Antarctic Automatic Weather Station Program: 2012- 2013 Field Season

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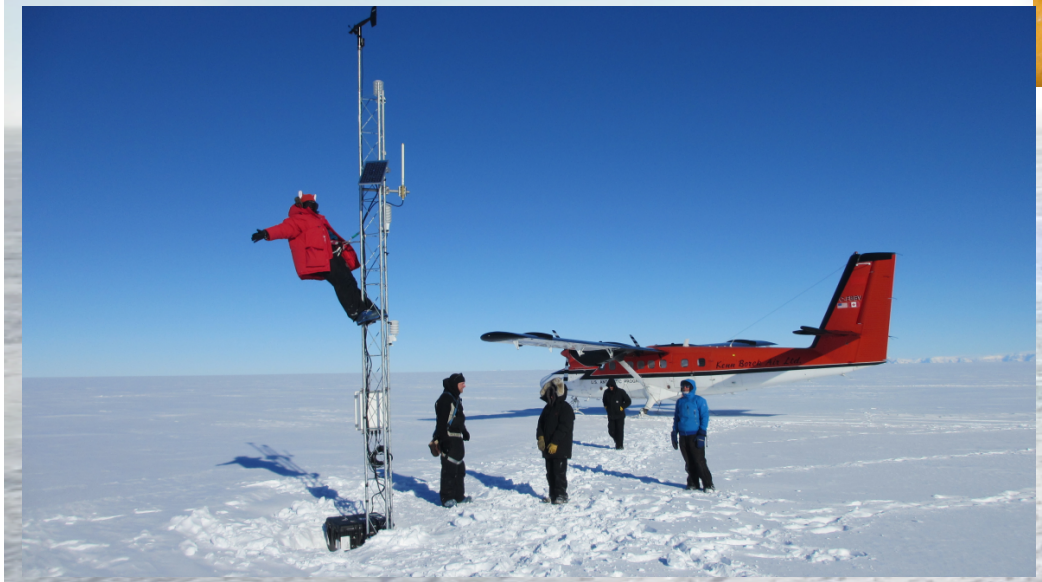
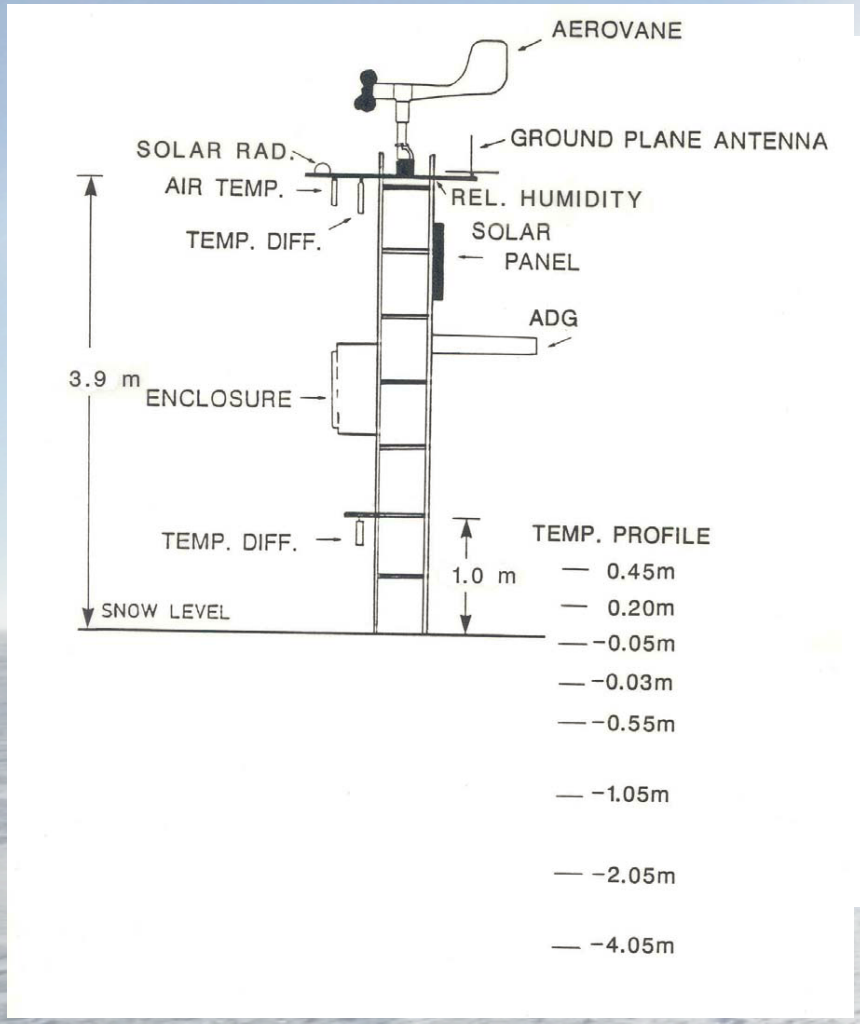
NSF

