PHYSICAL OCEANOGRAPHY

Palmer Station has a tide and conductivity gauge located on the west side of the pier at -64.774558° -64.055580° at a depth of 11.46 meters (WGS-84). It was reinstalled at this deeper depth after the completion of the Palmer Pier in June 2022.

The Research Associate acts as the station's physical oceanography observer by maintaining and observing the sea state. Observations of sea ice extent and growth stage are recorded along with continuous tidal height, ocean temperature, and ocean conductivity.

A new tide gauge has been installed on the pier! It was successfully installed in late April and we have confirmed we are receiving data. We are still troubleshooting data offsets which are causing the tide gauge to report tides of 1000+ meters which, I can assure everyone back home, is not the case. We have identified the issue as a mismatch of data columns between the tide gauge and our SQL database. Work will continue into May to resolve this.

METEOROLOGY

Mike Carmody, Principal Investigator, United States Antarctic Program

Palmer Station is Station 89061 in the World Meteorological Organization (WMO) Worldwide Network. Automated surface synoptic observations are made eight times each day and emailed to the National Atmospheric and Oceanographic Administration (NOAA) for entry into the Global Telecommunication System (GTS).

The Palmer Automatic Weather Station (PAWS) is a collection of sensors, computers, and software that records the meteorological data and generates synoptic reports. PAWS began

recording data in September of 2015. It was a replacement for the Palmer Meteorological Observing System (PalMOS) that was taken down in November 2017. The PAWS sensors and data acquisition hardware are located on a ridge in the backyard at -64.774130° -64.047440° at an elevation of 38.3 meters above sea level using the World Geodetic System-84. In addition to the synoptic and METAR reporting, PAWS also archives the current conditions at one-minute intervals and displays both raw data and graphs of the sensor data on our local intranet.

The Research Associate acts as Chief Weather Observer on station, measuring, compiling, and distributing meteorological data. Snow accumulation is physically observed at five accumulation stakes found near the PAWS system. All weather data are archived locally and forwarded to the University of Wisconsin on the first day of each month for archiving and distribution. Work still needs to be done on the spare DCP firmware to troubleshoot the ceilometer in the backyard met station.

This month, we had a full day of snow on April 29th where 12 cm of snow landed, bringing our total for the month to 28 cm. It was a windy month, with 22 days experiencing winds about 30+ knot gusts. Temperatures averaged 1.5° C warmer than normal, and the max temperature was 0.3° C lower than average.

One-minute weather data is archived on the AMRDC website:
https://amrdcdata.ssec.wisc.edu/dataset?q=Palmer+Station.

Palmer Monthly Met summary for April, 2026

Temperature
Average: 1.1 °C / 34 °F
Maximum: 6 °C / 42.8 °F on 13 Apr 14:19
Minimum: -2.8 °C / 26.96 °F on 26 Apr 02:25
Air Pressure
Average: 977.5 mb
Maximum: 994.2 mb on 4 Apr 00:39
Minimum: 957 mb on 9 Apr 20:10
Wind
Average: 14.8 knots / 17.1 mph
Peak (5 Sec Gust): 67 knots / 77 mph on 16 Apr 01:06 from NNE (21 deg)
Prevailing Direction for Month: NNE
Surface
Total Melted Precipitation: 93.7 mm / 3.69 in
Total Snowfall: 28 cm / 10.9 in
Greatest Depth at Snow Stake: 17.2 cm / 6.7 in
WMO Sea Ice Observation: 1-5 bergs, bergy bits, growlers, brash ice
Average Sea Surface Temperature: Not available due to broken tide sensor

