

Antarctic Automatic Weather Stations  
Field Report for 1997-1998

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The National Science Foundation's Office of Polar Programs funds the placement of automatic weather station (AWS) units in remote areas in Antarctica in support of meteorological research, applications and operations. The basic AWS units measure air temperature, wind speed and direction at a nominal height of 3 meters above the surface. Air pressure is measured at the height of the electronic's enclosure. Some units measure relative humidity at 3 meters above the surface and the air temperature difference between .5 and 3 meters above the surface at the time of installation. The data are collected by the ARGOS Data Collection System (DCS) on board the National Oceanic and Atmospheric Administration (NOAA) series of polar-orbiting satellites.

The AWS units are located in arrays for specific proposals and at other sites for operational purposes. Any one AWS may support several experiments and all support operational meteorological services - especially support for weather forecasts for aircraft flights.

Research areas supported include:

1. Barrier wind flow along the Antarctic Peninsula and the Transantarctic Mountains.
2. Katabatic wind flow down the Reeves, Byrd and Beardmore Glaciers, the Siple and Adelie Coast.
3. Mesoscale circulation and sensible and latent heat fluxes on the Ross Ice Shelf.
4. Climatology of Byrd and Dome C sites.
5. Meteorological support around the South Pole.
6. Meteorological support for the West Antarctic Ice Sheet Initiative and the International Trans-Antarctic Scientific Expedition.
7. Long Term Ecological Research (LTER) along the Antarctic Peninsula.
8. Meteorological support for flight operations at McMurdo Station.

Table 1 gives the site name, ARGOS identification number (ID), location, start date for the site, and the World Meteorological Organization (WMO) number for the Global Telecommunications System (GTS) if the site is used in the GTS. Figure 1 shows the locations of the sites on a map of Antarctica. Table 2 lists the sites in the order of the ARGOS ID and Figure 2 gives the ARGOS ID for the sites. Table 3 lists the sites that have WMO numbers in the order of the WMO numbers and Figure 3 shows the WMO numbers for the sites. Figures 4, Ross Island area; Figure 5, Ross Sea, Ross Ice Shelf, and West Antarctica; Figure 6, Adelie Coast; and Figure 7, Antarctic Peninsula; show the AWS sites in areas where the sites are close together.

Field work completed for 1997-1998

A. McMurdo based operations:

For the 1997-1998 field season, our field team consisted of Robert E. Holmes from the University of Wisconsin and John Cassano from the University of Wyoming. Mr. Cassano had made two trips to Antarctic while a graduate student at the University of Wisconsin. Of 11 planned site visits from McMurdo, eight were completed. Lettau site was not visited and the two new installations at Cape Crozier and Cape Bird were cancelled until the next field season.

The following sites were visited by a member of the field team.

Site	ARGOS ID	Service performed at site
Lynn	8935	AWS 8935 removed for use elsewhere.
Pegasus North	8927	Replace sensor boom, RM Young, batteries.
Minna Bluff	#21360	New AWS installed with high wind speed unit.
Linda	#8919	Replaced electronics, aerovane, batteries.
Willie Field	8901	CR10 for ADG removed for upgrading.
Schwerdtfeger	8913	Replaced aerovane.
Gill	8911	Replaced aerovane.
Elaine	8915	Replaced aerovane.

# New ARGOS ID's for 1998

The locations of the sites are shown in Figure 4 and 5.

B. Field work based in West Antarctica

No field work was done there this year. Bad weather prevented the field team from getting to West Antarctica.

C. Field work from the icebreaker:

No field work was done from the icebreaker during the 1998-1999 field season.

D. Field work in Adelie Land:

The following AWS sites were visited by the Institut Francais Pour la Recherche et la Technologie Polaires (IFRTP) at Dumont D'Urville.

Site	ARGOS ID	Service performed at the site
Cape Denison	8907	M/S Astrolabe visits but weather prevents a landing.
Port Martin	8930	M/S Astrolabe visits finds that the tower is broken and a complete new station is needed.
D-10	#8914	AWS 8914 is installed, tower raised
D-47	8986	AWS 8986 is reinstalled, tower raised

Time constraints prevented installation of new AWS units at D-57 and D-80. Figure 1 and 6 show the locations of the above sites.

E. Field work by the Japanese Antarctic Research Expedition at Dome Fuji:

An attempt to redeploy AWS 8982 from Dome Fuji to another site resulted in damage to the electronics. The AWS is to be returned to Madison for repair and upgrading to the RM Young wind system.

F. Field work accomplished by the British Antarctic Survey: The sites are shown in Figure 7.

Site	ARGOS ID	Service performed at site
Butler Island	8902	Raised one tower section
Larsen Ice Shelf	8926	Raised tower, location now 17 km from ice edge
Limbert	8925	Raised two sections, antenna replaced
Ski High	8917	Replace batteries
Uranus Glacier	8920	Tower raised one section.

G. Service performed by Long Term Ecological Research group and Palmer Station personnel:

Site	ARGOS ID	Service performed at site
Hugo Island	8923	Electronics repaired.

The location of the site is shown in Figure 7.

The following sites support specific principal investigators funded by NSF-OPP other than the authors.

Dr. Gerd Wendler, Katabatic Winds: D-10, D-47, D-57, D-80, Dome C II, Port Martin, Cape Denison, Penguin Point, Sutton, and Cape Webb.

Dr. David Bromwich, Siple Coast Katabatic Winds: Byrd Station, Brianna, Elizabeth, J.C., Erin, Harry, Theresa, Doug, and Swithinbank.

Dr. Ray Smith, Long Term Ecological Research: Racer Rock, Bonaparte Point, and Santa Claus Island.

Dr. David Bromwich, Research on Ocean-Atmosphere Variability and Ecosystem Response in the Ross Sea: Marble Point, Whitlock, Manuela, Scott Island, Young Island, Possession Island.

Dr. David Bromwich, The Antarctic First Regional Observing Study of the Troposphere: All the OPP Antarctic AWS sites were used.

Dr. David Braaten, Snow Accumulation Dynamics at Low Wind and Moderate Katabatic Wind Locations in Antarctica: Willie Field with acoustic depth gauge, Ferrell, and Marilyn.

West Antarctic Ice Sheet Initiative and International Trans Antarctic Scientific Expedition: Siple Dome and a site to be installed in 1997/8 field season. Siple Dome and the new site will be equipped with snow temperature profiles and acoustic depth gauges for snow accumulation with time.

Drs. Neff and Carroll, Observational and Model Studies of Episodic Events in the South Polar Atmospheric Boundary Layer: Henry, Nico, Clean Air, and two other sites that were moved when the observation program was completed.

Aircraft Operation: All AWS sites in Antarctic.

The Antarctic AWS units are supporting many investigators outside of NSF-OPP.

Plans for June 1, 1998 through July 31, 1999

A. AWS Operations based from McMurdo:

1. Installations

The AWS sites in the table below are planned for installation during the 1998-1999 Antarctic field season. Cape Crozier, Ross Ice Shelf, and Cape Bird will be in support of Dr. David Bromwich et al., Research on Ocean-Atmosphere

Variability and Ecosystem Response in the Ross Sea (ROAVERRS). The three sites will also support aircraft operations in the McMurdo area. The West Antarctic Dome site will be in support of the West Antarctic Ice Sheet Initiative (WAISI) and the International Trans Antarctic Scientific Expedition (ITASE).

AWS units planned for installation during the 1998-1999 field season.

Site	Lat.	Lon.	Support area
Cape Crozier	77.55°S	170.82°E	ROAVERRS
Ross Ice Shelf	77.80°S	180.00°	ROAVERRS
Cape Bird	77.20°S	166.70°E	ROAVERRS
Byrd Névé	80.50°S	152.00°E	RIS
Roosevelt Island	78.??°S	160.??°W	WAISI/RIS
West Ant. Dome	77.33°S	116.33°W	WAISI

## 2. AWS servicing

- a. Lettau site will be visited with a new electronics and updating with a new RM Young wind system.

Other sites to be service as necessary.

## B. AWS operations from the icebreaker:

1. The following AWS sites will be visited for upgrading to high wind speed and direction units from HydroTech Inc.

Site	ARGOS ID	Lat.	Lon.	Alt. m
Port Martin	8930	66.82°S	141.40°E	39
Cape Denison	8907	67.009°S	142.664°E	31
Penguin Point	8929	67.617°S	146.180°E	30
Sutton	8939	67.08°S	141.37°E	871
Cape Webb	8933	67.934°S	146.824°E	37

The locations of the sites are shown in Figure 6.

## C. AWS operations from West Antarctica:

1. The following AWS sites will be serviced as necessary.

Site	ARGOS ID	LAT	LONG	ELEV (M)
Byrd Station	8903	80.007°S	119.404°W	1530
Brianna	21362	83.887°S	134.145°W	549
Elizabeth	21361	82.606°S	137.082°W	549
J.C.	21357	85.070°S	135.516°W	549
Erin	21363	84.901°S	128.810°W	1005
Harry	21355	83.003°S	121.393°W	945
Theresa	21358	84.599°S	115.811°W	1460
Doug	8922	82.315°S	113.240°W	1433
Mount Siple	8981	73.198°S	127.052°W	230
Siple Dome	8900	81.656°S	148.773°W	620
Swithinbank	21356	81.200°S	126.174°W	945



D. Tentative field work by the Institut Francais Pour la Recherche et la Technologie Polaires (IFRTP) at Dumont D'Urville:

1. Two installations are planned with other sites to be serviced as necessary.

AWS Site	ARGOS ID	Lat. (deg)	Long. (deg)	Alt (m)
D-10	#8914	66.71°S	139.83°E	243
D-47	8986	67.397°S	138.726°E	1560
D-57 Install	AWS 8912	68.199°S	137.538°E	2105
D-80 Install	AWS 8916	70.040°S	134.878°E	2500
Dome C II	8989	75.121°S	123.374°E	3250

E. Tentative Field work by the Japanese Antarctic Expedition from Dome Fuji:

1. AWS 8982 to be installed at new location.
2. AWS units at Relay Station and Dome Fuji to be serviced.

F. AWS field work to be done by the British Antarctic Survey at Rothera Station:

1. Retrieval of AWS 8932 from AGO-A84 site?
2. Possible Installation of AWS at Thurston Island ~72S, 103W

G. AWS operations based at Palmer Station

1. Provide spare AWS for LTER (or new site)
2. Retrieve AWS 8947 from Racer Rock?

H. AWS Operations over the next three year grant cycle.

1. West Antarctica sector

The plans are to install 6 additional AWS units at sites in West Antarctica and around Dome Fuji during the three years of this proposal. After 2 years of good data from the array of 8 AWS sites on the Siple Coast, 4 to 5 of the AWS units will be removed and reinstalled at other sites in West Antarctica in support of WAISI and ITASE. The selection of the sites to remain on the Siple Coast will depend upon their value for research and forecasting events related to aircraft operations. At present the sites most likely sites to remain are Theresa, J.C., and Elizabeth.

The region of the Earth from the South Pole to 30°S along 85°W then to 175°W then to the South Pole remains the largest meteorological void for surface observations by manned stations. A dog house AWS unit should be installed on Peter I island (69°S, 91°E) to provide pressure and temperature data. Past experience has shown that wind systems on islands like Peter I will last only a few weeks. The dog house AWS has the batteries, AWS electronics and pressure gauge, and antenna located inside a small dog house that weighs about 300 kg. The dog house can be carried as a sling load by the Coast Guard helicopters and deposited at locations where the helicopter cannot land. Dog house AWS units are currently installed at Young, Possession, and Scott Islands and at Mt. Siple. The batteries will operate the unit for several years and a solar panel is installed to charge the batteries. The installation at Peter I island is dependent on the availability of the Coast Guard helicopter to make the installation. The dog house AWS box is at

McMurdo, Antarctica waiting for the opportunity.

An AWS located near Pine Island Bay unit could be either a dog house or a conventional AWS unit. The choice will depend upon conditions at Pine Island Bay such as the annual snow accumulation, the build up of ice or hoar on objects, and the softness of the snow. From sequences of satellite images (Stearns, et al., 1997a) it is known that synoptic systems frequently move into West Antarctica from the north along 120°W and may bring sufficient moisture to cause icing of wind systems in the Pine Island Bay area. An AWS unit with a wind system would be installed when an established camp is the area and a suitable site for the AWS has been found.