Field Team

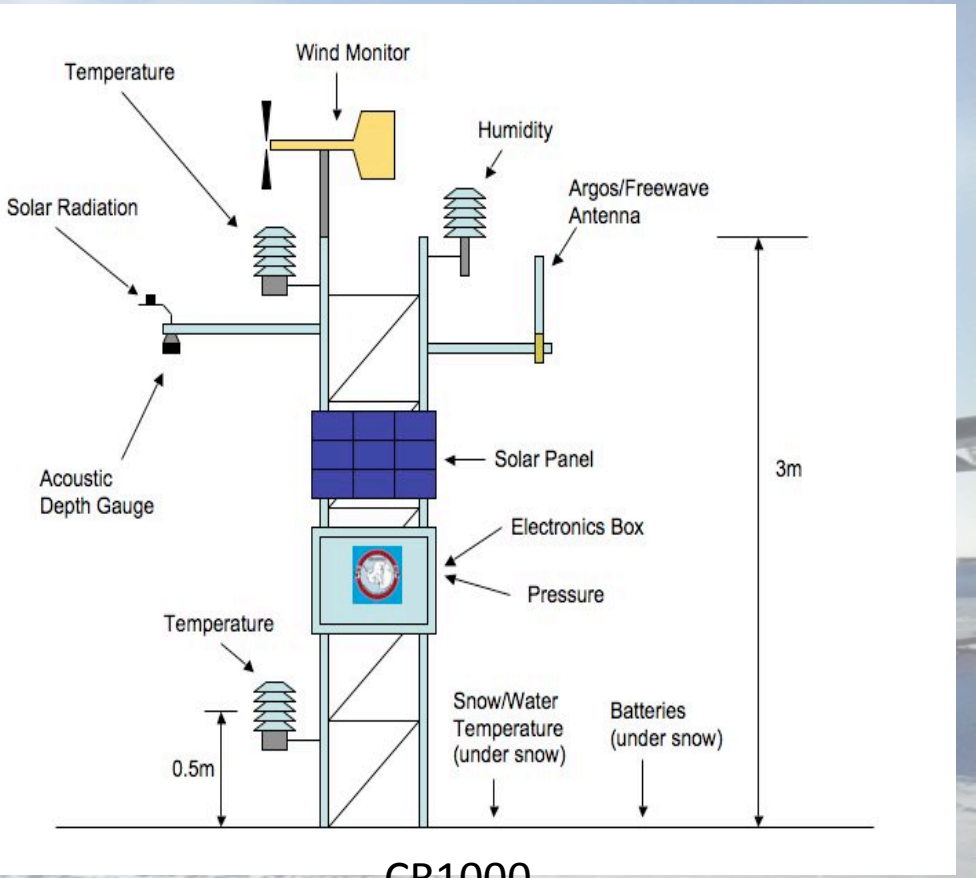
- Lee Welhouse
- David Mikolajczyk
- Maria (Masha) Tsukernik