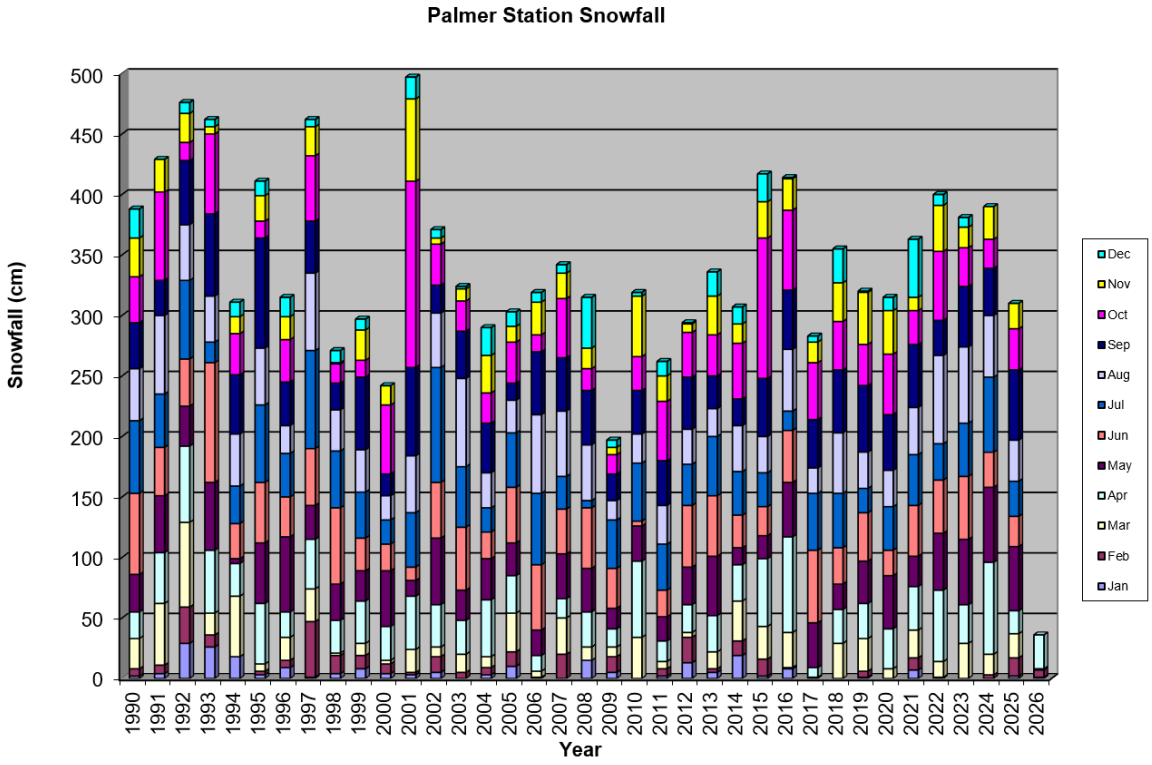

Figure 8. Palmer Station snowfall (cm) by year and month.

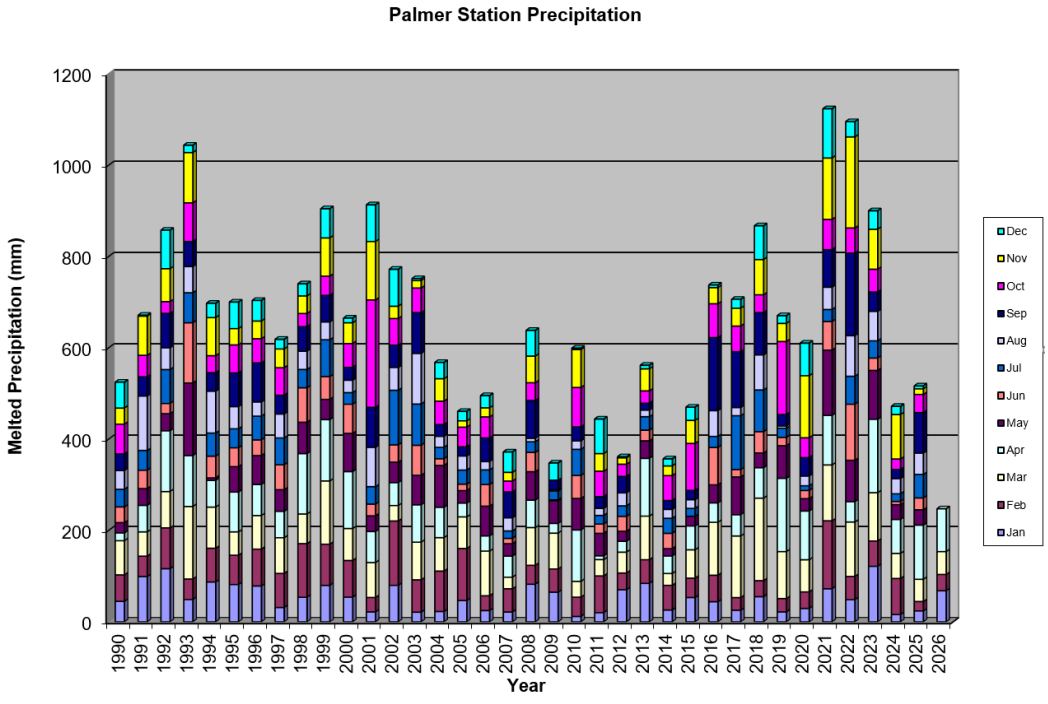

Figure 9. Palmer Station melted precipitation (mm) by year and month.