Meteorological support for WAISI (Bindschadler, 1996) and ITASE (Mayewski, 1996) in West Antarctica begins in the 1997/98 field season with the installation of an AWS unit at a possible ice core drilling site at West Antarctic Dome, Table 1, Figure 2. Four additional sites would be approximately 100 km N, E, S, and W of the West Antarctic Dome site. The sites selected should reflect observed accumulation differences in the snow pits around the dome. The differences in annual snow accumulation may reflect differences in the wind fields and associated moisture advection at each site. The Greenland Crest showed significant differences in the wind field around the crest (Stearns et al., 1997b). The monthly resultant wind direction on the west side of the Greenland Crest was from the south and along the contours while on the east side of the crest the monthly resultant wind direction was from the northwest and across the contours downslope. The annual resultant wind direction at Byrd Station is from the north while the Siple Station annual resultant wind direction is from the south. The three AWS sites around South Pole show annual resultant wind directions along 120°W to 150°W essentially towards Byrd Station. There are significant differences in the annual resultant wind direction over distance of approximately 1000 km. Sufficient AWS units need to be installed in West Antarctica to determine the areas where the wind regimes change. The traverses planned by ITASE may provide information where additional AWS units should be located.

#### 2. AWS proposed for Queen Maud Land

The similar arrangement of sites is planned for Dome Fuji. An AWS unit at the crest and four other AWS units approximately 100 km away from the crest. These will provide meteorological data in support of ice coring at Dome Fuji.

#### 3. AWS in support of LTER at Palmer Station

Data from the AWS units installed at Bonaparte Point, Santa Claus Island, and Racer Rock are being used by the LTER Program with Dr. Ray Smith as one of the PIs. These units are subject to considerable damage by salt water as the AWS units were designed for cold dry locations. We will continue to upgrade the units within our available resources to withstand the effects of salt spray on the structures and equipment. Replacement equipment will be sent to Palmer Station so that any necessary repairs can be made using the research vessels or other means to reach the 3 AWS sites.

#### 4. Other Requests

An AWS unit has been requested by NSF-OPP through Pat Smith for installation at Black Island in support of air operations at McMurdo, Antarctica. The AWS unit should be equipped with a high wind speed system and should be collected in real time at McMurdo using an ARGOS receiver, antenna,

and computer to process the information.

#### DATA AVAILABILITY

The data from our Automatic Weather Stations are available by anonymous FTP. The IP number is 144.92.108.169 (uwaaws.ssec.wisc.edu). The login is "anonymous" (do not use the quotation marks), and the password is your email address. Once you have logged in, change to the pub subdirectory. A listing of our station locations, names, and ARGOS ID numbers is located in the file "biglist" in this subdirectory. It is meant to serve as a guide to our stations as their ID numbers sometimes change. A complete guide for navigating the site may be found in the file "readme.faq".

Our three-hourly interval data for Antarctica are contained in the year subdirectories of pub/antrdr. The data have been corrected, i.e. an effort has been made to remove the bad data points. These data take longer to process, so the data for recent months are not available. Within each of the year subdirectories of pub/antrdr, there are text files named "3hrlist??" (where ?? indicates the last two digits of the year). These files list what station's data are contained in which files. The file "readme.aupdates" in pub/antrdr contains information on updates and/or corrections to the data, and the file "readme.3format" contains file name construction information and format of the three-hourly data. The file "readme.mailinglist" contains information on joining a mailing list which distributes information on data updates and changes.

The directory pub/summary contains printable text files of the paper data summary sheets. The format of the files can be found in the file "readme.sum" while updates and corrections to the data are located in "readme.sumupdates". The data are located in year subdirectories of pub/summary.

For those users who need more current information, we have created 10 minute interval data for each station. These data are located in year subdirectories of pub/10min/rdr. The data have been calibrated for the individual station instruments, but no other corrections have been made. The data are generally available up to and including the last full month of this year. The year subdirectories also contain a text file named "namelist??" (where ?? indicates the last two digits of the year in question). These files list specifically what station's data are contained in which files.

Several important readme files are located in pub/10min/rdr. The file "readme.10min" contains basic information about the data and the compressed archives of ten-minute data, located in pub/10min/rdr/months. The file "readme.5digit" contains information on the Siple Coast stations which have a different station identification. The file "readme.format" contains information on filename construction of the data, as well as file content and is a must for those unfamiliar with the data. The file "readme.updates" contains important information on changes/additions to the data.

Our site is available 24 hours a day, 7 days a week. If you have questions or problems, send email to Matt at front242@uwaaws.ssec.wisc.edu. We can also be reached by phone at (608) 265-4816 or fax at (608) 263-6738. By mail, please contact:

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Table 1. The 1998 Antarctic automatic weather station site name, ARGOS identification number, latitude, longitude, altitude above sea level, site start date and WMO number for the Global Telecommunications System. Sites with three digits after the decimal point in the latitude and longitude were located using the ARGOS positions for a three day period, aircraft GPS, or hand held GPS.

Site	ARGOS ID	Lat. (deg)	Long. (deg)	Alt. (m)	Date Start	WMO#
<b>Adelie Coast</b>						
D-10	#8914	66.71°S	139.83°E	243	Jan 80	89832
D-47	#8986	67.397°S	138.726°E	1560	Nov 82	89834
D-57		68.199°S	137.538°E	2105	Jan 96	
D-80		70.040°S	134.878°E	2500	Jan 83	89836
Dome C II	8989	75.121°S	123.374°E	3250	Dec 95	89828
Port Martin	8930	66.82°S	141.40°E	39	Jan 90	
Cape Denison	8907	67.009°S	142.664°E	31	Jan 90	
Penguin Point	8929	67.617°S	146.180°E	30	Dec 93	89847
Sutton	8939	67.08°S	141.37°E	871	Dec 94	
Cape Webb	8933	67.934°S	146.824°E	37	Dec 94	
<b>West Antarctica</b>						
Byrd Station	8903	80.007°S	119.404°W	1530	Feb 80	89324
Brianna	21362	83.887°S	134.145°W	549	Nov 94	
Elizabeth	21361	82.606°S	137.082°W	549	Nov 94	89332
J.C.	21357	85.070°S	135.516°W	549	Nov 94	
Erin	21363	84.901°S	128.810°W	1006	Nov 94	
Harry	21355	83.003°S	121.393°W	945	Nov 94	
Theresa	21358	84.599°S	115.811°W	1463	Nov 94	89314
Doug	8922	82.315°S	113.240°W	1433	Nov 94	
Mount Siple	8981	73.198°S	127.052°W	230	Feb 92	89327
Siple Dome	8900	81.656°S	148.773°W	620	Jan 97	89345
Swithinbank	21356	81.200°S	126.174°W	945	Jan 97	
<b>Ross Island Region</b>						
Marble Point	8906	77.439°S	163.759°E	120	Feb 80	89866
Ferrell	8934	77.928°S	170.820°E	45	Dec 80	89872
Pegasus North	8927	77.952°S	166.505°E	10	Jan 90	89667
Pegasus South	8937	77.990°S	166.576°E	10	Jan 91	
Minna Bluff	#21360	78.554°S	166.656°E	920	Jan 91	89768
Linda	#8919	78.480°S	168.375°E	50	Jan 91	89769
Willie Field	8901	77.865°S	167.017°E	40	Jan 92	
<b>Ocean Islands</b>						
Whitlock	8921	76.144°S	168.392°E	274	Jan 82	89865
Scott Island	8983	67.37°S	179.97°W	30	Dec 87	89371
Young Island	8980	66.229°S	162.275°E	30	Jan 91	89660
Possession Is.	8984	71.891°S	171.210°E	30	Dec 92	89879
Manuela	8905	74.946°S	163.687°E	80	Feb 84	89864
<b>Ross Ice Shelf</b>						
Marilyn	8931	79.954°S	165.130°E	75	Jan 84	89869
Schwerdtfeger	8913	79.904°S	169.973°E	60	Jan 85	89868
Gill	8911	79.985°S	178.611°W	55	Jan 85	89376
Elaine	8915	83.134°S	174.169°E	60	Jan 86	89873
Lettau	8908	82.518°S	174.452°W	55	Jan 86	89377
<b>Antarctic Peninsula</b>						
Larsen Ice	8926	66.949°S	60.914°W	17	Oct 85	89262
Butler Island	8902	72.207°S	60.171°W	91	Mar 86	89266
Uranus	8920	71.43°S	68.93°W	780	Mar 86	89264
Limbert	8925	75.422°S	59.948°W	40	Dec 95	89257
Racer Rock	8947	64.067°S	61.613°W	17	Nov 89	89261
Bonaparte Point	8923	64.778°S	64.067°W	8	Jan 92	89269
AGO-A84	8932	84.36°S	23.86°W	2103	Jan 96	
Ski-Hi	8917	74.975°S	70.766°W	1395	Feb 94	89272
Santa Claus I	21364	64.964°S	65.670°W	25	Dec 94	
<b>High Polar Plateau</b>						
Clean Air	8987	90.00°S		2835	Jan 86	89208
Henry	8985	89.011°S	1.025°W	2755	Jan 93	89108
Nico	8924	89.000°S	89.669°E	2935	Jan 93	89799
Relay Station	8918	74.017°S	43.062°E	3353	Feb 95	89744
Dome Fuji	8982	77.31°S	39.70°E	3810	Feb 95	89734

CRS, 20 May 1998

# New ARGOS ID at the site for 1998



Table 2. The 1998 Antarctic automatic weather station site name, ARGOS identification number, latitude, longitude, altitude above sea level, site start date and WMO number for the Global Telecommunications System. Sites with three digits after the decimal point in the latitude and longitude were located using the ARGOS positions for a three day period, aircraft GPS, or hand held GPS.

Site	ARGOS ID	Lat. (deg)	Long. (deg)	Alt. (m)	Date Start	WMO#
Siple Dome	8900	81.656°S	148.773°W	620	Jan 97	89345
Willie Field	8901	77.865°S	167.017°E	40	Jan 92	
Butler Island	8902	72.207°S	60.171°W	91	Mar 86	89266
Byrd Station	8903	80.007°S	119.404°W	1530	Feb 80	89324
Dome Fuji	8904	77.31°S	39.70°E	3810	Feb 95	89734
Manuela	8905	74.946°S	163.687°E	80	Feb 84	89864
Marble Point	8906	77.439°S	163.759°E	120	Feb 80	89866
Cape Denison	8907	67.009°S	142.664°E	31	Jan 90	
Lettau	8908	82.518°S	174.452°W	55	Jan 86	89377
	8909					
	8910					
Gill	8911	79.985°S	178.611°W	55	Jan 85	89376
	8912					
Schwerdtfeger	8913	79.904°S	169.973°E	60	Jan 85	89868
D-10	#8914	66.71°S	139.83°E	243	Jan 80	89832
Elaine	8915	83.134°S	174.169°E	60	Jan 86	89873
	8916					
Ski-Hi	8917	74.975°S	70.766°W	1395	Feb 94	89272
Relay Station	8918	74.017°S	43.062°E	3353	Feb 95	89744
Linda	8919	78.480°S	168.375°E	50	Jan 91	89769
Uranus	8920	71.43°S	68.93°W	780	Mar 86	89264
Whitlock	8921	76.144°S	168.392°E	274	Jan 82	89865
Doug	8922	82.315°S	113.240°W	1433	Nov 94	
Bonaparte Point	8923	64.778°S	64.067°W	8	Jan 92	89269
Nico	8924	89.000°S	89.669°E	2935	Jan 93	89799
Limbirt	8925	75.422°S	59.948°W	40	Dec 95	89257
Larsen Ice	8926	66.949°S	60.914°W	17	Oct 85	89262
Pegasus North	8927	77.952°S	166.505°E	10	Jan 90	89667
	8928					
Penguin Point	8929	67.617°S	146.180°E	30	Dec 93	89847
Port Martin	8930	66.82°S	141.40°E	39	Jan 90	
Marilyn	8931	79.954°S	165.130°E	75	Jan 84	89869
AGO-A84	8932	84.36°S	23.86°W	2103	Jan 96	
Cape Webb	8933	67.934°S	146.824°E	37	Dec 94	
Ferrell	8934	77.928°S	170.820°E	45	Dec 80	89872
	8935					
	8936					
Pegasus South	8937	77.990°S	166.576°E	10	Jan 91	
	8938					
Sutton	8939	67.08°S	141.37°E	871	Dec 94	
Racer Rock	8947	64.067°S	61.613°W	17	Nov 89	89261
Young Island	8980	66.229°S	162.275°E	30	Jan 91	89660
Mount Siple	8981	73.198°S	127.052°W	230	Feb 92	89327
Dome Fuji	8982	77.31°S	39.70°E	3810	Feb 95	89734
Scott Island	8983	67.37°S	179.97°W	30	Dec 87	89371
Possession Is.	8984	71.891°S	171.210°E	30	Dec 92	89879
Henry	8985	89.011°S	1.025°W	2755	Jan 93	89108
D-47	#8986	67.397°S	138.726°E	1560	Nov 82	89834
Clean Air	8987	90.00°S		2835	Jan 86	89208
	8988					
Dome C II	8989	75.121°S	123.374°E	3250	Dec 95	89828
Harry	21355	83.003°S	121.393°W	945	Nov 94	
Swithinbank	21356	81.200°S	126.174°W	945	Jan 97	
J.C.	21357	85.070°S	135.516°W	549	Nov 94	
Theresa	21358	84.599°S	115.811°W	1463	Nov 94	89314
	21359					
Minna Bluff	21360	78.554°S	166.656°E	920	Jan 91	89768
Elizabeth	21361	82.606°S	137.082°W	549	Nov 94	89332
Brianna	21362	83.887°S	134.145°W	549	Nov 94	
Erin	21363	84.901°S	128.810°W	1006	Nov 94	
Santa Claus I	21364	64.964°S	65.670°W	25	Dec 94	