AWS Schematics



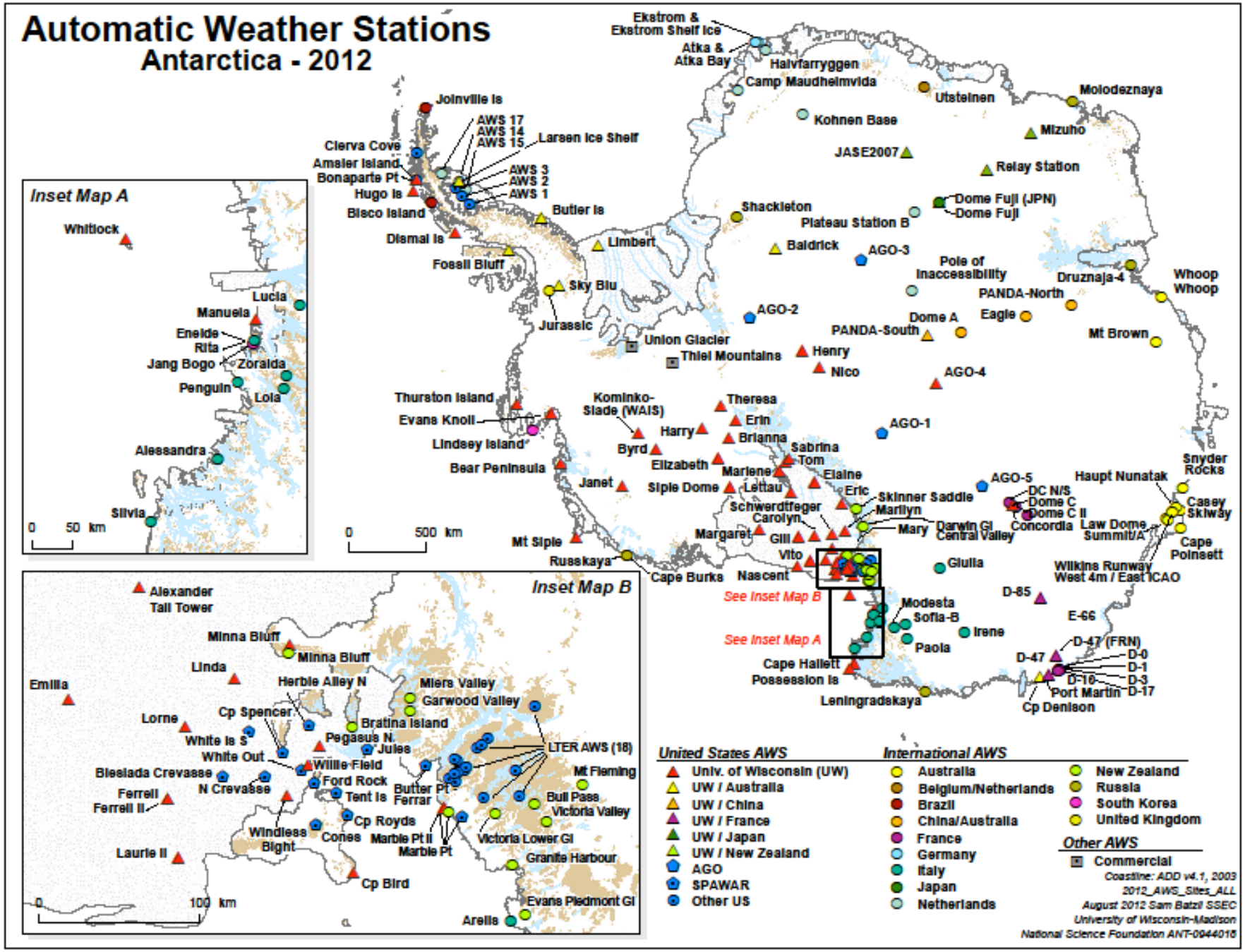
AWS 2B



CR1000

Summary of 2012/2013 field season for O-283:

White Island station installed	12/09/2012
Ferrell station removed	12/12/2012
Windless Bight station updated to Freewave system	12/17/2012
White Island station repair	12/20/2012
Minna Bluff station inspection	12/26/2012
Lorne remove argos electronics	12/26/2012
White Island further repairs	12/26/2012
Lorne install Freewave electronics	12/27/2012
Lorne repair Freewave modem	12/29/2012
Marble Point tower inspection, data recovery, and operating system update	12/29/2012
Lorne further repairs to Freewave modem required	01/03/2013
Janet AWS raise and batteries replaced on second day.	01/15/2013 and 01/16/2013
Erin station replaced with CR1000	01/20/2013
Kominko-Slade data recovered and operating system updated	01/24/2013
Tall Tower lower instruments raised and tower inspected	01/30/2013
Marilyn Aerovane replaced	02/02/2013
Schwerdtfeger replaced with CR1000 system	02/02/2013
Tall Tower unsuccessful conversion to iridium	02/02/2013
Willie Field electronics replaced	02/03/2013
Minna Bluff replaced wind direction sensor	02/05/2013


