

Antarctic Automatic Weather Stations  
Field Report 1991-1992 Field Season

by  
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and  
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Introduction:

The original plans for the 1991-1992 field season included a cruise along the Adelie Coast to repair the AWS units at Cape Denison and Port Martin, and the installation of dog house AWS units at Scott and Possession Islands. The above plans were significantly modified due to a more limited icebreaker schedule, equipment delays and problems, and, of course, weather.

First Polar Sea Cruise:

The 1991-1992 field season in Antarctica started on 19 December 1991 when C.R. Stearns left Madison, WI for Portland, Australia to meet the Polar Sea for the cruise to McMurdo, Antarctica starting on 23 December 1991. The intent was to install dog house AWS units at Scott and Possession Island. This was not done because the AWS units were not operating properly and there was a severe storm in the area which would have prevented the deployment of the AWS units anyway. The Polar Sea arrived at Terra Nova Bay 31 December 1991. Stearns went by helicopter to Manuela site that evening, removed aerovane 84-447 which had a broken post and installed aerovane 91-2410. Otherwise the Manuela site AWS was in good shape. On Wednesday, 1 January 1992 an over-cast sky and snow flurries prevented the flight to Shristi site to remove the AWS electronics for repair and raise the tower 6 feet. Conditions for the flight to Shristi site were unfavorable throughout the day. The Polar Sea set sail for McMurdo late in the evening.

On Thursday, 2 January 1992, the Polar Sea reached the ice edge near Cape Evans about 1100 near Cape Evans. Reached McMurdo about 0300 3 January 1992. Stearns did not arrive at McMurdo Station until 1000 4 January 1992 due to low visibility for two days which prevented helicopter flights.

McMurdo Area Activities:

Weidner, Doornbos, and Holmes reached McMurdo on 6 January 1992. The fish huts were prepared for operations. The first order of business at the science meeting was the installation of an AWS unit at Mount Howe in support of the study of the blue ice area as a possible landing site for supplying Amundsen-Scott Station at the south pole. Weidner and Stearns prepared the AWS unit for Mount Howe and on 9 January 1992 flew to the south pole for a scheduled Twin Otter flight to Mount Howe on the next day. The flight was delayed until 11 January 1992 because of the need to recover a balloon payload.

The boom at Clean Air site was tilted up at the antenna end so on 10 January 1992 the boom was positioned horizontally and tightened. The lowest of the two solar panels had snow around it so it was raised to just below the boom.

The Mount Howe AWS was installed on the blue ice near the outhouse in fine weather on 11 January 1992. Bill Barber and the Twin Otter pilots helped install the unit. Anchoring was by 4" x 4" x 4' posts drilled into the ice.

Preparations were started for the repairs to Linda and Minna Bluff sites. On 15 January 1992 Weidner, Doornbos, and Holmes flew by New Zealand's Squirrel helicopter to Linda site and replaced the AWS unit and the aerovane. Much to our surprise the aerovane wind speed contacts on the slip rings were spread apart enough that they did not contact the slip ring and thus the wind speed was not recorded. This is a new reason for missing wind speed data. On this date the ARGOS ID for Linda site changed from 8915 to 8921.

On 16 January 1992 Stearns, Doornbos, and Holmes flew to Minna Bluff. The antenna was broken at the base and the aerovane post was broken. The antenna, aerovane, and the AWS electronics were replaced. The ARGOS ID for Minna Bluff changed from 8935 to 8915 on this date.

Pegasus North and Pegasus South were inspected by Stearns, Doornbos, and Holmes on 22 January 1992. The towers were anchored firmly and appeared to be in good condition.

On 23 January 1992 Stearns, Weidner, Doornbos, and Holmes flew by Twin Otter aircraft to Lynn site. The Tri-x tower was raised five feet, the aerovane was replaced, and ARGOS ID 8901 was replaced by 8935. On the return flight to McMurdo from Lynn site Sushila site was removed. Sandra site was left since Shristi site was not serviced.

The Willie Field AWS unit was installed on 25 January 1992 at the point where the Pegasus road turns south. The ARGOS ID is 8901. The AWS unit measures wind speed, air temperature, wind direction, wind speed, vertical temperature difference, and relative humidity. The purpose of the AWS unit is to measure the meteorological conditions during the periods when manned observations are not carried out at Willie Field.

The Geotech WS-201 wind system was installed at Jimmy site to see how the system stands up during the winter at a relatively benign location in Antarctica.

#### Second Polar Sea Cruise:

Whitlock site at Franklin Island delivered garbled data for a few days then stopped altogether about 23 January 1992 after just completing 10 years of continuous operation. The AWS electronics for 8936 along with a two 80 AH gel cell batteries, solar panel, junction box, antenna, and antenna cable were prepared as replacements for the unit at Whitlock site. The Polar Sea was unable to visit Franklin Island on this cruise.

Martha2 site was removed by Lt. Shaw and the Marine Science Technicians from the Polar Sea on 14 February 1992. The snow level was six inches below the boom. Another unit is planned for installation during the 1992-1993 field season.

A dog house AWS unit was installed near Mount Siple by helicopter from the Polar Sea on about 20 February 1992.

#### Antarctic Peninsula:

Tony Amos replaced the AWS electronics at Racer Rock because the pressure was erratic. The ARGOS ID changed from 8930 to 8947 in November 1991.

Tony Amos installed the AWS unit at Bonaparte Point in January 1992 in support of the Long Term Ecological Research. The ARGOS ID is 8912.

**British Antarctic Survey:**

Members of the British Antarctic Survey (BAS) are repairing the AWS units on the east side of the Antarctic Peninsula.

On 30 January 1992 the Siple Station AWS unit was raised one Tri-x five foot tower section. The unit was reported to be in good condition and is working properly. The AWS unit with ID 8920 was reinstalled on the Uranus Glacier and the aerovane was replaced at Butler Island. On 24 February Andy Lacey raised the Larsen Ice Shelf AWS unit one Tri-x five foot tower section and replaced the damaged wind system.

**Expeditions Polaris Francaises:**

Expedition Polaris Francaises (EPF) are repairing the AWS units along the Adelie Coast and into the interior towards Dome C.

P. David of EPF reported the replacement of the wind system at Port Martin on 30 January 1992. The AWS electronics was installed at D-47 on 1 February. The solar panel remained at the same level and the battery voltage was 12.5 vdc. The D-10 electronics was replaced with the same ID (8914) and the old unit is being returned to Madison, Wi.

Figure 1 is a map of Antarctica showing the locations of widely spaced AWS units and rectangles for closely spaced AWS units that are shown in other figures. Figure 2 shows the AWS units in the vicinity of McMurdo, Antarctica. Figure 3 shows the AWS units in the Reeves Glacier region. Figure 4 shows the AWS units along the Adelie Coast near Dumont d'Urville. Figure 5 shows the location of the AWS unit relative to Mount Howe. Figure 6 shows the present and proposed AWS locations on the Ross Ice Shelf and West Antarctica. Table 1 gives the AWS site name, ARGOS identification number, geographic location including the elevation, start date, and the WMO site number for 1992. Table 2 gives the same data in order of the ARGOS identification number, Table 3 gives the same data for 1991 and Table 4 gives the data for the possible field work during the 1992-1993 season.

