

ICESat-2 PROJECT SCIENCE OFFICE REPORT

Monday, September 21, 2020 thru Sunday, September 27, 2020

RGTs spanned: 1232 (cycle 8) – 43 (cycle 9)
Cycle 8/9

SUMMARY:

All ATLAS housekeeping data is nominal; laser 2 is firing at energy level 4 and in science mode. ASAS remains on-schedule for the October 01 2020 code freeze. As long as no issues are found this week, ASAS will begin generating the 954b1 functional test on (or shortly after) October 01. 954b1 will be the test data provided to the Science Team in support of the acceptance reviews for ASAS v5.4.

The science team held their first virtual meeting on Monday and Tuesday – despite being online, it was a great meeting!

****ELEMENT DETAILS BELOW****

CAMS/POD:

CAMS: Regular CAMS operations: constraint and conjunction monitoring for MW106 and MW107 and mission planning for MW108.

CAMS recommended laser arm for 41615(FLOCK 2P7) 270/15:25:46 - 270/15:25:56 (MW107). Event Self Mitigated

CAMS recommends laser arm for 41615(FLOCK 2P7) 270/17:47:12 – 270/17:47:22 (MW107).

CAMS continues working with the project on ARB09.

POD: Regular POD operations continue. Intermediate POD was completed for GPS week 2123. Final POD was completed for GPS week 2121.

ISF:

All ATLAS housekeeping data is nominal

Laser 2 is firing at energy level 4 and in science mode

WTEM Peak to Edge Ratio: 1.190

Laser 2 Temperature Error: -0.31C

SADA in SAILBOAT Mode

Spacecraft orientation: - X

Mission Planning:

MW107 ATS is loaded to the spacecraft and currently operating (PSO Activity List is attached)

MW108 AIP has been delivered, nominal calibrations; CAMS has delivered preliminary products.

Team planned and performed a Risk Mitigation Maneuver (RMM02d) this morning to avoid physical conjunction with an object (41980) on Tuesday

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**Activities during the past week:**

Real-time activities:

monitoring via telework

**Onsite Monday (9/21) to adjust the VBG temperature and clear FSW red limit**

ATS activities:

MW\_107 (currently loaded and executing):

Routine Instrument calibrations, TOOs, Ocean scans and Vegetation Data collection, Segmented RTW scans

**mini-ATS to Put Laser to ARM mode for LCA62 with 41615 2020/270 (Sept 26)**

**Split-ATS to mitigate physical conjunction with 41980 with RMM02d (Sept 28)**

Other Activities:

Near-term upcoming activities:

PDB E.0.2 testing and deployment (MOC CCB on Sept 30)

Facility:

**Updating ITOS servers to RedHat 7.0 due to EOL of 6.0 at the end of November**

Tech HW refresh:

Procurement in progress for ISF Tech Refresh Phase 2 to complete during FY20

Phase 1a setup and testing continues

Notes/Issues:

1. ARB09: RMM02 Anomaly - the team continues to analyze events and determine process (automated and manual) updates to mitigate the chance of a recurrence. The team has implemented changes to the manual processes for verification of planning products. The team is providing inputs for root cause analysis and corrective action.

LTO Schedule:

Tech refresh updates to be provided to ESMO Scheduler. Update to RedHat 7.0 takes priority and phase 2 hardware is not received.

**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 ATL01 and ATL02 Data products to NSIDC.
  - Distributed the rapid Science Data products to the SCF.
- Participated in the ESDIS Assessment and Authorization (A&A) audit.

**ASAS:**

ASAS remains on-schedule for the October 01 2020 code freeze. As long as no issues are found this week, ASAS will begin generating the 954b1 functional test on (or shortly after) October 01. 954b1 will be the test data provided to the Science Team in support of the acceptance reviews for ASAS v5.4.

954a5 is the final functional test before the October 01 code freeze. All products (except for ATL13) have been generated for the 954a5 Functional Test and are available on the ASAS development server. ATL13 is expected to complete early this week. Please contact Jeff if you would like any of these test products transferred to SCF. So far, only the ATL04s and ATL09s have been transferred.

**SCF:**

The SCF is operating nominally. Data for releases 003 and R003 are being ingested and distributed as they arrive, with subsetting subscriptions continuing to be fulfilled. The next batch of release 003 finals is expected around or after mid-October, and release 954 data (that serve as a preview of release 004) are anticipated in a similar time frame. A file listing the current SCF data holdings is attached.

\* Data Management -- Work continues on new ATL10 trending plots. The simple program developed as a quick test has been updated, and we are looking at how to incorporate the necessary changes into the code base. Also, we are starting to plan for the next release of the software, currently expected to be a minor one that rolls up all patches currently running in operations.

\* Subsetter -- Performing as expected in operations; no failed jobs. We are currently looking towards making a new major release of the software after release 004 is available so any adjustments that may be necessary to handle ASAS v5.4 data products will be included.

**ATL02/Instrument Science:**

The Instrument Scientist presented current ATLAS status and issues at the ICESat-2 Science Team meeting 21-22 September.

