

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.

The tide gauge is still offline while we await the arrival of its replacement. New electronics arrive in April, and the new stilling well will arrive in November.

On March 31st, a new island was “born” in Arthur Harbor, separating completely from the glacier. This yet-to-be-named island sits less than ½ mile from Dietrich (Pi) Island, which separated from the glacier on March 14th, 2014, or “Pi Day”.



Figure 11. Arthur Harbor satellite imagery from December 2004 (left) and December 2025 (right).
Source: Maxar Technologies, Airbus



The first glimpse of the new island as seen from the glacier, March 31st, 2026. *Image credit: Hector Plaza*

METEOROLOGY

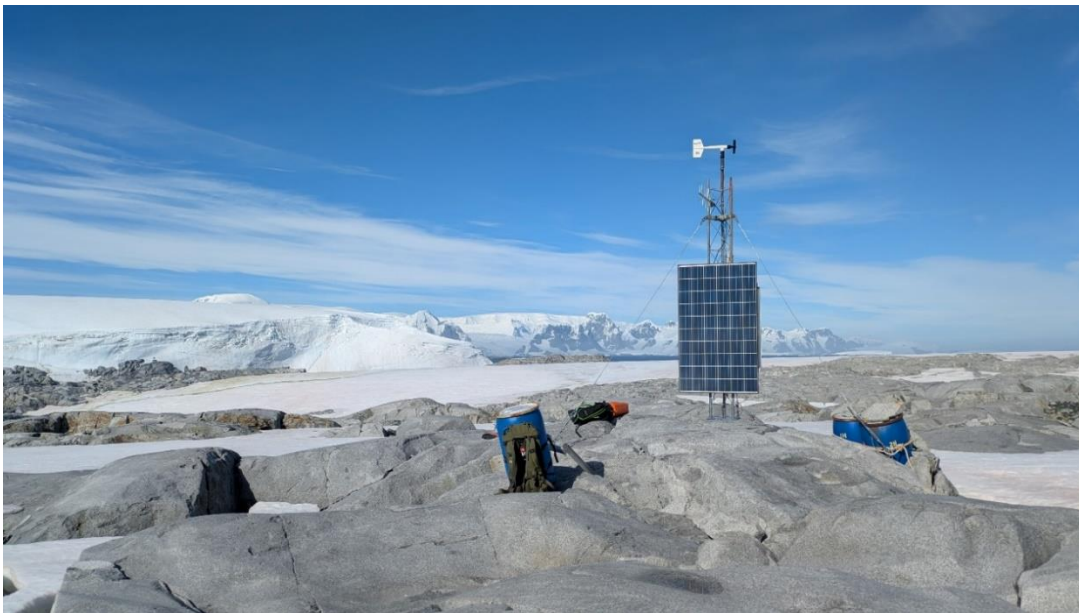
Mike Carmody, Principal Investigator, United States Antarctic Program

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.

This month, ceilometer troubleshooting continued with limited success. First, a spare blower was swapped in, and then a spare DCP. Neither change resolved the issue, however work is ongoing to update the spare DCP's firmware to facilitate further tests. In better news, on March 11th, the AWS2 (Joubins) barometer issue was resolved by correcting an error in the Airport Weather Advisor configuration. On March 6th, the RA visited AWS1 (Wauwermans) to rotate the solar panel 90° from landscape to portrait. This should reduce shading from the guy lines. It also may allow the station to start coming alive earlier in the season, if the top part of the solar panel is sticking up out of the snow. Lastly, it will reduce wind load on the tower and lead to less twisting.



View from AWS1 after the solar panel was rotated from landscape to portrait, March 6th, 2026.

Image credit: Ben Rosen-Filardo

Weather information for March 2026:

This month was warmer and less snowy than typical.

Palmer almost broke the March average temperature record (1997-present), with an average air temperature of 2.2 °C (record: 2.3 °C in March 2006).