ARGOS ID	Site Name	Start Date	WMO Site No.	Elevation (m)	Latitude	Longitude
8912	Bonaparte Pt.	Jan 92	8912	64.78°S	61.08°W	8
8920	Uranus Glacier	Jan 92	8920	61.43°S	61.93°W	780
8914	Port Martin	Jan 92	8914	61.46°S	61.84°W	17
8913	Reeves Glacier	Jan 92	8913	61.46°S	61.84°W	17
8915	Adelie Coast	Jan 92	8915	62.33°S	62.33°W	22
8916	Adelie Coast	Jan 92	8916	62.33°S	62.33°W	22
8917	Adelie Coast	Jan 92	8917	62.33°S	62.33°W	22
8918	Adelie Coast	Jan 92	8918	62.33°S	62.33°W	22
8919	Adelie Coast	Jan 92	8919	62.33°S	62.33°W	22
8921	Adelie Coast	Jan 92	8921	62.33°S	62.33°W	22
8922	Adelie Coast	Jan 92	8922	62.33°S	62.33°W	22
8923	Adelie Coast	Jan 92	8923	62.33°S	62.33°W	22
8924	Adelie Coast	Jan 92	8924	62.33°S	62.33°W	22
8925	Adelie Coast	Jan 92	8925	62.33°S	62.33°W	22
8926	Adelie Coast	Jan 92	8926	62.33°S	62.33°W	22
8927	Adelie Coast	Jan 92	8927	62.33°S	62.33°W	22
8928	Adelie Coast	Jan 92	8928	62.33°S	62.33°W	22
8929	Adelie Coast	Jan 92	8929	62.33°S	62.33°W	22
8930	Adelie Coast	Jan 92	8930	62.33°S	62.33°W	22
8931	Adelie Coast	Jan 92	8931	62.33°S	62.33°W	22
8932	Adelie Coast	Jan 92	8932	62.33°S	62.33°W	22
8933	Adelie Coast	Jan 92	8933	62.33°S	62.33°W	22
8934	Adelie Coast	Jan 92	8934	62.33°S	62.33°W	22
8935	Adelie Coast	Jan 92	8935	62.33°S	62.33°W	22
8936	Adelie Coast	Jan 92	8936	62.33°S	62.33°W	22
8937	Adelie Coast	Jan 92	8937	62.33°S	62.33°W	22
8938	Adelie Coast	Jan 92	8938	62.33°S	62.33°W	22
8939	Adelie Coast	Jan 92	8939	62.33°S	62.33°W	22
8940	Adelie Coast	Jan 92	8940	62.33°S	62.33°W	22
8941	Adelie Coast	Jan 92	8941	62.33°S	62.33°W	22
8942	Adelie Coast	Jan 92	8942	62.33°S	62.33°W	22
8943	Adelie Coast	Jan 92	8943	62.33°S	62.33°W	22
8944	Adelie Coast	Jan 92	8944	62.33°S	62.33°W	22
8945	Adelie Coast	Jan 92	8945	62.33°S	62.33°W	22
8946	Adelie Coast	Jan 92	8946	62.33°S	62.33°W	22
8947	Adelie Coast	Jan 92	8947	62.33°S	62.33°W	22
8948	Adelie Coast	Jan 92	8948	62.33°S	62.33°W	22
8949	Adelie Coast	Jan 92	8949	62.33°S	62.33°W	22
8950	Adelie Coast	Jan 92	8950	62.33°S	62.33°W	22
8951	Adelie Coast	Jan 92	8951	62.33°S	62.33°W	22
8952	Adelie Coast	Jan 92	8952	62.33°S	62.33°W	22
8953	Adelie Coast	Jan 92	8953	62.33°S	62.33°W	22
8954	Adelie Coast	Jan 92	8954	62.33°S	62.33°W	22
8955	Adelie Coast	Jan 92	8955	62.33°S	62.33°W	22
8956	Adelie Coast	Jan 92	8956	62.33°S	62.33°W	22
8957	Adelie Coast	Jan 92	8957	62.33°S	62.33°W	22
8958	Adelie Coast	Jan 92	8958	62.33°S	62.33°W	22
8959	Adelie Coast	Jan 92	8959	62.33°S	62.33°W	22
8960	Adelie Coast	Jan 92	8960	62.33°S	62.33°W	22
8961	Adelie Coast	Jan 92	8961	62.33°S	62.33°W	22
8962	Adelie Coast	Jan 92	8962	62.33°S	62.33°W	22
8963	Adelie Coast	Jan 92	8963	62.33°S	62.33°W	22
8964	Adelie Coast	Jan 92	8964	62.33°S	62.33°W	22
8965	Adelie Coast	Jan 92	8965	62.33°S	62.33°W	22
8966	Adelie Coast	Jan 92	8966	62.33°S	62.33°W	22
8967	Adelie Coast	Jan 92	8967	62.33°S	62.33°W	22
8968	Adelie Coast	Jan 92	8968	62.33°S	62.33°W	22
8969	Adelie Coast	Jan 92	8969	62.33°S	62.33°W	22
8970	Adelie Coast	Jan 92	8970	62.33°S	62.33°W	22
8971	Adelie Coast	Jan 92	8971	62.33°S	62.33°W	22
8972	Adelie Coast	Jan 92	8972	62.33°S	62.33°W	22
8973	Adelie Coast	Jan 92	8973	62.33°S	62.33°W	22
8974	Adelie Coast	Jan 92	8974	62.33°S	62.33°W	22
8975	Adelie Coast	Jan 92	8975	62.33°S	62.33°W	22
8976	Adelie Coast	Jan 92	8976	62.33°S	62.33°W	22
8977	Adelie Coast	Jan 92	8977	62.33°S	62.33°W	22
8978	Adelie Coast	Jan 92	8978	62.33°S	62.33°W	22
8979	Adelie Coast	Jan 92	8979	62.33°S	62.33°W	22
8980	Adelie Coast	Jan 92	8980	62.33°S	62.33°W	22
8981	Adelie Coast	Jan 92	8981	62.33°S	62.33°W	22
8982	Adelie Coast	Jan 92	8982	62.33°S	62.33°W	22
8983	Adelie Coast	Jan 92	8983	62.33°S	62.33°W	22
8984	Adelie Coast	Jan 92	8984	62.33°S	62.33°W	22
8985	Adelie Coast	Jan 92	8985	62.33°S	62.33°W	22
8986	Adelie Coast	Jan 92	8986	62.33°S	62.33°W	22
8987	Adelie Coast	Jan 92	8987	62.33°S	62.33°W	22
8988	Adelie Coast	Jan 92	8988	62.33°S	62.33°W	22
8989	Adelie Coast	Jan 92	8989	62.33°S	62.33°W	22
8990	Adelie Coast	Jan 92	8990	62.33°S	62.33°W	22
8991	Adelie Coast	Jan 92	8991	62.33°S	62.33°W	22
8992	Adelie Coast	Jan 92	8992	62.33°S	62.33°W	22
8993	Adelie Coast	Jan 92	8993	62.33°S	62.33°W	22
8994	Adelie Coast	Jan 92	8994	62.33°S	62.33°W	22
8995	Adelie Coast	Jan 92	8995	62.33°S	62.33°W	22
8996	Adelie Coast	Jan 92	8996	62.33°S	62.33°W	22
8997	Adelie Coast	Jan 92	8997	62.33°S	62.33°W	22
8998	Adelie Coast	Jan 92	8998	62.33°S	62.33°W	22
8999	Adelie Coast	Jan 92	8999	62.33°S	62.33°W	22

Table 1. Antarctic automatic weather station locations for 1992: The ARGOS ID and WMO# are for 1992. (\* = AWS unit is not operating in March 1992.)