All changes to the ATL02 product for Release 4 have been verified.

In addition, work continues on:

- Preparation of a paper on detailed characterization of the ATLAS linear system impulse response, including the small “after-pulses” that are visible in extremely strong surface returns.
- Investigation of data from July 15.
- Quantifying the expected annual number of back reflections from solar arrays on other spacecraft (e.g. Starlink).
- Investigating and modeling the properties of saturated returns.
- Writing up the results of the study of variation of range bias on orbital and seasonal time scales.
- Re-examining the temperature dependence of the ATLAS transmitted beam divergence.
- Improving the process for calibrating transmitter-receiver alignment.

**ATL03:**

Continued improvements to quality\_ph saturation flagging for release 004. Additionally, ATBD updates to the reference DEM and geophysical correction sections are underway to put the document current for what is planned for release 004, as well as closing action items that remain open for release 004.

## ISF ACTIVITIES MISSION WEEK 107

\* Not in science mode

^ Could affect science data quality

- \* 2020/268:02:19:11.0000 TEP data collection Grid 96 Duration 3 minutes
- \* 2020/268:02:29:37.0000 TEP data collection Grid 239 Duration 3 minutes
- 2020/268:03:03:46.0000 OCEANscan Duration 22 minutes
- \* 2020/268:03:58:42.0000 TEP data collection Grid 165 Duration 3 minutes
- 2020/268:06:04:34.0000 Segmented RTWscan Part 1 Duration 36 minutes
- 2020/268:06:53:48.0000 Segmented RTWscan Part 2 Duration 35 minutes
- 2020/268:07:34:30.0000 Segmented RTWscan Part 3 Duration 14 minutes
- \* 2020/268:08:41:34.0000 TEP data collection Grid 158 Duration 3 minutes
- \* 2020/268:08:50:53.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2020/268:10:05:49.0000 TEP data collection Grid 12 Duration 3 minutes
- \* 2020/268:10:13:15.0000 TEP data collection Grid 120 Duration 3 minutes
- \* 2020/268:11:44:55.0000 TEP data collection Grid 81 Duration 3 minutes
- \* 2020/268:11:50:09.0000 TEP data collection Grid 153 Duration 3 minutes
- \* 2020/268:12:05:34.0000 TEP data collection Grid 369 Duration 3 minutes
- \* 2020/268:13:16:47.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
- \* 2020/268:13:37:28.0000 TEP data collection Grid 330 Duration 3 minutes
- \* 2020/268:14:51:04.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
- 2020/268:16:25:18.0000 OCEANscan Duration 22 minutes
- \* 2020/268:18:12:24.0000 TEP data collection Grid 252 Duration 3 minutes
- \* 2020/268:18:20:20.0000 TEP data collection Grid 359 Duration 3 minutes
- \* 2020/268:19:41:36.0000 TEP data collection Grid 177 Duration 3 minutes
- \* 2020/268:21:29:33.0000 TEP data collection Grid 354 Duration 3 minutes
- \* 2020/268:22:52:47.0000 TEP data collection Grid 209 Duration 3 minutes
- \* 2020/268:22:57:59.0000 TEP data collection Grid 280 Duration 3 minutes
- \* 2020/268:23:26:43.0000 TEP data collection Grid 406 Duration 3 minutes
- \* 2020/269:00:14:24.0000 TEP data collection Grid 27 Duration 3 minutes
- \* 2020/269:02:06:34.0000 TEP data collection Grid 276 Duration 3 minutes
- \* 2020/269:02:35:16.0000 TEP data collection Grid 401 Duration 3 minutes
- \* 2020/269:03:27:49.0000 TEP data collection Grid 94 Duration 3 minutes
- 2020/269:04:12:24.0000 OCEANscan Duration 22 minutes
- 2020/269:05:10:00.0000 Stellar window dump Duration 90 minutes
- \* 2020/269:06:46:50.0000 TEP data collection Grid 233 Duration 3 minutes
- \* 2020/269:06:50:39.0000 TEP data collection Grid 268 Duration 3 minutes
- \* 2020/269:08:15:04.0000 TEP data collection Grid 159 Duration 3 minutes
- \* 2020/269:08:25:14.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2020/269:09:41:22.0000 TEP data collection Grid 49 Duration 3 minutes
- \* 2020/269:09:44:58.0000 TEP data collection Grid 84 Duration 3 minutes
- \* 2020/269:11:24:30.0000 TEP data collection Grid 154 Duration 3 minutes
- \* 2020/269:12:51:07.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
- \* 2020/269:13:17:03.0000 TEP data collection Grid 403 Duration 3 minutes