Automatic Weather Stations
Antarctica - 2012
Inset Map A
Inset Map B
Ekstrom & Ekstrom Shelf Ice
Atka & Atka Bay
Halvfarryggen
Camp Maudheimvida
Utsteinen
Molodeznaya
Kohnen Base
Mizuho
JASE2007
Relay Station
Dome Fuji (JPN)
Dome Fuji
Shackleton
Plateau Station B
Baldrick
AGO-3
Pole of Inaccessibility
Druznaja-4
Whoop Whoop
PANDA-North
Eagle
Dome A
PANDA-South
Mt Brown
AGO-2
Union Glacier
Thiel Mountains
Henry
Nico
AGO-4
Joinville Is
AWS 17
AWS 14
AWS 15
Larsen Ice Shelf
Clerva Cove
Amsler Island
Bonaparte Pt
Hugo Is
AWS 3
AWS 2
AWS 1
Bisco Island
Butler Is
Dismal Is
Limbert
Fossil Bluff
Sky Blu
Jurassic
Thurston Island
Evans Knoll
Lindsey Island
Bear Peninsula
Kominko-Slade (WAIS)
Theresa
Erin
Harry
Brianna
Byrd
Sabrina
Elizabeth
Tom
Marlene
Elaine
Janet
Siple Dome
Lettau
Eric
AGO-1
AGO-5
Haupt Nunatak
Snyder Rocks
Casey Skiway
Cape Poinsett
Law Dome Summit/A
DC N/S
Dome C
Dome C II
Concordia
Skinner Saddle
Marilyn
Schwerdtfeger
Carolyn
Darwin Gl
Central Valley
Mary
Margaret
Gill
Mt Siple
Russkaya
Cape Burks
Vito
Nascent
Giulia
Wilkins Runway
West 4m / East ICAO
D-85
E-66
See Inset Map B
See Inset Map A
Modesta
Sofia-B
Irene
Paola
D-47 (FRN)
D-47
D-0
D-1
D-10
D-3
D-17
Port Martin
Cape Hallett
Possession Is
Leningradskaya
Cp Denison
Lucia
Manuela
Eneide
Rita
Jang Bogo
Zoraida
Penguin
Lola
Alessandra
Silvia
Whitlock
0 50 km
0 500 km
Alexander Tall Tower
Minna Bluff
Linda
Emilia
Herbie Alley N
Miers Valley
Garwood Valley
Lorne
Cp Spencer
Bratina Island
White Is S
Pegasus N.
Jules
White Out
Willie Field
LTER AWS (18)
Mt Fleming
Bleslada Crevasse
N Crevasse
Ford Rock
Butler Pt
Ferrar
Ferrell
Ferrell II
Tent Is
Bull Pass
Victoria Valley
Cp Royds
Windless Bight
Cones
Marble Pt II
Marble Pt
Victoria Lower Gl
Laurie II
Granite Harbour
Cp Bird
Evans Piedmont Gl
Arelis
0 100 km
United States AWS
Univ. of Wisconsin (UW)
UW / Australia
UW / China
UW / France
UW / Japan
UW / New Zealand
AGO
SPAWAR
Other US
International AWS
Australia
Belgium/Netherlands
Brazil
China/Australia
France
Germany
Italy
Japan
Netherlands
New Zealand
Russia
South Korea
United Kingdom
Other AWS
Commercial
Coastline: ADD v4.1, 2003
2012_AWS_Sites_ALL
August 2012 Sam Batzli SSEC
University of Wisconsin-Madison
National Science Foundation ANT-0944018

White Island

The station was installed, and had minor issues with the power system that required a second visit. Later the ADG failed, and wasn't repairable during the third visit.