Site	ID	Lat. (deg)	Long. (deg)	Alt. (m)	Start	Stop	WMO#
<b>Adelie Coast</b>							
D-10	8914	66.70°S	139.80°E	240	Feb 80		89832
D-47	8916	67.38°S	138.72°E	1560	Jan 83		89834
D-80*	8919	70.02°S	134.72°E	2500	Nov 84		89836
Dome C	8904	74.50°S	123.00°E	3280	Feb 80		89828
Port Martin	8934	66.82°S	141.39°E	39	Jan 90		
Cape Denison	8933	67.02°S	142.68°E	31	Jan 90		
<b>Stations</b>							
Byrd Station	8903	80.00°S	120.00°W	1530	Feb 80		89324
Siple St.	8910	75.90°S	83.92°W	1054	Jan 82		89284
<b>Ross Island Region</b>							
Marble Point	8906	77.43°S	163.75°E	120	Feb 80		89866
Ferrell	8907	78.02°S	170.80°E	45	Dec 80		89872
Jimmy*		77.87°S	166.81°E	202	Dec 81		
Pegasus N.	8927	77.95°S	166.51°E	10	Jan 90		89667
Pegasus S.	8937	78.03°S	166.60°E	10	Jan 91		
Minna Bluff	8915	78.55°S	166.68°E	917	Jan 91		
Linda	8921	78.50°S	168.35°E	50	Jan 91		
Willie Field	8901	77.11°S	167.00°E	20	Jan 92		
<b>Ocean Islands</b>							
Whitlock*	8913	76.24°S	168.70°E	275	Jan 82		89865
Scott Island*		67.37°S	179.97°W	30	Dec 87	Feb 91	89371
Young Is.	8980	66.28°S	162.33°E	30	Dec 90		89660
<b>Ross Ice Shelf</b>							
Marilyn	8931	79.98°S	165.03°E	75	Jan 84		89869
Schwerdt.	8924	79.94°S	169.83°E	60	Jan 85		89868
Gill	8911	80.03°S	178.63°W	55	Jan 85		89863
Lettau	8908	82.59°S	174.27°W	55	Jan 86		89377
Martha II*	8900	78.38°S	173.42°W	18	Feb 87	Feb 92	89374
Mt Siple	8981	73.20°S	127.05°W	?	Feb 92		
<b>Reeves Glacier</b>							
Manuela	8905	74.92°S	163.60°E	80	Feb 84		89864
Shristi	8909	74.72°S	161.58°E	1200	Dec 87		89862
Sandra	8923	74.48°S	160.48°E	1525	Jan 88		89861
Sushila*	8921	74.41°S	161.28°E	1431	Jan 88	Jan 92	
Lynn	8935	74.21°S	160.39°E	1772	Jan 88		89860
<b>Antarctic Peninsula</b>							
Larsen Ice	8926	66.97°S	60.55°W	17	Oct 85		89262
Butler Is.	8902	72.20°S	60.34°W	91	Mar 86		89266
Cape Adams	8917	75.01°S	62.53°W	25	Jan 89		89268
Uranus Gl.	8920	71.43°S	68.93°W	780	Mar 86		
Racer Rock	8930	64.16°S	61.54°W	17	Nov 89		89261
BAS-AGO	8932	77.52°S	23.74°W	1545	Jan 91		89024
Bonaparte Pt	8912	64.78°S	63.06°W	8	Jan 92		
<b>South Pole Station</b>							
Clean Air	8918	90.00°S		2835	Jan 86		89208
Mt. Howe	8982	87.32°S	149.55°W	2400	Feb 92		

Table 2. Antarctic automatic weather station locations for 1992 in ID order.

Site	ID	Lat. (deg)	Long. (deg)	Alt. (m)	Start	Stop	WMO#
Martha II*	8900	78.38°S	173.42°W	18	Feb 87	Feb 92	89374
Willie Field	8901	77.11°S	167.00°E	20	Jan 92		
Butler Is.	8902	72.20°S	60.34°W	91	Mar 86		89266
Byrd Station	8903	80.00°S	120.00°W	1530	Feb 80		89324
Dome C	8904	74.50°S	123.00°E	3280	Feb 80		89828
Manuela	8905	74.92°S	163.60°E	80	Feb 84		89864
Marble Point	8906	77.43°S	163.75°E	120	Feb 80		89866
Ferrell	8907	78.02°S	170.80°E	45	Dec 80		89872
Lettau	8908	82.59°S	174.27°W	55	Jan 86		89377
Shristi*	8909	74.72°S	161.58°E	1200	Dec 87		89862
Siple St.	8910	75.90°S	83.92°W	1054	Jan 82		89284
Gill	8911	80.03°S	178.63°W	55	Jan 85		89863
Bonaparte Pt	8912	64.78°S	63.06°W	2400	Jan 92		
Whitlock	8913	76.24°S	168.70°E	275	Jan 82		89865
D-10	8914	66.70°S	139.80°E	240	Feb 80		89832
Minna Bluff	8915	78.55°S	166.68°E	917	Jan 91		
D-47	8916	67.38°S	138.72°E	1560	Jan 83		89834
Cape Adams	8917	75.01°S	62.53°W	25	Jan 89		89268
Clean Air	8918	90.00°S		2835	Jan 86		89208
D-80*	8919	70.02°S	134.72°E	2500	Nov 84		89836
Uranus Gl.	8920	71.43°S	68.93°W	780	Mar 86		
Linda	8921	78.50°S	168.35°E	50	Jan 88		
Sandra	8923	74.48°S	160.48°E	1525	Jan 88		89861
Schwerdtfeger	8924	79.94°S	169.83°E	60	Jan 85		89868
Larsen Ice	8926	66.97°S	60.55°W	17	Oct 85		89262
Pegasus N.	8927	77.95°S	166.51°E	10	Jan 90		89667
Marilyn	8931	79.98°S	165.03°E	75	Jan 84		89869
BAS-AGO	8932	77.52°S	23.74°W	1545	Jan 91		89024
Cape Denison	8933	67.02°S	142.68°E	31	Jan 90		
Port Martin	8934	66.82°S	141.39°E	39	Jan 90		
Lynn	8935	74.21°S	160.39°E	1772	Jan 88		89860
Pegasus S.	8937	78.03°S	166.60°E	10	Jan 91		
Racer Rock	8947	64.16°S	61.54°W	17	Nov 89		89261
Young Is.	8980	66.28°S	162.33°E	30	Dec 90		89660
Mount Siple	8981	73.20°S	127.05°W	?	Feb 92		
Mount Howe	8982	87.32°S	149.55°W	2400	Jan 92		
Scott Island*		67.37°S	179.97°W	30	Dec 87	Feb 91	89371
Jimmy*		77.87°S	166.81°E	202	Dec 81		

Table 3. Antarctic automatic weather station locations for 1991: The ARGOS ID and WMO# are for 1991.

Site	ID	Lat. (deg)	Long. (deg)	Alt. (m)	Start	Stop	WMO#
<b>Adelie Coast</b>							
D-10	8914	66.70°S	139.80°E	240	Feb 80		89832
D-80	8919	70.02°S	134.72°E	2500	Nov 84		89836
Dome C	8904	74.50°S	123.00°E	3280	Feb 80		89828
Port Martin	8934	66.82°S	141.39°E	39	Jan 90		
Cape Denison	8933	67.02°S	142.68°E	31	Jan 90		
<b>Stations</b>							
Byrd Station	8903	80.00°S	120.00°W	1530	Feb 80		89324
Siple St.	8910	75.90°S	83.92°W	1054	Jan 82		89284
<b>Ross Island Region</b>							
Marble Point	8906	77.43°S	163.75°E	120	Feb 80		89866
Ferrell	8907	78.02°S	170.80°E	45	Dec 80		89872
Jimmy		77.87°S	166.81°E	202	Dec 81		
Pegasus N.	8927	77.95°S	166.51°E	10	Jan 90		89667
Pegasus S.	8937	78.03°S	166.60°E	10	Jan 91		
Minna Bluff	8935	78.50°S	166.51°E	900	Jan 91		
Linda	8915	78.50°S	168.35°E	50	Jan 91		
<b>Ocean Islands</b>							
Whitlock	8913	76.24°S	168.70°E	275	Jan 82		89865
Scott Island		67.37°S	179.97°W	30	Dec 87	Feb 91	89371
Young Is.	8980	66.28°S	162.33°E	30	Dec 90		89660
<b>Ross Ice Shelf</b>							
Marilyn	8931	79.98°S	165.03°E	75	Jan 84		89869
Schwerdt.	8924	79.94°S	169.83°E	60	Jan 85		89868
Gill	8911	80.03°S	178.63°W	55	Jan 85		89863
Lettau	8908	82.59°S	174.27°W	55	Jan 86		89377
Martha II	8900	78.38°S	173.42°W	18	Feb 87		89374
<b>Reeves Glacier</b>							
Manuela	8905	74.92°S	163.60°E	80	Feb 84		89864
Shristi	8909	74.72°S	161.58°E	1200	Dec 87		89862
Sushila	8921	74.41°S	161.31°E	1441	Jan 88		
Sandra	8923	74.48°S	160.48°E	1525	Jan 88		89861
Lynn	8901	74.21°S	160.39°E	1772	Jan 88		89860
<b>Antarctic Peninsula</b>							
Larsen Ice	8926	66.97°S	60.55°W	17	Oct 85		89262
Butler Is.	8902	72.20°S	60.34°W	91	Mar 86		89266
Cape Adams	8917	75.01°S	62.53°W	25	Jan 89		89268
Racer Rock	8930	64.16°S	61.54°W	17	Nov 89		89261
BAS-AGO	8932	77.52°S	23.74°W	1545	Jan 91		89024
<b>South Pole Station</b>							
Clean Air	8918	90.00°S		2835	Jan 86		89208

Table 4. New automatic weather stations locations planned for Antarctic during the 1992-1993 field season and beyond and sites in Antarctica that need repairs as of March 1992 during the 1992-1993 field season in Antarctica.

