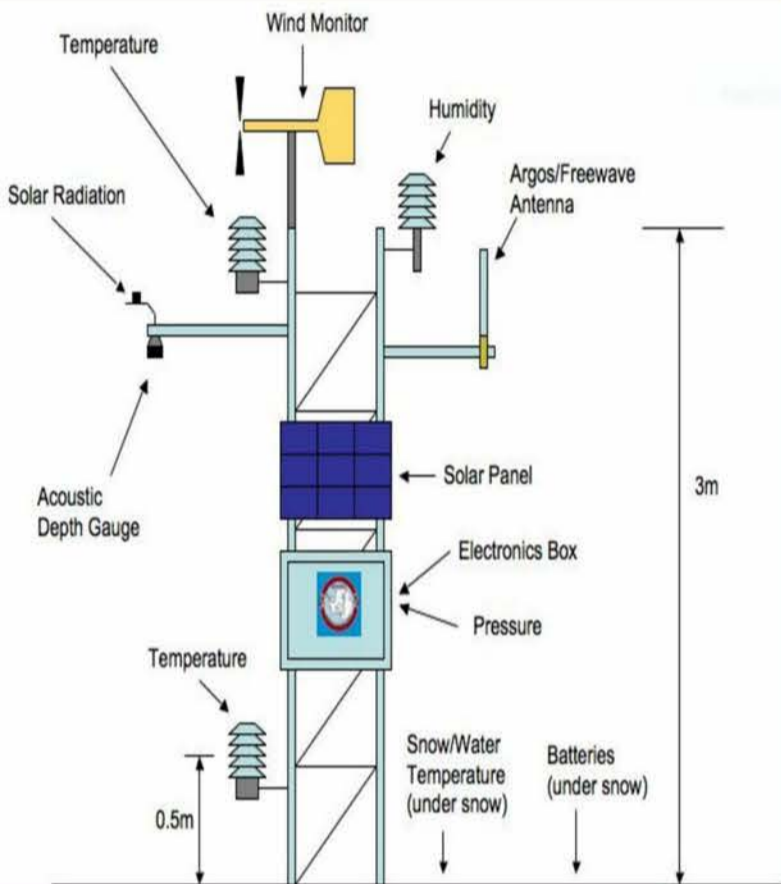


Automatic Weather Stations: Antarctica

A PolarTREC Teacher's Expedition to Antarctica



My name is George Hademenos, a physics teacher at Richardson High School in Richardson, Texas. As a teacher who is always looking for opportunities to engage my students in real-world applications of STEM, I will be embarking on an expedition to Antarctica this November as a PolarTREC teacher. I will be working with Carol Costanza from the University of Wisconsin at Madison on the Automatic Weather Stations project.



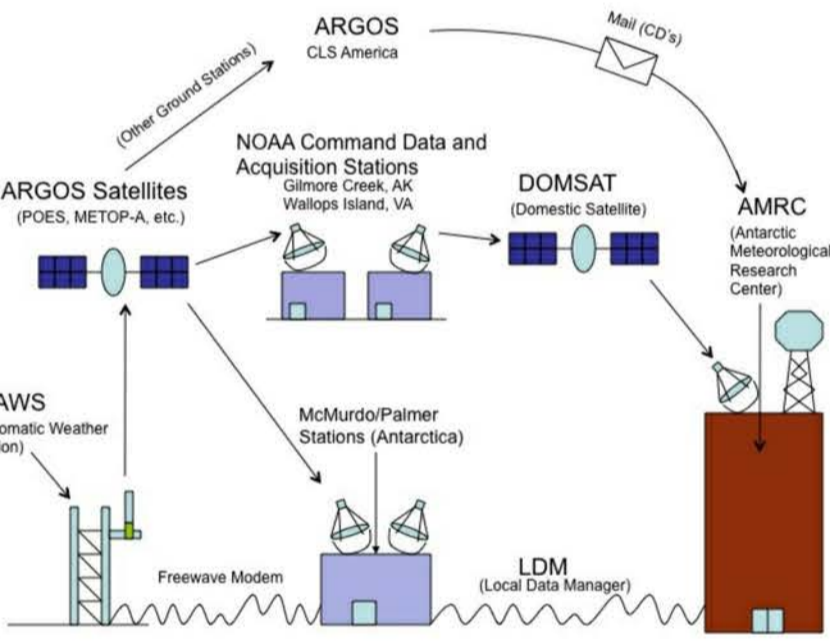
What is an Automatic Weather Station?