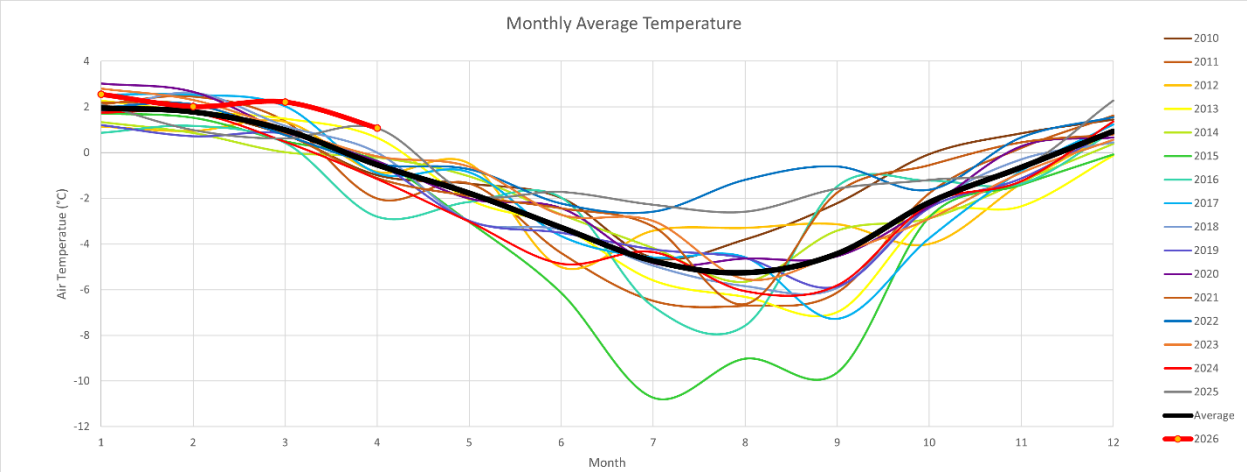

Figure 10. Palmer Station monthly average temperature (C).

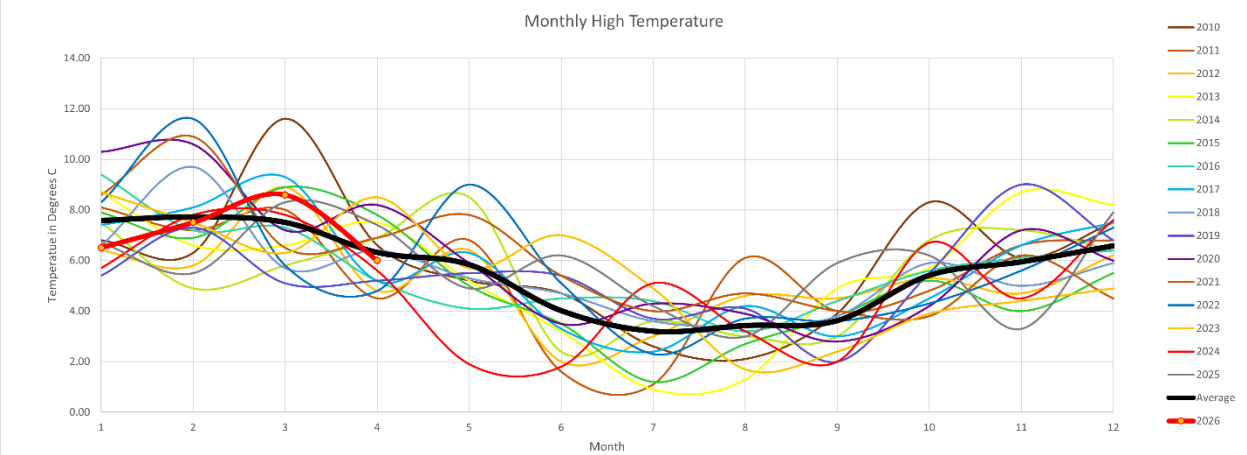

Figure 11. Palmer Station monthly high temperature (C).