New AWS Locations:

Katabatic Flow down the slope to the Adelie Land Coast

Cape Webb	67.??°S	144.??°E		Ice Breaker
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Long Term Ecological Research

Jobin Is.	64.??°S	64.3°W		Polar Duke
Hugo Is.	65.1°S	65.1°W		Polar Duke
Biscoe Is.	66.2°S	66.??°W		Polar Duke

Meteorological Support for Forecasting at McMurdo, Antarctica

Cape Crozier	77.55°S	170.1°E		Helicopter
Ross Ice Shelf Edge	78.??°S	177.5°E		Ice Breaker
Beaufort Island	77.??°S	167.??°E		Ice Breaker
Possession Island	71.9°S	174.??°E		Dog House, Ice Breaker
Scott Island	67.37°S	179.97°W		Dog House, Ice Breaker
Peter I Island	69.8°S	91.??°W		Dog House, Ice Breaker

Meteorological Support for Investigations of Ice Runways:

Plunkett Pt.	86.1°S	167.2°E	1800	Twin Otter
Byrd Neve	80.5°S	152.??°E		Twin Otter

Long Term Climate Change at South Pole:

Clean Air	8918	90.00°S	2835	Install 16 m snow temp profile
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Ross Ice Shelf

Elaine	83.15°S	174.46°E		Twin Otter
Siple Coast	79.00°S	158.00°W		Twin Otter
	82.00°S	158.00°W		Twin Otter
	85.00°S	158.00°W		Twin Otter

Maria Byrd Land

Cape Colbeck	77.2°S	159.°W	?	Dog House, Ice Breaker
Guest Peninsula	76.4°S	149.°W	?	Dog House, Ice Breaker
Land Bay	75.5°S	141.°W	?	Dog House, Ice Breaker
Up-Stream Bravo	82.0°S	120.°W	1000	Twin Otter
Siple Dome	82.0°S	150.°W	500	Twin Otter
	79.2°S	150.°W	500	Twin Otter
Ready Glacier	85.0°S	136.°W	500	Twin Otter

AWS Repairs and Replacements

	AWS units known to need repairs as of March 1992			
Whitlock	8913	76.24°S	168.70°E	275 New Batteries
D-80	8919	70.02°S	134.72°E	2500 Replace unit
Dome C	8904	74.50°S	123.00°E	3280 Replace unit and remove RTG
Port Martin	8934	66.82°S	141.39°E	39 Repair wind sensors
Cape Denison	8933	67.02°S	142.68°E	31 Repair wind sensors
Bonaparte Pt	8912	64.78°S	63.06°W	2400 Install solar radiation sensor

Antarctic Peninsula, British Antarctic Survey

Rohn tower sections and booms with relative humidity for Larsen Ice Shelf, Siple and Cape Adams.

Cooperation with Japan and South Africa:

Desirability and details of the working arrangements need to be settled. Letter from Yugi Kodami is attached. The South African contact is Graham Tilbury, Antarctic Officer, Fax (031) 261 6550, Telex 621231SA, Tel. (031) 816 2775. The site would be approximately 180 km south of SANAE. Letter is attached.

Long Term Ecological Research

John Ince	64.77°S	65.77°W	64.77°S	65.77°W	John Ince
Hugh Ince	65.77°S	65.77°W	65.77°S	65.77°W	Hugh Ince
Blanca Ince	66.77°S	66.77°W	66.77°S	66.77°W	Blanca Ince

Meteorological Support for Forecasting at McMurdo, Antarctica

Cape Conner	77.27°S	170.77°E	77.27°S	170.77°E	Cape Conner
Ross Ice Shelf Edge	75.77°S	177.77°E	75.77°S	177.77°E	Ross Ice Shelf Edge
Peninsula Island	77.77°S	187.77°E	77.77°S	187.77°E	Peninsula Island
Peninsula Island	77.77°S	177.77°E	77.77°S	177.77°E	Peninsula Island
Robert Island	67.77°S	177.77°W	67.77°S	177.77°W	Robert Island
Robert Island	69.77°S	91.77°W	69.77°S	91.77°W	Robert Island

Meteorological Support for Investigation of Ice Runways

Franklin Pt	85.77°S	187.77°E	85.77°S	187.77°E	Franklin Pt
Byrd Base	80.77°S	157.77°E	80.77°S	157.77°E	Byrd Base

Long Term Climate Change at South Pole

Clear Air	90.00°S	150.00°E	90.00°S	150.00°E	Clear Air
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Ross Ice Shelf

Elaine	88.77°S	177.77°E	88.77°S	177.77°E	Elaine
Siple Coast	78.00°S	158.00°W	78.00°S	158.00°W	Siple Coast
Twin Otter	82.00°S	158.00°W	82.00°S	158.00°W	Twin Otter
Twin Otter	83.00°S	158.00°W	83.00°S	158.00°W	Twin Otter

Marie Byrd Land

Cape Colbeck	77.77°S	159.77°W	77.77°S	159.77°W	Cape Colbeck
Guest Peninsula	78.77°S	149.77°W	78.77°S	149.77°W	Guest Peninsula
Land Bay	75.77°S	141.77°W	75.77°S	141.77°W	Land Bay
Up-Stream Stream	82.00°S	150.00°W	82.00°S	150.00°W	Up-Stream Stream
Siple Dome	82.00°S	150.00°W	82.00°S	150.00°W	Siple Dome
Twin Otter	78.77°S	150.77°W	78.77°S	150.77°W	Twin Otter
Twin Otter	85.00°S	158.00°W	85.00°S	158.00°W	Twin Otter

Rohn Tower and Replacements

Whitlock	8813	78.24°S	188.70°E	8813	78.24°S	188.70°E	Whitlock
D-80	8819	78.07°S	174.77°E	8819	78.07°S	174.77°E	D-80
Dome 2	8804	78.50°S	173.00°E	8804	78.50°S	173.00°E	Dome 2
Four Martin	8814	68.82°S	141.00°E	8814	68.82°S	141.00°E	Four Martin
Cape Johnson	8813	67.02°S	143.68°E	8813	67.02°S	143.68°E	Cape Johnson
Benjamin Pt	8812	64.78°S	61.08°W	8812	64.78°S	61.08°W	Benjamin Pt

Rohn Tower and Replacements

Repair unit and remove RTD	1280	1280	1280	1280	Repair unit and remove RTD
Repair wind sensors	19	19	19	19	Repair wind sensors
Repair wind sensors	31	31	31	31	Repair wind sensors
Install solar radiation sensor	2400	2400	2400	2400	Install solar radiation sensor