# New ARGOS ID at the site for 1998

CRS, 20 May 1998

Table 3. The 1998 Antarctic automatic weather station site name, ARGOS identification number, latitude, longitude, altitude above sea level, site start date and WMO number for the Global Telecommunications System in the order of the WMO number. Sites with three digits after the decimal point in the latitude and longitude were located using the ARGOS positions for a three day period, aircraft GPS, or hand held GPS.

Site	ARGOS ID	Lat. (deg)	Long. (deg)	Alt. (m)	Date Start	WMO#
Henry	8985	89.011°S	1.025°W	2755	Jan 93	89108
Clean Air	8987	90.00°S		2835	Jan 86	89208
Limbart	8925	75.422°S	59.948°W	40	Dec 95	89257
Racer Rock	8947	64.067°S	61.613°W	17	Nov 89	89261
Larsen Ice	8926	66.949°S	60.914°W	17	Oct 85	89262
Uranus	8920	71.43°S	68.93°W	780	Mar 86	89264
Butler Island	8902	72.207°S	60.171°W	91	Mar 86	89266
Bonaparte Point	8923	64.778°S	64.067°W	8	Jan 92	89269
Ski-Hi	8917	74.975°S	70.766°W	1395	Feb 94	89272
Theresa	21358	84.599°S	115.811°W	1463	Nov 94	89314
Byrd Station	8903	80.007°S	119.404°W	1530	Feb 80	89324
Mount Siple	8981	73.198°S	127.052°W	230	Feb 92	89327
Elizabeth	21361	82.606°S	137.082°W	549	Nov 94	89332
Siple Dome	8900	81.656°S	148.773°W	620	Jan 97	89345
Scott Island	8983	67.37°S	179.97°W	30	Dec 87	89371
Gill	8911	79.985°S	178.611°W	55	Jan 85	89376
Lettau	8908	82.518°S	174.452°W	55	Jan 86	89377
Young Island	8980	66.229°S	162.275°E	30	Jan 91	89660
Pegasus North	8927	77.952°S	166.505°E	10	Jan 90	89667
Dome Fuji	8982	77.31°S	39.70°E	3810	Feb 95	89734
Relay Station	8918	74.017°S	43.062°E	3353	Feb 95	89744
Minna Bluff	#21360	78.554°S	166.656°E	920	Jan 91	89768
Linda	#8919	78.480°S	168.375°E	50	Jan 91	89769
Nico	8924	89.000°S	89.669°E	2935	Jan 93	89799
Dome C II	8989	75.121°S	123.374°E	3250	Dec 95	89828
D-10	#8914	66.71°S	139.83°E	243	Jan 80	89832
D-47	#8986	67.397°S	138.726°E	1560	Nov 82	89834
D-80		70.040°S	134.878°E	2500	Jan 83	89836
Penguin Point	8929	67.617°S	146.180°E	30	Dec 93	89847
Manuela	8905	74.946°S	163.687°E	80	Feb 84	89864
Whitlock	8921	76.144°S	168.392°E	274	Jan 82	89865
Marble Point	8906	77.439°S	163.759°E	120	Feb 80	89866
Schwerdtfeger	8913	79.904°S	169.973°E	60	Jan 85	89868
Marilyn	8931	79.954°S	165.130°E	75	Jan 84	89869
Ferrell	8934	77.928°S	170.820°E	45	Dec 80	89872
Elaine	8915	83.134°S	174.169°E	60	Jan 86	89873
Possession Is.	8984	71.891°S	171.210°E	30	Dec 92	89879

CRS, 20 May 1998

# New ARGOS ID at the site for 1998

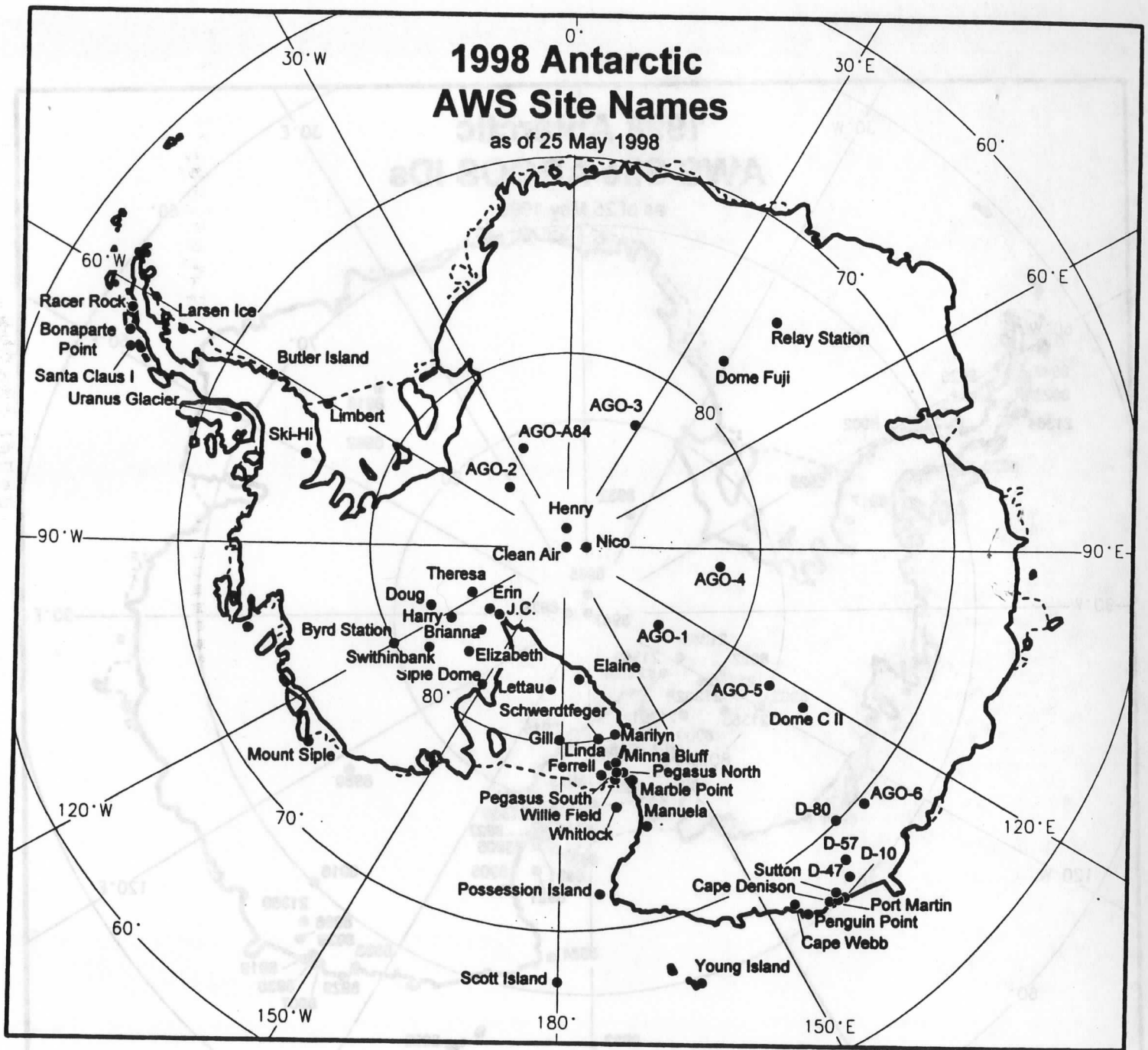


Figure 1. Map of Antarctica showing the locations of widely spaced automatic weather stations (AWS) for 1998. Identification of the sites is by the site name. The locations of the AGO sites are included but are not a part of the AWS program.

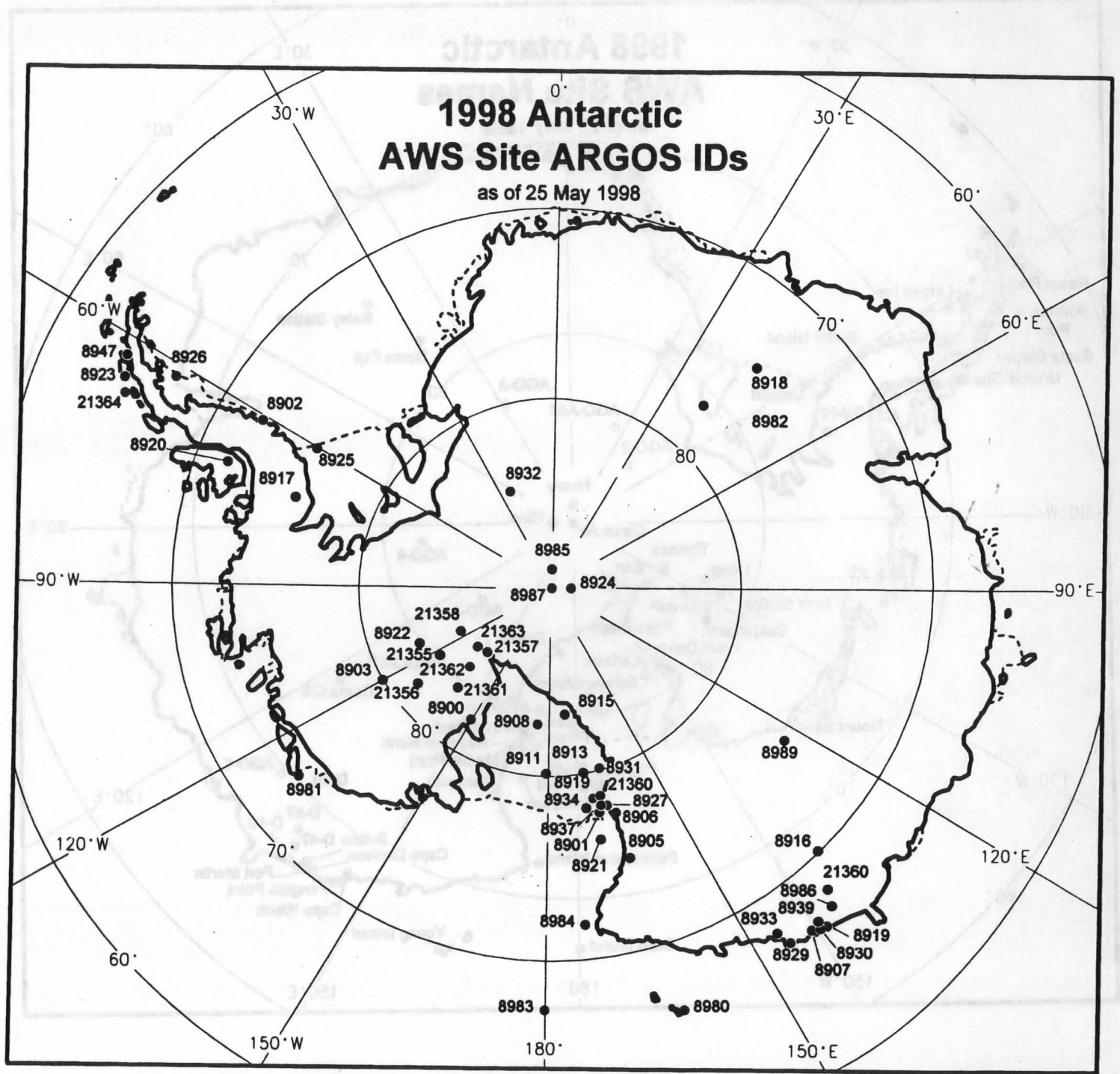


Figure 2. Antarctic AWS sites identified by the ARGOS identification number for 1998.



