

ICECAPS-ACE Weekly Report

July 22 – July 28, 2019

Heather Guy



A large dispersed contrail contributes to cloud cover on 7-24.

General Notes:

This week the MSF building was levelled successfully, and some time was spent preparing for the radiosonde balloon base station move. The Total Sky Imager was brought online, aligned and is now collecting data. Towards the end of the week the winds picked up accompanied by blowing snow, warmer temperatures and low visibility – restricting outdoor tasking.

General Weather Observations:

Date	Time (Z)	Wind	Weather	Visibility	Sky	Temp	Notes
7-22	12	256°, 4.1 kn	-SN BLSN		OVC042	-18.7	
7-23	12	097°, 4 kn		9999	BKN008	-14	Low-level optically thin liquid clouds.
7-24	12	343°, 6 kn		9999	SCT160	-12	
7-25	12	043°, 10 kn		9999	BKN040	-12	
7-26	12	120°, 8 kn	-SN	3200	OVC037	-12	
7-27	12	123°, 21 kn	BLSN	3200	BKN059	-10	
7-28	12	137°, 24 kn	BLSN	3200	OVC049	-8	

Significant Weather Observations:

- 7-22 2315-2330z: Fog bow followed by freezing fog.
- 7-23 0630-0800z: Fog bow
- 7-23 1653-2000z: Clear skies for checking CAPABL.
- 7-24 1150z: Large dispersed contrail significantly contributing to cloud cover (see photo).

MSF

- 7-26 1600-1900z: MSF building was levelled. MMCR pitch and roll now both read 0.0 and all jacks are flush.

ICECAPS-ACE Data Management:

- 7-22: Data transfer completed at 06:06z
- 7-23: Data transfer completed at 06:48z
- 7-24: Data transfer completed at 06:42z
- 7-25: Successful data transfer, time not recorded.
- 7-26: Data transfer completed at 05:27z
- 7-27: Data transfer completed at 05:15z
- 7-28: Data transfer completed at 0518z

MWR:

- Operating normally.

SODAR:

- 7-26 1241-1245z: Cleaned and levelled.
- Operating normally.

POSS:

- Operating normally.

MMCR:

- 7-26: After MSF building level, pitch and roll both read 0.0.
- Red 'added loss' light on TWTA continues to flash.
- 5V#1 and 5V#2 remain out of tolerance.

CAPABL:

- 7-22 1150z: Water droplets on CAPABL window – not cleared.
- Operating normally.

MPL:

- 7-22 1150z: Water droplets on MPL window – not cleared.
- 7-25 1210z: ‘Windows recovered from an unexpected shutdown’. Data collection restarted. No MPL data between 0900 and 1216z.
- Operating normally

VCEIL:

- Operating normally.

IceCAM:

- Operating normally

PAERI:

- 7-22 1630z: PAERI fan checked for ice accumulation. Fan looks clear. Upon reinstallation instrument temperatures look to be improved.
- Operating normally

TSI:

- 7-23 1941z: TSI online and collecting data after successful alignment.
- 7-24: TSI data did not transfer to Boulder, contacted Matt to set up transfer.
- 7-25: TSI Dataman mount set up, data transferred.
- 7-28: Note: TSI is counting low light overcast conditions as clear skies.
- Operating normally

IcePIC:

- 7-22 1250-1310z: 7 photos uploaded, plates and irregulars, melting quickly.
- 7-26 1200-1230z: 3 photos uploaded. Irregulars.

Radiosonde:

- Twice daily launches.

MASC:

- 7-25 1207-1209z: Computer and data collection restarted due to frozen trackpad.
- Operating normally.

MSF - OPC:

- 7-24: Large amounts of NaN data from 1709z. Data collection stopped all together at 1902z when OPC failed to send signal.
- 7-25 1250z: Data collection restarted manually.
- 7-25 1300z: OPC still recording NaNs, logging script modified to allow a longer wait time for data transmission from the OPC (as was done with the TAWO OPC when it was first installed). Data looks better.
- 7-27 OPC data does not look good. Very low counts.

TAWO – OPC:

- Operating normally.

SKYOPC:

- 7-23: Appears to be no data for this day, I'm not sure why.
- 7-24: SKYOPC quick-look plot is now updating.
- Operating normally.

CLASP:

- 7-22 1200z: A close look at the CLASP data indicates poor quality. The CLASP-G is disconnected and brought inside for defrosting and further testing.
- 7-23: CLASP offline
- 7-24 1620z: CLASP-F installed and collecting data.
- 7-25: CLASP-F also has a high laser reference.

CPC:

- Operating normally

Fluxtower instrument suite:

- Operating normally
- 7-24: I replaced the broken fan in the spare aspirated shield, coated the inlet as fully as possible with electrical tape and installed it on the MSF roof to begin testing for ways to prevent significant icing.

INP Freezing assay:

- 7-23 1230-1412: Weekly freezing assay completed; data transferred.

Aerosol vertical profiler:

- 7-22 1655-1710z: One successful profile completed. Then executed a practice emergency landing.
- 7-23 1708-1726: Successful profile.
- 7-24: Done flight attempted, but computer and controller could not connect to drone. It's unclear why this happened.
- 7-25 1916-1934z: Successful profile.
- 7-26 1718-1735z: Successful profile. First profile was clear, in the second profile the wind picked up bringing in low level alto-cu and blowing snow.