\* 2020/269:14:25:25.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
2020/269:15:59:39.0000 OCEANscan Duration 22 minutes  
\* 2020/269:17:34:00.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
\* 2020/269:17:54:41.0000 TEP data collection Grid 360 Duration 3 minutes  
\* 2020/269:19:23:45.0000 TEP data collection Grid 286 Duration 3 minutes  
\* 2020/269:20:52:02.0000 TEP data collection Grid 212 Duration 3 minutes  
\* 2020/269:22:29:44.0000 TEP data collection Grid 245 Duration 3 minutes  
\* 2020/269:22:37:33.0000 TEP data collection Grid 353 Duration 3 minutes  
\* 2020/269:23:56:12.0000 TEP data collection Grid 135 Duration 3 minutes  
\* 2020/270:00:04:01.0000 TEP data collection Grid 243 Duration 3 minutes  
2020/270:00:40:57.0000 TOO TOOid 1730 RGT 28 offpoint 2.76deg Duration 2 minutes  
\* 2020/270:01:32:29.0000 TEP data collection Grid 169 Duration 3 minutes  
\* 2020/270:02:57:18.0000 TEP data collection Grid 23 Duration 3 minutes  
2020/270:03:46:45.0000 OCEANscan Duration 22 minutes  
\* 2020/270:06:26:23.0000 TEP data collection Grid 305 Duration 3 minutes  
\* 2020/270:07:55:28.0000 TEP data collection Grid 231 Duration 3 minutes  
\* 2020/270:07:59:35.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/270:12:33:53.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
\* 2020/270:13:59:46.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
2020/270:15:34:00.0000 OCEANscan Duration 22 minutes  
\* 2020/270:15:58:56.0000 TEP data collection Grid 399 Duration 3 minutes  
\* 2020/270:17:08:20.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
\* 2020/270:17:25:29.0000 TEP data collection Grid 289 Duration 3 minutes  
\* 2020/270:17:47:01.0000 Laser in ARM mode for LCA62 41615 (FLOCK 2P 7) 26-Sep-  
2020 17:47:16 Duration 1 minute  
\* 2020/270:20:16:06.0000 TEP data collection Grid 69 Duration 3 minutes  
\* 2020/270:22:01:28.0000 TEP data collection Grid 210 Duration 3 minutes  
\* 2020/270:23:48:48.0000 TEP data collection Grid 387 Duration 3 minutes  
\* 2020/271:01:15:16.0000 TEP data collection Grid 277 Duration 3 minutes  
2020/271:03:21:05.0000 OCEANscan Duration 22 minutes  
\* 2020/271:07:16:45.0000 TEP data collection Grid 52 Duration 3 minutes  
\* 2020/271:07:33:55.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes  
\* 2020/271:10:30:34.0000 TEP data collection Grid 119 Duration 3 minutes  
\* 2020/271:12:15:17.0000 TEP data collection Grid 260 Duration 3 minutes  
\* 2020/271:13:34:06.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
2020/271:15:08:21.0000 OCEANscan Duration 22 minutes  
\* 2020/271:16:42:41.0000 AMCS Cal over open Pacific ocean Duration 2 minutes  
\* 2020/271:18:27:14.0000 TEP data collection Grid 215 Duration 3 minutes  
2020/271:22:45:00.0000 Laser window dump Duration 2 minutes  
\* 2020/271:23:17:55.0000 TEP data collection Grid 316 Duration 3 minutes  
\* 2020/272:00:52:13.0000 TEP data collection Grid 313 Duration 3 minutes  
2020/272:02:55:26.0000 OCEANscan Duration 22 minutes  
2020/272:05:56:13.0000 Segmented RTWscan Part 1 Duration 37 minutes  
2020/272:06:45:26.0000 Segmented RTWscan Part 2 Duration 35 minutes  
2020/272:07:26:14.0000 Segmented RTWscan Part 3 Duration 14 minutes  
\* 2020/272:08:42:33.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes

^ 2020/272:12:29:55.0000 RMM02d to mitigate CARA HIE with 41980 (FLOCK 3P 70)  
Duration 54 minutes

- \* 2020/272:14:42:44.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
- 2020/272:16:16:58.0000 OCEANscan Duration 22 minutes
- \* 2020/272:18:04:21.0000 TEP data collection Grid 251 Duration 3 minutes
- 2020/273:04:04:03.0000 OCEANscan Duration 22 minutes
- \* 2020/273:08:16:52.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2020/273:12:42:45.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
- \* 2020/273:14:17:02.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
- 2020/273:15:51:16.0000 OCEANscan Duration 22 minutes
- \* 2020/273:17:25:37.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
- 2020/274:03:38:21.0000 OCEANscan Duration 22 minutes
- \* 2020/274:07:51:10.0000 AMCS Cal over open Atlantic ocean Duration 2 minutes
- \* 2020/274:12:23:35.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
- \* 2020/274:13:51:21.0000 AMCS Cal over open Pacific ocean Duration 2 minutes
- ^ 2020/274:14:21:33.8080 Adjust the VBG Setpoint to 62.96 to optimize the laser  
wavelength Duration 1 minute
- 2020/274:15:25:35.0000 OCEANscan Duration 22 minutes
- \* 2020/274:16:59:55.0000 AMCS Cal over open Pacific ocean Duration 2 minutes