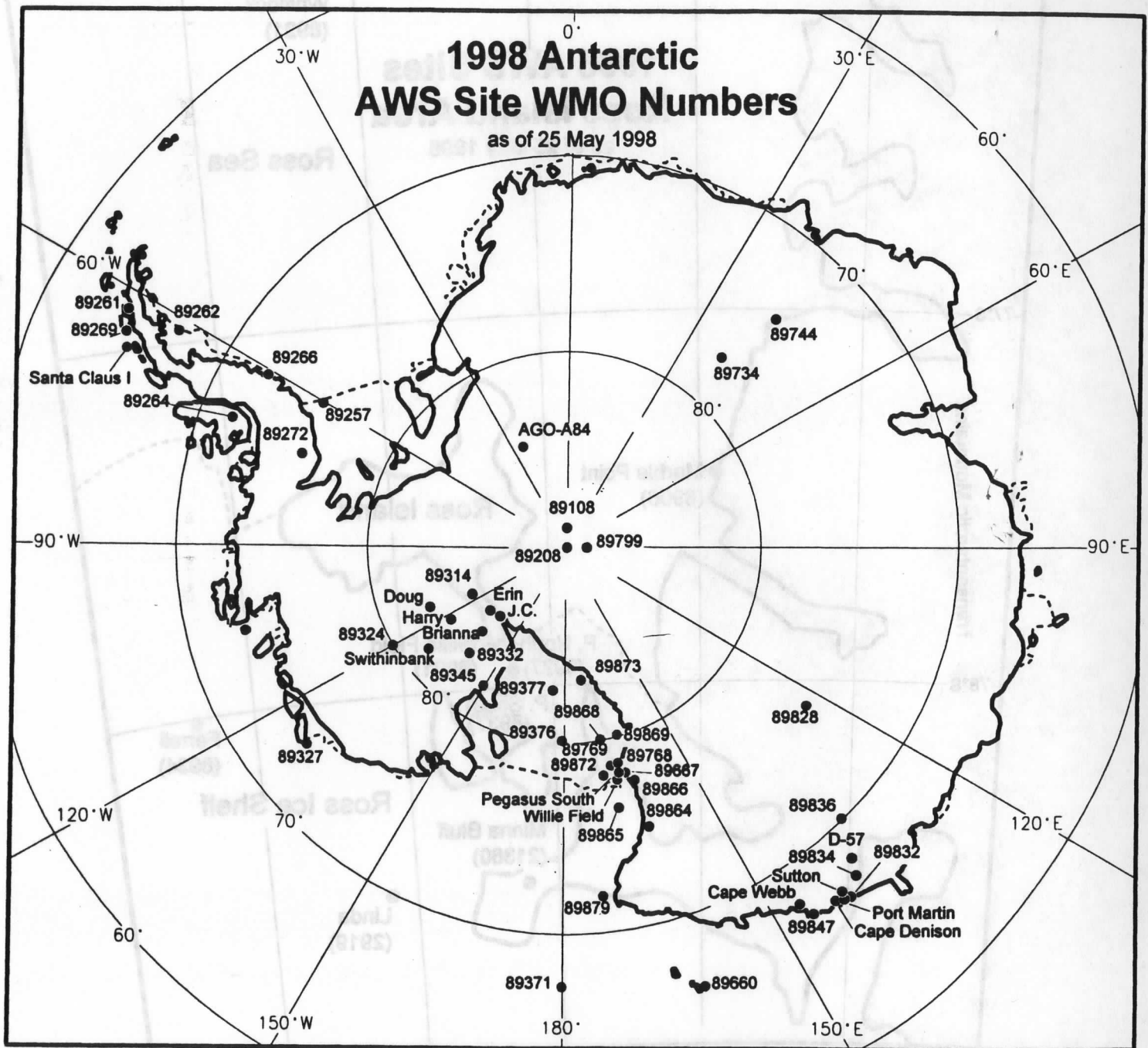


Figure 3. Antarctic AWS sites identified by the World Meteorological Organization (WMO) number for the Global Telecommunications System (GTS) for sites entering the GTS through Service ARGOS for 1998.

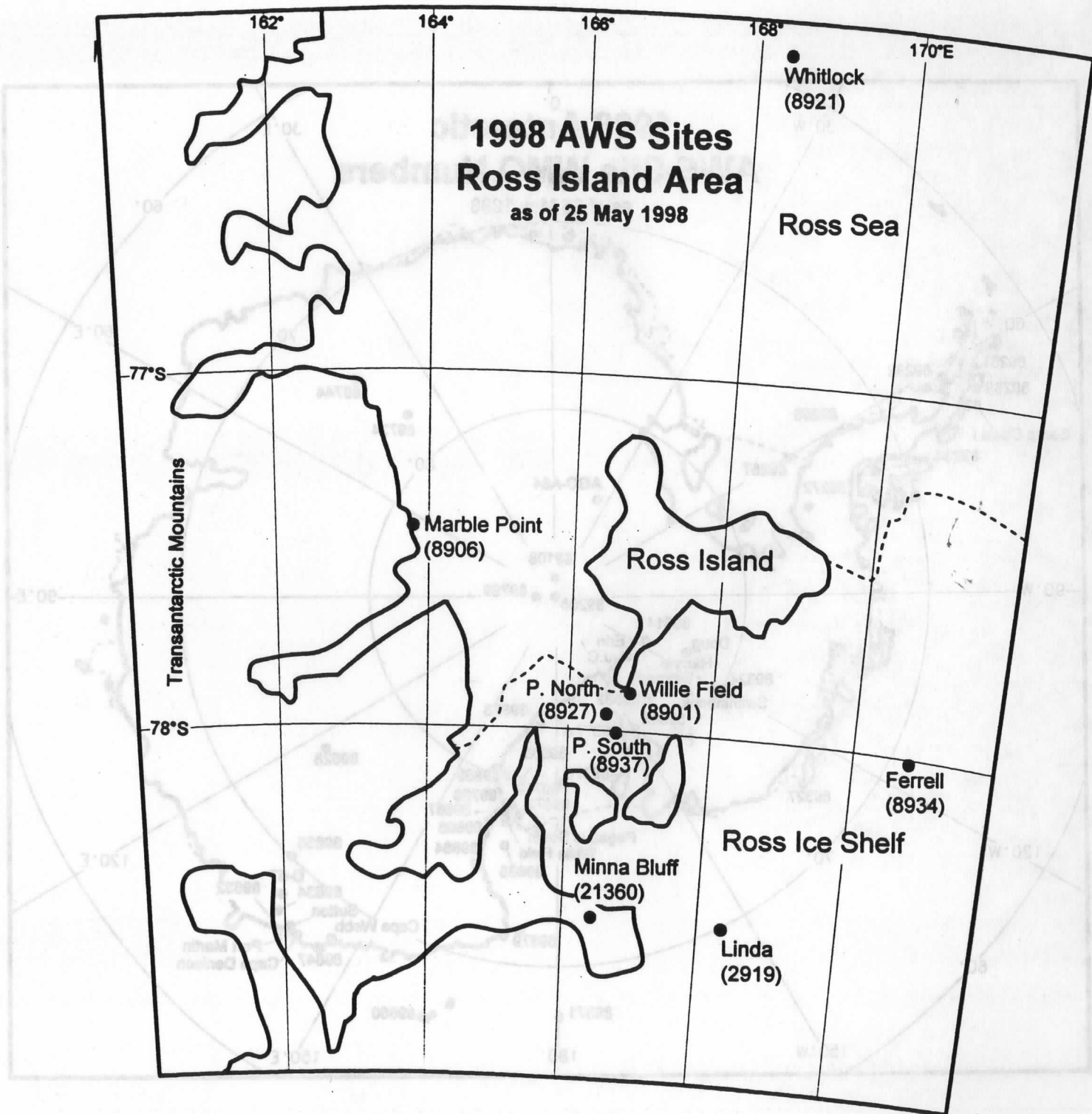


Figure 4. AWS sites in the Ross Island area identified by the site name and the ARGOS identification number in parenthesis for 1998.

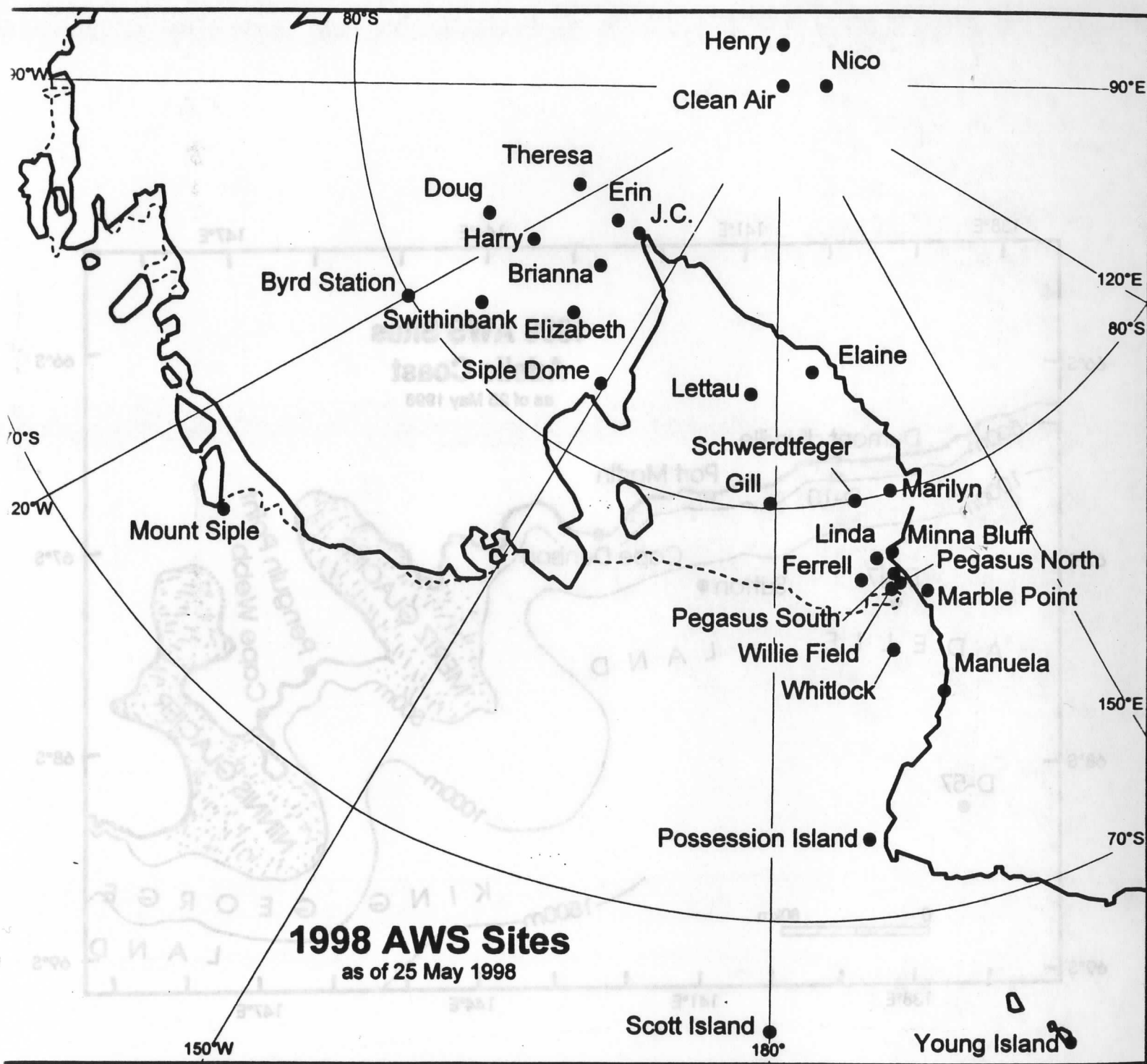


Figure 5. AWS sites in the Ross Sea, Ross Ice Shelf, and West Antarctic areas identified by the site name for 1998.