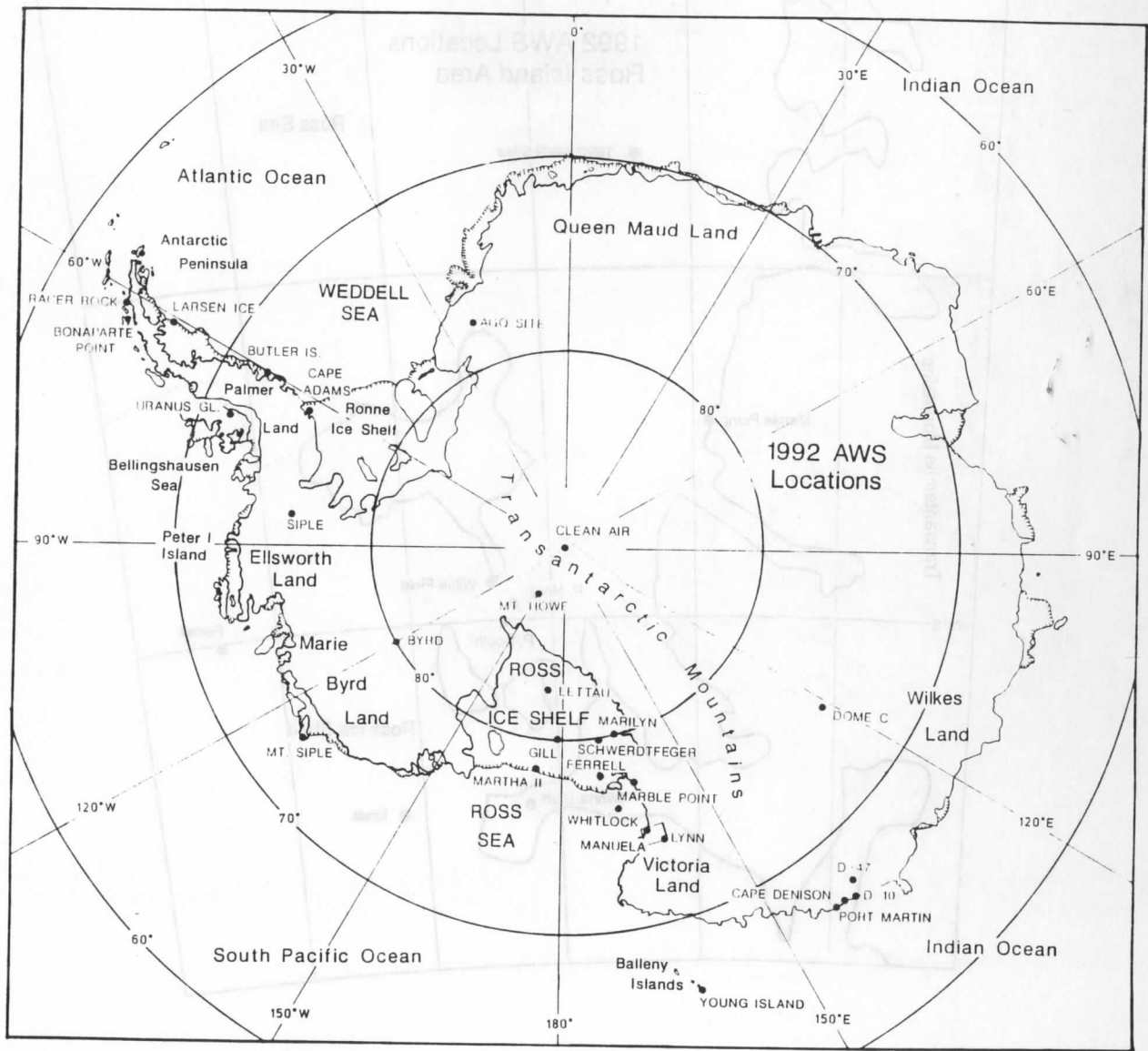


Figure 1. Map of Antarctica showing the locations of the automatic weather station units at the end of the 1991-1992 field season.

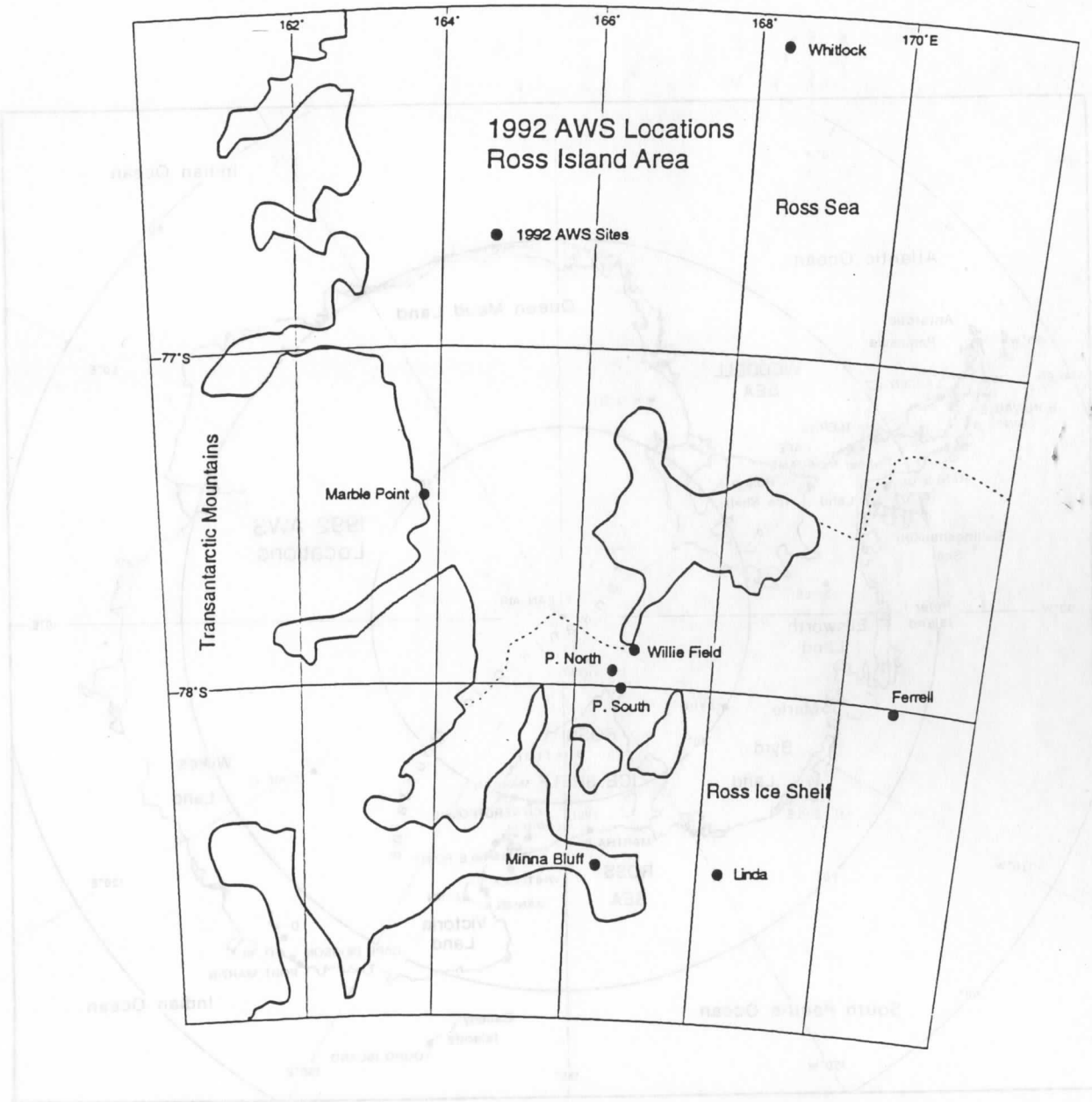


Figure 2. The automatic weather station locations in the vicinity of Ross Island, Antarctica at the end of the 1991-1992 field season.

