

ICECAPS-ACE Weekly Report

August 5 – August 11, 2019

Heather Guy



Freezing fog and 'fog bows' were a common occurrence this week. 8-06.

General Notes:

Mechanical issues with the ANG C130 Aircraft have delayed the start of FP5 by 6 days. We now expect the first aircraft at Summit on Wednesday (August 14th), reducing the length of the last flight period to 4 days. As such, the flight period looks to be exceptionally busy and work will necessarily be prioritized accordingly. The replacement of the ceilometer laser is now expected to be delayed until after the flight period. The radiosonde relocation, MWR calibration and maintenance to the MSF power feed cable will all be carried out during the flight period, provided that there are no further delays.

General Weather Observations:

Date	Time (Z)	Wind	Weather	Visibility	Sky	Temp	Notes
8-05	12	085°, 4 kn		9999	FEW	-12	FZFG overnight
8-06	12	223°, 7 kn	FZFG	1600	BKN000	-15	FZFG overnight
8-07	12	337°, 9 kn	-SN	3200	OVC005	-10	North winds
8-08	12	48°, 5 kn		9999	BKN066	-14.6	FZFG overnight, north winds
8-09	12	351°, 2 kn	-SN	4800	BKN075	-9	FZFG overnight, north winds
8-10	12	343°, 7 kn	IC	4800	BKN012	-12	North winds
8-11	12	359°, 8 kn	FZFG	3600	SKC	-18	North winds

Significant Weather Observations:

- 8-05 0000-0100z: Fog bow.
- 8-05 0530-0630z: Fog bow.
- 8-05 1120z: Diamond dust
- 8-05 1200-1900z: Clear skies for checking CAPABL.
- 8-06 0600-1030z: Fog bow.
- 8-07 1700-2000z: Clear skies for checking CAPABL.
- 8-11 0830-1200z: Fog bow

MSF

- MSF power feed maintenance is planned for 8-16. During the maintenance (which is expected to last 3-4 hours) the MSF power will be transferred to a dedicated generator that will be placed next to the MSF. There will be two UPS-supported power outages, as power is switched to the mobile generator and then again when it is switched back to normal station power.

ICECAPS-ACE Data Management:

- 8-05: Data transfer completed at 0514z
- 8-06: Data transfer completed at 0536z
- 8-07: Data transfer completed at 0514z
- 8-08: Data transfer completed at 0710z
- 8-09: Data transfer completed at 0521z
- 8-10: Data transfer completed at 0615z
- 8-11: Data transfer completed at 0519z. Fluxtower data did not transfer for 8-10.

MWR:

- Operating normally.

SODAR:

- 8-09 1330-1342z: Cleaned of snow and levelled.
- Operating normally.

POSS:

- Operating normally.

MMCR:

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

CAPABL:

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

MPL:

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

VCEIL:

- The ceilometer is recording intermittent periods of good and bad data.
- The replacement laser due in FP5 will be installed after the flight period.

IceCAM:

- Operating normally

PAERI:

- 8-07: Quicklook window not open, data logging normally.

TSI:

- Operating normally

IcePIC:

- 8-07 1230-1300z: Dendrites and plates, 30 photos uploaded.
- 8-09 1220-1250z: Irregulars, 13 photos uploaded.

Radiosonde:

- Twice daily launches.

MASC:

- 8-05 1212z: Trackpad frozen, computer and data collection restarted.
- Operating normally.

MSF - OPC:

- 8-05 1650z: Coffee filter secured over outlet fan to prevent fan getting blocked with ice.
- 8-10 0100-0500z: Data gap, cause unknown.
- Operating normally.

TAWO – OPC:

- 8-06: TAWO OPC run inside building for troubleshooting.
- 8-06 1811: TAWO OPC installed back outside.
- 8-06 2130: TAWO OPC stopped logging – port changed again.
- 8-07: Installed ferrite bead and restarted TAWO OPC.
- 8-11: Data from 8-10 lost due to computer failure (see fluxtower section), restarted at 1910z.
- TAWO OPC has been operating normally since the ferrite bead was installed, with the exception of occasional unrealistic spikes in the data – I’m still not sure what’s causing these but providing they don’t get any worse, they will be easy to filter out.

SKYOPC:

- Operating normally.

CLASP:

- 8-05: CLASP-F quicklook data plots generating.
- After close inspection of CLASP-F data this week, it looks like the CLASP-F is logging good data and compares well with the other aerosol instruments, although there was a period when it was first installed when this was not the case.
- Operating normally.

CPC:

- 8-09: Butanol filter changed.
- 8-10 0100-0500z: Lowest total aerosol concentrations I’ve seen yet.
- Operating normally

Fluxtower instrument suite:

- 8-08: Spare aspirated shield coated in 9H ceramic coating and installed on MSF roof. Coating appears to have no effect on rime build up, the shield was completely blocked in the morning.
- 8-11: Fluxtower laptop computer died – possible hard drive failure. Data for 8-10 lost. The replacement laptop (FLUXTOWER2) was set up and data collection was restarted at 1910z.

INP Freezing assay:

- 8-05 1530-1930: Weekly freezing assay completed; data transferred.

Aerosol vertical profiler:

- 8-05: Uninstalled and reinstalled drone software on computer.
- 8-05 1812z: Attempt unsuccessful – drone fails to connect to computer.
- 8-08 1610-1628z: Successful profile
- 8-09 1844-1904z: Successful profile