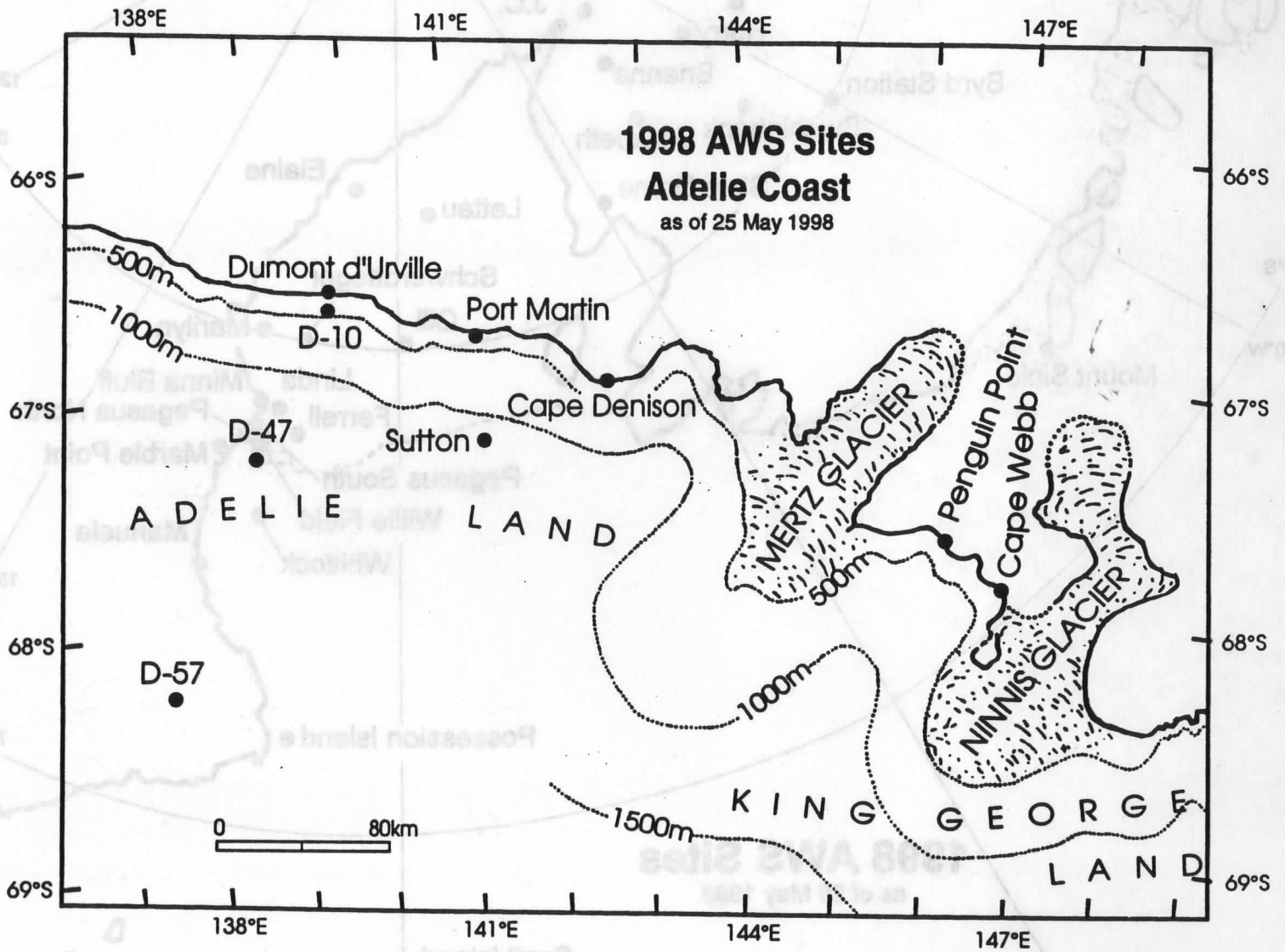


Figure 6. AWS sites for 1998 in the vicinity of the Adélie Coast, Antarctica identified by the site name.



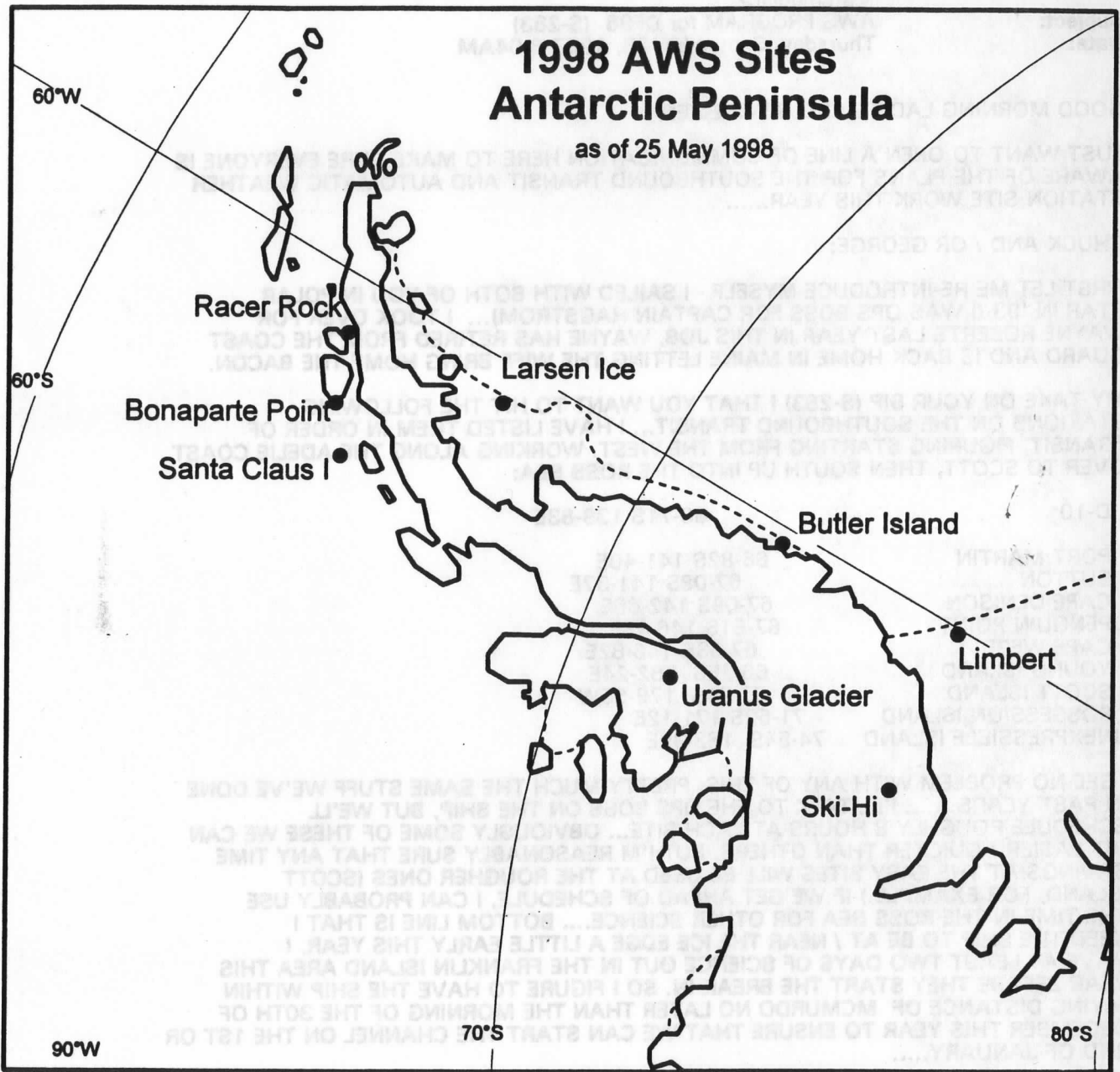


Figure 7. AWS sites for 1998 in the vicinity of the Antarctic Peninsula identified by the site name.

**GeorgeWeidner**

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**From:** Wheeler, Stephen LCDR  
**To:** 'chucks@ssec.wisc.edu'; 'georgew@ssec.wisc.edu'  
**Cc:** 'Abbott, Robin'; 'PSTARCO'; 'PSTAROPS'; McGillivray, Philip; Jackson, LCDR R  
<atcmobile>  
**Subject:** AWS PROGRAM for DF98 (S-283)  
**Date:** Thursday, September 25, 1997 8:04AM

GOOD MORNING LADIES AND GENTLEMEN -

JUST WANT TO OPEN A LINE OF COMMUNICATION HERE TO MAKE SURE EVERYONE IS AWARE OF THE PLANS FOR THE SOUTHBOUND TRANSIT AND AUTOMATIC WEATHER STATION SITE WORK THIS YEAR.....

CHUCK AND / OR GEORGE:

FIRST LET ME RE-INTRODUCE MYSELF - I SAILED WITH BOTH OF YOU IN POLAR STAR IN '93 (I WAS OPS BOSS FOR CAPTAIN HAGSTROM)... I TOOK OVER FOR WAYNE ROBERTS LAST YEAR IN THIS JOB, WAYNE HAS RETIRED FROM THE COAST GUARD AND IS BACK HOME IN MAINE LETTING THE WIFE BRING HOME THE BACON.

MY TAKE ON YOUR SIP (S-283) I THAT YOU WANT TO HIT THE FOLLOWING STATIONS ON THE SOUTHBOUND TRANSIT... I HAVE LISTED THEM IN ORDER OF TRANSIT, FIGURING STARTING FROM THE WEST, WORKING ALONG THE ADELIE COAST OVER TO SCOTT, THEN SOUTH UP INTO THE ROSS SEA:

D-10	66-71S 139-83E
PORT MARTIN	66-82S 141-40E
SUTTON	67-08S 141-37E
CAPE DENISON	67-09S 142-66E
PENGUIN POINT	67-61S 146-18E
CAPE WEBB	67-93S 146-82E
YOUNG ISLAND	66-25S 162-24E
SCOTT ISLAND	67-24S 179-55W
POSSESSION ISLAND	71-52S 171-12E
INEXPRESSIBLE ISLAND	74-54S 163-39E

I SEE NO PROBLEM WITH ANY OF THIS, PRETTY MUCH THE SAME STUFF WE'VE DONE IN PAST YEARS..... I'LL TALK TO THE OPS BOSS ON THE SHIP, BUT WE'LL SCHEDULE ROUGHLY 8 HOURS AT EACH SITE... OBVIOUSLY SOME OF THESE WE CAN HIT EASIER / QUICKER THAN OTHERS, BUT I'M REASONABLY SURE THAT ANY TIME SAVINGS AT THE EASY SITES WILL BE USED AT THE ROUGHER ONES (SCOTT ISLAND, FOR EXAMPLE.) IF WE GET AHEAD OF SCHEDULE, I CAN PROBABLY USE THE TIME IN THE ROSS SEA FOR OTHER SCIENCE.... BOTTOM LINE IS THAT I NEED THE SHIP TO BE AT / NEAR THE ICE EDGE A LITTLE EARLY THIS YEAR, I HAVE AT LEAST TWO DAYS OF SCIENCE OUT IN THE FRANKLIN ISLAND AREA THIS YEAR BEFORE THEY START THE BREAK IN. SO I FIGURE TO HAVE THE SHIP WITHIN FLYING DISTANCE OF MCMURDO NO LATER THAN THE MORNING OF THE 30TH OF DECEMBER THIS YEAR TO ENSURE THAT WE CAN START THE CHANNEL ON THE 1ST OR 2ND OF JANUARY.....