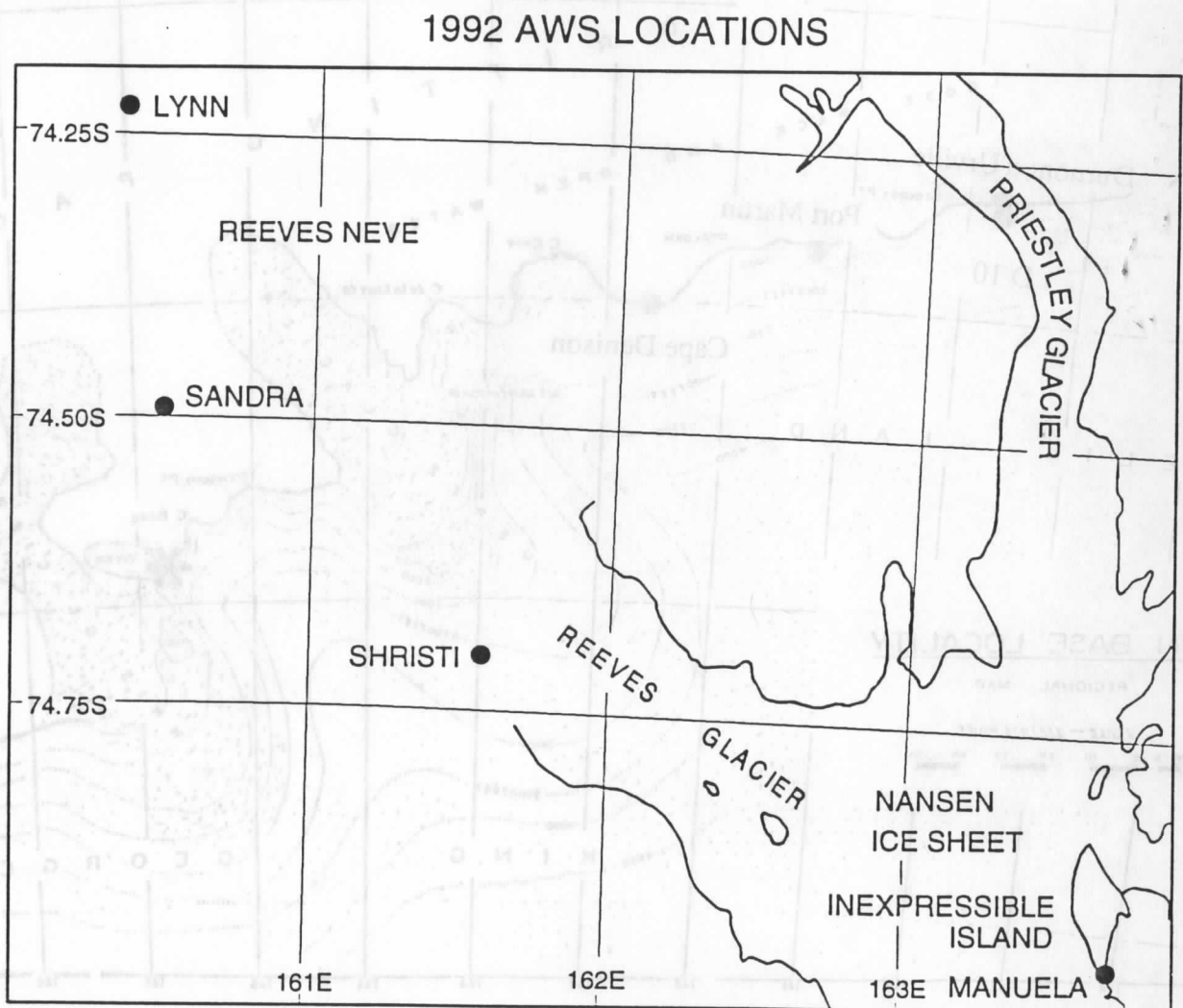


Figure 3. Locations of the automatic weather stations in the Reeves Glacier region at the end of the 1991-1992 field season.

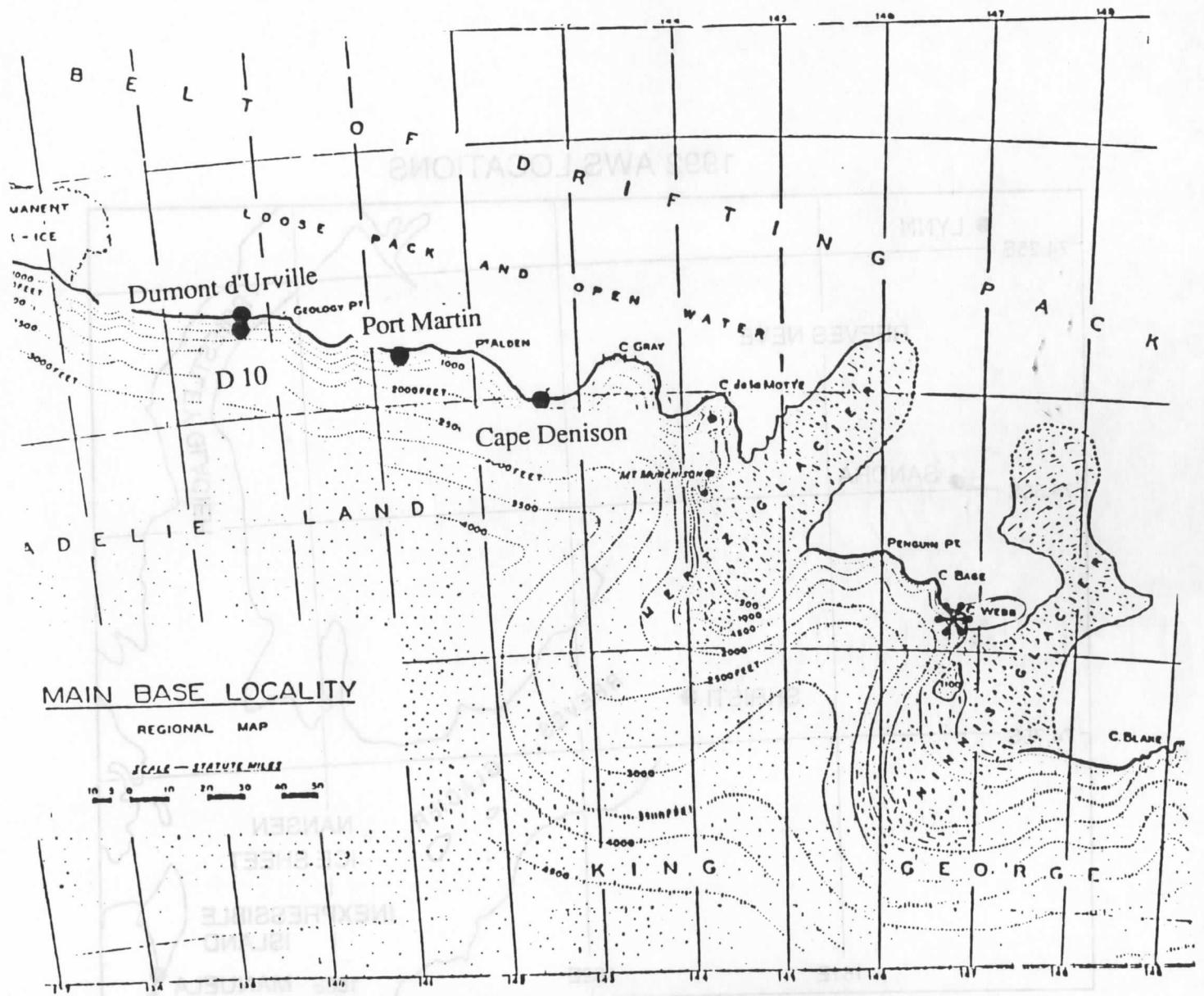


Figure 4. The locations of the automatic weather stations in Antarctica along the Adelie Coast near Dumont d'Urville at the end of the 1991-1992 field season.

