UW-Madison: Coldest northern hemisphere temperature, first recorded by UW-Madison, officially confirmed

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MADISON – Nearly 30 years after recording a temperature of minus 93.2 degrees Fahrenheit (minus 69.6 Celsius) in Greenland, the measurement has been verified by the World Meteorological Organization as the coldest recorded temperature in the Northern Hemisphere.

The measurement was first recorded by a University of Wisconsin-Madison Antarctic Meteorological Research Center Automatic Weather Station in December 1991. An AWS is a standalone instrument suite developed by UW-Madison Space Science and Engineering Center and AMRC scientists and engineers to collect numerous environmental parameters such as air temperature, pressure, humidity, wind direction and speed. The information is then relayed via satellite back to SSEC in near real time.

Over time, these data have come to provide a benchmark for understanding weather extremes and climate change.

“The more data you have, the more you can understand what’s going on globally, and make important political and environmental decisions related to climate change,” says George Weidner, emeritus researcher with the UW-Madison Department of Atmospheric and Oceanic Sciences. “It is also an important moment for the AWS systems in that their data are being accepted as official records.”

Weidner is the lead author on a new paper published in the Quarterly Journal of the

Royal Meteorological Society this month that documents the low temperature finding.

In 2007, the WMO created an online archive of weather and climate extremes around the globe, helping to set benchmarks for future climate research. Other measurements include record high temperatures, wind speeds, and the impact of tropical cyclones, including the deadliest in history.

Extreme measurements like that in Greenland undergo a rigorous review process to make sure they are accurate and there is agreement with other meteorological data and weather forecast models. Due to the quality and preservation of the AWS station data provided by the Antarctic Meteorological Research Center, the WMO was able to verify the 1991 temperature and log it as part of the official record.