Heights:

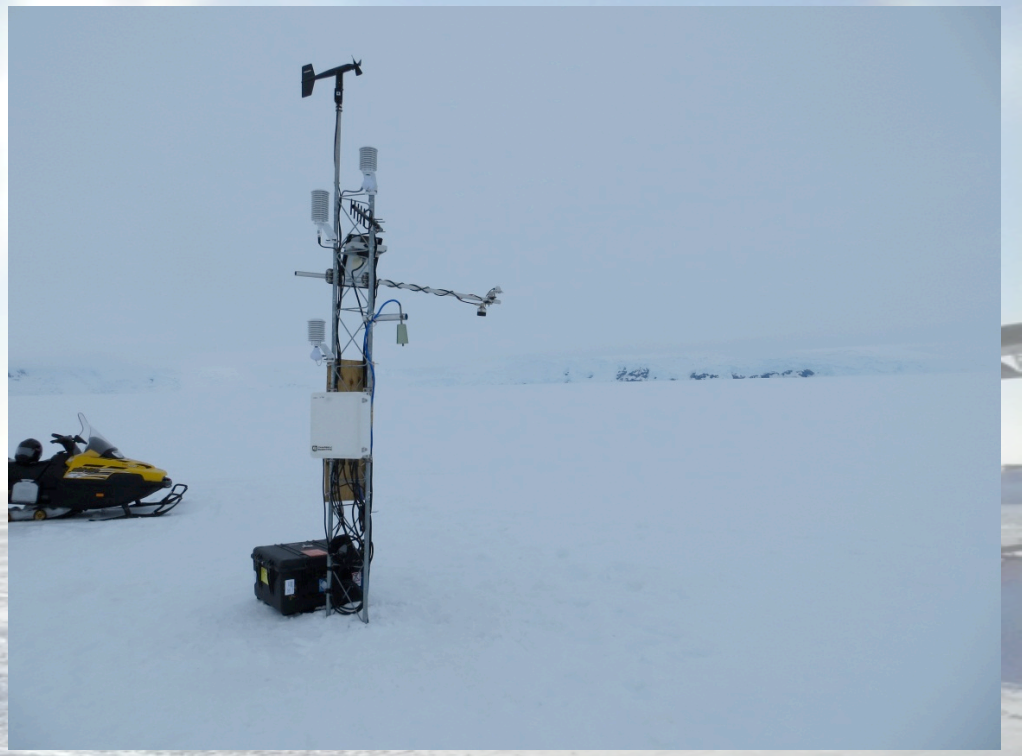
- ADG: 99"
- Humidity: 99"
- Enclosure: 45"
- Lower temperature: 90"
- Upper temperature: 231"
- Wind: 253"

Ferrell

After a few years overlap the old station has been removed

Windless Bight

Station converted to a new CR1000 Freewave station transmitting through White Island