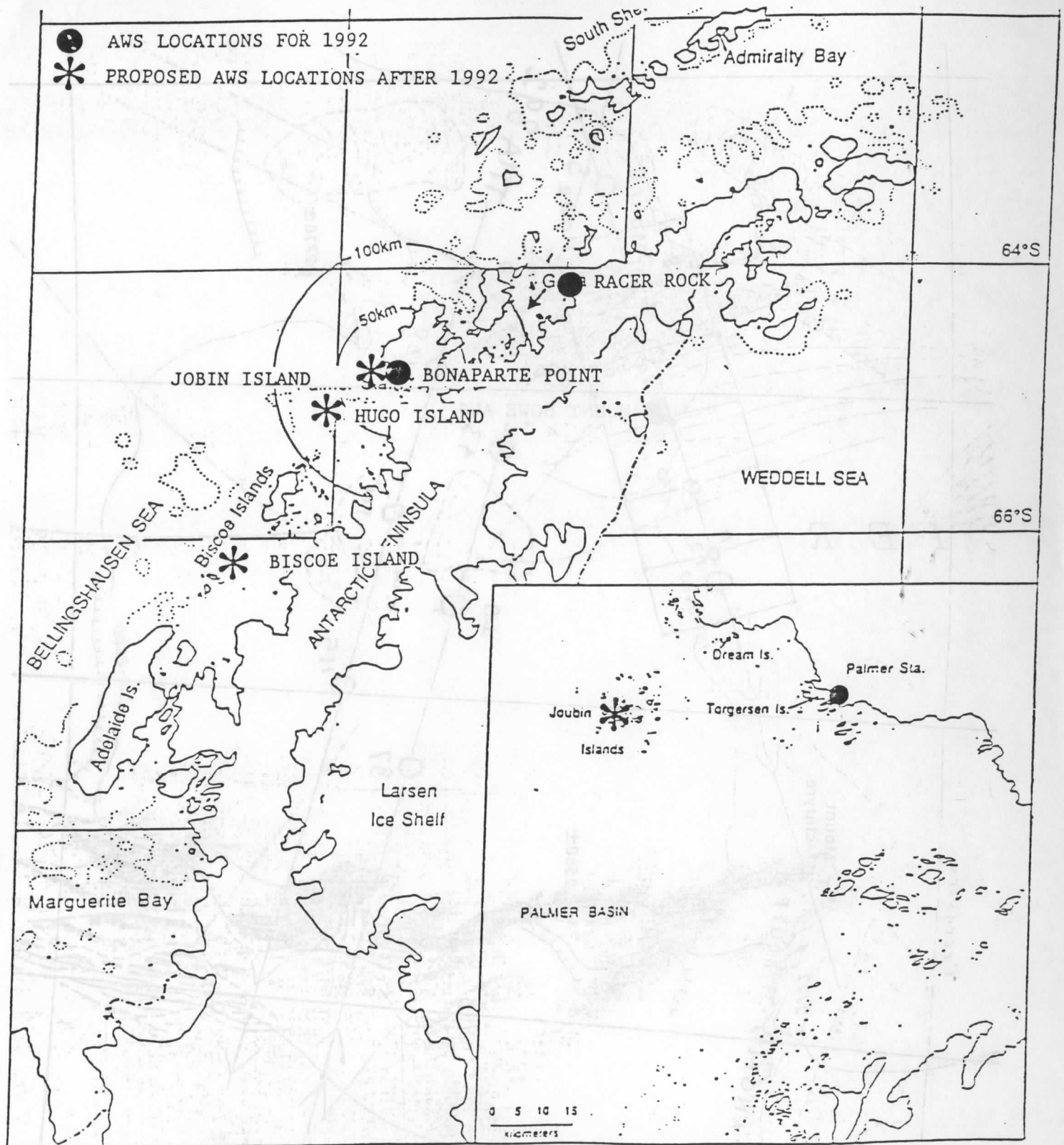


Figure 5. Automatic weather station locations in the vicinity of Palmer Station, Antarctica after the 1991-1992 field season and future locations in support of Long Term Ecological Research.

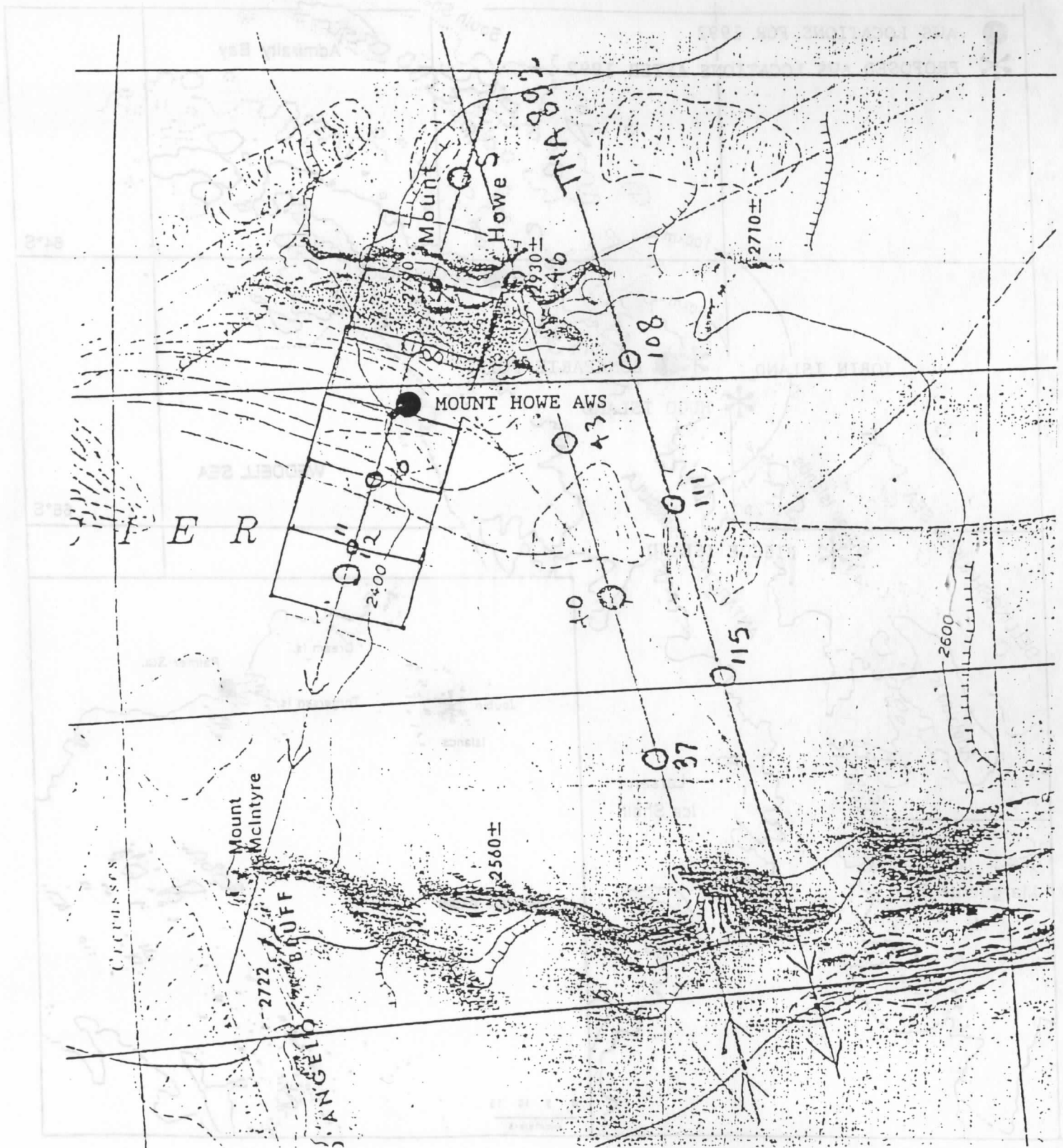


Figure 6. The location of the Mount Howe automatic weather station on the blue ice in the vicinity of Mt. Howe.

