

# ICECAPS-ACE Weekly Report

August 12 – August 18, 2019

Heather Guy



*An aerial view of station from the drone. 8-16.*

## **General Notes:**

This week brought the beginning and end of the last flight period of the summer season with all scheduled LC-130 flights arriving at Summit on a compressed schedule after mechanical and service delays the previous week. This flight period saw the arrival of the remaining fall season crew members, and the departure of the summer crew. This week also saw the completion of a number of big projects including: the relocation of our radiosonde base station, repairs to the MSF power feed, a LN2 calibration of the MWR, a number of drone flights with IR and video cameras, and a new internal hard drive installed in the ICECAPS dataman computer.

**General Weather Observations:**

Date	Time (Z)	Wind	Weather	Visibility	Sky	Temp	Notes
8-12	12	018°, 4 kn		9999	SCT115	-13	Morning FZFG. North winds
8-13	12	135°, 6 kn	IC	9999	SCT049	-14	Light snow first thing.
8-14	12	340°, 4 kn	SN	4800	OVC019	-10	
8-15	12	093°, 11 kn		9999	FEW197	-18	Rapid temp drop and FZFG overnight.
8-16	12	128°, 10 kn		9999	FEW	-16	Contrail contributing to cloud cover.
8-17	12	334°, 6 kn	FZFG	4800	SKT	-20	FZFG first thing, heavy rime overnight.
8-18	12	096°, 9 kn		4800	FEW	-22	FZFG and low vis in the afternoon.

**Significant Weather Observations:**

- 8-12 0815-0900z: Fog bow.
- 8-15 0800-0830z: Fog bow.
- 8-15 1200-1800z: Clear skies for checking CAPABL.
- 8-16 1000z: Diamond dust
- 8-18 1000z: Solar corona and FZFG.

**MSF**

- 8-15 1326-1328: Planned power outage during switch to microturbine.
- 8-16 1055-1056: Planned power outage during MSF power feed maintenance.
- 8-16 1056-1201: MSF run on generator while the MSF power feed was successfully repaired.
- 8-16 1201-1202: Planned power outage, MSF switched back to station power.

**ICECAPS-ACE Data Management:**

- 8-12: Data transfer completed at 0513z
- 8-13: Data transfer completed at 0534z
- 8-13 1233-1928z: Dataman shutdown while internal hard-drive was cloned and replaced.
- 8-14: Data transfer completed at 0525z
- 8-15: Data transfer completed at 0531z
- 8-16: Data transfer completed at 0519z
- 8-17: Data transfer completed at 0533z
- 8-18: Data transfer completed at 0537z

**MWR:**

- The MWR was successfully calibrated this week using a liquid nitrogen target:
  - 8-15 1905Z: HATPRO absolute calibration and internal-external flop
  - 8-15 2017Z: 90/150 GHz absolute calibration.
  - 8-16 1946Z: HATPRO absolute calibration and internal-external flop
  - 8-17 1213Z: HATPRO absolute calibration and internal-external flop
- Operating normally.

**SODAR:**

- 8-16 1639-1649z: Cleaned of snow and levelled.
- Operating normally.

**POSS:**

- 8-13 1230-1920z: POSS powered down for dataman hard drive swap.
- Operating normally.

**MMCR:**

- Operating normally.
- Red 'added loss' light on TWTA continues to flash.
- 5V#1 and 5V#2 remain out of tolerance.

**CAPABL:**

- 8-13 1130z: Water droplets on window – not cleared.
- 8-18 1325z: CAPABL laser turned off for a planned flash lamp change. Flash lamp change was aborted last minute as we weren't sure whether we had an up to date protocol. Data collection was restarted without a flash lamp change or computer shut down. It took two attempts to restart data collection (on the first the meadowlark current remained at 0).
- Operating normally.

**MPL:**

- 8-09 1215z: Water droplets on window – not cleared.
- Operating normally

**VCEIL:**

- The ceilometer laser has arrived. A decision about replacing the laser is to be confirmed.
- Operating normally.

**IceCAM:**

- Operating normally

**PAERI:**

- 8-18: Odd data and red warning lights first thing (LW/SW responsivity, HBB temp), cleared by themselves.

**TSI:**

- Operating normally

**IcePIC:**

- 8-13 1130-1150z: Plates and irregulars, light snow turning to clear skies and diamond dust.
- 8-14 1120-1140z: Dendrites, irregulars and plates.

**Radiosonde:**

- Twice daily launches.
- 8-17: Radiosonde base station relocation to SMG
- 8-17: Evening balloon launch delayed until 0041z due to flight operations.

**MASC:**

- 8-16 1136z: Trackpad frozen, computer and data collection restarted.
- Operating normally.

**MSF - OPC:**

- High aerosol counts this week.
- Operating normally.

**TAWO – OPC:**

- TAWO OPC continues to have issues with noise and data interruptions. A possible pathway to re-route the cable has been identified and will be implemented this week.

**SKYOPC:**

- High aerosol counts this week.
- SKYOPC data drops out during power outages as the vacuum pump is not on UPS – recorded in log.
- Operating normally.

**CLASP:**

- High aerosol counts this week.
- Operating normally.

**CPC:**

- High aerosol counts this week.
- 8-12: CPC was reporting 'Error air pump problem'. The CPC exhaust tube was blocked with ice. Exhaust was pulled inside to defrost, data collection restarted at 1200z.
- 8-12: CPC butanol refilled.
- Operating normally.

**Fluxtower instrument suite:**

- Operating normally.

**INP Freezing assay:**

- 8-12 1500-1900: Weekly freezing assay completed; data transferred.

**Aerosol vertical profiler:**

- 8-14: Two station orbital drone flights with Zenmuse camera collecting aerial footage.
- 8-15 1112z: Successful AVP drone flight.
- 8-16 1227z: Successful infrared imaging drone profile.
- 8-16 1420z: Successful AVP drone flight.
- 8-16 1555z: Station orbital drone flight to collect aerial footage.
- 8-16 1747z: Successful AVP drone flight.
- 8-17: Drone packed to travel back to Washington State University.