ONLY PROBLEM I SEE IN THE SIP I YOUR NEED TO WORK THE STATION AT MOUNT SIPLE.... I GUESS I NEED TO VERIFY MOUNT RUTH SIPLE AT 73-15S 126-06W... IF SO, THIS IS GOING TO BE A PROBLEM, UNLESS THERE IS SOME REASON I CAN POINT THE SHIP TOWARD THE SOUTH AMERICAN COAST FOR THE NORTHBOUND TRANSIT.... RIGHT NOW, IT LOOKS LIKE WE MIGHT HAVE SOME WORK ON THE VICTORIA COAST NORTHBOUND.... I'D ALSO LIKE TO KEEP THE SHIP TO THE WEST COAST TO CATCH ANY AWS SITES THAT WE MISS ON THE WAY DOWN. ...

SO, I DON'T KNOW IF SIPLE IS GOING TO BE DOABLE FROM THE SHIP THIS YEAR,

HAVE NO CALL TO SEND THE SHIP THAT FAR EAST. I'M THINKING THAT YOU MIGHT BE ABLE TO GET SOMEONE OVER THERE VIA AIRCRAFT, BUT DEFINITELY NOT MY BAILIWICK....

AS FAR AS RIDING THE SHIP SOUTHBOUND, YOU ARE CERTAINLY WELCOME, UNFORTUNATELY NO CLUE AT THIS POINT WHAT THE LAST PORT OF CALL WILL BE. TRYING TO GET THE SHIP INTO CHRISTCHURCH (AGAIN) THIS YEAR, BUT THAT IS STILL BEING LOOKED AT. FALL BACK WILL BE THE STANDARD AUSTRALIA PORT TO REFUEL, THEN MOST LIKELY HOBART AS THE STEPPING OFF POINT.

HELO SUPPORT WILL BE THE SAME AS LAST YEAR, LCDR RICH JACKSON WILL BE THE SENIOR AVIATOR THIS YEAR. RICH MADE THE TRIP LAST YEAR AND HAS AN EXCELLENT HANDLE ON WORKING THE AWS SITES.... (WHAT A CONCEPT - RECENT EXPERIENCE AND CONTINUITY IN THE COAST GUARD RANKS....)

ROBIN: ANY THOUGHTS ABOUT GETTING AN AWS TECH OVER TO MT SIPLE?

W/R  
Steve Wheeler  
LCDR Stephen M. Wheeler  
US Coast Guard Pacific Area  
Ice Operations Section  
swheeler@d11.uscg.mil  
(510) 437-3850 (voice)  
(510) 437-3055 (fax)

**GeorgeWeidner**

**From:** Wheeler, Stephen LCDR  
**To:** 'GeorgeWeidner'  
**Cc:** 'PSTAROPS'; McGillivray, Philip  
**Subject:** RE: AWS site visits via Polar Star DF 98  
**Date:** Thursday, October 02, 1997 2:52PM

George:

Looks like a winner....

I see no problem with working any of the below stations..... I noticed you info'd Robin Abbott on your response to my message - are you aware that she went south? She's at the mcmurdo@mcmurdo.gov address....

I'll stay the primary point of contact for arranging the AWS support this year, once the icebreaker is headed down that way and we've established a reliable e-mail link, I'll hand you off to them..... Just got off the phone with the operations Officer in POLAR STAR, his only concern at this point is the work itself - are you / or someone else from UofW going to ride the ship down to do the work, or do you want to educate a few bodies on the ship and have them do it.....

Cheers  
Steve Wheeler  
LCDR Stephen M. Wheeler  
US Coast Guard Pacific Area  
Ice Operations Section  
swheeler@d11.uscg.mil  
(510) 437-3850 (voice)  
(510) 437-3055 (fax)

>-----  
>From: GeorgeWeidner[SMTP:GeorgeW@ssec.wisc.edu]  
>Sent: Thursday, October 02, 1997 9:17 AM  
>To: Wheeler, Stephen LCDR  
>Cc: Rabbot; ChuckStearns; 'GLENSMITH'  
>Subject: AWS site visits via Polar Star DF 98

>  
>  
>Here is the first update on AWS site visits via the icebreaker.

> SITE	STATUS	ACTION
>REQUIRED		
> D-10	Not active	Install AWS
> Sutton	AWS off	Service
>replace AWS		
> Pt. Maritn	AWS ok but	Install new
>batteries	batteries low	service



- >wind sensor
- >
- > Cape Denison            AWS off            Needs pressure port
- >retro
- >
- > service / replace AWS
- >
- > Penguin Pt              AWS off              service/replace
- >
- > Cape Webb               AWS off               service/relace
- >
- > AT THIS TIME NO VISITS FOR YOUNG , POSSESSION,
- >SCOTT ISLANDS NECESSARY !!!!!
- >
- > Franklin Is              AWS off              Replace
- >batteries (92)
- >
- >
- >
- > Inex Island              aws OK               Install high
- >wind speed unit
- >
- >
- >
- >I am examining the data to determine possible causes fo why
- >most Adelie Coast AWS are off!
- >
- >Next update 15 October with estimated times required at each site.
- >
- >

**GeorgeWeidner**

---

**From:** Wheeler, Stephen LCDR  
**To:** 'GeorgeW@ssec.wisc.edu'  
**Cc:** 'PSTAROPS'  
**Subject:** RE: Departure date for Polar Star  
**Date:** Friday, October 10, 1997 8:19AM

GEORGE:  
FAIRLY LATE BREAKING CHANGE: STAR WILL LEAVE SEATTLE NO EARLIER THAN 24 OCTOBER - MOST LIKELY WILL LEAVE FOR HONOLULU ON THE 25TH... THEY'LL BE IN HONO FROM (ROUGHLY) 2 NOVEMBER TO 20 NOVEMBER.....

FEEL FREE TO GIVE THE OPS BOSS A SHOUT - LIEUTENANT COMMANDER TOM WIGGANS, (206) 217-6260 TO COORDINATE SHIPPING / RECEIVING -

STEVE WHEELER

>-----  
> From: GeorgeWeidner[SMTP:]  
> Sent: Friday, October 10, 1997 8:02 AM  
> To: Wheeler, Stephen LCDR  
> Cc: ChuckStearns  
> Subject: Departure date for Polar Star  
>  
>  
> Stephen,  
>  
> Is there a firm departure date for Polar Star from Seattle?  
> I have shipped some batteries used to power our AWS to them in order  
> to make the tentative early departure date of 14 October.  
> They are a pain to send air freight. If Polar Star is departing at a later  
> date, I would like to ship some other items to avoid the air freight  
> charges.  
>  
>  
> George Weidner  
>

**GeorgeWeidner**

---

**From:** Wheeler, Stephen LCDR  
**To:** 'GeorgeW@ssec.wisc.edu'  
**Subject:** RE: AWS site visits via Polar Star DF 98  
**Date:** Friday, November 07, 1997 2:43PM

'AFTERNOON GEORGE:

BIG PROBLEMS. THE TANKER ARRIVAL DATE HAS BEEN MOVED UP TO THE 13TH OF JANUARY (VICE THE PREVIOUS SCHEDULE OF 20 JANUARY). I'M NOT READY TO MASH THE PANIC BUTTON YET, BUT I HAVE TO TELL YOU THAT THERE MIGHT BE SOME IMPACT ON THE SCHEDULE FOR VISITING WAS SITES THIS YEAR....

THE SHIP WILL BE LEAVING THEIR LAST PORT OF CALL AROUND THE 13TH OR 14TH - I STILL DON'T KNOW IF THAT'LL BE HOBART OR LYTTLETON, HOPEFULLY I'LL HEAR SOMETHING SOON. IN ORDER TO ACCOMMODATE THE TANKER, I HAVE TO START THE BREAK-IN NO LATER THAN 26 DECEMBER. REALISTICALLY, THAT'LL ONLY LEAVE US 4 MAYBE 5 DAYS TO DO WEATHER STATION WORK ON THE WAY IN.....

ALL IS CERTAINLY NOT LOST, ANY STATION WE CAN'T GET ON THE WAY IN WE CAN VISIT ON THE WAY OUT IN FEBRUARY. I GUESS MY FIRST QUESTION IS:

WHAT KIND OF NEGATIVE IMPACT ARE WE LOOKING AT IF WE HAVE TO DEFER WORKING THE AWS SITES UNTIL AFTER THE SEASON, WHEN THE SHIP LEAVES IN EARLY FEBRUARY?

CAN YOU GIN UP A PRIORITIZED LIST OF STATIONS THAT ABSOLUTELY NEED WORKING, AND A LIST OF STATIONS THAT WE CAN HOLD OFF ON UNTIL FEBRUARY??

LIKE I SAID, NOT READY TO PANIC YET. I'M HEARING THAT ICE CONDITIONS ARE FAIRLY EASY THIS YEAR, STILL SOME POSSIBILITY WE CAN WORK ALL OF YOUR STATIONS AS PLANNED.... BUT I DO WANT TO GIVE YOU A HEADS UP ON THIS SITUATION.....

Steve Wheeler  
LCDR Stephen M. Wheeler  
US Coast Guard Pacific Area  
Ice Operations Section  
swheeler@d11.uscg.mil  
(510) 437-3850 (voice)  
(510) 437-3055 (fax)

>-----  
> From: GeorgeWeidner[SMTP:  
> Sent: Thursday, October 16, 1997 8:49 AM  
> To: Wheeler, Stephen LCDR  
> Subject: FW: AWS site visits via Polar Star DF 98  
>  
>  
>  
> Here is the 15 Oct update on AWS site visits via the icebreaker.  
> No change from last update.  
>  
> Could you forward to LCDR Wiggins. I can't seem to get email  
> to him.  
>  
> SITE STATUS ACTION  
> REQUIRED  
>

SITE	STATUS	ACTION
D-10	Not active	Install AWS
Sutton	AWS off	Service
replace AWS		
Pt. Maritn	AWS ok but	Install new
batteries		
wind sensor	batteries low	service
Cape Denison	AWS off	Needs pressure port
retro		
service / replace AWS		
Penguin Pt	AWS off	service/replace
Cape Webb	AWS off	service/relace
AT THIS TIME NO VISITS FOR YOUNG , POSSESION, SCOTT ISLANDS NECESSARY !!!!!		
Franklin Is	AWS off	Replace
batteries (92)	Low batteries	
Inex Island	aws OK	Install high
wind speed unit		
Next update 1 Nov.		
George Weidner		



**GeorgeWeidner**

**From:** Wheeler, Stephen LCDR  
**To:** 'GeorgeW@ssec.wisc.edu'  
**Subject:** RE: AWS SITE WORK DF98  
**Date:** Friday, December 12, 1997 2:18PM

>Steve,  
>  
>Thanks for the info!  
>  
>I have had problems getting email to Polar Star.  
>I assume they are at Lyttleton??

THE SHIP HAS BEEN HAVING PROBLEMS WITH THEIR E-MAIL SYSTEM (I'M BLAMING THAT ON EL NINO TOO). WE WERE UNABLE TO GET 'EM INTO NEW ZEALAND (POLITICAL/DOD BS), THEY SAILED FROM SYDNEY BOUND FOR HOBART TODAY... I UNDERSTAND THAT THEY WERE ABLE TO CLEAR THEIR E-MAIL WHILE TIED UP..... MY RESPONSE IN ALL CAPS:

>  
>Here is our situation as of 8 December.  
>  
>1. The new wind units have yet to arrive so they wouldn't have been available  
> for work on the way down anyway.

OK.....

