



The Antarctic Automatic Weather Station Network

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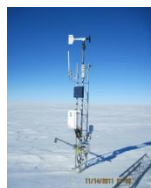
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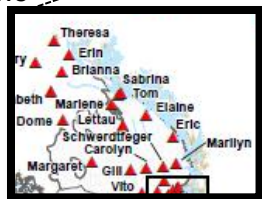
Abstract: The Antarctic Automatic Weather Station (AWS) network has been run by the University of Wisconsin since 1980. For more than thirty years, a large number of research projects have been supported by the data gathered. In addition to conducting research, our group deploys team members to the continent to do field work. Our primary bases of operations in Antarctica are McMurdo, WAIS Divide, and South Pole. A TAM Camp would facilitate AWS servicing to stations near the Transantarctic mountains and on the Ross Ice Shelf.



Elaine AWS

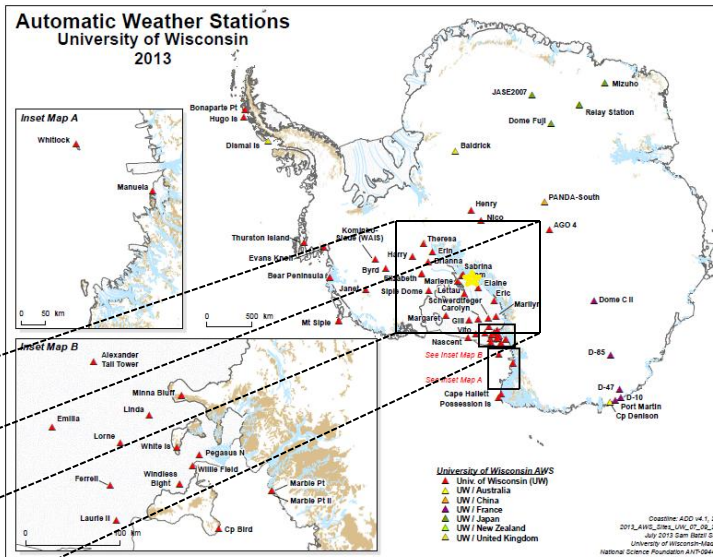


Lettau AWS



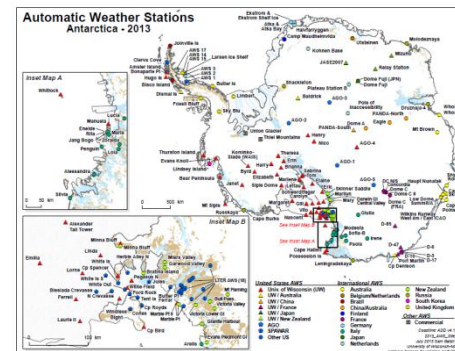
Sabrina AWS

UW Antarctic AWS



Above: Yellow star indicates approximate location of TAM Camp

Antarctic AWS – All Stations



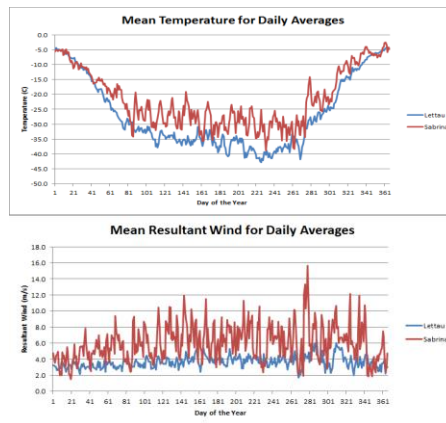
Antarctic AWS Network: The map above shows all current AWS located on Antarctica, while the map to the left shows only the AWS affiliated with UW-Madison. There are approximately 120 total AWS on the continent, with slightly over half of those being affiliated with UW-Madison.

TAM Camp Field Work Coverage: The outset map above shows the approximate region of coverage that would be more easily attainable via TAM camp operations located at the Shackleton Glacier.

The benefits of a TAM Camp:

- * Overcome weather issues
- * Decrease travel time
- * Visit more AWS
- * More reliable AWS network

AWS Climatology: In order to better understand the atmospheric phenomena of the Ross Ice Shelf, a surface climatology using AWS in the region is in the process of being completed. The two graphs to the left are examples of the AWS parameters that are being collected by our AWS Sabrina and Lettau, which are located near the TAM camp site. Sabrina's data are available from 2009 to present, and Lettau's data are available from 1986 to 2011. The top graph is the mean daily temperature averaged from 3-hourly data, with Lettau in blue and Sabrina in red. The second graph is the mean resultant wind speed using daily averages from 3-hourly data, with Lettau in blue and Sabrina in red. The resultant wind is the average of the vector wind observed at the station.



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