Due to the warm temperatures, precipitation (50 mm total) consisted mostly of rain. Just 1 cm of snow fell this month, less only than March 2017, which had 0 cm (1990-present). This was the first time since 2020 in which March concluded with no snow on the ground.

One-minute weather data are archived on the AMRDC website:

<https://amrdcdata.ssec.wisc.edu/dataset?q=Palmer+Station>.

Palmer Monthly Met summary for March 2026

Data unavailable 3/21 14:57 – 3/24 20:38 UTC.

Temperature
Average: 2.2 °C / 35.9 °F
Maximum: 8.6 °C / 47.48 °F on 11 Mar 13:09
Minimum: -2.2 °C / 28.04 °F on 7 Mar 15:59
Air Pressure
Average: 988.8 mb
Maximum: 1016.1 mb on 7 Mar 08:36
Minimum: 951.1 mb on 25 Mar 01:16
Wind
Average: 9.3 knots / 10.7 mph
Peak (5 Sec Gust): 58 knots / 67 mph on 11 Mar 14:58 from NNE (23 deg)
Prevailing Direction for Month: N
Surface
Total Melted Precipitation: 50 mm / 1.97 in
Total Snowfall: 1 cm / 0.4 in
Greatest Depth at Snow Stake: 0.6 cm / 0.2 in
WMO Sea Ice Observation: 1-5 bergs, bergy bits, growlers, brash ice
Average Sea Surface Temperature: Not available due to broken tide sensor

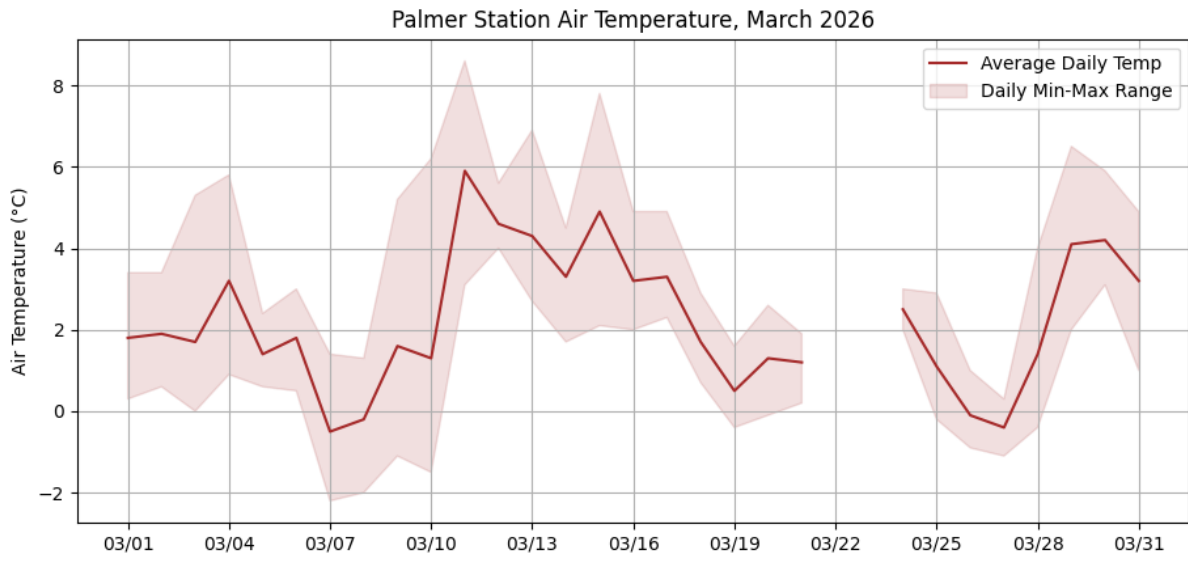


Figure 12. Palmer Station temperature for March 2026, a near record-breaking month. Data are missing for March 22nd and 23rd due to ceilometer & DCP troubleshooting.