The Subsetter has been ported to Python 3 and is being tested in the Python 3 environment. Subsetting requests are returning empty files in some cases. The empty files are correct, but we will correct the software to not send empty files.

* Visualizer -- Version 5.1 of the software should be available next week. The apps have been created and are undergoing some final testing before making the release available.

ATL02/Instrument Science:
ATL02 data, Release 001, became publicly available on NSIDC May 28, along with other data products. No significant problems were reported. Current plans for Release 002 include updating the receiver channel skew calibration (CAL 49), adding some additional QA parameters, and adding some material to the ATBD.

Revised parameters (Version 8) for the Flight Science Receiver Algorithm have been accepted by the PSO after review of the results from the May 9 on-orbit test. Implementation is expected to take about 2 weeks.

Review of the range bias measurement and correction process continues.

ATL03:
No significant issues were reported following public release of ATL03. Work is ongoing to identify issues to tackle this summer, including updating the inland water mask, including some ATLAS housekeeping parameters from ATL02 on the ATL03 product, and potentially using a DEM to assist in the declassification of clouds as high-confidence signal.

ISF ACTIVITIES MISSION WEEK 038:

* Not in science mode
^ Could affect science data quality

* 2019/150:01:21:30.0000 TEP data collection for 3 minutes
  2019/150:02:08:42.0000 OCEANscan (22 minutes)
^ 2019/150:02:41:31.0000 VBG sweep in Science mode for 3 minutes
* 2019/150:02:55:48.0000 TEP data collection for 3 minutes
* 2019/150:04:30:05.0000 TEP data collection for 3 minutes
  2019/150:05:09:31.0000 RTWscan (90 minutes)
* 2019/150:07:36:13.0000 TEP data collection for 3 minutes
^ 2019/150:07:55:50.0000 AMCS Cal for 2 minutes over open ocean
* 2019/150:08:49:43.0000 TEP data collection for 3 minutes
* 2019/150:10:24:02.0000 TEP data collection for 3 minutes
* 2019/150:11:58:20.0000 TEP data collection for 3 minutes
^ 2019/150:12:38:43.0000 AMCS Cal for 2 minutes over open ocean
* 2019/150:13:32:38.0000 TEP data collection for 3 minutes
^ 2019/150:13:58:38.0000 AMCS Cal for 2 minutes over open ocean
* 2019/150:15:06:56.0000 TEP data collection for 3 minutes
  2019/150:15:30:15.0000 OCEANscan (22 minutes)
* 2019/150:16:41:15.0000 TEP data collection for 3 minutes
* 2019/150:18:15:33.0000 TEP data collection for 3 minutes
* 2019/150:19:49:13.0000 TEP data collection for 3 minutes
* 2019/150:20:12:58.0000 TEP data collection for 3 minutes
* 2019/150:21:47:16.0000 TEP data collection for 3 minutes
* 2019/150:23:21:33.0000 TEP data collection for 3 minutes
* 2019/151:00:55:51.0000 TEP data collection for 3 minutes
^ 2019/151:02:15:51.0000 VBG sweep in Science mode for 3 minutes
* 2019/151:02:30:08.0000 TEP data collection for 3 minutes
  2019/151:03:17:20.0000 OCEANscan (22 minutes)
* 2019/151:04:04:25.0000 TEP data collection for 3 minutes
* 2019/151:05:38:43.0000 TEP data collection for 3 minutes
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* 2019/151:22:55:54.0000 TEP data collection for 3 minutes

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* 2019/152:00:30:11.0000 TEP data collection for 3 minutes
* 2019/152:02:04:28.0000 TEP data collection for 3 minutes
  2019/152:02:51:40.0000 OCEANscan (22 minutes)
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