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WMO verifies highest temperatures for Antarctic

By [BusinessMirror](#)
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In Photo: Adélie Penguins in Antarctica

A World Meteorological Organization (WMO) committee of experts has announced new records for the highest temperatures recorded in the Antarctic region, as part of continuing efforts to expand a database of extreme weather and climate conditions throughout the world.

Knowledge and verification of such extremes is important in the study of weather patterns, naturally occurring climate variability and human-induced climate change at global and regional scales, the WMO news release said.

The highest temperature for the Antarctica region (defined by the WMO and the United Nations as all land and ice south of 60°S) of 19.8 degrees Celsius (67.6 degrees Fahrenheit) was observed on January 30, 1982, at Signy Research Station, Borge Bay on Signy Island.

The highest temperature for the Antarctic continent, defined as the main continental landmass and adjoining islands, is the temperature extreme of 17.5°C (63.5°F) recorded on March 24, 2015, at the Argentine Research Base Esperanza located near the northern tip of the Antarctic Peninsula, the news release said.

Third, the highest temperature for the Antarctic Plateau (at or above 2,500 meters [8,202 feet]) was -7.0°C (19.4°F) made on December 28, 1980, at an Automatic Weather Station (AWS) site D-80 located inland of the Adélie Coast.

The lowest temperature yet recorded by ground measurements for the Antarctic Region, and for the whole world, was -89.2°C (-128.6°F) at Vostok station on July 21, 1983.

It is possible, indeed likely, that greater extremes can and have occurred in the Antarctic region. As with all WMO evaluations, the extremes are identified based on only those events with available high-quality ground-based data.

The WMO's Commission for Climatology maintains an [archive of weather and climate extremes](#). This includes the world's highest and lowest temperatures, rainfall, heaviest hailstone, longest dry period, maximum gust of wind, longest lightning flash and highest significant wave height.

Spanning 14 million km (roughly twice the size of Australia), the Antarctic is cold, windy and dry. The average annual temperature ranges from about -10°C on the Antarctic coast to -60°C at the highest parts of the interior.

Its immense ice sheet is up to 4.8-km thick and contains 90 percent of the world's freshwater, enough to raise sea level by around 60 meters were it all to melt.

The Antarctic Peninsula (the northwest tip near to South America) is among the fastest warming regions of the planet, almost 3°C over the last 50 years. Some 87 percent of glaciers along the west coast of the Antarctic Peninsula have retreated in the last 50 years, with most of these showing an accelerated retreat in the last 12 years.

The verification of these three Antarctic extremes helps increase understanding about the Antarctic's distinct climatic regimes, specifically maritime versus plateau environments.

The Commission for Climatology international evaluation committee noted that the records at all three stations occurred during an influx of warm air. At Signy and Esperanza, there was a warming "föhn" wind. At D-80, solar heating under clear skies at high elevation was a major contributory factor.

The WMO investigations also serve to improve the quality of observations through the careful analysis of observation practices and proper equipment selection.

"The Antarctic and the Arctic are poorly covered in terms of weather observations and forecasts, even though both play an important role in driving climate and ocean patterns and in sea-level rise. Verification of maximum and minimum temperatures help us to build up a picture of the weather and climate

in one of Earth's final frontiers," said Michael Sparrow, a polar expert with the WMO cosponsored World Climate Research Programme.

In an effort to increase weather forecasting and environmental prediction capability in the Antarctic and Arctic, the WMO is one of the organizers of the Year of Polar Prediction from mid-2017 to mid- 2019. This is a concerted effort to increase and improve research, observing and modeling capabilities in the poles, the news release said .

"This investigation highlights the need to continually monitor all of the Antarctic region and ensure that we have the best possible data for climate change analysis at both the regional and global scales," said Randall Cerveny, WMO rapporteur on climate and weather extremes.

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