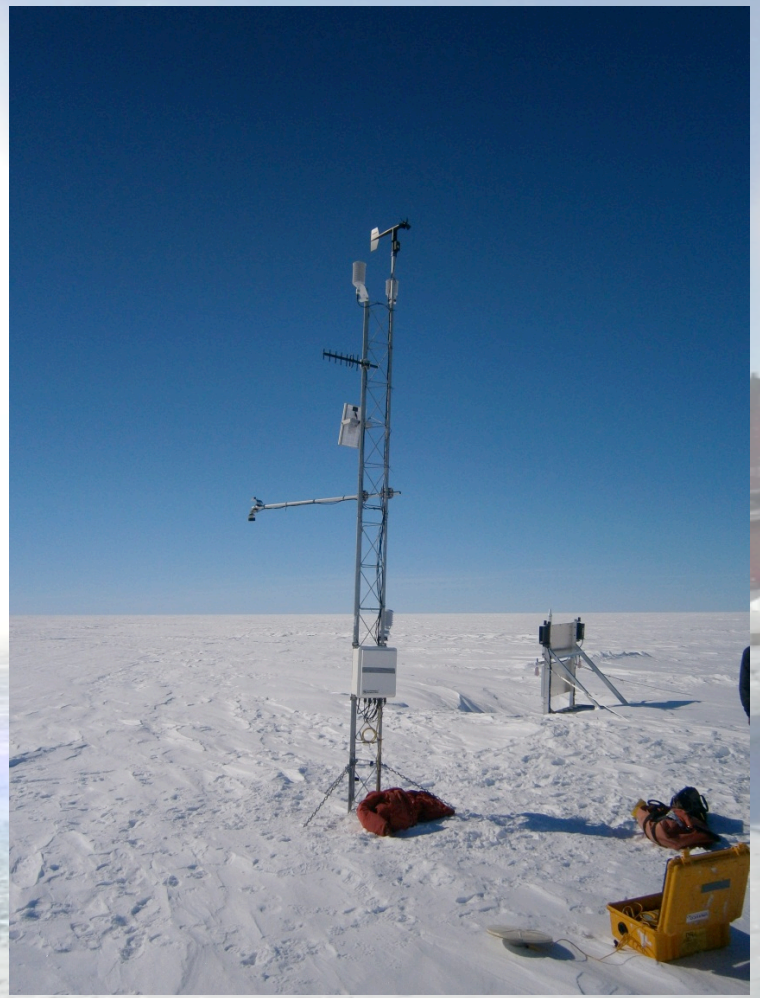


- Final Heights:
- ADG: 25”
- Humidity: 36”
- Enclosure: 44”
- Lower temperature: snow temperature
- Upper temperature: 94”
- Wind: 118”

Lorne

Converted to Freewave station, had a few issues with Freewave modem resulting in multiple visits

- Heights:
- Box: 41”
- Lower temperature: 65”
- Pyranometer/ADG boom: 115”
- Upper temperature: 196”
- Humidity: 192”
- Wind: 212”



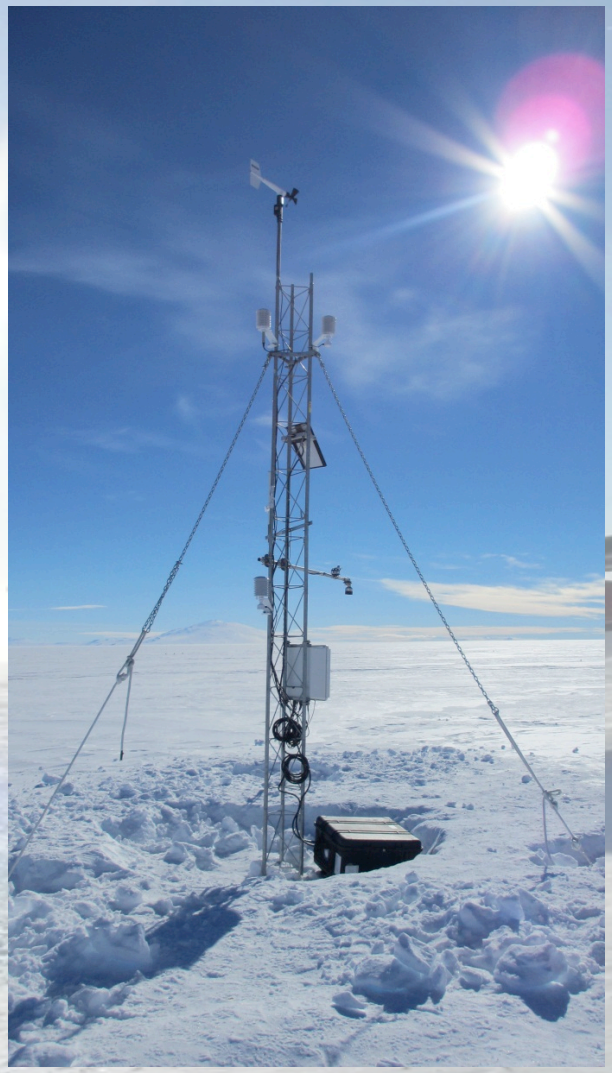
Minna Bluff

Wind direction sensor failed. Initial attempts to repair it failed resulting in a second visit late in the season when parts arrived