>2. I am scheduled for another evaluation by my doctor on 15 December.  
> That will kind of be my last input on trying to get to the ice this year.  
> I still don't have medical clearance from ASA - they should have the latest medical info.

GOOD LUCK -

>3. Our AWS units on the ice tool a major hit this year (let's blame El Nino). We thus will need some of the items I sent to the ship. Those can be delivered to Mcmurdo . Mr. Rob Holmes (S283) will assemble them and return them to the ship prior to your northbound trip.

I CAN IMAGINE, EVEN IN & AROUND MCMURDO THIS YEAR THE WX HAS BEEN NASTY..... THIS SOUNDS LIKE A GOOD PLAN, I WORKED WITH ROB LAST YEAR, WE CAN HANDLE EVERYTHING FROM THE MCMURDO END.....

>4.. So, next will tell if I have a chance on getting down this year .  
> Depending on our field teams success at servicing AWS on the ice will determine what we will have left for northbound trip.  
> Our field team will likely make us of your helos while in Mcmudo so they will be in touch.

GOOD DEAL, I'LL BE STANDING BY.... (NSFA31.MCMURDO@MCMURDO.GOV)

TAKE CARE -

STEVE WHEELER

**GeorgeWeidner**

---

**From:** GeorgeWeidner  
**To:** Wheeler, Stephen LCDR  
**Subject:** RE: AWS SITE WORK DF98  
**Date:** Friday, December 12, 1997 3:31PM

-----  
**From:** Wheeler, Stephen LCDR  
**To:** 'GEORGEW@SSEC.WISC.EDU'  
**Subject:** AWS SITE WORK DF98  
**Date:** Thursday, December 11, 1997 2:38PM

>  
>>'AFTERNOON GEORGE:  
>>  
> I'M HEADED OUT OF HERE MONDAY MORNING FOR THE ICE.... WE'RE STAYING WITH  
> THE IDEA THAT WE CAN WORK THE AWS SITES ON THE WAY OUT, CAN CARRY GERD  
> (OR ANYONE ELSE YOU NEED). WE'LL SEE WHAT STATIONS (IF ANY) THE FRENCH  
> CAN WORK FOR YOU OUT IN ADELIE LAND, BUT AGAIN, WE ARE PERFECTLY WILLING  
> TO WORK ANY SIT YOU NEED..... I'LL BE AT nsfa31.mcmurdo@mcmurdo.gov  
> AFTER 20 DECEMBER, AND WILL BE IN MCM FOR THE REST OF THE SEASON.....  
> GIVE A SHOUT AS SOON AS WE GET A PLAN TOGETHER -  
>  
> BEST REGARDS, AND HAVE A HAPPY HOLIDAY  
>>  
>> Steve Wheeler

Steve,

Thanks for the info!

I have had problems getting email to Polar Star.  
I assume they are at Lyttleton??

Here is our situation as of 8 December.

1. The new wind units have yet to arrive so they wouldn't have been available for work on the way down anyway.
2. I am scheduled for another evaluation by my doctor on 15 December. That will kind of be my last input on trying to get to the ice this year. I still don't have medical clearance from ASA - they should have the latest medical info.
3. Our AWS units on the ice tool a major hit this year (let's blame El Nino). We thus will need some of the items I sent to the ship. Those can be delivered to Mcmurdo . Mr. Rob Holmes (S283) will assemble them and return them to the ship prior to your northbound trip.
- 4.. So, next will tell if I have a chance on getting down this year . Depending on our field teams success at servicing AWS on the ice will determine what we will have left for northbound trip. Our field team will likely make us of your helos while in Mcmudo so they will be in touch.

Regards,  
George Weidner

**GeorgeWeidner**

**From:** T.Kameda  
**To:** ChuckS; georgew; robh; front242  
**Cc:** h90000; h88000; motoyama; domemoto; kod  
**Subject:** AWS units at East Antarctica  
**Date:** Wednesday, January 14, 1998 10:08PM

To: Prof. Stearns, Weidner Rob and Matt

CC:Takahashi, Enomoto, Motoyama and Kodama,

From: Takao Kameda, KIT JAPAN

I would like to explain AWS unit condition at Dome Fuji Station, Relay Station and Mizuho Station, East Antarctica during the summer season in 1997/98.

AWS unit at Dome Fuji Station (ID Number: 8982; Bendix aerovane type) probably already stop transmitting because the preparation of the movement to Mizuho Station (70 42'0"S, 44 17'21"E; 2250m). The AWS unit (No. 8982) will start transmitting on early February 1998 from Mizuho Station.

Another AWS unit at Dome Fuji which was installed on February 1997 (Young aerovane type) will continue transmitting data, and the data will represent AWS data at Dome Fuji Station since December 1997 or January 1998 in your FTP site.

If you could not understand, please tell me.

One question: What is the reason of change name from "Relay Point" to "Relay Station" in your FTP site data ?

Best regards,

Takao Kameda

+++++  
Takao Kameda  
Kitami Institute of Technology  
Koencho 165, Kitami, Hokkaido 090, JAPAN  
Phone : +81-157-26-9506  
Fax : +81-157-25-8772  
e-mail : h90002@cc.kitami-it.ac.jp  
+++++

**GeorgeWeidner**

**From:** T.Kameda  
**To:** ChuckS; ChuckS  
**Cc:** georgew; robh; h90000; motoyama  
**Subject:** JARE-AWS program  
**Date:** Saturday, February 28, 1998 11:35AM

Dear Prof. Stearns,

I was informed from Dr. Motoyama that electronics box in AWS unit (8982) was broken during his oversnow traverse from Dome Fuji Station to Mizuho Station. This unit was initially installed at Dome Fuji in February 1995, and plan to move to Mizuho Station in February 1998. This unit will return to Japan on 10 April 1998. I will check the inside of the electronic box and try to repair the box. I hope that this unit will be sent to Antarctica next November, and will be installed at Mizuho Station in February 1999.

I sent reprints of papers about initial results of our cooperative JARE-Wisconsin AWS program. First draft of this paper was sent to you and George at February 1997. Meteorological data obtained by ARGOS and CMOS AWS units in East Queen Maud Land in 1995 was described. You and George are coauthors of this paper.

I will be in Svalbard, Norway from 2 March to 1 April. If you have any problems about our joint AWS program, please contact with Prof. Takahashi (h90000@cc.kitami-it.ac.jp).

Best regards,

Takao Kameda

CC: Mr. George Weidner, Mr. Robert Holmes, Prof. S. Takahashi, Dr. Motoyama

++++++  
Takao Kameda  
Kitami Institute of Technology  
Koencho 165, Kitami, Hokkaido 090, JAPAN  
Phone : +81-157-26-9506  
Fax : +81-157-25-8772  
e-mail : h90002@cc.kitami-it.ac.jp  
++++++



## GeorgeWeidner

**From:** George Weidner  
**To:** GEORGEW  
**Subject:** bas 97/98 report  
**Date:** Friday, March 27, 1998 3:46PM

**From:** IN%"JCKI@pcmail.nerc-bas.ac.uk" "John C King"  
**To:** aws@macc.wisc.edu, chucks@ssec.wisc.edu  
**Subject:** BAS AWS work 1997/98 season

Dear Chuck and George,

Please find below a report on work carried out during the last season, together with an indication of supplies required for next year. As usual, early delivery of any spares would be appreciated.

Gareth Marshall, John Turner and I are currently investigating the possibility of a West Antarctic AWS deployment (Thurson Island? - Gareth contacted you about this a few weeks ago). When we are sure that this is logistically feasible we will contact you again about the possibility of supplying a unit. If you are unable to do this, I would consider moving 8920 Uranus Glacier, since we are soon hoping to have our own AWS at the nearby Fossil Bluff field station. However, a more up-to-date unit would be desirable.

Regards,  
John King

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### AWS MAINTAINANCE SUMMER 97/98

**ATOLL (8290 a.k.a. URANUS GLACIER)**  
Visited 18 Jan 98, 28 Jan 98.  
Location S 71 25.80 W 068 88.80  
Raised by 1 section.

Visit of 28th Jan because no transmissions received since last visit.  
System restarted and then given a Agood shake@.

#### Note

Solar panel lead connector is buried to deep to be recovered. Next time the AWS is raised the solar panel lead will need to be cut and extended using crimps rather than plug-in connectors.  
Voltage regulator box is buried (or none existent), 2 pin power lead required for raise..

**BUTLER ISLAND (8902)**  
Visited 5 Feb 98.  
Location S 72 12.00 W 060 09.60  
Raised by 1 section  
Replaced 1 deadman

#### Note

Raw pressure value received by test box is excessively low (776hpa). Data received at Rothera appears to be correct. The calibration check sheets we have are inaccurate.

**LARSEN (8926)**  
Visited 1 Feb 98.  
Location S 66 56.94 W 060 53.74

Raised by 1 section

**Note**

Current location over 10Nm from ice edge.

**SHELF (a.k.a. LIMBERT)**

Visited 31 Jan 98.

Location S 75 24.39 W 059 54.24

Raised by 2 sections

Rope section of guys buried to deep to be recovered. Guys extended by adding chain extensions to the top of each guy.

Antenna replaced.

**SKI HIGH**

Visited 28 Jan 98.

Location S 74 58.02 W 070 46.02

Raised by None

1 Battery box replaced. Lead from the replaced box kept available for future use.

**Note**

May require other battery box to be replaced next year depending upon performance over the coming winter.

**EQUIPMENT USED**

Mast Sections -5

Battery Box -1

Aerial -1

5 pin Battery Extension Leads -4

2 pin Power Extension Leads -1

Guy Chains -4

Deadmen -1

Shackles -12

Cable Ties -lots

**EQUIPMENT REQUIRED (A Guide Only)**

Cable Ties -200 minimum, the longer the better.

Shackles -20 minimum, suitable for linking guy chain sections.

Guy Chain -4 complete guy chains.

-8 1m chain sections for guy extensions when the rope

guys are irretrievably buried.

Mast Sections -4

2 pin Power Extension Leads -4

**STOCK HELD (Rough Check performed during indent)**

**Aerovane**

Complete Bendix aerovanes -2 ( 1 ex-Butler Island, other new bearings and bushes in 97)

Bendix aerovane housings -2

Bendix gaskets, brushes and pots -various

Large aerovane propeller -1 (unused)

Young aerovane -1

18cm x 30cm pitch black polythene propeller -2

Wind Speed Transducer (used) -2

DC tachometer generator, model 750 -1 complete, 1 missing nose piece

Tachogenerator housings -2

Aerovane mounts (used) -4

Aerovane transducer sections -1 complete, 1 broken transducers

Boom -1

**Boxes**

Voltage regulator box -2

AWS test box -1  
Solar Panel -2  
Battery Box -2  
Mounting Brackets -3 short, 2 long  
Spare diode board for Battery box -1  
Bolts -Selection of

Connectors  
Amphenol 5 pin female -3  
Amphenol 8 pin male -2  
Straight Plug, RS457-254, TNC -2

Mast  
Deadmen -3  
Guy Chains -2  
Shackles -Various, some  
Mast Sections -4  
Guy Rope -100ft roll

Leads  
2 pin power extension leads -1  
5 pin battery extension leads -16  
4 pin solar panel extension leads -3

PRT  
PRT sensors (used) -2  
PRT Housing -1

## GeorgeWeidner

**From:** GeorgeWeidner  
**To:** Rob Holmes  
**Cc:** aws  
**Subject:** THE PLAN  
**Date:** Tuesday, January 13, 1998 4:44PM

Ok here it is.

First a summary of what is up at each AWS that needs a visit!

1. Doug currently 8922 NOT TRANSMITTING

went off on may 7 in relatively high winds of a consistent 20 m/s  
battery voltage was ok.

MINIMUM REQUIREMENTS NEW AWS UNIT / ANTENNA AND CABLE OR NEW BOOM  
THIS MAY BE ONE OF THOSE UNPLUG AND PLUG IN AGAIN

2. Harry currently 21355 NOT TRANSMITTING

ACTUALLY WENT OFF END OF LAST DECEMBER , I DIDN'T NOTICE BUT WE DIDN'T HAVE  
THE RESOURCES LAST YEAR ANY WAY

BATTERY VOLTAGE WAS OK AS OF LAST YEAR.  
ALL DATA WAS OK AS OF LAST YEAR.