An Automatic Weather Station (AWS) is equipped with sensor systems designed to measure the following meteorological variables:

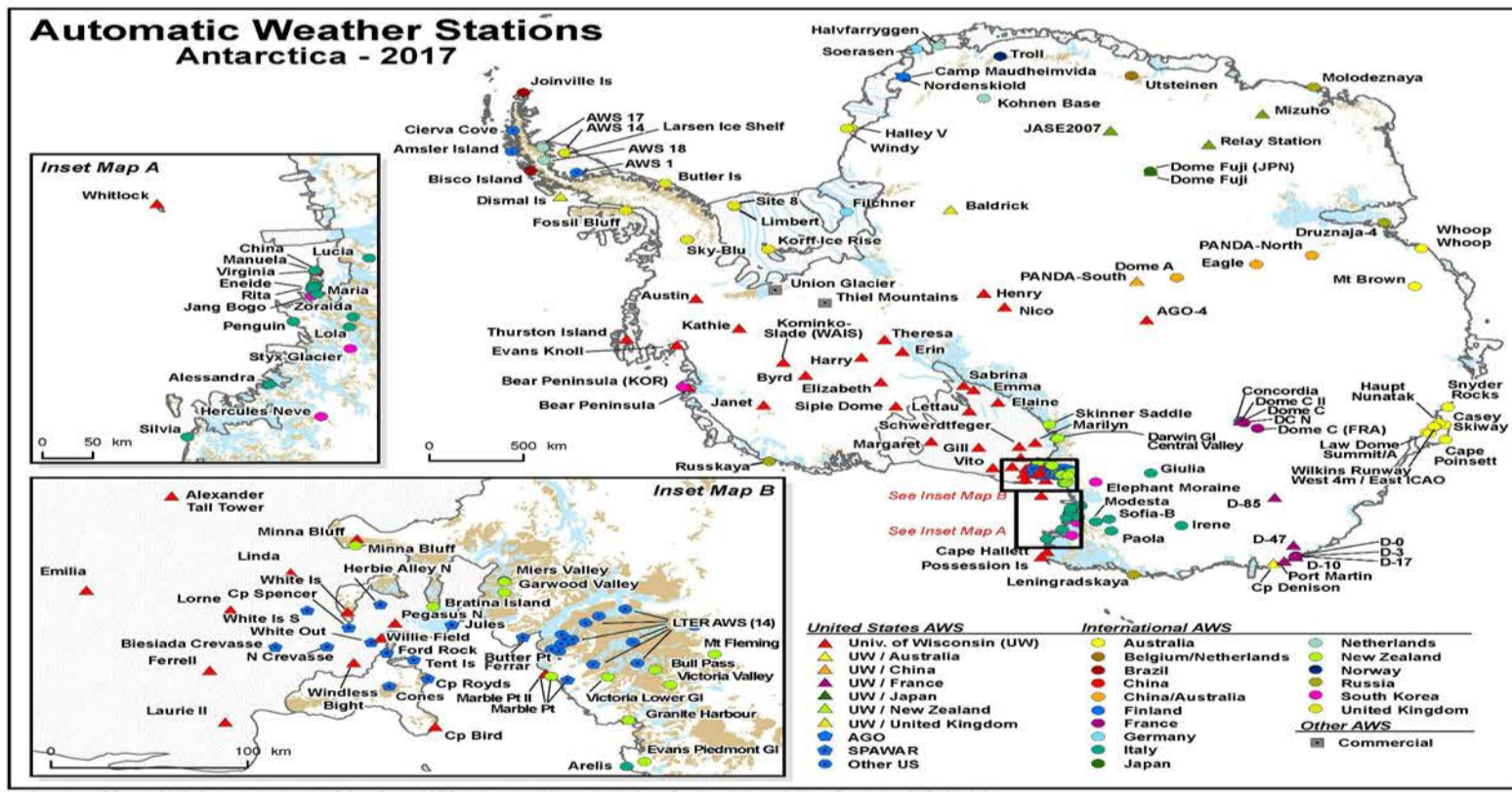
temperature, atmospheric pressure, wind speed & direction, relative humidity, snow temperature, and temperature difference between the top of the AWS to about a half meter from the surface

How Does an Automatic Weather Station Work?

Weather data from the sensors within an Automatic Weather Station is received by an Argos-certified transceiver which is housed on NOAA's synchronous, polar-orbiting satellites. The data is then transmitted from the satellite to satellite data ingestors in McMurdo Station (Antarctica) and NOAA (National Oceanic and Atmospheric Administration, Virginia and Alaska), and then the data is relayed to the Antarctic Meteorological Research Center in Wisconsin.



Where are the Automatic Weather Stations Located?



What is PolarTREC?

PolarTREC (Polar Teachers and Researchers Exploring and Collaborating), administered by the Arctic Research Consortium of the United States (ARCUS), is funded by the National Science Foundation Office of Polar Programs (Award # 1630463). It provides unique opportunities for teachers to work alongside polar scientists conducting research in the polar regions. You can follow my expedition at:



<http://www.polartrec.com/expeditions/antarctic-automatic-weather-stations>



Source

Antarctic Meteorological Research Center: <http://amrc.ssec.wisc.edu/aws/>

Disclaimer: Any opinions, findings, and conclusions or recommendations expressed in this flyer are those of the teacher and research team and do not necessarily reflect the views of the National Science Foundation.