Janet

Station raised fully, batteries replaced

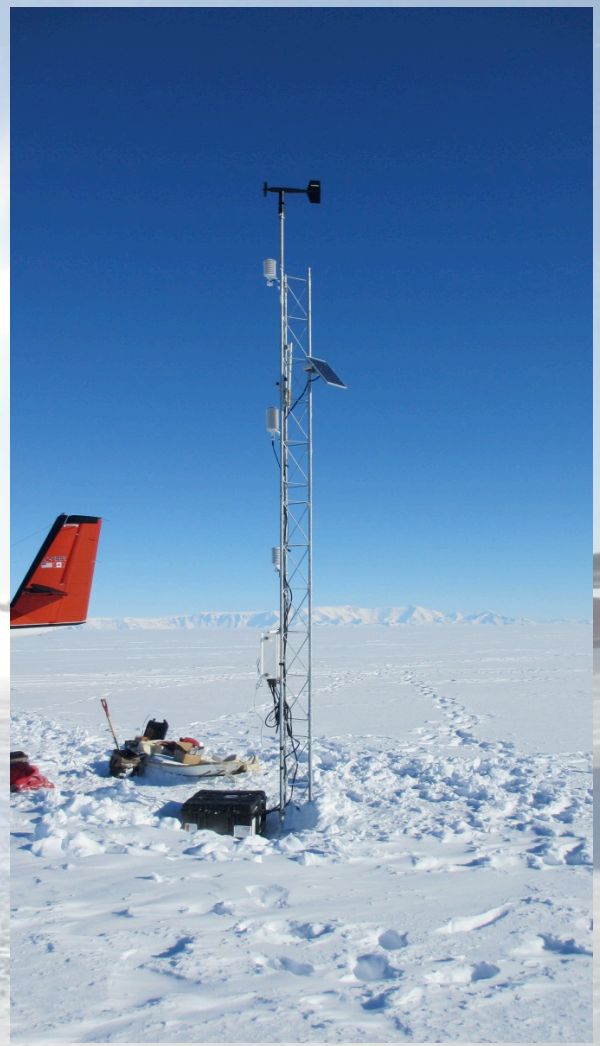
- Heights:
- Box: 20”
- HMP: 70”
- ADG: 113”
- Wind: 127”
- Temperature: 135”



Erin

Station replaced with CR1000

- Heights:
- Box: 53”
- HMP: 139”
- Wind: 221”
- Temperature: 199”
- Low Temperature: 85”



Kominko-Slade

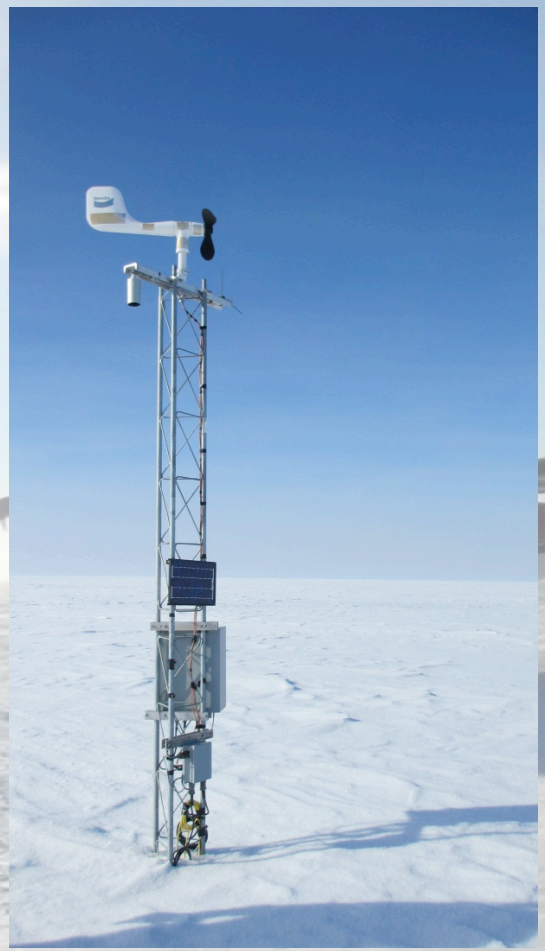
Data Card collected

- Heights:
- Lower Enclosure: 27”
- Upper Enclosure: 53”
- HMP: 196”
- ADG/Radiation boom: 98”
- Wind: 213”
- High Temperature: 197”
- Low Temperature: 111”

Schwerdtfeger

Converted to CR1000 station.

- Heights:
- Enclosure: 49”
- Lower Temperature: 78”
- HMP: 111”
- ADG/pyronometer boom: 95”
- Wind: 160”
- High Temperature: 141”



Marilyn

Replaced aerovane and sensors

- Height of boom 98”

Alexander Tall Tower!

Raised lower instrumentation and unsuccessfully converted to Iridium. Checked the tower and instrumentation

- Heights:
- Lowest wind/temp: 42”
- Second wind/temp: 55”

Willie Field

Replaced CR1000 electronics as they were failing and sent electronics back in to Campbell Scientific for repair

Issues

- Various work pushed back to next season
  - Lettau
  - Finish Marilyn
  - Repair Tall Tower
  - Etc.

Acknowledgements

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