MINIMUM OF NEW AWS . PROBABLY NEW BATTERIES AS WELL

3. Brianna currently 21362 NOT TRANSMITTING

WENT OFF JULY 15TH 1997 WITH LOW BATTERIES. ALL DATA LOOKED OK .  
MINIMUM NEEDED IS BATTERIES WITH NEW JUNCTION BOX AS BATTERIES DIDN'T  
APPEAR TO REALLY CHARGE , BUT THIS COULD HAV E BEEN A BAD BATTERY AS WELL.

4. J. C. currently 21357 NOT TRANSMITTING

WENT OFF AUGUST 8 IN HIGH WINDS --- 35 M/S

DATA WAS GOOD EXCEPT FOR DELTA-T READ ING HIGH.

BATTERIES WERE LOW BUT NOT LOW ENOUGH TO HAVE CAUSED THE UNIT TO GO OFF.

MINIMUM - NEW AWS UNIT /BOOM WITH ANTENNA/ BATTERIES

5. Erin currently 21363 Transmitting good data except for wind speed

Went off during winter with low batteries. also wind direction froze up for long periods.

MINIMUM OF NEW BATTERIES, AND BENDIX/BELFORT

6. Elizabeth currently 21361 Transmitting good data

Went off with low batteries.

MINIMUM NEEDS NEW BATTERIES

7. Lettau currently 8908 on again off again with good data.

Batteries are low and transmitter seems to drift in and out with temperature.

When warm the tx er goes out of freq.

Minimum new batteries . and AWS 8935.

Ok I will transmit list of thing to take and plan from home , It should be there by 4 pm your time.  
George

4.



**GeorgeWeidner**

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**From:** Rob Holmes  
**To:** georgew  
**Subject:** more info on sdm  
**Date:** Tuesday, January 20, 1998 3:36PM

George,

Talked to Kris Scott telling her that unless nsf changes it's mind and decides to get us to sdm pronto, we will be pulling out of that trip. She told me that the decision to prioritize AGO over us was from Simon Stephenson. So, it may be a good idea to include Simon in any email. His address is SSTEPHEN@NSF.GOV. Also, it wouldn't do any good to email Kris Scott about this. She just takes her orders from simon and Al. Kind of one of those Don't shoot the messenger deals.

Oh, FYI...the long duration balloon may also be requesting some otter time. They had to drop the balloon on the plateau. And, there is another beaker at sdm that wants one day in the otter, but apparently was only to get it if there was time after we were done. So, I guess we got prioritized over someone!

Take care,

Rob

**GeorgeWeidner**

**From:** Bob Bindschadler  
**To:** alsuther  
**Cc:** GeorgeW; ChuckStearns  
**Subject:** Re: West Antarctic and Siple Dome AWS  
**Date:** Tuesday, January 20, 1998 5:37PM

Al,

I know the pressures to accomplish the full plans for any field season only get worse as the season wears on. I am reluctant to stir things up, but Chuck Stearns has appealed to some of us to voice our concern regarding the maintenance of the West ANtarctic AWS sites. Because there is solid justification for these sites, and because NOT to reply might be interpreted as an absence of support, I urge you to do your utmost to assign the AWS maintenance a high priority.

The AWS data are not glamorous, but it is their continuity that gives them great value. Due to logistic difficulties, and limited numbers of AWS's, the West Antarctic data set is not long. This makes each year extremely valuable. It is because the weather in West Antarctica has been so difficult this year, that the value of these site's data is of heightened importance.

As you are aware, there is intense and long-lasting concern over the current mass balance of the West ANtarctic ice sheet. The meteorological record is a key piece in quantifying the mass balance and the analysis of these data through the numerical modeling spearheaded by David Bromwich is a key piece of understanding how climate change may alter the mass accumulation of the ice sheet. The locations of the sites at risk were determined after considerable reflection on where the data would be most valuable for the goals of the West Antarctic Ice Sheet project (WAIS).

Thus, speaking in my capacity as chair of the WAIS project, I appeal to your ingenuity to find some means to accomplish the AWS maintenance that Chuck requires.

Thank you,  
Bob

--  
===== Message from =====  
Robert Bindschadler  
Code 971 (Oceans and Ice Branch)  
NASA/Goddard Space Flight Center  
Greenbelt, MD 20771  
301-286-7611 (Voice) 301-286-0240 (Fax)  
bob@igloo.gsfc.nasa.gov  
=====

**GeorgeWeidner**

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**From:** SUTHERLAND, AL  
**To:** p\_mayewski; Mark.Twickler; joe; echiang; dpeacock; ChuckS; blettau; bentley; bob; alsuther; rbrbrn  
**Cc:** GeorgeW; ralley; SSTEPHEN; SCOTTKR.mcmurdo; QUINNT0.mcmurdo; FERRISJL.mcmurdo  
**Subject:** Re: West Antarctic and Siple Do  
**Date:** Friday, January 30, 1998 1:35PM

Folks,

As you all know, setting priorities with the limited resources in Antarctica is often difficult. This year, as you may have heard, and, as noted below by Chuck, we have had some extraordinarily difficult weather. (El nino???? Maybe Chuck can tell us!) During the middle of January, we had 13 straight days in which we could not get a single flight into Siple Dome. For a while, rather concentrating on Siple, we did divert resources (namely a Twin Otter) to support the AGO's, which had marginally better weather - but we still had some potential to get the AWS team into Siple, first by Herc and then to outlying areas by the Twin Otter. Chuck's field team came to the decision to concentrate efforts on Helo supported AWS's since the likelihood was better that they could get to some of them.

The AWS at Siple itself, I am told, should work through the winter - although some new add-on instruments were not installed. Unfortunately, the 6 or so other AWS's that are normally serviced out of Siple did not receive service and may not transmit data throughout the winter.

It was not for the lack of effort or commitment of resources that the AWS's from Siple did not get serviced. If we had any reasonable weather to operate in, we would have been able to service both the AGO's (which are all up) and all of the AWS's. Unfortunately the weather was against us.

Regards,  
Al Sutherland  
NSFREP

\*\*\*\*\*Original Message Follows\*\*\*\*\*

Dear Colleagues:

We are having difficulty getting to Siple Dome to install and service the aws units in West Antarctica. First, the weather has been extremely poor there this year. This has resulted in many flights to SDM being cancelled and postponed. The Twin Otter dedicated to SOAR has had only a fraction of the anticipated flying days. We were finally given a date of 17 January

for departure to SDM from Mcmurdo. This was subsequently delayed until 19

January.

One hour before the flight to SDM our field team was informed of another change in plans.

The date was delayed until 26 January with uncertainty as to which of the

two Twin Otters

we would have available (one not being available until 29 January).

This

was to give the

Twin Otter in Mcmurdo a priority of servicing AGO-4 and AGO-5 from what I

understand.

The latest plan puts us in a difficult position. To complete our field work

at Mcmurdo,

we require some of the resources that are also required at SDM. By

delaying

the work

at SDM, with the record of poor weather there, we are at risk of not

having

time to

complete the six AWS sites visits/installations yet to be done from

McMurdo.

We would like your support for having a higher priority for servicing the AWS in West Antarctica. Please contact Mr. Al Sutherland.

Regards,  
Stearns

----- Original message header:

>MAIL FROM:<ChuckS@ssec.wisc.edu>  
>RCPT TO:<alsuther@new-smtpsrv.mcmurdo.gov>  
>RCPT TO:<echiang@new-smtpsrv.mcmurdo.gov>  
>DATA  
>Received: from beta.nsf.gov (firewall-user@beta.nsf.gov [206.2.78.5])  
> by terror.mcmurdo.gov (8.8.5/8.8.5) with ESMTP id VAA11435;  
> Tue, 20 Jan 1998 21:49:43 GMT  
>Received: by beta.nsf.gov; id QAA10226; Tue, 20 Jan 1998 16:49:37 -0500  
(EST)  
>Received: from mailman.nsf.gov(128.150.11.2) by beta.nsf.gov via smap  
(3.2)  
> id xma010196; Tue, 20 Jan 98 16:49:10 -0500  
>Received: from beta.nsf.gov (baker.nsf.gov [128.150.1.5])  
> by mailman.nsf.gov (8.8.4/8.8.4) with ESMTP  
> id QAA29535; Tue, 20 Jan 1998 16:49:08 -0500  
>Received: by beta.nsf.gov; id QAA10160; Tue, 20 Jan 1998 16:49:07 -0500  
(EST)  
>Received: from ssec.wisc.edu(144.92.108.61) by beta.nsf.gov via smap  
(3.2)  
> id xma010149; Tue, 20 Jan 98 16:48:56 -0500  
>Received: from msmtp.ssec.wisc.edu (msmail.ssec.wisc.edu  
[144.92.118.210]) by ssec.wisc.edu (8.7.1/8.7.1) with SMTP id PAA22068;  
Tue, 20 Jan 1998 15:48:08 -0600

>Received: by msmtp.ssec.wisc.edu with Microsoft Mail  
> id <34C50D86@msmail.ssec.wisc.edu>; Tue, 20 Jan 98 15:48:06 CST  
>From: ChuckStearns <ChuckS@ssec.wisc.edu>  
>To: alsutherland <alsuther@nsf.gov>, bentley <bentley@geology.wisc.edu>,  
> bernielettau <blettau@nsf.gov>,  
> Bob Bindshadler <bob@igloo.gsfc.nasa.gov>,  
> dennispeacock <dpeacock@nsf.gov>, erickchiang <echiang@nsf.gov>,  
> Joe McConnell <joe@hwr.arizona.edu>,  
> Mark Twickler <Mark.Twickler@grg.sr.unh.edu>,  
> "Mayewski, Paul" <p\_mayewski@unh.edu>  
>Cc: GeorgeWeidner <GeorgeW@ssec.wisc.edu>  
>Subject: West Antarctic and Siple Dome AWS  
>Date: Tue, 20 Jan 98 15:20:00 CST  
>Message-ID: <34C50D86@msmail.ssec.wisc.edu>  
>Encoding: 36 TEXT  
>X-Mailer: Microsoft Mail V3.0  
----- End of message header.

\*\*\*\*\*End of Original Message\*\*\*\*\*



Dest: George Weidner - Matt Whittaker

Fax: (1) 608 262 5974

From: Paul Petré & G. Dargaud, Dumont d'Urville

Fax: (872) 322 79 398 or (872) 111 05 15

Date: 24 February 1998

Pages: 1

Dear Mr Weidner,

We did send you a fax about the AWS stations some time ago. You may not have gotten it, so here is second one.

- Situation update of the AWS stations in Adelie Land  
 Only Dome C 8989 seems to work anymore, Dome C 8904 gives erratic results. The traverse did not have much time and gear to repair the other stations: D-10 8914 and D-47 8986 are back on line, but the pressure of D-10 seems to be offset. What is station 21364 ? In our database it corresponds to D-10 also. The Astrolabe was at Cape Denison 2 months ago, but due to the weather conditions, they were unable to change the station.  
 The mast of the Port Martin station is broken (it must have been really windy !). A complete station would be necessary for a change.
- Update of our database  
 Could you please give us the list of stations currently active in Antarctica, especially in our area, complete with their parameters so we can update the local data acquisition program. That is: Argos number, station name, latitude, longitude, altitude, CX, CY, CZ, ARH, BRH, ADT, BDT, WDC, PC.

Regards,  
Guillaume Dargaud  
Paul Petré

**GeorgeWeidner**

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**From:** sellmann  
**To:** GeorgeW  
**Subject:** AWI-Automatic Waether Stations  
**Date:** Thursday, May 07, 1998 11:17AM

Dear George,

as you know the AWI has 2 AWS in the Antarctic, which were built up in January/February 1995. Both stations are working well but I think we have to do some maintenance work. In January 1999 we will have the change to do this. We will change the battery packs and raise up the stations. For raise it will be helpful to have new mast elements. Would you please check wheather you can sell the AWI 4 mast elements. If not would you please mail me the address of the manufacturer. Many thanks in advance.

Best regards, Lutz Sellmann