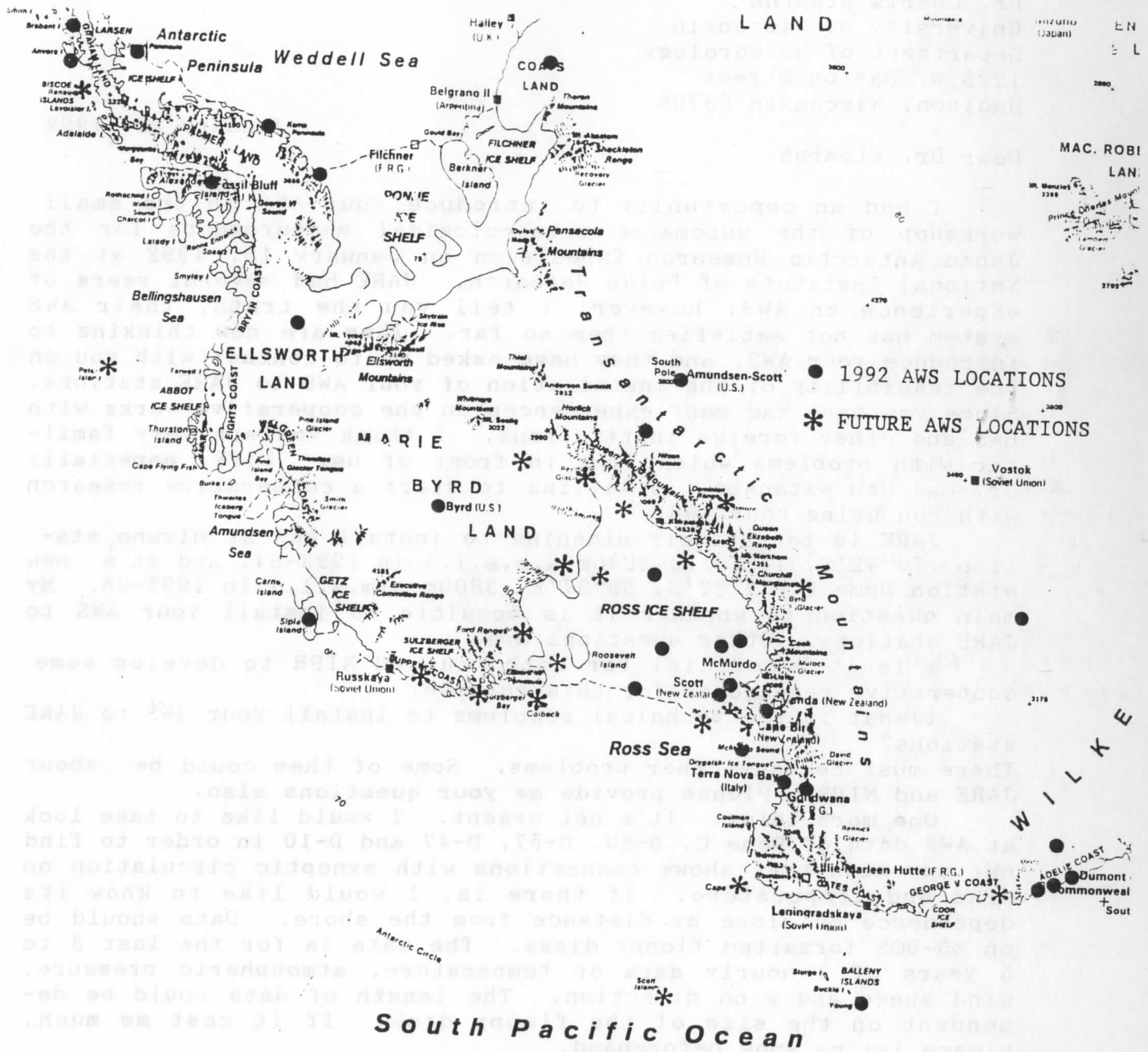


Figure 7. Map of the Ross Ice Shelf and West Antarctica showing the 1992 locations and possible future locations for automatic weather stations.



北海道大学低温科学研究所

THE INSTITUTE OF LOW TEMPERATURE SCIENCE

HOKKAIDO UNIVERSITY, SAPPORO, JAPAN 060

telex: ILTSHU 932261 J. fax: 011-716-5698

Dr. Charls Stearns  
University of Wisconsin  
Department of Meteorology  
1225 W. Dayton Street  
Madison, Wisconsin 53706

January 20, 1992

Dear Dr. Stearns,

I had an opportunity to introduce your AWS in the small workshop of the automatic meteorological measurements for the Japan Antarctic Research Expedition on January 16, 1992 at the National Institute of Polar Research. JARE had several years of experience on AWS, however, I tell you the truth, their AWS system has not satisfied them so far. They are now thinking to introduce your AWS, and they have asked me to contact with you on the feasibility of the installation of your AWS to JARE stations. Since you have had many experiences on the cooperative works with BAS and other foreign institutions. I think you are very familiar with problems which lies in front of us. NIPR, especially Dr. Okitugu Watanabe, is willing to start a cooperative research with you using your AWS.

JARE is tentatively planning to install AWS at Mizuho station ( $70^{\circ}42'S$ ,  $44^{\circ}20'E$ , 2230m a.m.s.l.) in 1993-94, and at a new station Dome F ( $77^{\circ}22'S$ ,  $39^{\circ}37'E$ , 3800m a.m.s.l.) in 1995-96. My main question is whether it is possible to install your AWS to JARE stations. Other questions are:

- i) Is it beneficial for both you and NIPR to develop some cooperative researches for this purpose?
- ii) What is the technical problems to install your AWS to JARE stations?

There must be many other problems. Some of them could be about JARE and NIPR. Please provide me your questions also.

One more thing. It's not urgent. I would like to take look at AWS data of Dome C, D-80, D-57, D-47 and D-10 in order to find out any sign that shows connections with synoptic circulation on wind and temperature. If there is, I would like to know its dependence on slope or distance from the shore. Data should be on MS-DOS formatted floppy disks. The data is for the last 3 to 5 years of 3 hourly data of temperature, atmospheric pressure, wind speed and wind direction. The length of data could be dependent on the size of the floppy disk. If it cost me much, please let me know beforehand.

Please extend my regards to George. *you*  
I am looking forward to hearing from *you* soon.  
With Best Regards,

*Yuji Kodama*  
Yuji Kodama





Department of Physics  
**UNIVERSITY OF NATAL**

King George V Avenue Durban 4001 South Africa  
Telephone (031)8162775 Fax (031)2616550 Telex 621231SA

TO FAX NUMBER:

091 608 263 2081

October 28, 1991

FOR ATTENTION OF:

Dept. of Meteorology  
Project Director:  
Antarctic Automatic Weather Stations

FROM:

GRAHAM TILBURY - ANTARCTIC OFFICER

MESSAGE:

Dear Sir

I have been aware of the work your department is conducting with A.W.S. in the Antarctic for some time now.

Mr Greg Bodeker, a MSc. student from our department, spoke to one of your people at the recent IUGG conference in Vienna, and has reported back that there is a possibility of us mutually assisting one another.

Briefly, we could arrange for one of your units to be transported to the Antarctic and installed at a site approximately 180 Kms inland from our station SANAE, at no charge to yourselves. In return we would like access to the data from the station in order to assist us with the design of equipment for deployment in planned A.G.O's ( Automatic Geophysical Observatories ) in the area.

I personally have had experience with the design, construction, calibration and deployment of satellite tracked drifting buoys, currently used in the Southern Oceans. We also have at our disposal here in the department, a pool of electronics technicians and Antarctic Expedition members with many years of practical experience operating equipment in the Antarctic.

Should you be interested in our offer, please contact me as soon as possible. My fax number is South Africa 31-2616550 .

I look forward to your early reply.

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PAGES FOLLOW

Dr. Bernd Lettau  
Division of Polar Programs  
Meteorology  
National Science Foundation  
1800 G Street, N.W.  
Washington, D.C. 25550  
U.S.A.

18 February 1992

Dear Bernie,

Belated best wishes for a happy 1992. As I mentioned in October, I am taking sabbatical leave at this new institute (director Garth Paltridge). Beside the fact that the austral summer is preferable over the Alaskan winter, there is lots of potential common interest between the Geophysical Institute in Alaska and the institute here, the former one more concentrating on the high northerly latitudes, while the latter one more on Antarctica; but both concentrating on high latitude phenomena. The common interest is, however, not necessarily limited to the Geophysical Institute, but might be also of interest to other american institutions. Presently, I am working with my australian colleagues on two papers on Antarctic problems; the australian have their AWS stations to the west of the stations in Adélie Land, and the two combined data sets give the best coastal coverage since the IGY, and for inland stations the best coverage ever.

The reason I am writing is, however, that I do not plan to attend the AWS meeting in Denver. The trip would be quite expensive, and as we already have a fairly tight budget, the funds could be, in my opinion, spent better for other purposes. However, please don't misunderstand me; I am quite willing to come, if you should think it to be essential. If this should be the case, please fax or call me.

My absence should not be interpreted as a lack of commitment to the project. As the installation of the AWS station was not possible during the last season, a fact about which I am still sad, it is highly important that they will be installed during the 1992/93 season. Hence, I wanted to ask you to look out for my interest. There are four coastal stations to be installed from the US icebreaker, Dumont d'Urville (D 10), Port Martin, Commonwealth Bay and Cape Webb. It will be essential that there is sufficient ice breaker time (including helicopter time) allocated, so that this installation will be successful. As the area is the windiest in Antarctica, even though

page?

